



TEST DATA OF LFA10F-15

Regulated DC Power Supply
June 19, 2009

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Yoshiaki Shimizu Design Manager

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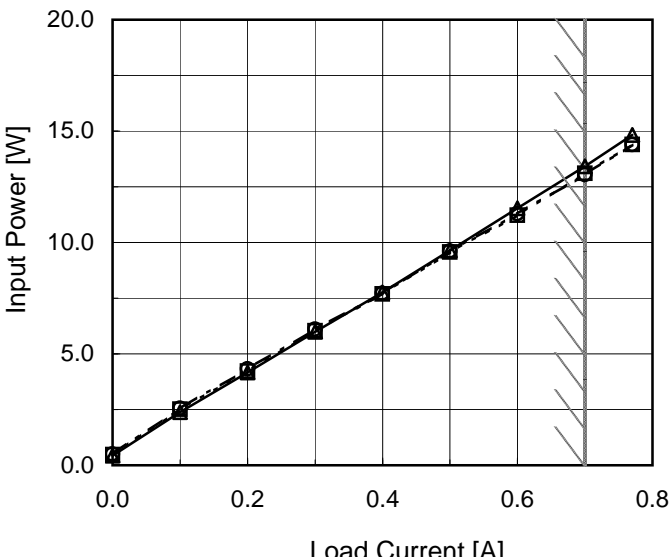
COSEL CO.,LTD.

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|---|---------------------------------|---|--------------------|------------------|-------------------|--|--|--------------------|--------------------|--------------------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|----|---|---|---|----|---|---|---|
| Item | Input Current (by Load Current) | Temperature | 25℃ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div>- - -□- -</div><div>Input Volt.</div><div>200V</div></div><div><div>- · -○- · -</div><div>Input Volt.</div><div>230V</div></div></div> <p>Input Current [A]</p> <p>Load Current [A]</p> <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">Input Current [A]</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>0.013</td><td>0.010</td><td>0.009</td></tr><tr><td>0.10</td><td>0.056</td><td>0.036</td><td>0.033</td></tr><tr><td>0.20</td><td>0.090</td><td>0.056</td><td>0.052</td></tr><tr><td>0.30</td><td>0.122</td><td>0.076</td><td>0.070</td></tr><tr><td>0.40</td><td>0.152</td><td>0.094</td><td>0.085</td></tr><tr><td>0.50</td><td>0.182</td><td>0.113</td><td>0.103</td></tr><tr><td>0.60</td><td>0.211</td><td>0.129</td><td>0.118</td></tr><tr><td>0.70</td><td>0.240</td><td>0.147</td><td>0.133</td></tr><tr><td>0.77</td><td>0.260</td><td>0.159</td><td>0.145</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. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | 0.00 | 0.013 | 0.010 | 0.009 | 0.10 | 0.056 | 0.036 | 0.033 | 0.20 | 0.090 | 0.056 | 0.052 | 0.30 | 0.122 | 0.076 | 0.070 | 0.40 | 0.152 | 0.094 | 0.085 | 0.50 | 0.182 | 0.113 | 0.103 | 0.60 | 0.211 | 0.129 | 0.118 | 0.70 | 0.240 | 0.147 | 0.133 | 0.77 | 0.260 | 0.159 | 0.145 | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Input Current [A] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | 0.013 | 0.010 | 0.009 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.10 | 0.056 | 0.036 | 0.033 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | 0.090 | 0.056 | 0.052 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.30 | 0.122 | 0.076 | 0.070 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.40 | 0.152 | 0.094 | 0.085 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | 0.182 | 0.113 | 0.103 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.60 | 0.211 | 0.129 | 0.118 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.70 | 0.240 | 0.147 | 0.133 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.77 | 0.260 | 0.159 | 0.145 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Model | LFA10F-15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------------------------|---|--------------------|------------------|-----------------|--|--|--------------------|--------------------|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|----|---|---|---|----|---|---|---|
| Item | Input Power (by Load Current) | Temperature | 25℃ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | _____ | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div>—△—</div><div>Input Volt.</div><div>100V</div></div> <div><div>---□---</div><div>Input Volt.</div><div>200V</div></div> <div><div>---○---</div><div>Input Volt.</div><div>230V</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">Input Power [W]</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>0.43</td><td>0.48</td><td>0.50</td></tr><tr><td>0.10</td><td>2.39</td><td>2.52</td><td>2.56</td></tr><tr><td>0.20</td><td>4.16</td><td>4.22</td><td>4.33</td></tr><tr><td>0.30</td><td>5.99</td><td>6.04</td><td>6.10</td></tr><tr><td>0.40</td><td>7.76</td><td>7.68</td><td>7.72</td></tr><tr><td>0.50</td><td>9.64</td><td>9.57</td><td>9.61</td></tr><tr><td>0.60</td><td>11.54</td><td>11.22</td><td>11.29</td></tr><tr><td>0.70</td><td>13.42</td><td>13.10</td><td>13.05</td></tr><tr><td>0.77</td><td>14.83</td><td>14.40</td><td>14.40</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. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | 0.00 | 0.43 | 0.48 | 0.50 | 0.10 | 2.39 | 2.52 | 2.56 | 0.20 | 4.16 | 4.22 | 4.33 | 0.30 | 5.99 | 6.04 | 6.10 | 0.40 | 7.76 | 7.68 | 7.72 | 0.50 | 9.64 | 9.57 | 9.61 | 0.60 | 11.54 | 11.22 | 11.29 | 0.70 | 13.42 | 13.10 | 13.05 | 0.77 | 14.83 | 14.40 | 14.40 | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Input Power [W] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | 0.43 | 0.48 | 0.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.10 | 2.39 | 2.52 | 2.56 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | 4.16 | 4.22 | 4.33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.30 | 5.99 | 6.04 | 6.10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.40 | 7.76 | 7.68 | 7.72 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | 9.64 | 9.57 | 9.61 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.60 | 11.54 | 11.22 | 11.29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.70 | 13.42 | 13.10 | 13.05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.77 | 14.83 | 14.40 | 14.40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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BC-10350

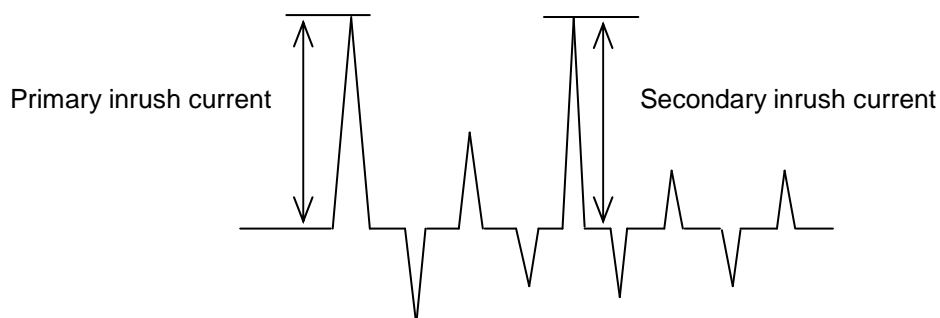
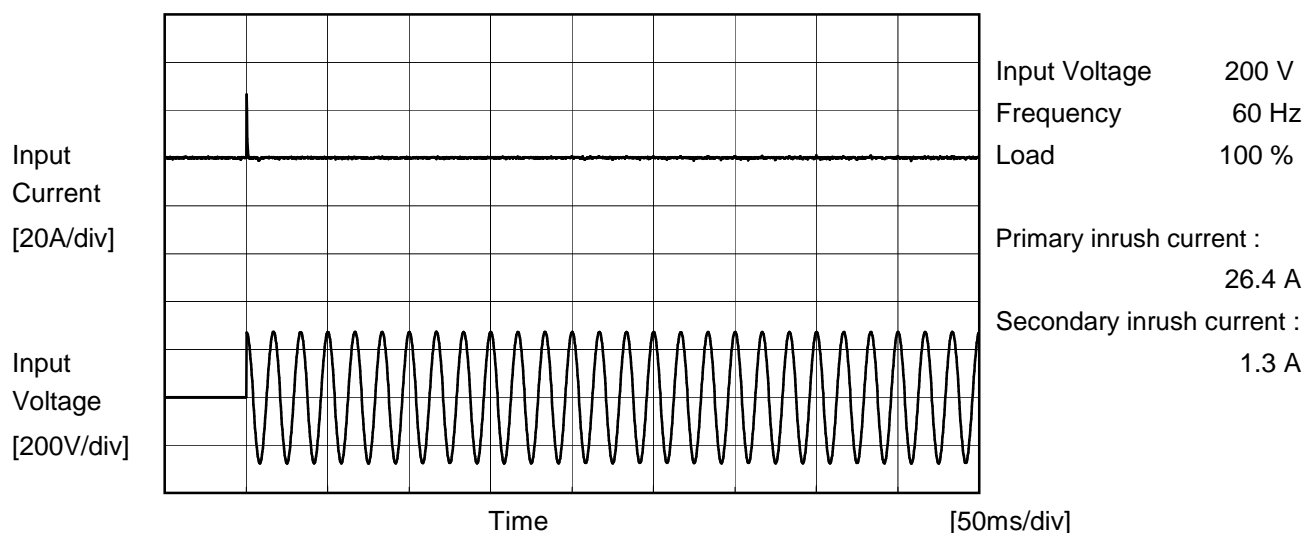
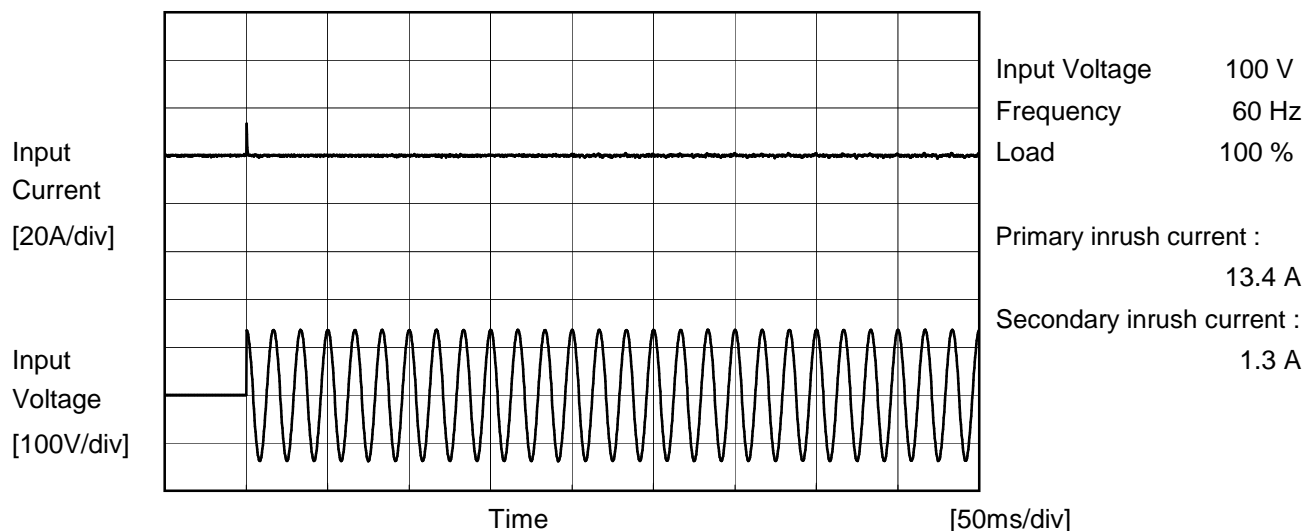
| Model | | LFA10F-15 | Temperature | | 25℃ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|----------------|-------------------------------|-------------------|----------------|----------|----------|-----------|----|------|------|----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|----|---|---|--|--|--|
| Item | | Efficiency (by Input Voltage) | Testing Circuitry | | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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>Load 50%</div><div>Load 100%</div></div> <table><thead><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Efficiency [%]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>75</td><td>74.8</td><td>75.5</td></tr><tr><td>85</td><td>75.7</td><td>76.8</td></tr><tr><td>100</td><td>76.6</td><td>78.1</td></tr><tr><td>120</td><td>76.4</td><td>79.3</td></tr><tr><td>200</td><td>75.6</td><td>80.3</td></tr><tr><td>230</td><td>74.5</td><td>80.2</td></tr><tr><td>264</td><td>72.5</td><td>80.2</td></tr><tr><td>280</td><td>72.5</td><td>80.1</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table> <p>Note: Slanted line shows the range of the rated input voltage.</p> | | | Input Voltage [V] | Efficiency [%] | | Load 50% | Load 100% | 75 | 74.8 | 75.5 | 85 | 75.7 | 76.8 | 100 | 76.6 | 78.1 | 120 | 76.4 | 79.3 | 200 | 75.6 | 80.3 | 230 | 74.5 | 80.2 | 264 | 72.5 | 80.2 | 280 | 72.5 | 80.1 | -- | - | - | | | |
| Input Voltage [V] | Efficiency [%] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Load 50% | Load 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 75 | 74.8 | 75.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 85 | 75.7 | 76.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 | 76.6 | 78.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 120 | 76.4 | 79.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 200 | 75.6 | 80.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 230 | 74.5 | 80.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 264 | 72.5 | 80.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 280 | 72.5 | 80.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Model | | LFA10F-15 | | Temperature 25℃ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Item | | Efficiency (by Load Current) | | Testing Circuitry Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>—△— Input Volt. 100V</div><div>---□--- Input Volt. 200V</div><div>-·-○-·- Input Volt. 230V</div></div><div>Efficiency [%]</div><div>Load Current [A]</div></div> <div>Note: Slanted line shows the range of the rated load current.</div> | | | | <table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Efficiency [%]</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>0.10</td><td>61.5</td><td>58.2</td><td>56.1</td></tr><tr><td>0.20</td><td>71.3</td><td>68.7</td><td>67.2</td></tr><tr><td>0.30</td><td>74.9</td><td>73.2</td><td>72.0</td></tr><tr><td>0.40</td><td>77.3</td><td>77.6</td><td>76.6</td></tr><tr><td>0.50</td><td>78.0</td><td>78.0</td><td>77.1</td></tr><tr><td>0.60</td><td>78.1</td><td>80.2</td><td>79.6</td></tr><tr><td>0.70</td><td>78.1</td><td>80.3</td><td>80.2</td></tr><tr><td>0.77</td><td>78.1</td><td>80.3</td><td>79.7</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] | Efficiency [%] | | | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | 0.00 | - | - | - | 0.10 | 61.5 | 58.2 | 56.1 | 0.20 | 71.3 | 68.7 | 67.2 | 0.30 | 74.9 | 73.2 | 72.0 | 0.40 | 77.3 | 77.6 | 76.6 | 0.50 | 78.0 | 78.0 | 77.1 | 0.60 | 78.1 | 80.2 | 79.6 | 0.70 | 78.1 | 80.3 | 80.2 | 0.77 | 78.1 | 80.3 | 79.7 | -- | - | - | - | -- | - | - | - |
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| Model | LFA10F-15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Item | Power Factor (by Input Voltage) | Temperature | 25℃ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>75</td><td>0.559</td><td>0.619</td></tr><tr><td>85</td><td>0.534</td><td>0.595</td></tr><tr><td>100</td><td>0.505</td><td>0.563</td></tr><tr><td>120</td><td>0.476</td><td>0.529</td></tr><tr><td>200</td><td>0.409</td><td>0.451</td></tr><tr><td>230</td><td>0.392</td><td>0.430</td></tr><tr><td>264</td><td>0.382</td><td>0.413</td></tr><tr><td>280</td><td>0.371</td><td>0.405</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table> | | Input Voltage [V] | Load 50% | Load 100% | 75 | 0.559 | 0.619 | 85 | 0.534 | 0.595 | 100 | 0.505 | 0.563 | 120 | 0.476 | 0.529 | 200 | 0.409 | 0.451 | 230 | 0.392 | 0.430 | 264 | 0.382 | 0.413 | 280 | 0.371 | 0.405 | -- | - | - | | |
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| Note: Slanted line shows the range of the rated input voltage. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Model | LFA10F-15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------------------------|--|--------------------|------------------|--------------|--|--|--------------------|--------------------|--------------------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|----|---|---|---|----|---|---|---|
| Item | Power Factor (by Load Current) | Temperature | 25℃ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div>—△— Input Volt. 100V</div><div>---□--- Input Volt. 200V</div><div>-·-○-·- Input Volt. 230V</div></div> <p>Power Factor</p> <p>Load Current [A]</p> <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">Power Factor</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>0.381</td><td>0.368</td><td>0.318</td></tr><tr><td>0.10</td><td>0.437</td><td>0.361</td><td>0.351</td></tr><tr><td>0.20</td><td>0.472</td><td>0.389</td><td>0.375</td></tr><tr><td>0.30</td><td>0.497</td><td>0.405</td><td>0.391</td></tr><tr><td>0.40</td><td>0.516</td><td>0.417</td><td>0.401</td></tr><tr><td>0.50</td><td>0.534</td><td>0.429</td><td>0.414</td></tr><tr><td>0.60</td><td>0.550</td><td>0.438</td><td>0.421</td></tr><tr><td>0.70</td><td>0.565</td><td>0.451</td><td>0.430</td></tr><tr><td>0.77</td><td>0.573</td><td>0.456</td><td>0.437</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] | Power Factor | | | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | 0.00 | 0.381 | 0.368 | 0.318 | 0.10 | 0.437 | 0.361 | 0.351 | 0.20 | 0.472 | 0.389 | 0.375 | 0.30 | 0.497 | 0.405 | 0.391 | 0.40 | 0.516 | 0.417 | 0.401 | 0.50 | 0.534 | 0.429 | 0.414 | 0.60 | 0.550 | 0.438 | 0.421 | 0.70 | 0.565 | 0.451 | 0.430 | 0.77 | 0.573 | 0.456 | 0.437 | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Power Factor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | 0.381 | 0.368 | 0.318 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.10 | 0.437 | 0.361 | 0.351 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | 0.472 | 0.389 | 0.375 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.30 | 0.497 | 0.405 | 0.391 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.40 | 0.516 | 0.417 | 0.401 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | 0.534 | 0.429 | 0.414 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.60 | 0.550 | 0.438 | 0.421 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.70 | 0.565 | 0.451 | 0.430 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.77 | 0.573 | 0.456 | 0.437 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | |
|--------|----------------|----------------------------------|------------------|
| | | | |
| Model | LFA10F-15 | Temperature Testing Circuitry | 25°C Figure A |
| Item | Inrush Current | | |
| Object | _____ | | |





| | | |
|--------|-----------------|---|
| | | Temperature 25℃ Testing Circuitry Figure B |
| Model | LFA10F-15 | |
| Item | Leakage Current | |
| Object | _____ | |

1.Results

[mA]

| Standards | | Input Volt. | | | Note |
|------------|--------------|-------------|---------|---------|-----------|
| | | 100 [V] | 200 [V] | 240 [V] | |
| DEN-AN | Both phases | 0.07 | 0.14 | 0.16 | Operation |
| | One of phase | 0.13 | 0.27 | 0.33 | stand by |
| IEC60950-1 | Both phases | 0.09 | 0.19 | 0.20 | Operation |
| | One of phase | 0.13 | 0.28 | 0.31 | stand by |

The value for "One phase" 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 | LFA10F-15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------------------|------------------------------|-----------------------------|------------------------------|----|--------|--------|----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|----|---|---|--|--|
| Item | Line Regulation | Temperature | 25℃ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +15V0.7A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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>15.090</td><td>15.089</td></tr><tr><td>85</td><td>15.090</td><td>15.089</td></tr><tr><td>100</td><td>15.090</td><td>15.089</td></tr><tr><td>120</td><td>15.090</td><td>15.089</td></tr><tr><td>200</td><td>15.090</td><td>15.089</td></tr><tr><td>230</td><td>15.090</td><td>15.089</td></tr><tr><td>264</td><td>15.090</td><td>15.089</td></tr><tr><td>280</td><td>15.091</td><td>15.089</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 | 15.090 | 15.089 | 85 | 15.090 | 15.089 | 100 | 15.090 | 15.089 | 120 | 15.090 | 15.089 | 200 | 15.090 | 15.089 | 230 | 15.090 | 15.089 | 264 | 15.090 | 15.089 | 280 | 15.091 | 15.089 | -- | - | - | | |
| Input Voltage [V] | Output Voltage [V] Load 50% | Output Voltage [V] Load 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 75 | 15.090 | 15.089 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 85 | 15.090 | 15.089 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 | 15.090 | 15.089 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 120 | 15.090 | 15.089 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 200 | 15.090 | 15.089 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 230 | 15.090 | 15.089 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 264 | 15.090 | 15.089 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 280 | 15.091 | 15.089 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Note: Slanted line shows the range of the rated input voltage. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

- 9 -

BC-10350

| Model | LFA10F-15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------|--------------------|--------------------|--|--|--------------------|--------------------|--------------------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|----|---|---|---|----|---|---|---|--|--|
| Item | Load Regulation | Temperature | 25℃ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +15V0.7A | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>—△—</div><div>---□---</div><div>-·-○-·-</div></div><div>Input Volt. 100V</div><div>Input Volt. 200V</div><div>Input Volt. 230V</div></div> <table><thead><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></thead><tbody><tr><td>0.00</td><td>15.096</td><td>15.096</td><td>15.095</td></tr><tr><td>0.10</td><td>15.096</td><td>15.096</td><td>15.095</td></tr><tr><td>0.20</td><td>15.096</td><td>15.095</td><td>15.095</td></tr><tr><td>0.30</td><td>15.095</td><td>15.095</td><td>15.094</td></tr><tr><td>0.40</td><td>15.095</td><td>15.094</td><td>15.094</td></tr><tr><td>0.50</td><td>15.094</td><td>15.094</td><td>15.093</td></tr><tr><td>0.60</td><td>15.094</td><td>15.093</td><td>15.093</td></tr><tr><td>0.70</td><td>15.093</td><td>15.093</td><td>15.092</td></tr><tr><td>0.77</td><td>15.093</td><td>15.092</td><td>15.092</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></tbody></table> <p>Note: Slanted line shows the range of the rated load current.</p> | | Load Current [A] | Output Voltage [V] | | | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | 0.00 | 15.096 | 15.096 | 15.095 | 0.10 | 15.096 | 15.096 | 15.095 | 0.20 | 15.096 | 15.095 | 15.095 | 0.30 | 15.095 | 15.095 | 15.094 | 0.40 | 15.095 | 15.094 | 15.094 | 0.50 | 15.094 | 15.094 | 15.093 | 0.60 | 15.094 | 15.093 | 15.093 | 0.70 | 15.093 | 15.093 | 15.092 | 0.77 | 15.093 | 15.092 | 15.092 | -- | - | - | - | -- | - | - | - | | |
| Load Current [A] | Output Voltage [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | 15.096 | 15.096 | 15.095 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.10 | 15.096 | 15.096 | 15.095 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | 15.096 | 15.095 | 15.095 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.30 | 15.095 | 15.095 | 15.094 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.40 | 15.095 | 15.094 | 15.094 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | 15.094 | 15.094 | 15.093 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.60 | 15.094 | 15.093 | 15.093 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.70 | 15.093 | 15.093 | 15.092 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.77 | 15.093 | 15.092 | 15.092 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

- 10 -

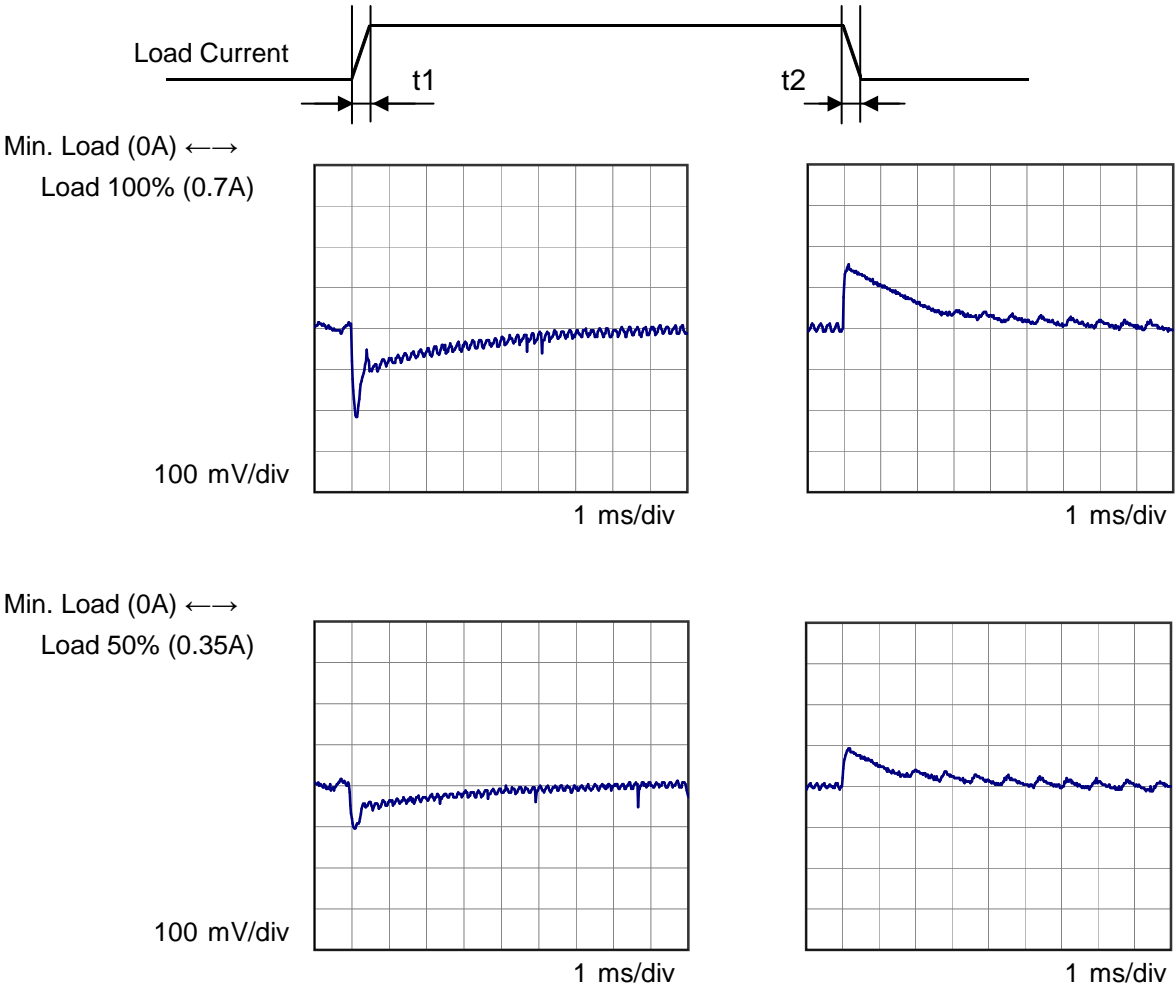
BC-10350



| | | | |
|--------|-----------------------|-------------------|----------|
| | | | |
| Model | LFA10F-15 | | |
| Item | Dynamic Load Response | Temperature | 25°C |
| Object | +15V0.7A | Testing Circuitry | Figure A |

Input Volt. 100 V
Cycle 1000 ms

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



| Model | LFA10F-15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|----------------------------------|--|----------|------------------|---------------------|--|---------------------|---------------------|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|----|---|---|----|---|---|
| Item | Ripple Voltage (by Load Current) | Temperature | 25℃ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +15V0.7A | Testing Circuitry | Figure C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div><div></div><div>—△—</div><div>Input Volt. 100V</div></div><div><div></div><div>- - ○ - -</div><div>Input Volt. 200V</div></div></div><div><p>Ripple Voltage [mV]</p><p>Load Current [A]</p></div></div> <div><p>Measured by 20 MHz Oscilloscope.</p><p>Ripple Voltage is shown as p-p in the figure below.</p><p>Note: Slanted line shows the range of the rated load current.</p></div> <div><div><div><div></div><div>T1: Due to AC Input Line</div></div><div><div></div><div>T2: Due to Switching</div></div></div><div><p>Ripple [mVp-p]</p><p>T1</p><p>T2</p></div></div> <div>Fig. Complex Ripple Wave Form</div> | | <table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [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>20</td></tr><tr><td>0.10</td><td>10</td><td>10</td></tr><tr><td>0.20</td><td>10</td><td>10</td></tr><tr><td>0.30</td><td>15</td><td>15</td></tr><tr><td>0.40</td><td>15</td><td>15</td></tr><tr><td>0.50</td><td>20</td><td>20</td></tr><tr><td>0.60</td><td>20</td><td>20</td></tr><tr><td>0.70</td><td>30</td><td>20</td></tr><tr><td>0.77</td><td>30</td><td>20</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table> | | Load Current [A] | Ripple Voltage [mV] | | Input Volt. 100 [V] | Input Volt. 200 [V] | 0.00 | 25 | 20 | 0.10 | 10 | 10 | 0.20 | 10 | 10 | 0.30 | 15 | 15 | 0.40 | 15 | 15 | 0.50 | 20 | 20 | 0.60 | 20 | 20 | 0.70 | 30 | 20 | 0.77 | 30 | 20 | -- | - | - | -- | - | - |
| Load Current [A] | Ripple Voltage [mV] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100 [V] | Input Volt. 200 [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | 25 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.10 | 10 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | 10 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.30 | 15 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.40 | 15 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | 20 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.60 | 20 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.70 | 30 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.77 | 30 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Model | LFA10F-15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---------------------|--|----------|------------------|-------------------|--|---------------------|---------------------|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|----|---|---|----|---|---|
| Item | Ripple-Noise | Temperature | 25℃ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +15V0.7A | Testing Circuitry | Figure C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>—△— Input Volt. 100V</div><div>- -○- - Input Volt. 200V</div></div><p>Measured by 20 MHz Oscilloscope. Ripple-Noise is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p></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>30</td><td>20</td></tr><tr><td>0.10</td><td>15</td><td>15</td></tr><tr><td>0.20</td><td>15</td><td>15</td></tr><tr><td>0.30</td><td>20</td><td>20</td></tr><tr><td>0.40</td><td>20</td><td>20</td></tr><tr><td>0.50</td><td>25</td><td>25</td></tr><tr><td>0.60</td><td>30</td><td>25</td></tr><tr><td>0.70</td><td>55</td><td>30</td></tr><tr><td>0.77</td><td>55</td><td>30</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 | 30 | 20 | 0.10 | 15 | 15 | 0.20 | 15 | 15 | 0.30 | 20 | 20 | 0.40 | 20 | 20 | 0.50 | 25 | 25 | 0.60 | 30 | 25 | 0.70 | 55 | 30 | 0.77 | 55 | 30 | -- | - | - | -- | - | - |
| Load Current [A] | Ripple-Noise [mV] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100 [V] | Input Volt. 200 [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | 30 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.10 | 15 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | 15 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.30 | 20 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.40 | 20 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | 25 | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.60 | 30 | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.70 | 55 | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.77 | 55 | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>T1: Due to AC Input Line</div><div>T2: Due to Switching</div></div><p>Fig. Complex Ripple Wave Form</p></div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Model | LFA10F-15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------------|---|--------------------|--------------------------|--------------------|--|--|--------------------|--------------------|--------------------|-----|--------|--------|--------|-----|--------|--------|--------|---|--------|--------|--------|----|--------|--------|--------|----|--------|--------|--------|----|--------|--------|--------|----|--------|--------|--------|----|--------|--------|--------|----|--------|--------|--------|----|--------|--------|--------|----|---|---|---|
| Item | Ambient Temperature Drift | Testing Circuitry Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +15V0.7A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</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">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>-20</td><td>15.087</td><td>15.087</td><td>15.087</td></tr><tr><td>-10</td><td>15.089</td><td>15.089</td><td>15.089</td></tr><tr><td>0</td><td>15.090</td><td>15.090</td><td>15.090</td></tr><tr><td>10</td><td>15.091</td><td>15.091</td><td>15.091</td></tr><tr><td>20</td><td>15.093</td><td>15.093</td><td>15.093</td></tr><tr><td>25</td><td>15.093</td><td>15.093</td><td>15.093</td></tr><tr><td>30</td><td>15.094</td><td>15.093</td><td>15.093</td></tr><tr><td>40</td><td>15.092</td><td>15.091</td><td>15.091</td></tr><tr><td>50</td><td>15.087</td><td>15.087</td><td>15.087</td></tr><tr><td>60</td><td>15.081</td><td>15.081</td><td>15.080</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table> | | Ambient Temperature [°C] | Output Voltage [V] | | | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | -20 | 15.087 | 15.087 | 15.087 | -10 | 15.089 | 15.089 | 15.089 | 0 | 15.090 | 15.090 | 15.090 | 10 | 15.091 | 15.091 | 15.091 | 20 | 15.093 | 15.093 | 15.093 | 25 | 15.093 | 15.093 | 15.093 | 30 | 15.094 | 15.093 | 15.093 | 40 | 15.092 | 15.091 | 15.091 | 50 | 15.087 | 15.087 | 15.087 | 60 | 15.081 | 15.081 | 15.080 | -- | - | - | - |
| Ambient Temperature [°C] | Output Voltage [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -20 | 15.087 | 15.087 | 15.087 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -10 | 15.089 | 15.089 | 15.089 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 15.090 | 15.090 | 15.090 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 15.091 | 15.091 | 15.091 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | 15.093 | 15.093 | 15.093 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 15.093 | 15.093 | 15.093 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | 15.094 | 15.093 | 15.093 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 15.092 | 15.091 | 15.091 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 15.087 | 15.087 | 15.087 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | 15.081 | 15.081 | 15.080 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

- 15 -

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| | | |
|--------|-------------------------|----------------------------|
| | | Testing Circuitry Figure A |
| Model | LFA10F-15 | |
| Item | Output Voltage Accuracy | |
| Object | +15V0.7A | |

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℃

Input Voltage : 85 - 264V

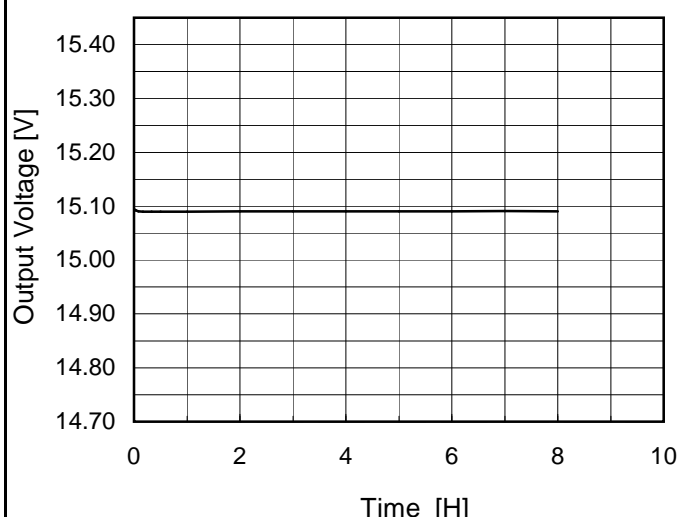
Load Current : 0 - 0.7A

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

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

2. Values

| Item | Temperature [℃] | Input Voltage[V] | Output | | Output Voltage Accuracy | |
|-----------------|--------------------|---------------------|------------|------------|-------------------------|------------|
| | | | Current[A] | Voltage[V] | Value [mV] | Ration [%] |
| Maximum Voltage | 30 | 264 | 0 | 15.096 | ±5 | ±0.1 |
| Minimum Voltage | 50 | 264 | 0.7 | 15.086 | | |

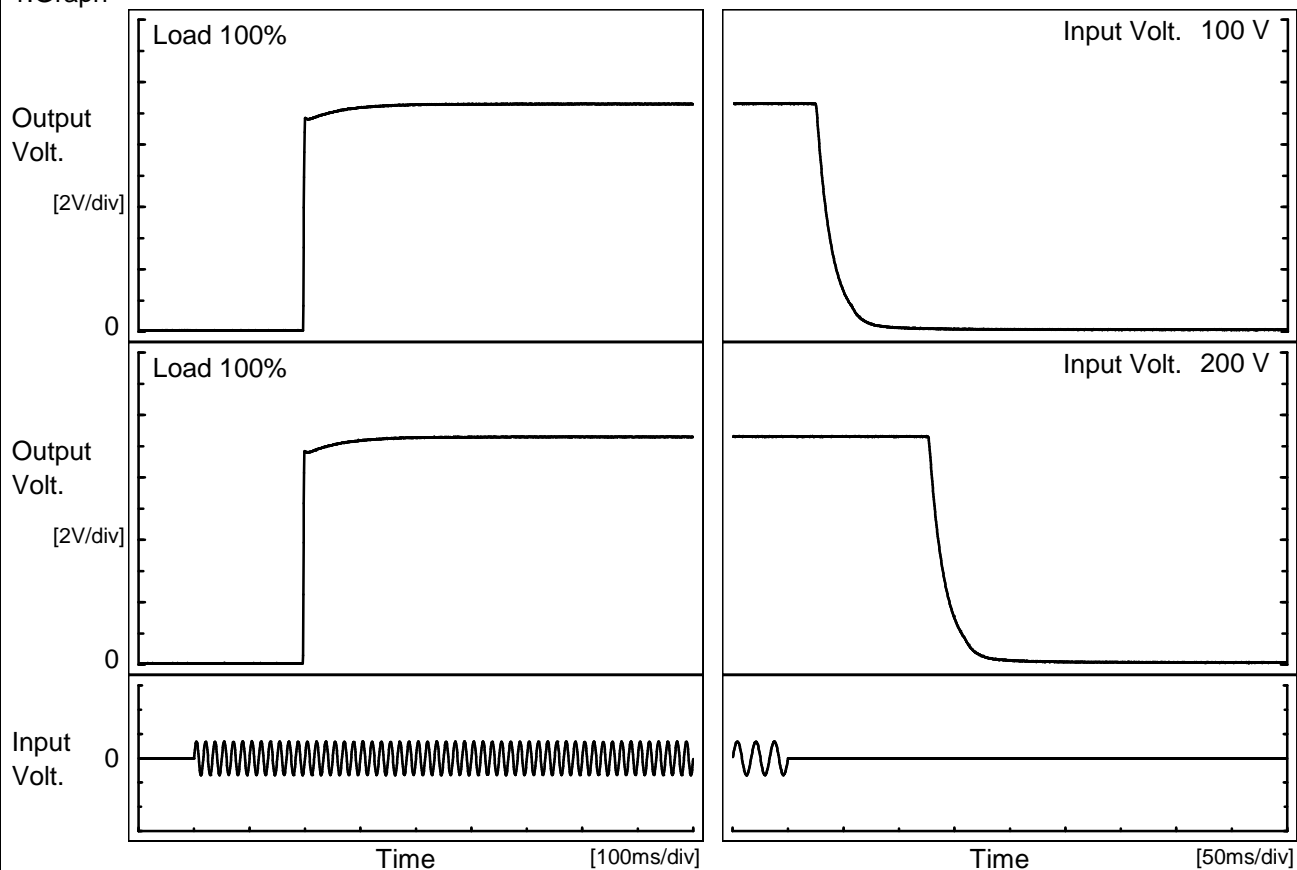
| Model | LFA10F-15 | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------|--|----------|----------------------|--------------------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|
| Item | Time Lapse Drift | Temperature | 25℃ | | | | | | | | | | | | | | | | | | | | | | |
| | | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | |
| Object | +15V0.7A | | | | | | | | | | | | | | | | | | | | | | | | |
| 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>15.096</td></tr><tr><td>0.5</td><td>15.090</td></tr><tr><td>1.0</td><td>15.090</td></tr><tr><td>2.0</td><td>15.091</td></tr><tr><td>3.0</td><td>15.090</td></tr><tr><td>4.0</td><td>15.091</td></tr><tr><td>5.0</td><td>15.091</td></tr><tr><td>6.0</td><td>15.091</td></tr><tr><td>7.0</td><td>15.091</td></tr><tr><td>8.0</td><td>15.091</td></tr></table> | | Time since start [H] | Output Voltage [V] | 0.0 | 15.096 | 0.5 | 15.090 | 1.0 | 15.090 | 2.0 | 15.091 | 3.0 | 15.090 | 4.0 | 15.091 | 5.0 | 15.091 | 6.0 | 15.091 | 7.0 | 15.091 | 8.0 | 15.091 |
| Time since start [H] | Output Voltage [V] | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.0 | 15.096 | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.5 | 15.090 | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.0 | 15.090 | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.0 | 15.091 | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.0 | 15.090 | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.0 | 15.091 | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.0 | 15.091 | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.0 | 15.091 | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.0 | 15.091 | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.0 | 15.091 | | | | | | | | | | | | | | | | | | | | | | | | |
| * The characteristic of AC200V is equal. | | | | | | | | | | | | | | | | | | | | | | | | | |

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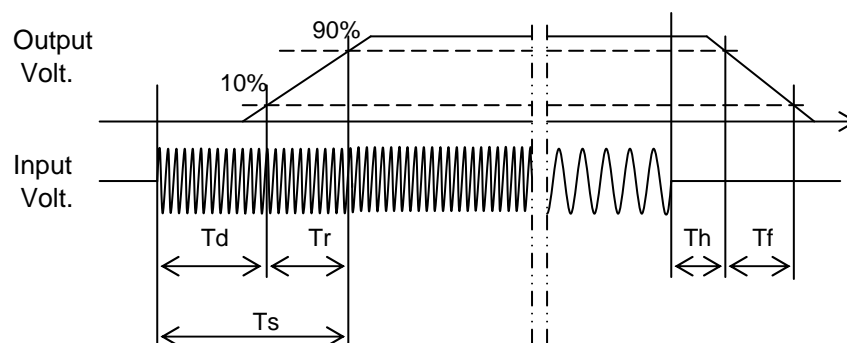
| | | | |
|--------|--------------------|-------------------|----------|
| Model | LFA10F-15 | Temperature | 25°C |
| Item | Rise and Fall Time | Testing Circuitry | Figure A |
| Object | +15V0.7A | | |

1.Graph



2.Values

| Input Volt. \ Time | Td | Tr | Ts | Th | Tf |
|--------------------|-------|-----|-------|-------|------|
| 100 V | 197.0 | 3.0 | 200.0 | 25.8 | 31.5 |
| 200 V | 197.0 | 2.0 | 199.0 | 127.8 | 32.3 |



| Model | | LFA10F-15 | Temperature | | 25℃ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------------|--------------|---|--|----------|-------------------|-------------------|--|----------|-----------|----|----|---|----|----|----|-----|----|----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|---|---|
| Item | | Hold-Up Time | Testing Circuitry | | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | +15V0.7A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div><div>Hold-Up Time [ms]</div><div>Input Voltage [V]</div></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>25</td><td>6</td></tr><tr><td>85</td><td>35</td><td>10</td></tr><tr><td>100</td><td>53</td><td>21</td></tr><tr><td>120</td><td>81</td><td>34</td></tr><tr><td>200</td><td>250</td><td>127</td></tr><tr><td>230</td><td>337</td><td>170</td></tr><tr><td>264</td><td>450</td><td>233</td></tr><tr><td>280</td><td>509</td><td>265</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table> | | | Input Voltage [V] | Hold-Up Time [ms] | | Load 50% | Load 100% | 75 | 25 | 6 | 85 | 35 | 10 | 100 | 53 | 21 | 120 | 81 | 34 | 200 | 250 | 127 | 230 | 337 | 170 | 264 | 450 | 233 | 280 | 509 | 265 | -- | - | - |
| Input Voltage [V] | Hold-Up Time [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Load 50% | Load 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 75 | 25 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 85 | 35 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 | 53 | 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 120 | 81 | 34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 200 | 250 | 127 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 230 | 337 | 170 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 264 | 450 | 233 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 280 | 509 | 265 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <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> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Model | LFA10F-15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--|--------------------|------------------|-----------|--|--|--------------------|--------------------|--------------------|------|---|---|---|------|-----|-----|-----|------|----|-----|-----|------|----|-----|-----|------|----|-----|-----|------|----|-----|-----|------|----|-----|-----|------|----|-----|-----|------|----|-----|-----|----|---|---|---|----|---|---|---|
| Item | Instantaneous Interruption Compensation | Temperature | 25℃ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +15V0.7A | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div>---□---</div><div>Input Volt.</div><div>200V</div></div><div><div>---○---</div><div>Input Volt.</div><div>230V</div></div></div> <p>Instantaneous Compensation Time [ms]</p> <p>Load Current [A]</p> <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">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>0.10</td><td>168</td><td>723</td><td>965</td></tr><tr><td>0.20</td><td>93</td><td>419</td><td>559</td></tr><tr><td>0.30</td><td>63</td><td>291</td><td>390</td></tr><tr><td>0.40</td><td>48</td><td>223</td><td>302</td></tr><tr><td>0.50</td><td>38</td><td>180</td><td>242</td></tr><tr><td>0.60</td><td>31</td><td>151</td><td>204</td></tr><tr><td>0.70</td><td>21</td><td>124</td><td>170</td></tr><tr><td>0.77</td><td>19</td><td>112</td><td>153</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 | - | - | - | 0.10 | 168 | 723 | 965 | 0.20 | 93 | 419 | 559 | 0.30 | 63 | 291 | 390 | 0.40 | 48 | 223 | 302 | 0.50 | 38 | 180 | 242 | 0.60 | 31 | 151 | 204 | 0.70 | 21 | 124 | 170 | 0.77 | 19 | 112 | 153 | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Time [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.10 | 168 | 723 | 965 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | 93 | 419 | 559 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.30 | 63 | 291 | 390 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.40 | 48 | 223 | 302 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | 38 | 180 | 242 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.60 | 31 | 151 | 204 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.70 | 21 | 124 | 170 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.77 | 19 | 112 | 153 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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[illegible]

| Model | LFA10F-15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|--|----------|--------------------|------------------|--|--------------------|--------------------|-------|------|------|-------|---|---|-------|---|---|-------|---|---|-------|---|---|------|---|---|------|---|---|------|---|---|------|---|---|------|---|---|------|---|---|------|---|---|
| Item | Overcurrent Protection | Temperature | 25℃ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +15V0.7A | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>△</div><div>Input Volt. 100V</div></div><div><div>○</div><div>Input Volt. 200V</div></div></div> <p>Note: Slanted line shows the range of the rated load current.</p> <p>Intermittent operation occurs when the output voltage is less than rated output voltage.</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. 200[V]</th></tr><tr><td>15.00</td><td>1.42</td><td>1.73</td></tr><tr><td>14.25</td><td>-</td><td>-</td></tr><tr><td>13.50</td><td>-</td><td>-</td></tr><tr><td>12.00</td><td>-</td><td>-</td></tr><tr><td>10.50</td><td>-</td><td>-</td></tr><tr><td>9.00</td><td>-</td><td>-</td></tr><tr><td>7.50</td><td>-</td><td>-</td></tr><tr><td>6.00</td><td>-</td><td>-</td></tr><tr><td>4.50</td><td>-</td><td>-</td></tr><tr><td>3.00</td><td>-</td><td>-</td></tr><tr><td>1.50</td><td>-</td><td>-</td></tr><tr><td>0.00</td><td>-</td><td>-</td></tr></table> | | Output Voltage [V] | Load Current [A] | | Input Volt. 100[V] | Input Volt. 200[V] | 15.00 | 1.42 | 1.73 | 14.25 | - | - | 13.50 | - | - | 12.00 | - | - | 10.50 | - | - | 9.00 | - | - | 7.50 | - | - | 6.00 | - | - | 4.50 | - | - | 3.00 | - | - | 1.50 | - | - | 0.00 | - | - |
| Output Voltage [V] | Load Current [A] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100[V] | Input Volt. 200[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15.00 | 1.42 | 1.73 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14.25 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13.50 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12.00 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.50 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.00 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.50 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.00 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.50 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.00 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.50 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Model

LFA10F-15

Item

Overvoltage Protection

Object

+15V0.7A

1.Graph

—△—

Input Volt. 100V

---□---

Input Volt. 200V

Operating Point [V]

21.0

20.0

19.0

18.0

17.0

-40

-20

0

20

40

60

80

Ambient Temperature [°C]

Load 0%

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. 200[V] |
| -20 | 18.77 | 18.77 |
| -10 | 18.91 | 18.91 |
| 0 | 19.04 | 19.04 |
| 10 | 19.18 | 19.18 |
| 20 | 19.32 | 19.32 |
| 25 | 19.39 | 19.39 |
| 30 | 19.46 | 19.46 |
| 40 | 19.61 | 19.53 |
| 50 | 19.67 | 19.67 |
| 60 | 19.81 | 19.81 |
| -- | - | - |

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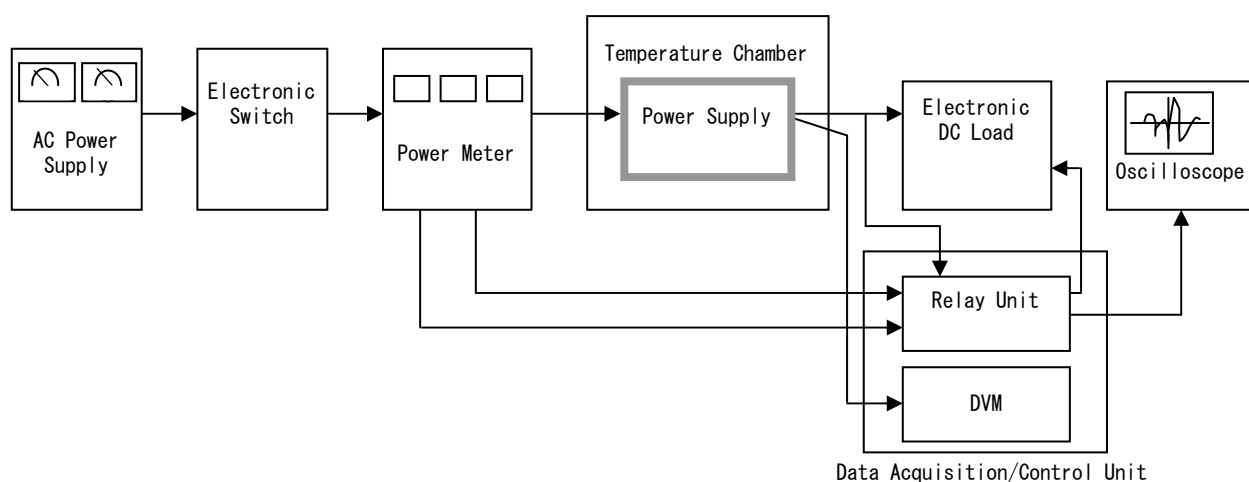


Figure A

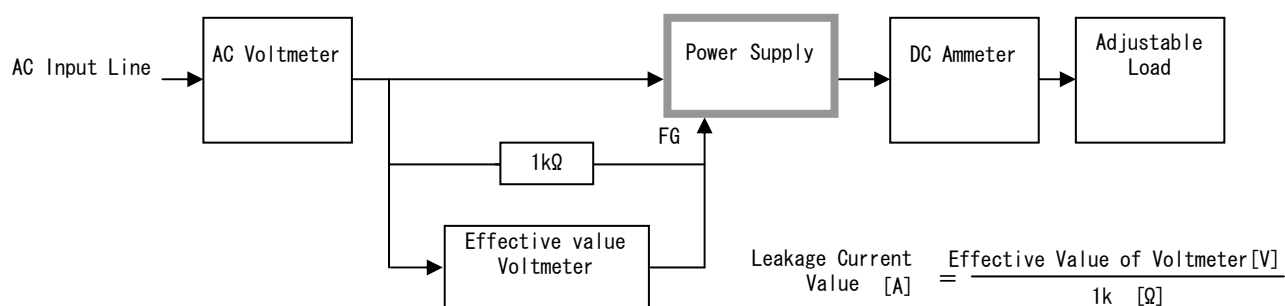


Figure B (DEN-AN)

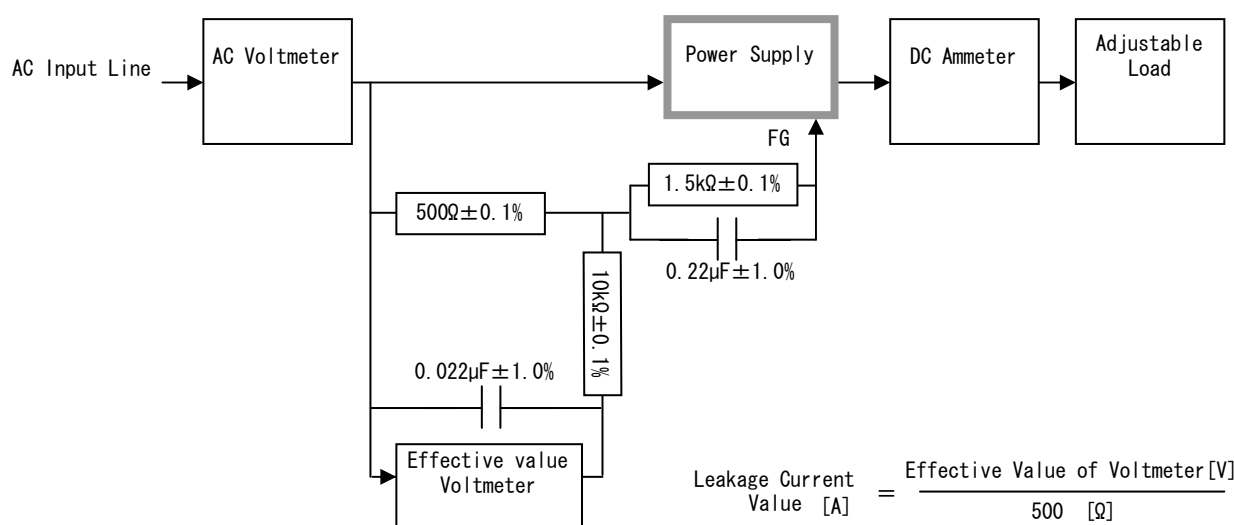


Figure B (IEC60950-1)

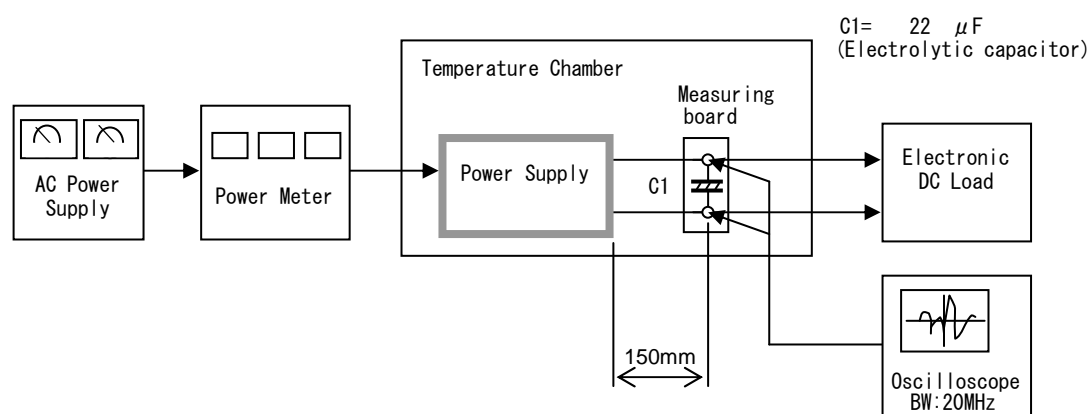


Figure C