

TEST DATA OF PMA100F-12

Regulated DC Power Supply
June 4, 2010

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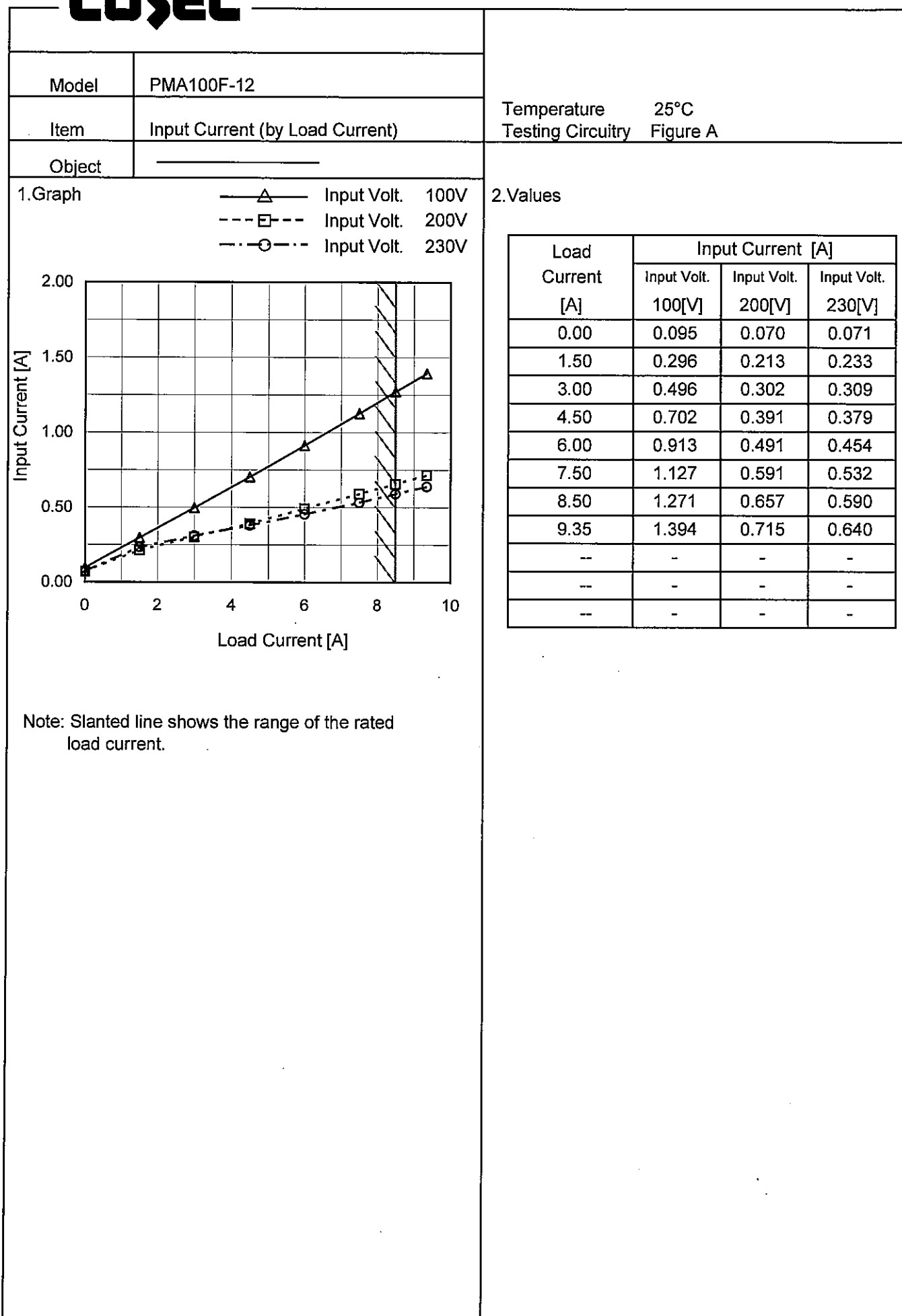
COSEL CO.,LTD.

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Model

PMA100F-12

Item

Input Power (by Load Current)

Object

1.Graph

—△—

Input Volt.

100V

---□---

Input Volt.

200V

---○---

Input Volt.

230V

Note: Slanted line shows the range of the rated load current.

Temperature

25°C

Testing Circuitry

Figure A

2.Values

| Load Current [A] | Input Power [W] | | |
|------------------|--------------------|--------------------|--------------------|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| 0.00 | 5.8 | 5.3 | 5.4 |
| 1.50 | 28.0 | 27.2 | 27.3 |
| 3.00 | 48.6 | 47.6 | 47.5 |
| 4.50 | 69.4 | 68.8 | 68.1 |
| 6.00 | 90.8 | 89.5 | 88.7 |
| 7.50 | 112.4 | 110.0 | 109.5 |
| 8.50 | 126.9 | 123.8 | 123.7 |
| 9.35 | 139.3 | 135.5 | 135.4 |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |

LOVEL

| | |
|--------|-------------------------------|
| Model | PMA100F-12 |
| Item | Efficiency (by Input Voltage) |
| Object | |

1.Graph

---□--- Load 50%

—△— Load 100%

Efficiency [%]

Input Voltage [V]

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

Temperature 25°C
Testing Circuitry Figure A

2.Values

| Input Voltage [V] | Efficiency [%] | |
|-------------------|----------------|-----------|
| | Load 50% | Load 100% |
| 75 | 77.6 | 79.5 |
| 85 | 78.3 | 80.6 |
| 100 | 79.0 | 82.1 |
| 120 | 79.4 | 82.9 |
| 200 | 79.9 | 84.1 |
| 230 | 80.5 | 84.1 |
| 264 | 80.4 | 84.8 |
| 280 | 80.6 | 84.8 |
| -- | - | - |

| | | | | | |
|--------|--|------------------------------|--|----------------------------------|------------------|
| Model | | PMA100F-12 | | Temperature Testing Circuitry | 25°C Figure A |
| Item | | Efficiency (by Load Current) | | | |
| Object | | _____ | | | |

1.Graph

—△—

Input Volt.

100V

---□---

Input Volt.

200V

-·-○-·-

Input Volt.

230V

Efficiency [%]

86

78

70

62

54

46

38

30

0

2

4

6

8

10

Load Current [A]

△

□

○

1.50

3.00

4.50

6.00

7.50

8.50

9.35

2.Values

| Load Current [A] | Efficiency [%] | | |
|---------------------|-----------------------|-----------------------|-----------------------|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| 0.00 | - | - | - |
| 1.50 | 65.6 | 67.6 | 67.3 |
| 3.00 | 75.6 | 77.2 | 77.3 |
| 4.50 | 79.4 | 80.0 | 80.8 |
| 6.00 | 80.8 | 82.0 | 82.7 |
| 7.50 | 81.6 | 83.4 | 83.8 |
| 8.50 | 82.1 | 84.1 | 84.1 |
| 9.35 | 82.1 | 84.4 | 84.4 |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |

Note: Slanted line shows the range of the rated load current.

| | | | |
|--------|--|---------------------------------|--|
| Model | | PMA100F-12 | |
| Item | | Power Factor (by Input Voltage) | |
| Object | | | |

1.Graph

| | | | |
|--------|--|--------------------------------|--|
| Model | | PMA100F-12 | |
| Item | | Power Factor (by Load Current) | |
| Object | | | |

1.Graph

—△—

Input Volt.

100V

---□---

Input Volt.

200V

---○---

Input Volt.

230V

Power Factor

1.0

0.9

0.8

0.7

0.6

0.5

0.4

0.3

0

2

4

6

8

10

Load Current [A]

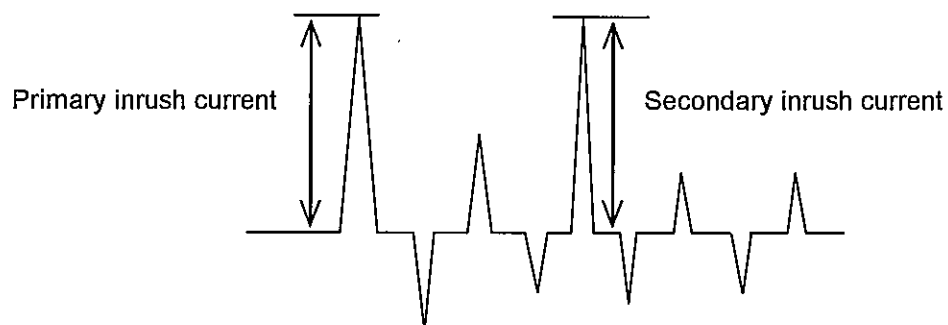
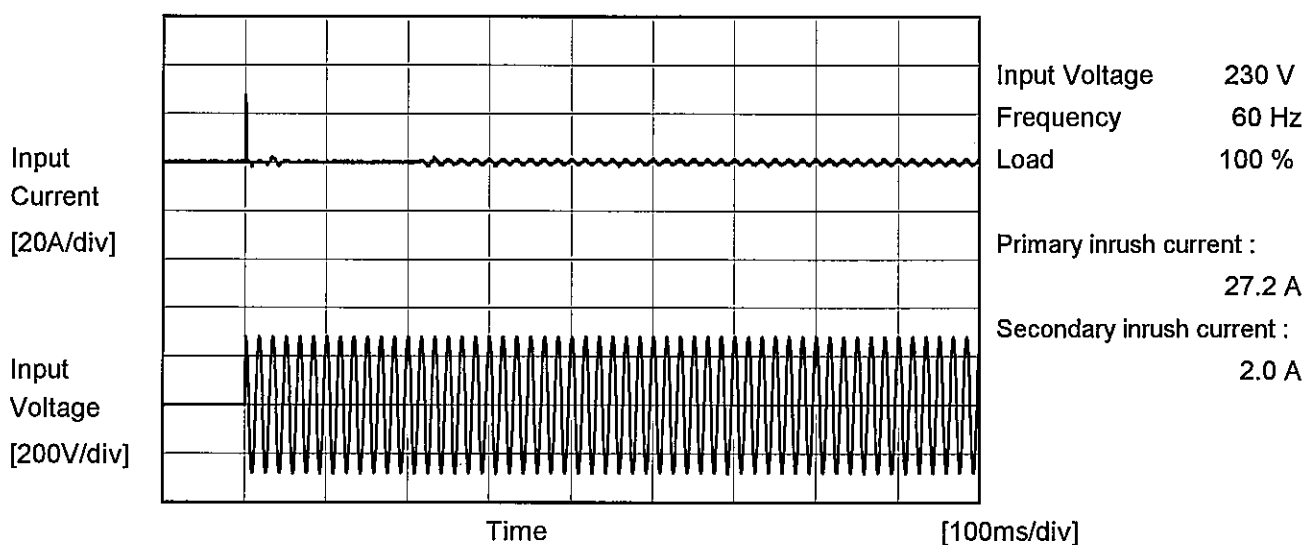
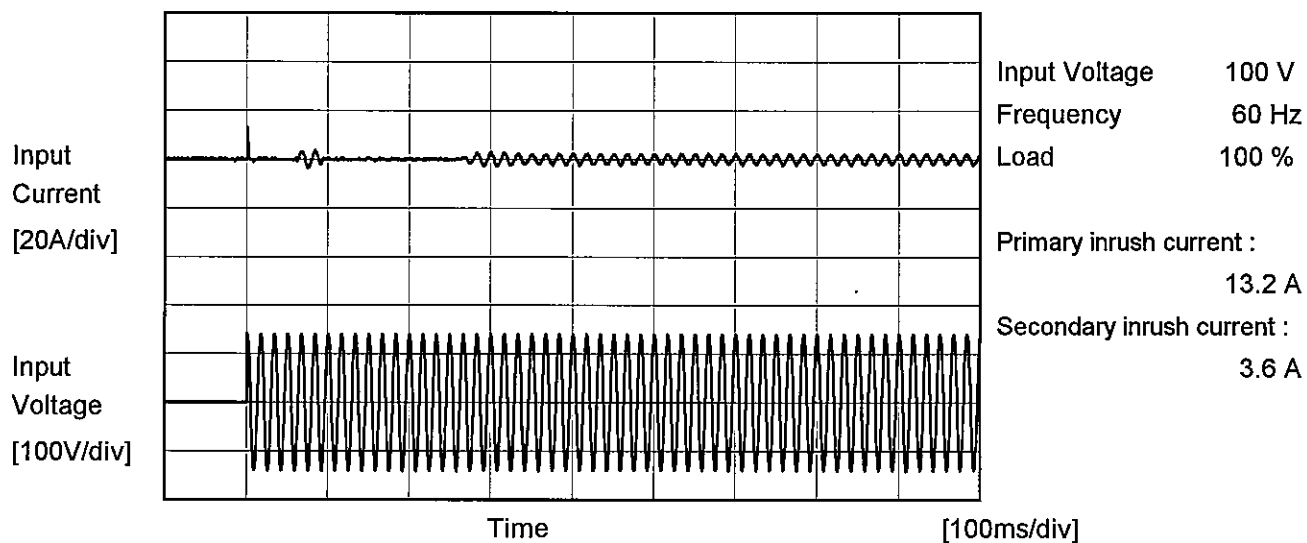
2.Values

| Load Current [A] | Power Factor | | |
|------------------|--------------------|--------------------|--------------------|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| 0.00 | 0.608 | 0.379 | 0.333 |
| 1.50 | 0.946 | 0.638 | 0.509 |
| 3.00 | 0.980 | 0.788 | 0.669 |
| 4.50 | 0.987 | 0.879 | 0.780 |
| 6.00 | 0.995 | 0.910 | 0.848 |
| 7.50 | 0.997 | 0.931 | 0.895 |
| 8.50 | 0.998 | 0.941 | 0.912 |
| 9.35 | 0.999 | 0.948 | 0.920 |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |

Note: Slanted line shows the range of the rated load current.

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| | | | |
|--------|----------------|-------------------|----------|
| Model | PMA100F-12 | Temperature | 25°C |
| Item | Inrush Current | Testing Circuitry | Figure A |
| Object | _____ | | |



| | | |
|--------|-----------------|--|
| | | Temperature 25°C Testing Circuitry Figure B |
| Model | PMA100F-12 | |
| Item | Leakage Current | |
| Object | _____ | |

1.Results

[mA]

| Standards | | Input Volt. | | | Note |
|-----------|---------------|-------------|---------|---------|-----------|
| | | 100 [V] | 200 [V] | 240 [V] | |
| IEC60601 | Both phases | 0.04 | 0.10 | 0.16 | Operation |
| | One of phases | 0.09 | 0.19 | 0.22 | Stand by |

The value for "One of phases" is the reference value only.

2.Condition

Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

| Model | PMA100F-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------------------|------------------------------|-----------------------------|------------------------------|----|--------|--------|----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|----|---|---|--|--|
| Item | Line Regulation | Temperature | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +12V8.5A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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>Input Voltage [V]</th><th>Output Voltage [V] Load 50%</th><th>Output Voltage [V] Load 100%</th></tr></thead><tbody><tr><td>75</td><td>12.269</td><td>12.264</td></tr><tr><td>85</td><td>12.269</td><td>12.264</td></tr><tr><td>100</td><td>12.269</td><td>12.264</td></tr><tr><td>120</td><td>12.269</td><td>12.263</td></tr><tr><td>200</td><td>12.269</td><td>12.264</td></tr><tr><td>230</td><td>12.269</td><td>12.264</td></tr><tr><td>264</td><td>12.269</td><td>12.264</td></tr><tr><td>280</td><td>12.269</td><td>12.263</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table> | | Input Voltage [V] | Output Voltage [V] Load 50% | Output Voltage [V] Load 100% | 75 | 12.269 | 12.264 | 85 | 12.269 | 12.264 | 100 | 12.269 | 12.264 | 120 | 12.269 | 12.263 | 200 | 12.269 | 12.264 | 230 | 12.269 | 12.264 | 264 | 12.269 | 12.264 | 280 | 12.269 | 12.263 | -- | - | - | | |
| Input Voltage [V] | Output Voltage [V] Load 50% | Output Voltage [V] Load 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 75 | 12.269 | 12.264 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 85 | 12.269 | 12.264 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 | 12.269 | 12.264 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 120 | 12.269 | 12.263 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 200 | 12.269 | 12.264 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 230 | 12.269 | 12.264 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 264 | 12.269 | 12.264 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 280 | 12.269 | 12.263 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Note: Slanted line shows the range of the rated input voltage. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

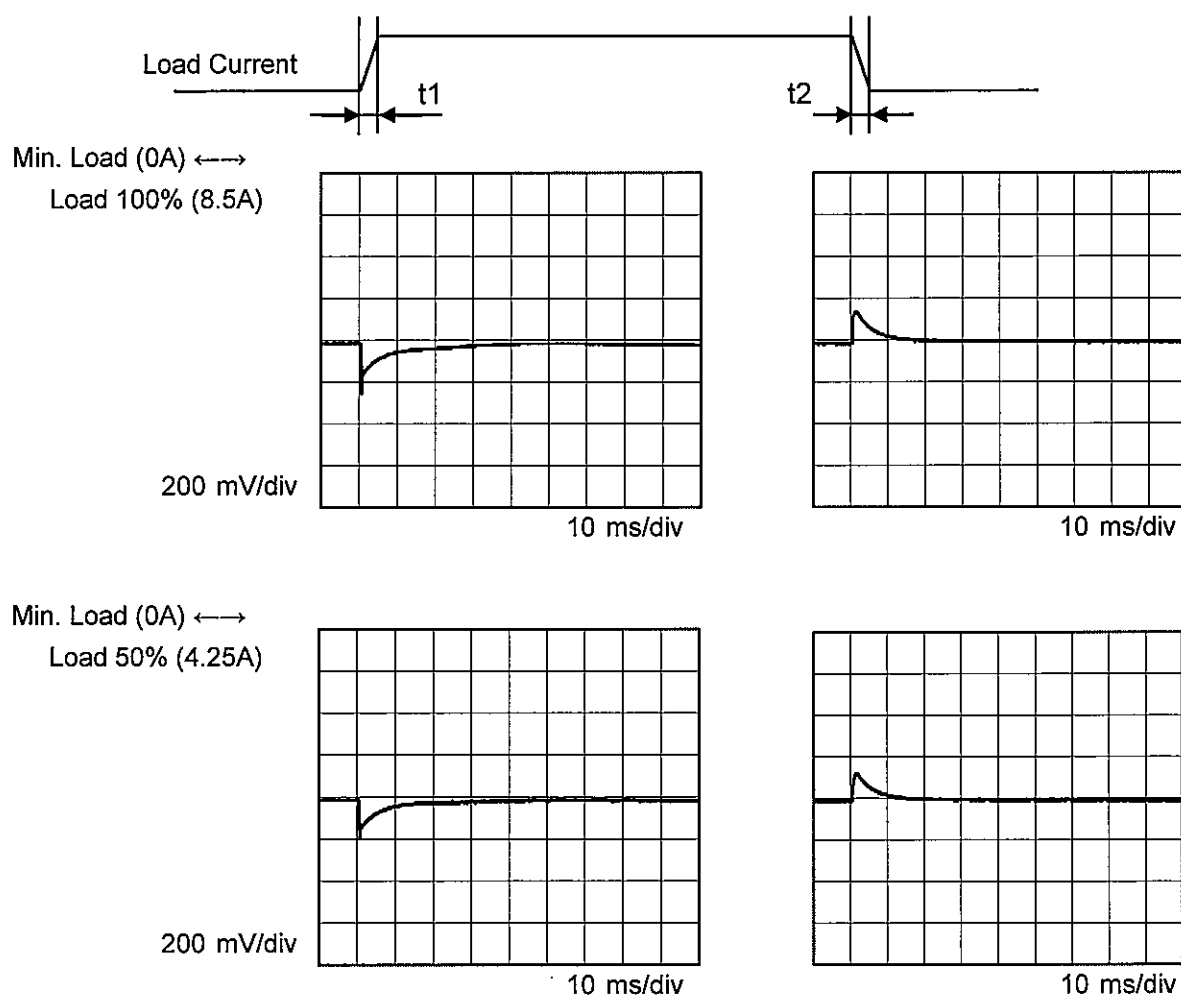
| Model | PMA100F-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------|--|--|------------------|--------------------|--|--|--------------------|--------------------|--------------------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|----|---|---|---|----|---|---|---|----|---|---|---|
| Item | Load Regulation | | Temperature 25°C Testing Circuitry Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +12V8.5A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>—△—</div><div>Input Volt. 100V</div></div><div><div>---□---</div><div>Input Volt. 200V</div></div><div><div>---○---</div><div>Input Volt. 230V</div></div></div> <p>Note: Slanted line shows the range of the rated load current.</p> | | <table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>12.277</td><td>12.277</td><td>12.276</td></tr><tr><td>1.50</td><td>12.274</td><td>12.274</td><td>12.274</td></tr><tr><td>3.00</td><td>12.272</td><td>12.273</td><td>12.272</td></tr><tr><td>4.50</td><td>12.270</td><td>12.271</td><td>12.270</td></tr><tr><td>6.00</td><td>12.268</td><td>12.269</td><td>12.268</td></tr><tr><td>7.50</td><td>12.267</td><td>12.267</td><td>12.266</td></tr><tr><td>8.50</td><td>12.265</td><td>12.265</td><td>12.264</td></tr><tr><td>9.35</td><td>12.264</td><td>12.264</td><td>12.263</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] | Output Voltage [V] | | | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | 0.00 | 12.277 | 12.277 | 12.276 | 1.50 | 12.274 | 12.274 | 12.274 | 3.00 | 12.272 | 12.273 | 12.272 | 4.50 | 12.270 | 12.271 | 12.270 | 6.00 | 12.268 | 12.269 | 12.268 | 7.50 | 12.267 | 12.267 | 12.266 | 8.50 | 12.265 | 12.265 | 12.264 | 9.35 | 12.264 | 12.264 | 12.263 | -- | - | - | - | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Output Voltage [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | 12.277 | 12.277 | 12.276 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.50 | 12.274 | 12.274 | 12.274 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.00 | 12.272 | 12.273 | 12.272 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.50 | 12.270 | 12.271 | 12.270 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.00 | 12.268 | 12.269 | 12.268 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.50 | 12.267 | 12.267 | 12.266 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.50 | 12.265 | 12.265 | 12.264 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.35 | 12.264 | 12.264 | 12.263 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | | | |
|--------|-----------------------|----------------------------------|-------------------|
| Model | PMA100F-12 | Temperature Testing Circuitry | 25° C Figure A |
| Item | Dynamic Load Response | | |
| Object | +12V8.5A | | |

Input Volt. 100 V
Cycle 1000 ms

Response. $t_1=t_2=50\mu\text{s}$. Typ



| | | | | | |
|---|--|----------------------------------|--|----------------------------|--|
| Model | | PMA100F-12 | | Temperature 25°C | |
| Item | | Ripple Voltage (by Load Current) | | Testing Circuitry Figure A | |
| Object | | +12V8.5A | | | |
| 1.Graph | | | | 2.Values | |
| <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></div></div> <div><div></div><div></div></div> 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| Model | PMA100F-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------|--|----------|------------------|-------------------|--|---------------------|---------------------|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|----|---|---|----|---|---|----|---|---|
| Item | Ripple-Noise | Temperature | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +12V8.5A | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>—△— Input Volt. 100V</div><div>- -○- - Input Volt. 200V</div></div><div>Ripple-Noise [mV]</div><div>Load Current [A]</div></div> <div><div>Measured by 20 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> | | <table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple-Noise [mV]</th></tr><tr><th>Input Volt. 100 [V]</th><th>Input Volt. 200 [V]</th></tr><tr><td>0.00</td><td>25</td><td>25</td></tr><tr><td>1.60</td><td>30</td><td>35</td></tr><tr><td>3.20</td><td>35</td><td>40</td></tr><tr><td>4.80</td><td>35</td><td>40</td></tr><tr><td>6.40</td><td>40</td><td>45</td></tr><tr><td>8.00</td><td>45</td><td>45</td></tr><tr><td>8.50</td><td>45</td><td>50</td></tr><tr><td>9.35</td><td>50</td><td>50</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></table> | | Load Current [A] | Ripple-Noise [mV] | | Input Volt. 100 [V] | Input Volt. 200 [V] | 0.00 | 25 | 25 | 1.60 | 30 | 35 | 3.20 | 35 | 40 | 4.80 | 35 | 40 | 6.40 | 40 | 45 | 8.00 | 45 | 45 | 8.50 | 45 | 50 | 9.35 | 50 | 50 | -- | - | - | -- | - | - | -- | - | - |
| Load Current [A] | Ripple-Noise [mV] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100 [V] | Input Volt. 200 [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | 25 | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.60 | 30 | 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.20 | 35 | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.80 | 35 | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.40 | 40 | 45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.00 | 45 | 45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.50 | 45 | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.35 | 50 | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <div><div><div>T1: Due to AC Input Line</div><div>T2: Due to Switching</div></div><div>Ripple-Noise [mVp-p]</div><div>T1</div><div>T2</div></div> <div>Fig. Complex Ripple Wave Form</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

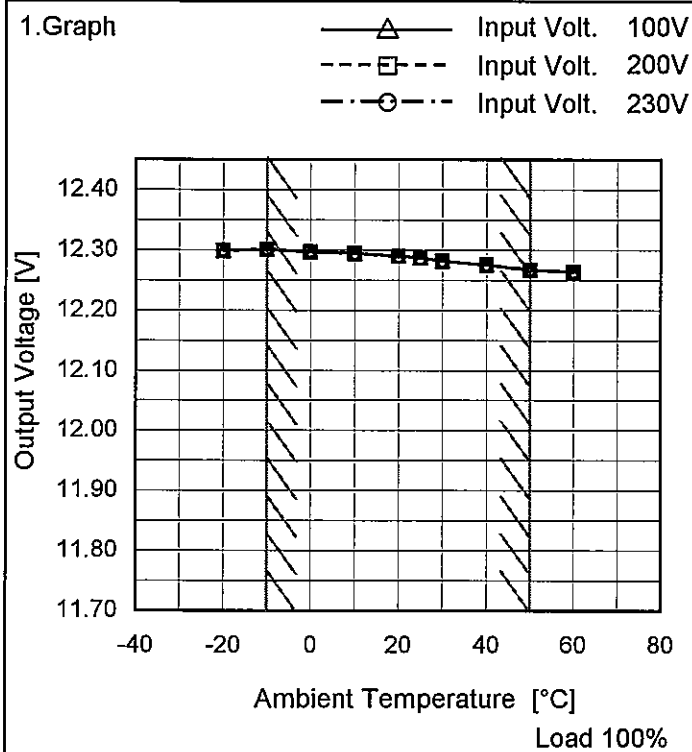
| Model | | PMA100F-12 | Testing Circuitry Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Item | | Ripple Voltage (by Ambient Temp.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | +12V8.5A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph <div><div><div>--- □ ---</div><div>Input Volt. 100V</div><div>— △ —</div><div>Input Volt. 200V</div></div><table><thead><tr><th>Ambient Temperature [°C]</th><th>100V Input [mV]</th><th>200V Input [mV]</th></tr></thead><tbody><tr><td>-30</td><td>100</td><td>100</td></tr><tr><td>-10</td><td>55</td><td>55</td></tr><tr><td>0</td><td>50</td><td>50</td></tr><tr><td>25</td><td>35</td><td>35</td></tr><tr><td>50</td><td>30</td><td>30</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><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table><p>Ambient Temperature [°C] Load 100 %</p></div> | | | Ambient Temperature [°C] | 100V Input [mV] | 200V Input [mV] | -30 | 100 | 100 | -10 | 55 | 55 | 0 | 50 | 50 | 25 | 35 | 35 | 50 | 30 | 30 | -- | - | - | -- | - | - | -- | - | - | -- | - | - | -- | - | - | -- | - | - | -- | - | - | 2.Values <table><thead><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 100 [V]</th><th>Input Volt. 200 [V]</th></tr></thead><tbody><tr><td>-30</td><td>100</td><td>100</td></tr><tr><td>-10</td><td>55</td><td>55</td></tr><tr><td>0</td><td>50</td><td>50</td></tr><tr><td>25</td><td>35</td><td>35</td></tr><tr><td>50</td><td>30</td><td>30</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><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table> | Ambient Temperature [°C] | Ripple Voltage [mV] | | Input Volt. 100 [V] | Input Volt. 200 [V] | -30 | 100 | 100 | -10 | 55 | 55 | 0 | 50 | 50 | 25 | 35 | 35 | 50 | 30 | 30 | -- | - | - | -- | - | - | -- | - | - | -- | - | - | -- | - | - | -- | - | - | -- | - | - |
| Ambient Temperature [°C] | 100V Input [mV] | 200V Input [mV] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -30 | 100 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -10 | 55 | 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 50 | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 35 | 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 30 | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Ambient Temperature [°C] | Ripple Voltage [mV] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100 [V] | Input Volt. 200 [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -30 | 100 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -10 | 55 | 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 50 | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 35 | 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 30 | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Measured by 20 MHz Oscilloscope. Note: Slanted line shows the range of the rated ambient temperature. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | |
|--------|---------------------------|
| Model | PMA100F-12 |
| Item | Ambient Temperature Drift |
| Object | +12V8.5A |

1. Graph



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

Testing Circuitry Figure A

2. Values

| Ambient Temperature [°C] | Output Voltage [V] | | |
|--------------------------|--------------------|--------------------|--------------------|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| -20 | 12.299 | 12.299 | 12.299 |
| -10 | 12.301 | 12.301 | 12.301 |
| 0 | 12.297 | 12.297 | 12.297 |
| 10 | 12.295 | 12.295 | 12.295 |
| 20 | 12.290 | 12.290 | 12.289 |
| 25 | 12.287 | 12.286 | 12.286 |
| 30 | 12.282 | 12.282 | 12.282 |
| 40 | 12.276 | 12.275 | 12.275 |
| 50 | 12.267 | 12.267 | 12.267 |
| 60 | 12.264 | 12.264 | 12.263 |
| -- | - | - | - |

| | | | |
|--------|--|-------------------------|----------------------------|
| Model | | PMA100F-12 | Testing Circuitry Figure A |
| Item | | Output Voltage Accuracy | |
| Object | | +12V8.5A | |

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 : -10 - 50°C

Input Voltage : 85 - 264V

Load Current : 0 - 8.5A

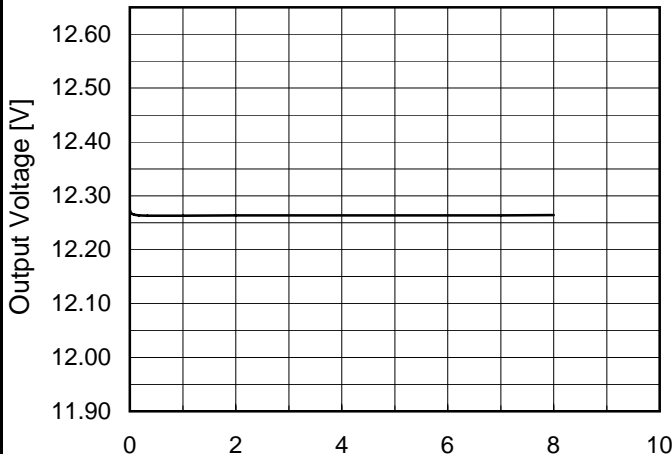
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

2. Values

| Item | Temperature [°C] | Input Voltage[V] | Output | | Output Voltage Accuracy | |
|-----------------|---------------------|---------------------|------------|------------|-------------------------|-----------|
| | | | Current[A] | Voltage[V] | Value [mV] | Ratio [%] |
| Maximum Voltage | -10 | 264 | 0 | 12.304 | ±22 | ±0.2 |
| Minimum Voltage | 50 | 264 | 8.5 | 12.260 | | |



| Model | PMA100F-12 | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------|--|----------|----------------------|--------------------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|
| Item | Time Lapse Drift | Temperature | 25°C | | | | | | | | | | | | | | | | | | | | | | |
| Object | +12V8.5A | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | |
| <div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 100V</p><p>Load 100%</p></div> | | <table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>12.274</td></tr><tr><td>0.5</td><td>12.263</td></tr><tr><td>1.0</td><td>12.263</td></tr><tr><td>2.0</td><td>12.264</td></tr><tr><td>3.0</td><td>12.264</td></tr><tr><td>4.0</td><td>12.264</td></tr><tr><td>5.0</td><td>12.264</td></tr><tr><td>6.0</td><td>12.264</td></tr><tr><td>7.0</td><td>12.264</td></tr><tr><td>8.0</td><td>12.264</td></tr></table> | | Time since start [H] | Output Voltage [V] | 0.0 | 12.274 | 0.5 | 12.263 | 1.0 | 12.263 | 2.0 | 12.264 | 3.0 | 12.264 | 4.0 | 12.264 | 5.0 | 12.264 | 6.0 | 12.264 | 7.0 | 12.264 | 8.0 | 12.264 |
| Time since start [H] | Output Voltage [V] | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.0 | 12.274 | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.5 | 12.263 | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.0 | 12.263 | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.0 | 12.264 | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.0 | 12.264 | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.0 | 12.264 | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.0 | 12.264 | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.0 | 12.264 | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.0 | 12.264 | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.0 | 12.264 | | | | | | | | | | | | | | | | | | | | | | | | |
| * The characteristic of AC200V is equal. | | | | | | | | | | | | | | | | | | | | | | | | | |

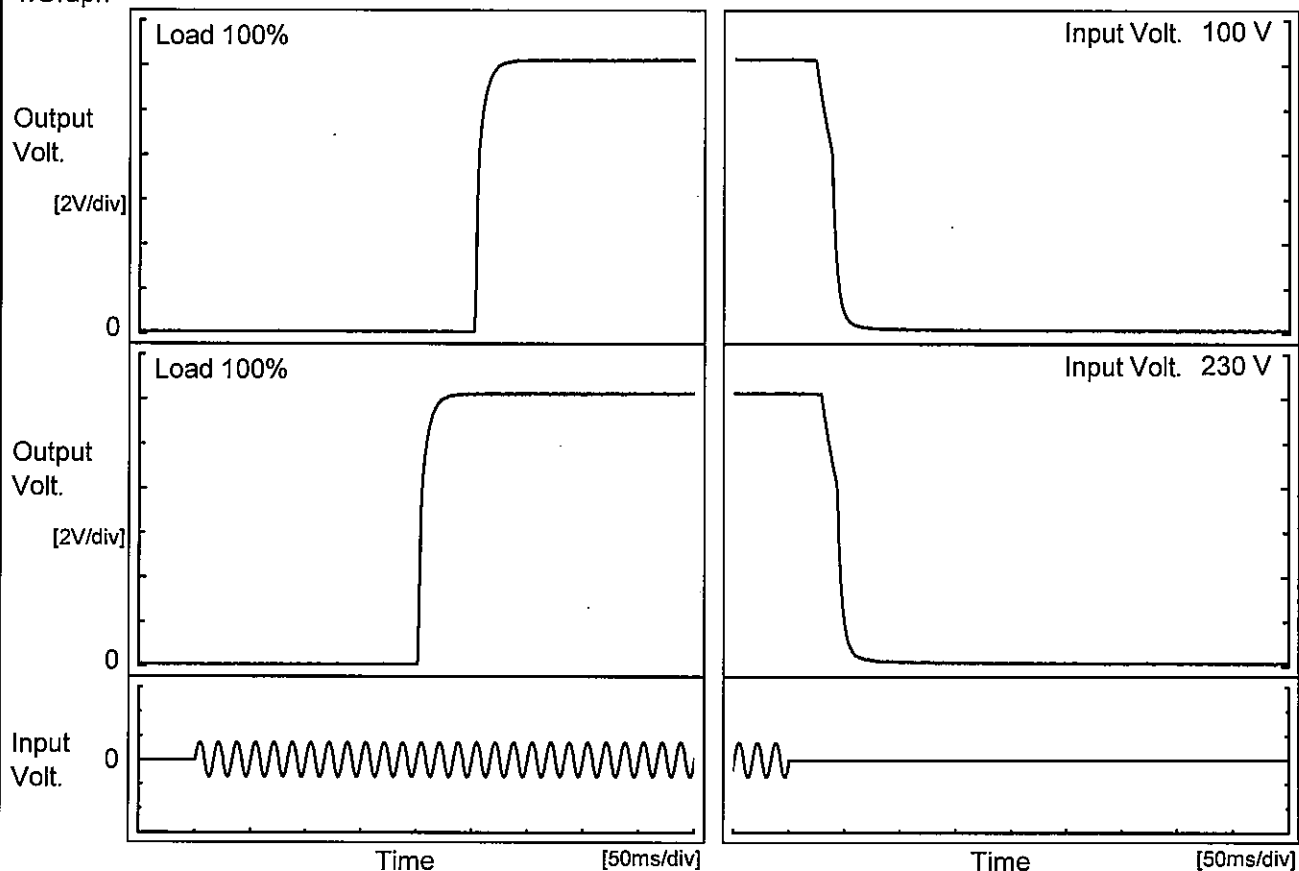
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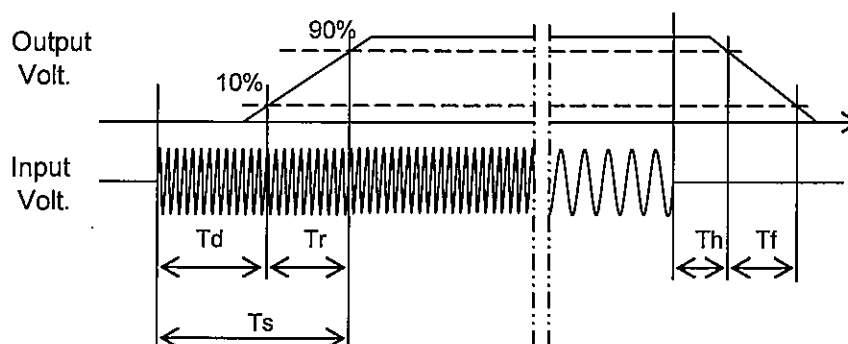
| | | | |
|--------|--------------------|-------------------|----------|
| Model | PMA100F-12 | Temperature | 25°C |
| Item | Rise and Fall Time | Testing Circuitry | Figure A |
| Object | +12V8.5A | | |

1. Graph



2. Values

| Input Volt. | Time | Td | Tr | Ts | Th | Tf |
|-------------|------|-------|------|-------|------|------|
| 100 V | | 253.5 | 10.5 | 264.0 | 27.5 | 19.5 |
| 230 V | | 202.5 | 10.5 | 213.0 | 33.0 | 19.5 |



| Model | PMA100F-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------------|--|----------|-------------------|-------------------|--|----------|-----------|----|----|----|----|----|----|-----|----|----|-----|----|----|-----|----|----|-----|----|----|-----|----|----|-----|----|----|----|---|---|
| Item | Hold-Up Time | Temperature | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +12V8.5A | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div> <div>Hold-Up Time [ms]</div> <div>Input Voltage [V]</div> | | <table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Hold-Up Time [ms]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>75</td><td>48</td><td>19</td></tr><tr><td>85</td><td>50</td><td>22</td></tr><tr><td>100</td><td>53</td><td>24</td></tr><tr><td>120</td><td>55</td><td>26</td></tr><tr><td>200</td><td>61</td><td>29</td></tr><tr><td>230</td><td>63</td><td>30</td></tr><tr><td>264</td><td>63</td><td>32</td></tr><tr><td>280</td><td>63</td><td>32</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table> | | Input Voltage [V] | Hold-Up Time [ms] | | Load 50% | Load 100% | 75 | 48 | 19 | 85 | 50 | 22 | 100 | 53 | 24 | 120 | 55 | 26 | 200 | 61 | 29 | 230 | 63 | 30 | 264 | 63 | 32 | 280 | 63 | 32 | -- | - | - |
| Input Voltage [V] | Hold-Up Time [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Load 50% | Load 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 75 | 48 | 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 85 | 50 | 22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 | 53 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 120 | 55 | 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 200 | 61 | 29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 230 | 63 | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 264 | 63 | 32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 280 | 63 | 32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</p> <p>Note: Slanted line shows the range of the rated input voltage.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

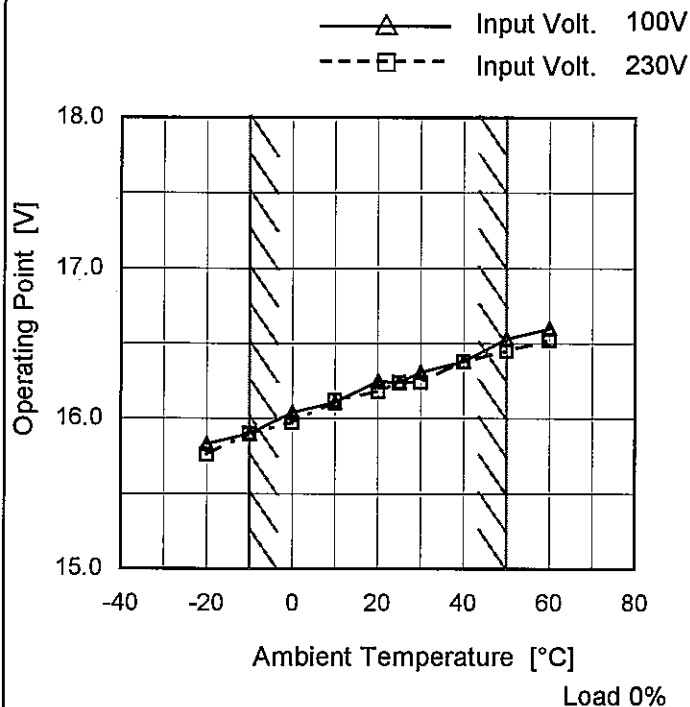
| Model | PMA100F-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|--|------------------|-----------|--|--|--------------------|--------------------|--------------------|------|---|---|---|------|-----|-----|-----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|----|---|---|---|----|---|---|---|----|---|---|---|
| Item | Instantaneous Interruption Compensation | | Temperature 25°C Testing Circuitry Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +12V8.5A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>—△—</div><div>Input Volt. 100V</div></div><div><div>---□---</div><div>Input Volt. 200V</div></div><div><div>---○---</div><div>Input Volt. 230V</div></div></div> <div><div><div>Instantaneous Compensation Time [ms]</div><div>1000</div><div>100</div><div>10</div><div>1</div></div><div><div>0246810</div><div>Load Current [A]</div></div></div> <div><div>Note: Slanted line shows the range of the rated load current.</div></div> | | <table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Time [ms]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>1.50</td><td>105</td><td>156</td><td>164</td></tr><tr><td>3.00</td><td>78</td><td>86</td><td>90</td></tr><tr><td>4.50</td><td>51</td><td>59</td><td>61</td></tr><tr><td>6.00</td><td>38</td><td>44</td><td>46</td></tr><tr><td>7.50</td><td>30</td><td>35</td><td>36</td></tr><tr><td>8.50</td><td>23</td><td>30</td><td>31</td></tr><tr><td>9.35</td><td>21</td><td>27</td><td>28</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] | Time [ms] | | | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | 0.00 | - | - | - | 1.50 | 105 | 156 | 164 | 3.00 | 78 | 86 | 90 | 4.50 | 51 | 59 | 61 | 6.00 | 38 | 44 | 46 | 7.50 | 30 | 35 | 36 | 8.50 | 23 | 30 | 31 | 9.35 | 21 | 27 | 28 | -- | - | - | - | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Time [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.50 | 105 | 156 | 164 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.00 | 78 | 86 | 90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.50 | 51 | 59 | 61 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.00 | 38 | 44 | 46 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.50 | 30 | 35 | 36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.50 | 23 | 30 | 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.35 | 21 | 27 | 28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | Testing Circuitry Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|-------------------------------|-------------------|--|----------|-----------|-----|----|----|-----|----|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|--|
| Model | PMA100F-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Item | Minimum Input Voltage for Regulated Output Voltage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +12V8.5A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Input Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>-20</td><td>41</td><td>56</td></tr><tr><td>-10</td><td>40</td><td>55</td></tr><tr><td>0</td><td>40</td><td>55</td></tr><tr><td>10</td><td>41</td><td>55</td></tr><tr><td>20</td><td>41</td><td>55</td></tr><tr><td>25</td><td>41</td><td>55</td></tr><tr><td>30</td><td>41</td><td>55</td></tr><tr><td>40</td><td>41</td><td>55</td></tr><tr><td>50</td><td>41</td><td>56</td></tr><tr><td>60</td><td>41</td><td>56</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table> | | Ambient Temperature [°C] | Input Voltage [V] | | Load 50% | Load 100% | -20 | 41 | 56 | -10 | 40 | 55 | 0 | 40 | 55 | 10 | 41 | 55 | 20 | 41 | 55 | 25 | 41 | 55 | 30 | 41 | 55 | 40 | 41 | 55 | 50 | 41 | 56 | 60 | 41 | 56 | -- | - | - | |
| Ambient Temperature [°C] | Input Voltage [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Load 50% | Load 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -20 | 41 | 56 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -10 | 40 | 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 40 | 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 41 | 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | 41 | 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 41 | 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | 41 | 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 41 | 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 41 | 56 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | 41 | 56 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Note: Slanted line shows the range of the rated ambient temperature. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Model | PMA100F-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|--|----------|--------------------|------------------|--|--------------------|--------------------|------|-------|-------|------|-------|-------|------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Item | Overcurrent Protection | Temperature | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +12V8.5A | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div></div><div>Input Volt. 100V</div></div><div><div></div><div>Input Volt. 230V</div></div></div> <p>Output Voltage [V]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p> | | <table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="2">Load Current [A]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>12.0</td><td>10.42</td><td>10.40</td></tr><tr><td>11.4</td><td>11.02</td><td>10.97</td></tr><tr><td>10.8</td><td>11.01</td><td>10.97</td></tr><tr><td>9.6</td><td>10.99</td><td>10.98</td></tr><tr><td>8.4</td><td>10.86</td><td>10.92</td></tr><tr><td>7.2</td><td>11.12</td><td>11.07</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><tr><td>--</td><td>--</td><td>--</td></tr><tr><td>--</td><td>--</td><td>--</td></tr></table> | | Output Voltage [V] | Load Current [A] | | Input Volt. 100[V] | Input Volt. 230[V] | 12.0 | 10.42 | 10.40 | 11.4 | 11.02 | 10.97 | 10.8 | 11.01 | 10.97 | 9.6 | 10.99 | 10.98 | 8.4 | 10.86 | 10.92 | 7.2 | 11.12 | 11.07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Output Voltage [V] | Load Current [A] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100[V] | Input Volt. 230[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12.0 | 10.42 | 10.40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11.4 | 11.02 | 10.97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.8 | 11.01 | 10.97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.6 | 10.99 | 10.98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.4 | 10.86 | 10.92 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.2 | 11.12 | 11.07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | -- | -- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | -- | -- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | -- | -- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | -- | -- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | -- | -- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | -- | -- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | -- | -- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | |
|--------|------------------------|
| Model | PMA100F-12 |
| Item | Overvoltage Protection |
| Object | +12V8.5A |

1.Graph



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

2.Values

| Ambient Temperature [°C] | Operating Point [V] | |
|--------------------------|---------------------|--------------------|
| | Input Volt. 100[V] | Input Volt. 230[V] |
| -20 | 15.83 | 15.76 |
| -10 | 15.90 | 15.90 |
| 0 | 16.04 | 15.97 |
| 10 | 16.11 | 16.12 |
| 20 | 16.25 | 16.18 |
| 25 | 16.24 | 16.24 |
| 30 | 16.31 | 16.24 |
| 40 | 16.38 | 16.38 |
| 50 | 16.53 | 16.45 |
| 60 | 16.60 | 16.52 |
| -- | - | - |

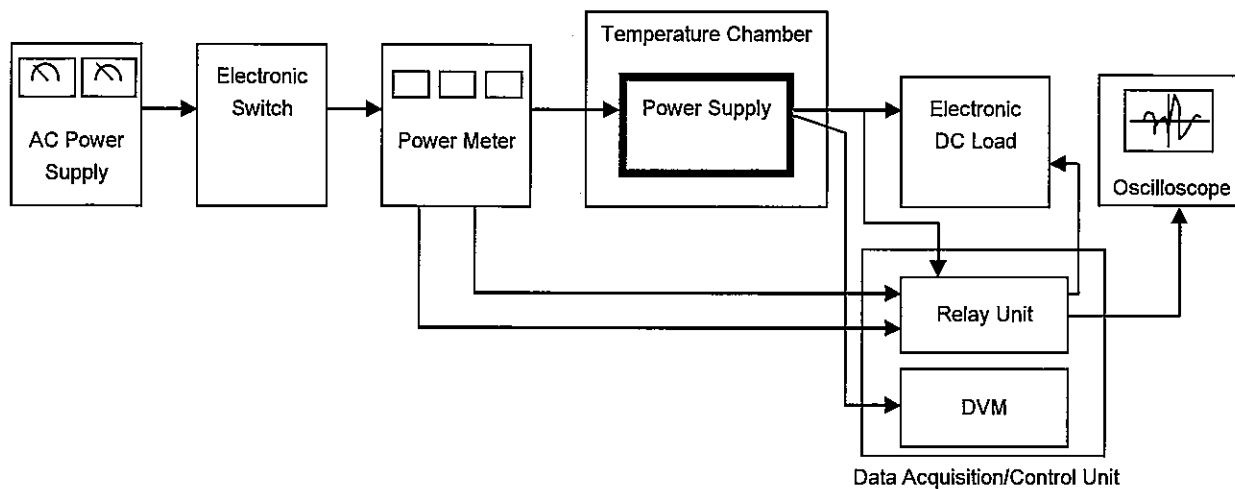


Figure A

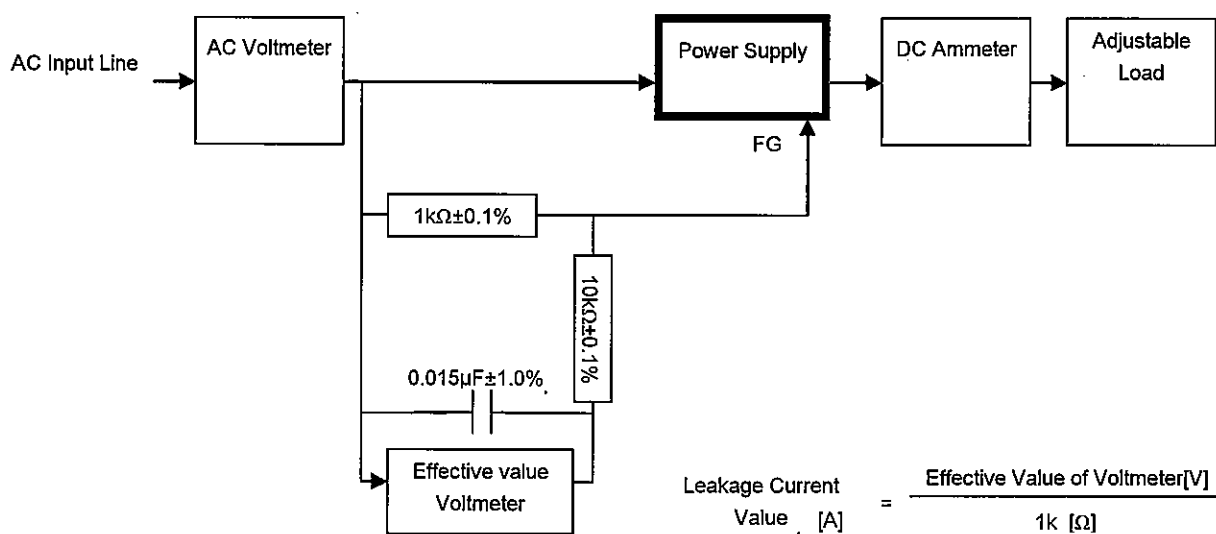


Figure B (IEC60601-1)