



# TEST DATA OF SFS302405/SFCS302405

Regulated DC Power Supply  
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Model

SFS302405/SFCS302405

Item

Input Current (by Input Voltage)

Object

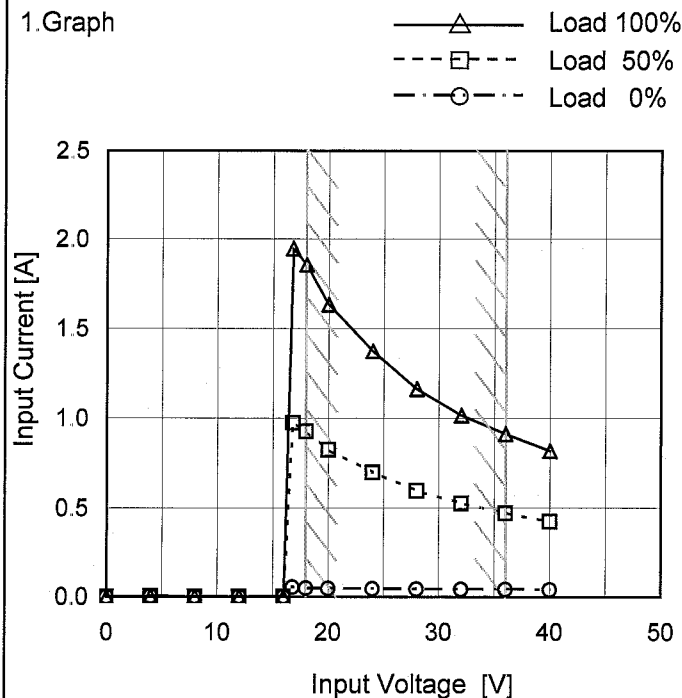
Temperature

25°C

Testing Circuitry

Figure A

## 1. Graph



Note: Slanted line shows the range of the rated input voltage.

## 2. Values

| Input Voltage [V] | Input Current [A] |          |           |
|-------------------|-------------------|----------|-----------|
|                   | Load 0%           | Load 50% | Load 100% |
| 0                 | 0.000             | 0.000    | 0.000     |
| 4                 | 0.003             | 0.003    | 0.003     |
| 8                 | 0.002             | 0.002    | 0.002     |
| 12                | 0.002             | 0.002    | 0.002     |
| 16                | 0.002             | 0.002    | 0.002     |
| 17                | 0.054             | 0.975    | 1.948     |
| 18                | 0.049             | 0.926    | 1.858     |
| 20                | 0.046             | 0.824    | 1.635     |
| 24                | 0.044             | 0.697    | 1.374     |
| 28                | 0.043             | 0.597    | 1.163     |
| 32                | 0.042             | 0.526    | 1.016     |
| 36                | 0.041             | 0.472    | 0.913     |
| 40                | 0.040             | 0.426    | 0.818     |
| --                | -                 | -        | -         |
| --                | -                 | -        | -         |
| --                | -                 | -        | -         |

| Model            |                   | SFS302405/SFCS302405   |                   | Temperature 25°C           |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|------------------|-------------------|--|-------------------|----------------------------|--|------------------|-------------------|--|--|-------------------|-------------------|-------------------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|----|---|---|---|----|---|---|---|----|---|---|---|
| Item             |                   | Input Current (by Load Current)  |                   | Testing Circuitry Figure A |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
| Object           |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
| 1. Graph         |                   | <div><div><div>—△—</div><div>---□---</div><div>-○-</div></div><div><div>Input Volt.</div><div>Input Volt.</div><div>Input Volt.</div></div><div><div>18V</div><div>24V</div><div>36V</div></div></div> <div><p>Note: Slanted line shows the range of the rated load current.</p></div>   |                   | 2. Values                  |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   | <table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Current [A]</th></tr><tr><th>Input Volt. 18[V]</th><th>Input Volt. 24[V]</th><th>Input Volt. 36[V]</th></tr><tr><td>0.0</td><td>0.049</td><td>0.044</td><td>0.041</td></tr><tr><td>1.0</td><td>0.335</td><td>0.258</td><td>0.183</td></tr><tr><td>2.0</td><td>0.629</td><td>0.477</td><td>0.327</td></tr><tr><td>3.0</td><td>0.926</td><td>0.697</td><td>0.472</td></tr><tr><td>4.0</td><td>1.230</td><td>0.920</td><td>0.618</td></tr><tr><td>5.0</td><td>1.538</td><td>1.145</td><td>0.764</td></tr><tr><td>6.0</td><td>1.858</td><td>1.374</td><td>0.913</td></tr><tr><td>6.2</td><td>1.922</td><td>1.421</td><td>0.942</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table> |                   |                            |  | Load Current [A] | Input Current [A] |  |  | Input Volt. 18[V] | Input Volt. 24[V] | Input Volt. 36[V] | 0.0 | 0.049 | 0.044 | 0.041 | 1.0 | 0.335 | 0.258 | 0.183 | 2.0 | 0.629 | 0.477 | 0.327 | 3.0 | 0.926 | 0.697 | 0.472 | 4.0 | 1.230 | 0.920 | 0.618 | 5.0 | 1.538 | 1.145 | 0.764 | 6.0 | 1.858 | 1.374 | 0.913 | 6.2 | 1.922 | 1.421 | 0.942 | -- | - | - | - | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Input Current [A] |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  | Input Volt. 18[V] | Input Volt. 24[V]  | Input Volt. 36[V] |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
| 0.0              | 0.049             | 0.044  | 0.041             |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
| 1.0              | 0.335             | 0.258  | 0.183             |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
| 2.0              | 0.629             | 0.477  | 0.327             |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
| 3.0              | 0.926             | 0.697  | 0.472             |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
| 4.0              | 1.230             | 0.920  | 0.618             |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
| 5.0              | 1.538             | 1.145  | 0.764             |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
| 6.0              | 1.858             | 1.374  | 0.913             |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
| 6.2              | 1.922             | 1.421  | 0.942             |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
| --               | -                 | -  | -                 |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
| --               | -                 | -  | -                 |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
| --               | -                 | -  | -                 |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |
|                  |                   |  |                   |                            |  |                  |                   |  |  |                   |                   |                   |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |

| Model   |                   | SFS302405/SFCS302405   |                   | Temperature 25°C           |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
|---|-------------------|--|-------------------|----------------------------|-----------------|--|--|-------------------|-------------------|-------------------|-----|------|------|------|-----|------|------|------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|----|---|---|---|----|---|---|---|----|---|---|---|--|--|
| Item  |                   | Input Power (by Load Current)  |                   | Testing Circuitry Figure A |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| Object  |                   |  |                   |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| 1. Graph  |                   | <div><div>—△—</div>Input Volt. 18V</div> <div><div>---□---</div>Input Volt. 24V</div> <div><div>---○---</div>Input Volt. 36V</div>   |                   | 2. Values                  |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| <div><div>Input Power [W]</div><div><div>Load Current [A]</div></div></div> |                   | <table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Power [W]</th></tr><tr><th>Input Volt. 18[V]</th><th>Input Volt. 24[V]</th><th>Input Volt. 36[V]</th></tr><tr><td>0.0</td><td>0.89</td><td>1.08</td><td>1.49</td></tr><tr><td>1.0</td><td>6.02</td><td>6.19</td><td>6.59</td></tr><tr><td>2.0</td><td>11.23</td><td>11.41</td><td>11.82</td></tr><tr><td>3.0</td><td>16.52</td><td>16.65</td><td>17.05</td></tr><tr><td>4.0</td><td>21.82</td><td>21.92</td><td>22.24</td></tr><tr><td>5.0</td><td>27.21</td><td>27.27</td><td>27.51</td></tr><tr><td>6.0</td><td>32.80</td><td>32.65</td><td>32.90</td></tr><tr><td>6.2</td><td>33.90</td><td>33.76</td><td>33.90</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table> |                   | Load Current [A]           | Input Power [W] |  |  | Input Volt. 18[V] | Input Volt. 24[V] | Input Volt. 36[V] | 0.0 | 0.89 | 1.08 | 1.49 | 1.0 | 6.02 | 6.19 | 6.59 | 2.0 | 11.23 | 11.41 | 11.82 | 3.0 | 16.52 | 16.65 | 17.05 | 4.0 | 21.82 | 21.92 | 22.24 | 5.0 | 27.21 | 27.27 | 27.51 | 6.0 | 32.80 | 32.65 | 32.90 | 6.2 | 33.90 | 33.76 | 33.90 | -- | - | - | - | -- | - | - | - | -- | - | - | - |  |  |
| Load Current [A]  | Input Power [W]   |  |                   |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
|   | Input Volt. 18[V] | Input Volt. 24[V]  | Input Volt. 36[V] |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| 0.0   | 0.89              | 1.08   | 1.49              |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| 1.0   | 6.02              | 6.19   | 6.59              |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| 2.0   | 11.23             | 11.41  | 11.82             |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| 3.0   | 16.52             | 16.65  | 17.05             |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| 4.0   | 21.82             | 21.92  | 22.24             |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| 5.0   | 27.21             | 27.27  | 27.51             |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| 6.0   | 32.80             | 32.65  | 32.90             |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| 6.2   | 33.90             | 33.76  | 33.90             |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| --  | -                 | -  | -                 |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| --  | -                 | -  | -                 |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| --  | -                 | -  | -                 |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |
| Note: Slanted line shows the range of the rated load current.               |                   |  |                   |                            |                 |  |  |                   |                   |                   |     |      |      |      |     |      |      |      |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |     |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |  |  |

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| Model  | SFS302405/SFCS302405          |   |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
|--|-------------------------------|---|----------|-------------------|----------------|--|----------|-----------|----|------|------|----|------|------|----|------|------|----|------|------|----|------|------|----|------|------|----|------|------|----|---|---|----|---|---|
| Item   | Efficiency (by Input Voltage) | Temperature   | 25°C     |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
|  |                               | Testing Circuitry   | Figure A |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
| Object   |                               |   |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
| 1. Graph   |                               | 2. Values   |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
| <div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div></div> <div><div>—</div><div>△</div><div>—</div></div> <div>Load 100%</div> <p>Note: Slanted line shows the range of the rated input voltage.</p> |                               | <table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Efficiency [%]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>17</td><td>90.9</td><td>91.5</td></tr><tr><td>18</td><td>91.3</td><td>91.8</td></tr><tr><td>20</td><td>91.3</td><td>91.9</td></tr><tr><td>24</td><td>90.7</td><td>91.8</td></tr><tr><td>30</td><td>89.7</td><td>91.5</td></tr><tr><td>36</td><td>88.5</td><td>91.0</td></tr><tr><td>40</td><td>87.9</td><td>90.6</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table> |          | Input Voltage [V] | Efficiency [%] |  | Load 50% | Load 100% | 17 | 90.9 | 91.5 | 18 | 91.3 | 91.8 | 20 | 91.3 | 91.9 | 24 | 90.7 | 91.8 | 30 | 89.7 | 91.5 | 36 | 88.5 | 91.0 | 40 | 87.9 | 90.6 | -- | - | - | -- | - | - |
| Input Voltage [V]  | Efficiency [%]                |   |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
|  | Load 50%                      | Load 100%   |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
| 17   | 90.9                          | 91.5  |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
| 18   | 91.3                          | 91.8  |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
| 20   | 91.3                          | 91.9  |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
| 24   | 90.7                          | 91.8  |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
| 30   | 89.7                          | 91.5  |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
| 36   | 88.5                          | 91.0  |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
| 40   | 87.9                          | 90.6  |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
| --   | -                             | -   |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
| --   | -                             | -   |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |
|  |                               |   |          |                   |                |  |          |           |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |    |   |   |

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| Model  | SFS302405/SFCS302405 |   |          |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
|--|----------------------|---|----------|-------------------|--------------------|--|----------|-----------|----|-------|-------|----|-------|-------|----|-------|-------|----|-------|-------|----|-------|-------|----|-------|-------|----|-------|-------|----|---|---|----|---|---|
| Item   | Line Regulation      | Temperature   | 25°C     |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| Object   | +5V6A                | Testing Circuitry   | Figure A |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 1. Graph   |                      | 2. Values   |          |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| <div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <p>Note: Slanted line shows the range of the rated input voltage.</p> |                      | <table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Output Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>17</td><td>5.039</td><td>5.005</td></tr><tr><td>18</td><td>5.045</td><td>5.012</td></tr><tr><td>20</td><td>5.054</td><td>5.022</td></tr><tr><td>24</td><td>5.051</td><td>5.006</td></tr><tr><td>30</td><td>5.048</td><td>4.993</td></tr><tr><td>36</td><td>5.047</td><td>4.987</td></tr><tr><td>40</td><td>5.047</td><td>4.984</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table> |          | Input Voltage [V] | Output Voltage [V] |  | Load 50% | Load 100% | 17 | 5.039 | 5.005 | 18 | 5.045 | 5.012 | 20 | 5.054 | 5.022 | 24 | 5.051 | 5.006 | 30 | 5.048 | 4.993 | 36 | 5.047 | 4.987 | 40 | 5.047 | 4.984 | -- | - | - | -- | - | - |
| Input Voltage [V]  | Output Voltage [V]   |   |          |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
|  | Load 50%             | Load 100%   |          |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 17   | 5.039                | 5.005   |          |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 18   | 5.045                | 5.012   |          |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 20   | 5.054                | 5.022   |          |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 24   | 5.051                | 5.006   |          |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 30   | 5.048                | 4.993   |          |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 36   | 5.047                | 4.987   |          |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 40   | 5.047                | 4.984   |          |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| --   | -                    | -   |          |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| --   | -                    | -   |          |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
|  |                      |   |          |                   |                    |  |          |           |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |



|  |  |   |  |                            |  |
|--|--|---|--|----------------------------|--|
| Model  |  | SFS302405/SFCS302405  |  | Temperature 25°C           |  |
| Item   |  | Load Regulation   |  | Testing Circuitry Figure A |  |
| Object   |  | +5V6A   |  |                            |  |
| 1. Graph   |  | <div><div><div><div></div></div><div><div></div></div><div><div></div></div></div><div><div>Input Volt. 18V</div><div>Input Volt. 24V</div><div>Input Volt. 36V</div></div></div> |  | 2. Values                  |  |
| <div><div><div><div>Output Voltage [V]</div><div><div><div></div></div></div><div><div></div></div></div><div><div></div></div><div><div></div></div></div><div><div></div></div><div><div></div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> <div><div></div></div> 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# COSEL

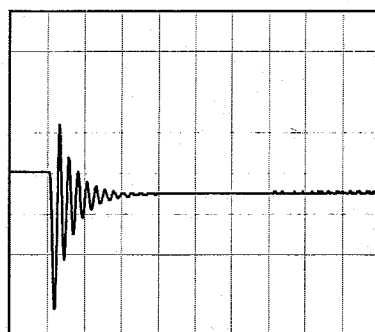
|        |                       |  |  |
|--------|-----------------------|--|--|
|        |                       |  |  |
| Model  | SFS302405/SFCS302405  | Temperature 25°C<br>Testing Circuitry Figure A |  |
| Item   | Dynamic Load Response |  |  |
| Object | +5V6A                 |  |  |

Input Volt. 24 V  
Cycle 1000 mS

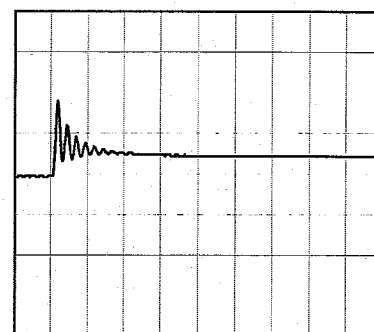
Load Current 6A / 200  $\mu$

Min. Load (0A)  $\longleftrightarrow$   
Load 100% (6A)

200mV/div



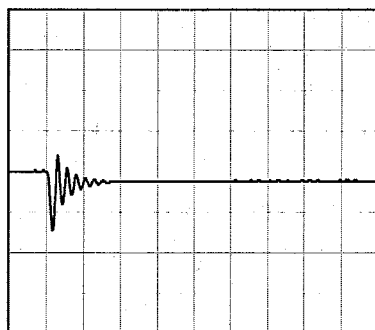
200  $\mu$  s/div



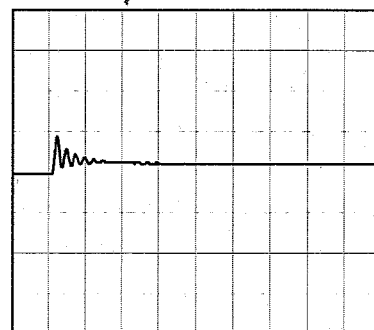
200  $\mu$  s/div

Min. Load (0A)  $\longleftrightarrow$   
Load 50% (3A)

200mV/div



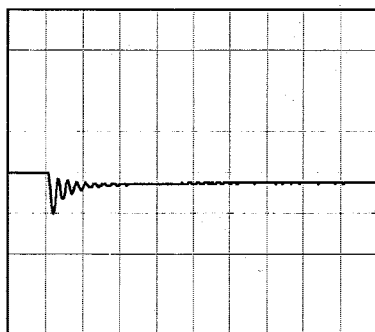
200  $\mu$  s/div



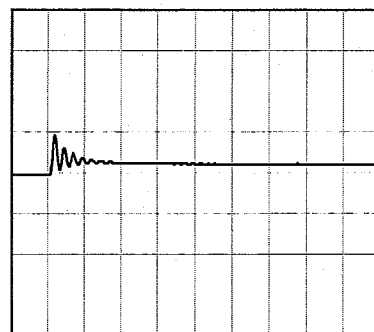
200  $\mu$  s/div

Load 50% (3A)  $\longleftrightarrow$   
Load 100% (6A)

200mV/div



200  $\mu$  s/div



200  $\mu$  s/div

| Model  | SFS302405/SFCS302405             |                    |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
|--|----------------------------------|--------------------|-----------------|-----------------|-----|---|---|-----|---|---|-----|---|---|-----|---|---|-----|---|---|-----|---|---|----|---|---|----|---|---|----|---|---|----|---|---|----|---|---|--|--|------------------|---------------------|--|--------------------|--------------------|-----|---|---|-----|---|---|-----|---|---|-----|---|---|-----|---|---|-----|---|---|----|---|---|----|---|---|----|---|---|----|---|---|----|---|---|
| Item   | Ripple Voltage (by Load Current) | Temperature        | 25°C            |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| Object   | +5V6A                            | Testing Circuitry  | Figure C        |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 1. Graph   |                                  | 2. Values          |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| <div><div><div><div></div><div>Input Volt. 18V</div></div><div><div></div><div>Input Volt. 36V</div></div></div><div><table><thead><tr><th>Load Current [A]</th><th>18V Ripple [mV]</th><th>36V Ripple [mV]</th></tr></thead><tbody><tr><td>0.0</td><td>5</td><td>9</td></tr><tr><td>1.2</td><td>5</td><td>9</td></tr><tr><td>2.4</td><td>5</td><td>9</td></tr><tr><td>3.6</td><td>5</td><td>9</td></tr><tr><td>4.8</td><td>5</td><td>9</td></tr><tr><td>6.0</td><td>5</td><td>9</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table></div></div> <div><div>Measured by 100 MHz Oscilloscope.<br/>Ripple Voltage is shown as p-p in the figure below.<br/>Note: Slanted line shows the range of the rated load current.</div><div><div><div>Ripple [mVp-p]</div><div></div></div><div>Fig. Complex Ripple Wave Form</div></div></div> |                                  | Load Current [A]   | 18V Ripple [mV] | 36V Ripple [mV] | 0.0 | 5 | 9 | 1.2 | 5 | 9 | 2.4 | 5 | 9 | 3.6 | 5 | 9 | 4.8 | 5 | 9 | 6.0 | 5 | 9 | -- | - | - | -- | - | - | -- | - | - | -- | - | - | -- | - | - | <table><thead><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 18 [V]</th><th>Input Volt. 36 [V]</th></tr></thead><tbody><tr><td>0.0</td><td>5</td><td>8</td></tr><tr><td>1.2</td><td>5</td><td>9</td></tr><tr><td>2.4</td><td>5</td><td>9</td></tr><tr><td>3.6</td><td>5</td><td>9</td></tr><tr><td>4.8</td><td>5</td><td>9</td></tr><tr><td>6.0</td><td>5</td><td>9</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table> |  | Load Current [A] | Ripple Voltage [mV] |  | Input Volt. 18 [V] | Input Volt. 36 [V] | 0.0 | 5 | 8 | 1.2 | 5 | 9 | 2.4 | 5 | 9 | 3.6 | 5 | 9 | 4.8 | 5 | 9 | 6.0 | 5 | 9 | -- | - | - | -- | - | - | -- | - | - | -- | - | - | -- | - | - |
| Load Current [A]   | 18V Ripple [mV]                  | 36V Ripple [mV]    |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 0.0  | 5                                | 9                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 1.2  | 5                                | 9                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 2.4  | 5                                | 9                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 3.6  | 5                                | 9                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 4.8  | 5                                | 9                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 6.0  | 5                                | 9                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                                | -                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                                | -                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                                | -                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                                | -                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                                | -                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| Load Current [A]   | Ripple Voltage [mV]              |                    |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
|  | Input Volt. 18 [V]               | Input Volt. 36 [V] |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 0.0  | 5                                | 8                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 1.2  | 5                                | 9                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 2.4  | 5                                | 9                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 3.6  | 5                                | 9                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 4.8  | 5                                | 9                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 6.0  | 5                                | 9                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                                | -                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                                | -                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                                | -                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                                | -                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                                | -                  |                 |                 |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                     |  |                    |                    |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |

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BC-10059

| Model  | SFS302405/SFCS302405    | Temperature             | 25°C                    |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
|--|-------------------------|-------------------------|-------------------------|-------------------------|-----|----|----|-----|----|----|-----|----|----|-----|----|----|-----|----|----|-----|----|----|----|---|---|----|---|---|----|---|---|----|---|---|----|---|---|--|--|------------------|-------------------|--|--------------------|--------------------|-----|----|----|-----|----|----|-----|----|----|-----|----|----|-----|----|----|-----|----|----|----|---|---|----|---|---|----|---|---|----|---|---|----|---|---|
| Item   | Ripple-Noise            | Testing Circuitry       | Figure C                |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| Object   | +5V6A                   |                         |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 1. Graph   |                         | 2. Values               |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| <div><div><div><div><div></div><div>—△—</div><div>Input Volt. 18V</div></div><div><div>---○---</div><div>Input Volt. 36V</div></div></div><div><table><thead><tr><th>Load Current [A]</th><th>Input Volt. 18 [V] [mV]</th><th>Input Volt. 36 [V] [mV]</th></tr></thead><tbody><tr><td>0.0</td><td>13</td><td>15</td></tr><tr><td>1.2</td><td>13</td><td>15</td></tr><tr><td>2.4</td><td>13</td><td>15</td></tr><tr><td>3.6</td><td>13</td><td>16</td></tr><tr><td>4.8</td><td>16</td><td>19</td></tr><tr><td>6.0</td><td>19</td><td>23</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table></div></div><div><div>Measured by 100 MHz Oscilloscope.</div><div>Ripple-Noise is shown as p-p in the figure below.</div><div>Note: Slanted line shows the range of the rated load current.</div></div><div><div><div><div></div><div>Ripple Noise[mVp-p]</div></div><div></div></div><div>Fig. Complex Ripple Noise Wave Form</div></div></div> |                         | Load Current [A]        | Input Volt. 18 [V] [mV] | Input Volt. 36 [V] [mV] | 0.0 | 13 | 15 | 1.2 | 13 | 15 | 2.4 | 13 | 15 | 3.6 | 13 | 16 | 4.8 | 16 | 19 | 6.0 | 19 | 23 | -- | - | - | -- | - | - | -- | - | - | -- | - | - | -- | - | - | <table><thead><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple-Noise [mV]</th></tr><tr><th>Input Volt. 18 [V]</th><th>Input Volt. 24 [V]</th></tr></thead><tbody><tr><td>0.0</td><td>13</td><td>15</td></tr><tr><td>1.2</td><td>13</td><td>15</td></tr><tr><td>2.4</td><td>13</td><td>15</td></tr><tr><td>3.6</td><td>13</td><td>16</td></tr><tr><td>4.8</td><td>16</td><td>19</td></tr><tr><td>6.0</td><td>19</td><td>23</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table> |  | Load Current [A] | Ripple-Noise [mV] |  | Input Volt. 18 [V] | Input Volt. 24 [V] | 0.0 | 13 | 15 | 1.2 | 13 | 15 | 2.4 | 13 | 15 | 3.6 | 13 | 16 | 4.8 | 16 | 19 | 6.0 | 19 | 23 | -- | - | - | -- | - | - | -- | - | - | -- | - | - | -- | - | - |
| Load Current [A]   | Input Volt. 18 [V] [mV] | Input Volt. 36 [V] [mV] |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 0.0  | 13                      | 15                      |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 1.2  | 13                      | 15                      |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 2.4  | 13                      | 15                      |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 3.6  | 13                      | 16                      |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 4.8  | 16                      | 19                      |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 6.0  | 19                      | 23                      |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                       | -                       |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                       | -                       |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                       | -                       |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                       | -                       |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                       | -                       |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| Load Current [A]   | Ripple-Noise [mV]       |                         |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
|  | Input Volt. 18 [V]      | Input Volt. 24 [V]      |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 0.0  | 13                      | 15                      |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 1.2  | 13                      | 15                      |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 2.4  | 13                      | 15                      |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 3.6  | 13                      | 16                      |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 4.8  | 16                      | 19                      |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| 6.0  | 19                      | 23                      |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                       | -                       |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                       | -                       |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                       | -                       |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                       | -                       |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |
| --   | -                       | -                       |                         |                         |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |  |  |                  |                   |  |                    |                    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |     |    |    |    |   |   |    |   |   |    |   |   |    |   |   |    |   |   |

Model

SFS302405/SFCS302405

Item

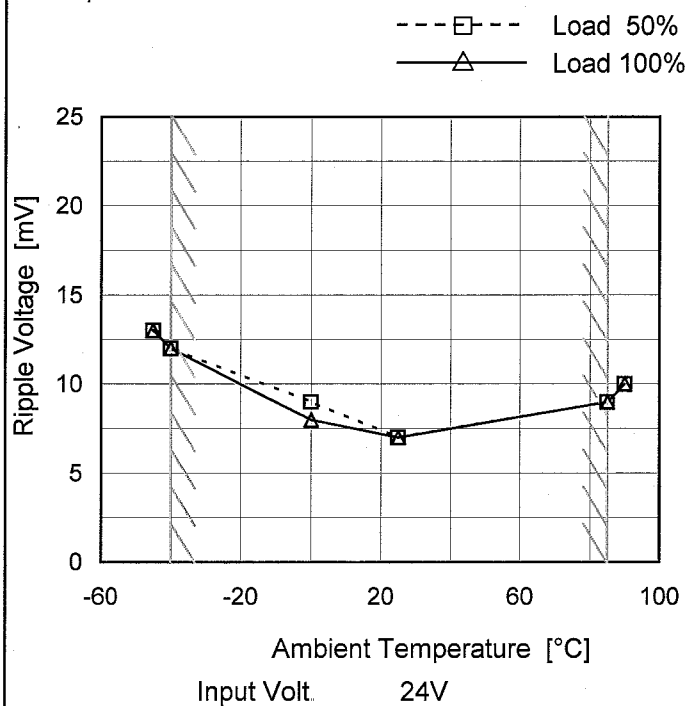
Ripple Voltage (by Ambient Temp.)

Object

+5V6A

Testing Circuitry Figure C

## 1. Graph



Measured by 100 MHz Oscilloscope.

Note: Slanted line shows the range of the rated ambient temperature.

## 2. Values

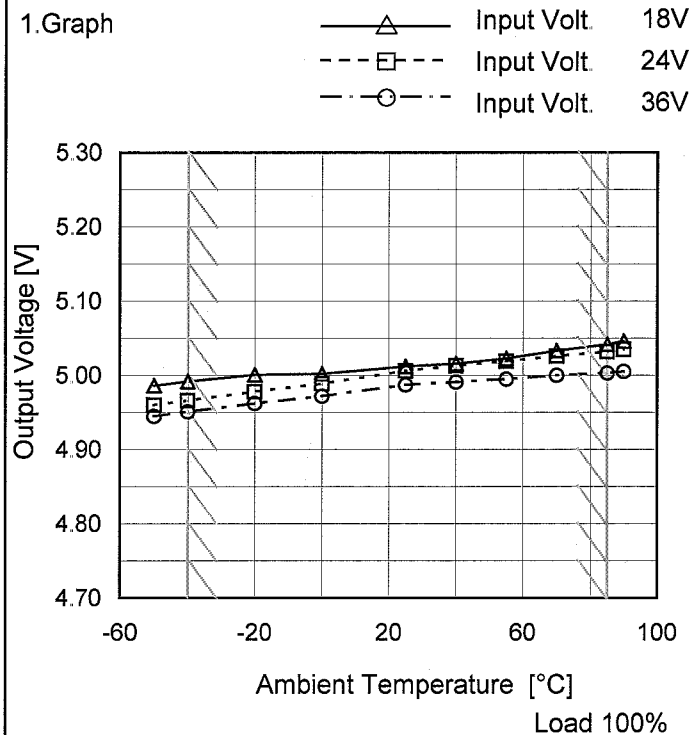
| Ambient Temperature [°C] | Ripple Voltage [mV] |           |
|--------------------------|---------------------|-----------|
|                          | Load 50%            | Load 100% |
| -45                      | 13                  | 13        |
| -40                      | 12                  | 12        |
| 0                        | 9                   | 8         |
| 25                       | 7                   | 7         |
| 85                       | 9                   | 9         |
| 90                       | 10                  | 10        |
| --                       | -                   | -         |
| --                       | -                   | -         |
| --                       | -                   | -         |
| --                       | -                   | -         |
| --                       | -                   | -         |

Model SFS302405/SFCS302405

Item Ambient Temperature Drift

Object +5V6A

Testing Circuitry Figure A



Note: Slanted line shows the range of the rated ambient temperature.

2. Values

| Ambient Temperature [°C] | Output Voltage [V] |                   |                   |
|--------------------------|--------------------|-------------------|-------------------|
|                          | Input Volt. 18[V]  | Input Volt. 24[V] | Input Volt. 36[V] |
| -50                      | 4.986              | 4.960             | 4.945             |
| -40                      | 4.992              | 4.966             | 4.951             |
| -20                      | 5.001              | 4.978             | 4.962             |
| 0                        | 5.002              | 4.989             | 4.972             |
| 25                       | 5.012              | 5.006             | 4.987             |
| 40                       | 5.016              | 5.013             | 4.991             |
| 55                       | 5.023              | 5.019             | 4.995             |
| 70                       | 5.033              | 5.026             | 5.000             |
| 85                       | 5.042              | 5.032             | 5.003             |
| 90                       | 5.046              | 5.035             | 5.005             |
| --                       | -                  | -                 | -                 |



|        |                         |                            |
|--------|-------------------------|----------------------------|
|        |                         | Testing Circuitry Figure A |
| Model  | SFS302405/SFCS302405    |                            |
| Item   | Output Voltage Accuracy |                            |
| Object | +5V6A                   |                            |

### 1. Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -40 - 85°C

Input Voltage : 18 - 36V

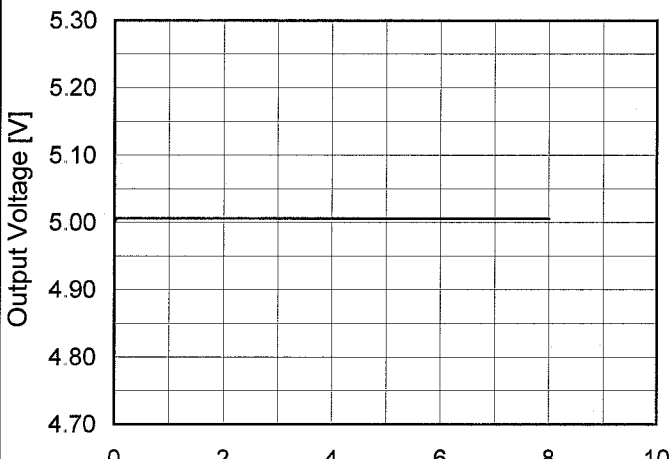
Load Current : 0 - 6A

\* Output Voltage Accuracy =  $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

\* Output Voltage Accuracy (Ratio) =  $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

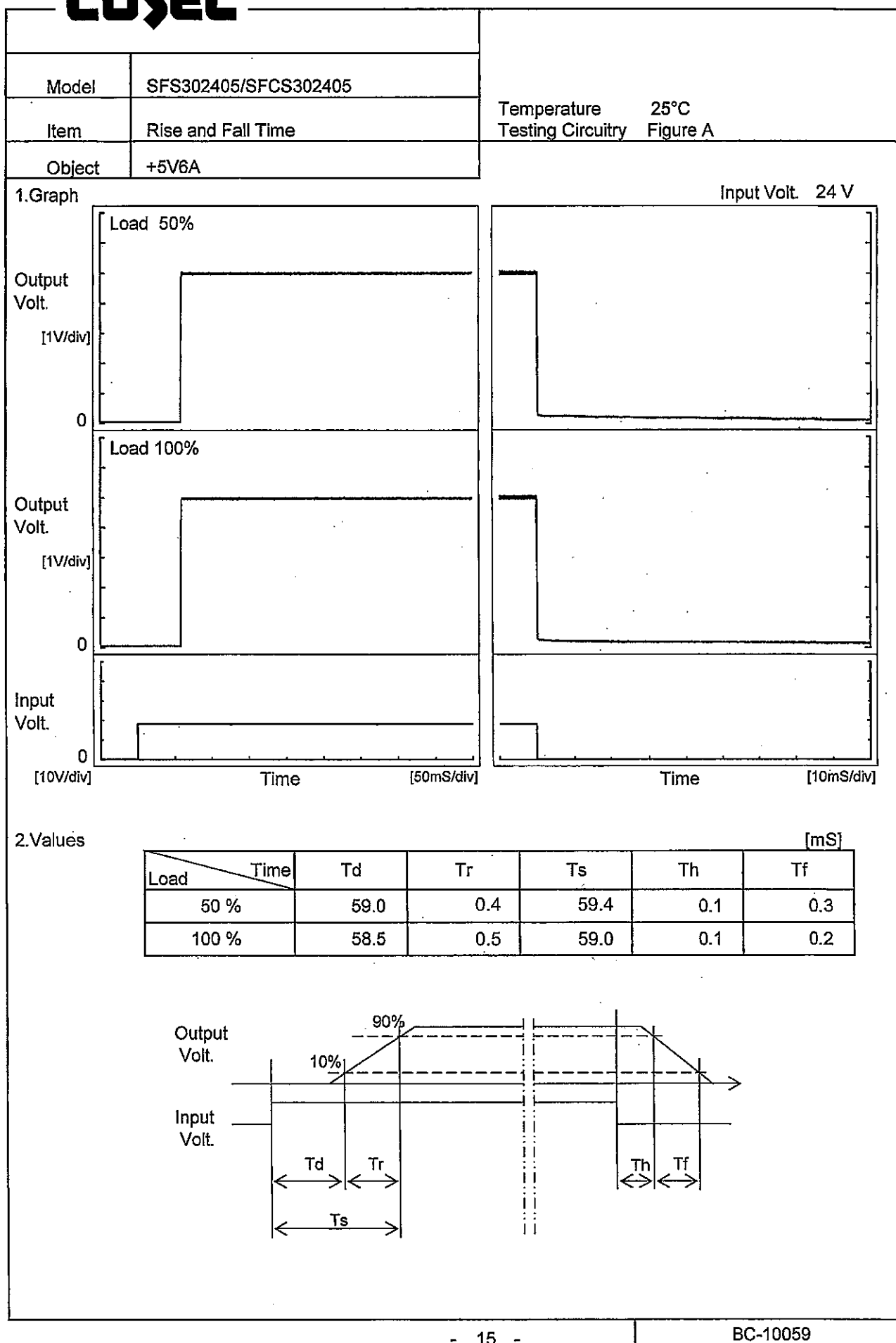
### 2. Values

| Item            | Temperature<br>[°C] | Input<br>Voltage[V] | Output     |            | Output Voltage Accuracy |           |
|-----------------|---------------------|---------------------|------------|------------|-------------------------|-----------|
|                 |                     |                     | Current[A] | Voltage[V] | Value [mV]              | Ratio [%] |
| Maximum Voltage | 85                  | 24                  | 0          | 5.128      | ±88                     | ±1.8      |
| Minimum Voltage | -40                 | 36                  | 6          | 4.952      |                         |           |

| Model  | SFS302405/SFCS302405 |  |          |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |
|--|----------------------|--|----------|----------------------|--------------------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| Item   | Time Lapse Drift     | Temperature  | 25°C     |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |
| Object   | +5V6A                | Testing Circuitry  | Figure A |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |
| 1. Graph   |                      | 2. Values  |          |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |
| <div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 24V</p><p>Load 100%</p></div> |                      | <table><thead><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr></thead><tbody><tr><td>0.0</td><td>5.000</td></tr><tr><td>0.5</td><td>5.006</td></tr><tr><td>1.0</td><td>5.006</td></tr><tr><td>2.0</td><td>5.006</td></tr><tr><td>3.0</td><td>5.006</td></tr><tr><td>4.0</td><td>5.006</td></tr><tr><td>5.0</td><td>5.006</td></tr><tr><td>6.0</td><td>5.006</td></tr><tr><td>7.0</td><td>5.006</td></tr><tr><td>8.0</td><td>5.006</td></tr></tbody></table> |          | Time since start [H] | Output Voltage [V] | 0.0 | 5.000 | 0.5 | 5.006 | 1.0 | 5.006 | 2.0 | 5.006 | 3.0 | 5.006 | 4.0 | 5.006 | 5.0 | 5.006 | 6.0 | 5.006 | 7.0 | 5.006 | 8.0 | 5.006 |
| Time since start [H]   | Output Voltage [V]   |  |          |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |
| 0.0  | 5.000                |  |          |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |
| 0.5  | 5.006                |  |          |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |
| 1.0  | 5.006                |  |          |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |
| 2.0  | 5.006                |  |          |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |
| 3.0  | 5.006                |  |          |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |
| 4.0  | 5.006                |  |          |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |
| 5.0  | 5.006                |  |          |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |
| 6.0  | 5.006                |  |          |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |
| 7.0  | 5.006                |  |          |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |
| 8.0  | 5.006                |  |          |                      |                    |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |       |



# COSEL



| Model   | SFS302405/SFCS302405                                  |                               |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
|---|---|-------------------------------|--------------|---------------|-----|------|------|-----|------|------|-----|------|------|---|------|------|----|------|------|----|------|------|----|------|------|----|------|------|----|------|------|----|------|------|----|---|---|--|--|
| Item  | Minimum Input Voltage<br>for Regulated Output Voltage | Testing Circuitry    Figure A |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
| Object  | +5V6A   |                               |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
| 1. Graph  |   | 2. Values                     |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
| <div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <table><thead><tr><th>Ambient Temperature [°C]</th><th>Load 50% [V]</th><th>Load 100% [V]</th></tr></thead><tbody><tr><td>-50</td><td>15.3</td><td>15.4</td></tr><tr><td>-40</td><td>15.4</td><td>15.5</td></tr><tr><td>-20</td><td>15.4</td><td>15.5</td></tr><tr><td>0</td><td>15.5</td><td>15.6</td></tr><tr><td>25</td><td>15.5</td><td>15.7</td></tr><tr><td>40</td><td>15.6</td><td>15.7</td></tr><tr><td>55</td><td>15.6</td><td>15.7</td></tr><tr><td>70</td><td>15.6</td><td>15.8</td></tr><tr><td>85</td><td>15.7</td><td>15.8</td></tr><tr><td>90</td><td>15.7</td><td>15.7</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table> <p>Note: Slanted line shows the range of the rated ambient temperature.</p> |   | Ambient Temperature [°C]      | Load 50% [V] | Load 100% [V] | -50 | 15.3 | 15.4 | -40 | 15.4 | 15.5 | -20 | 15.4 | 15.5 | 0 | 15.5 | 15.6 | 25 | 15.5 | 15.7 | 40 | 15.6 | 15.7 | 55 | 15.6 | 15.7 | 70 | 15.6 | 15.8 | 85 | 15.7 | 15.8 | 90 | 15.7 | 15.7 | -- | - | - |  |  |
| Ambient Temperature [°C]  | Load 50% [V]  | Load 100% [V]                 |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
| -50   | 15.3  | 15.4                          |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
| -40   | 15.4  | 15.5                          |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
| -20   | 15.4  | 15.5                          |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
| 0   | 15.5  | 15.6                          |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
| 25  | 15.5  | 15.7                          |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
| 40  | 15.6  | 15.7                          |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
| 55  | 15.6  | 15.7                          |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
| 70  | 15.6  | 15.8                          |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
| 85  | 15.7  | 15.8                          |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
| 90  | 15.7  | 15.7                          |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |
| --  | -   | -                             |              |               |     |      |      |     |      |      |     |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |   |   |  |  |

BC-10059

| Model   | SFS302405/SFCS302405   |  |             |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
|---|------------------------|--|-------------|--|--------------------------|---------------------|--|--|-------------------|-------------|-------------|-----|------|---|---|----|------|---|---|----|------|---|---|----|---|---|---|----|---|---|---|----|---|---|---|----|---|---|---|----|---|---|---|----|---|---|---|----|---|---|---|----|---|---|---|
| Item  | Overvoltage Protection | Testing Circuitry    Figure A  |             |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| Object  | +5V6A                  |  |             |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 1.Graph   |                        | 2.Values   |             |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| <div><div>—△—</div>Input Volt.    24V</div> <p>Operating Point [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 0%</p> <p>Note: Slanted line shows the range of the rated ambient temperature.</p> |                        | <table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="3">Operating Point [V]</th></tr><tr><th>Input Volt. 24[V]</th><th>Input Volt.</th><th>Input Volt.</th></tr><tr><td>-40</td><td>6.72</td><td>-</td><td>-</td></tr><tr><td>25</td><td>6.66</td><td>-</td><td>-</td></tr><tr><td>85</td><td>6.60</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table> |             |  | Ambient Temperature [°C] | Operating Point [V] |  |  | Input Volt. 24[V] | Input Volt. | Input Volt. | -40 | 6.72 | - | - | 25 | 6.66 | - | - | 85 | 6.60 | - | - | -- | - | - | - | -- | - | - | - | -- | - | - | - | -- | - | - | - | -- | - | - | - | -- | - | - | - | -- | - | - | - | -- | - | - | - |
| Ambient Temperature [°C]  | Operating Point [V]    |  |             |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
|   | Input Volt. 24[V]      | Input Volt.  | Input Volt. |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| -40   | 6.72                   | -  | -           |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 25  | 6.66                   | -  | -           |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 85  | 6.60                   | -  | -           |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --  | -                      | -  | -           |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --  | -                      | -  | -           |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --  | -                      | -  | -           |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --  | -                      | -  | -           |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --  | -                      | -  | -           |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --  | -                      | -  | -           |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --  | -                      | -  | -           |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --  | -                      | -  | -           |  |                          |                     |  |  |                   |             |             |     |      |   |   |    |      |   |   |    |      |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |

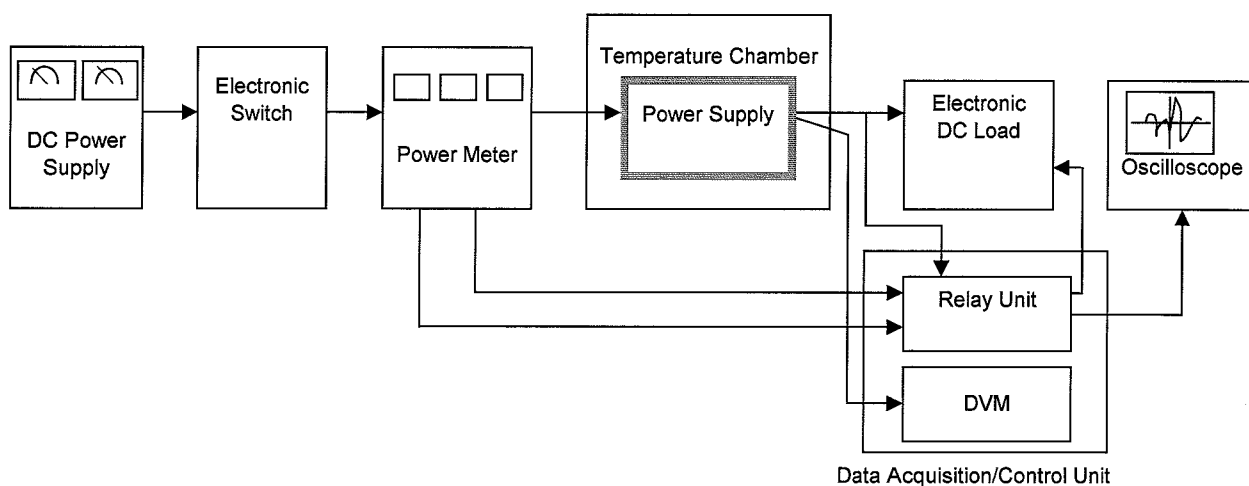


Figure A

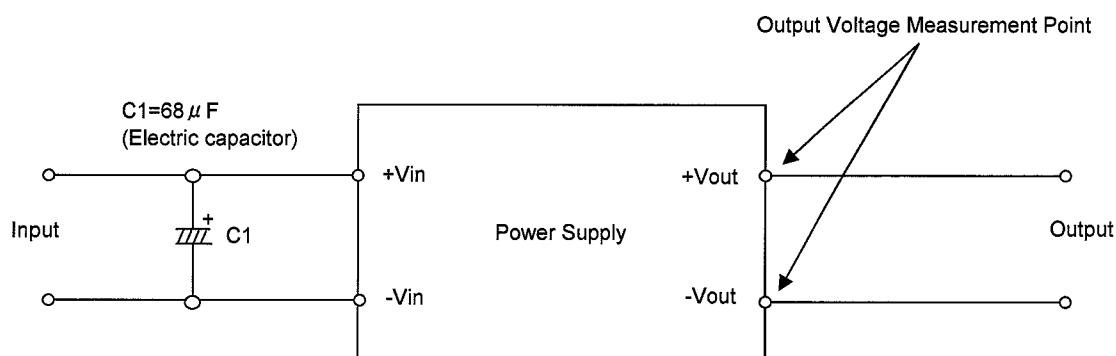


Figure B (General Electric Characteristic)

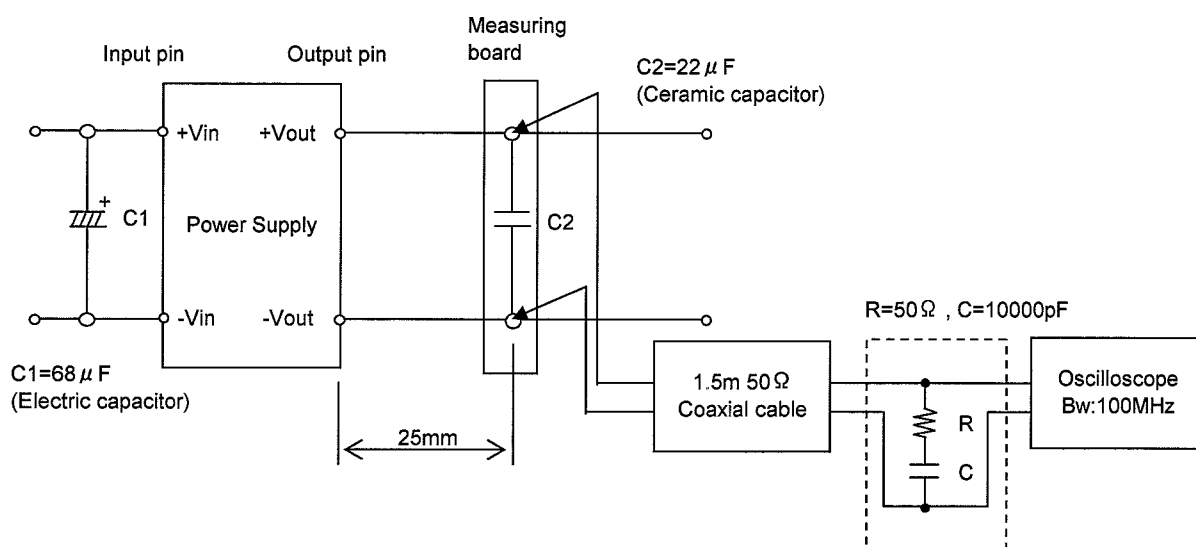


Figure C (Ripple and Ripple noise Characteristic)