



TEST DATA OF LFA50F-12

Regulated DC Power Supply
August 10, 2009

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Yoshiaki Shimizu Design Manager

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Kyohei Kosugi Design Engineer

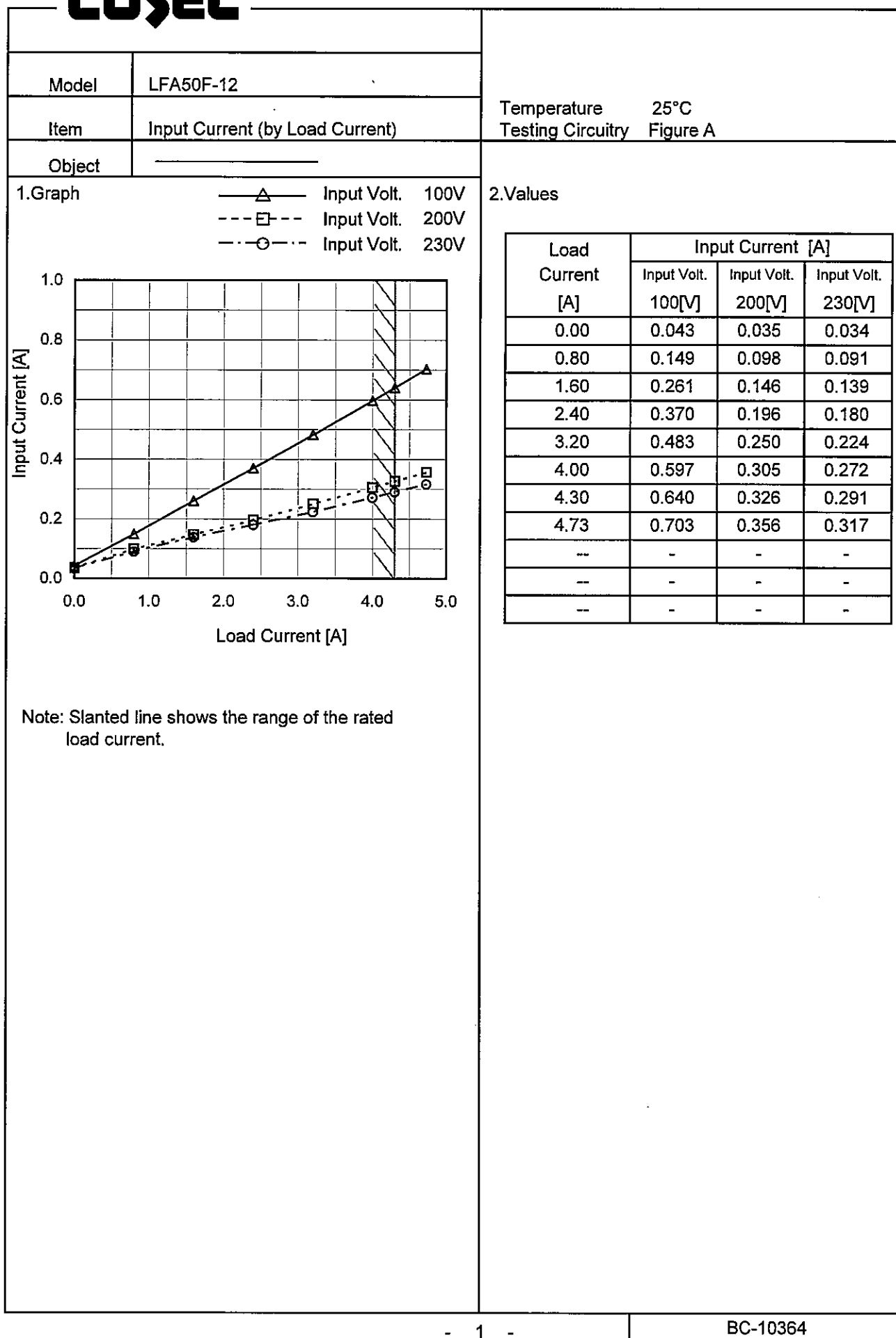
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(Final Page 25)

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Model

LFA50F-12

Item

Input Power (by Load Current)

Object

Temperature

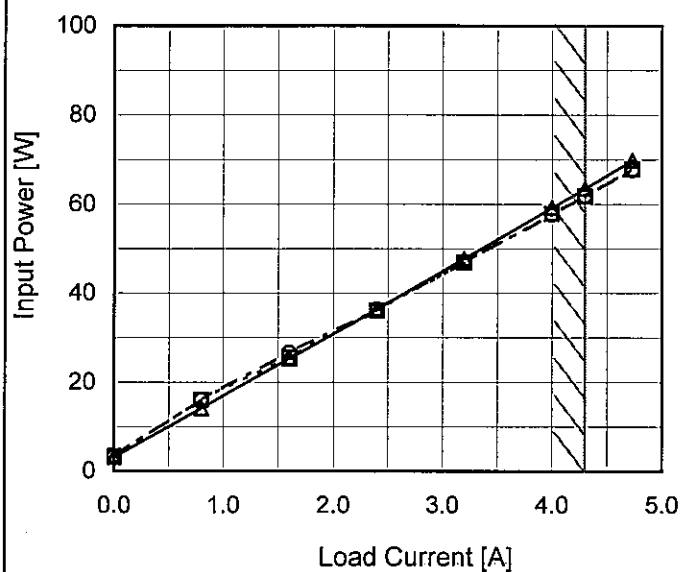
25°C

Testing Circuitry

Figure A

1. Graph

—△— Input Volt. 100V
 ---□--- Input Volt. 200V
 ---○--- Input Volt. 230V



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

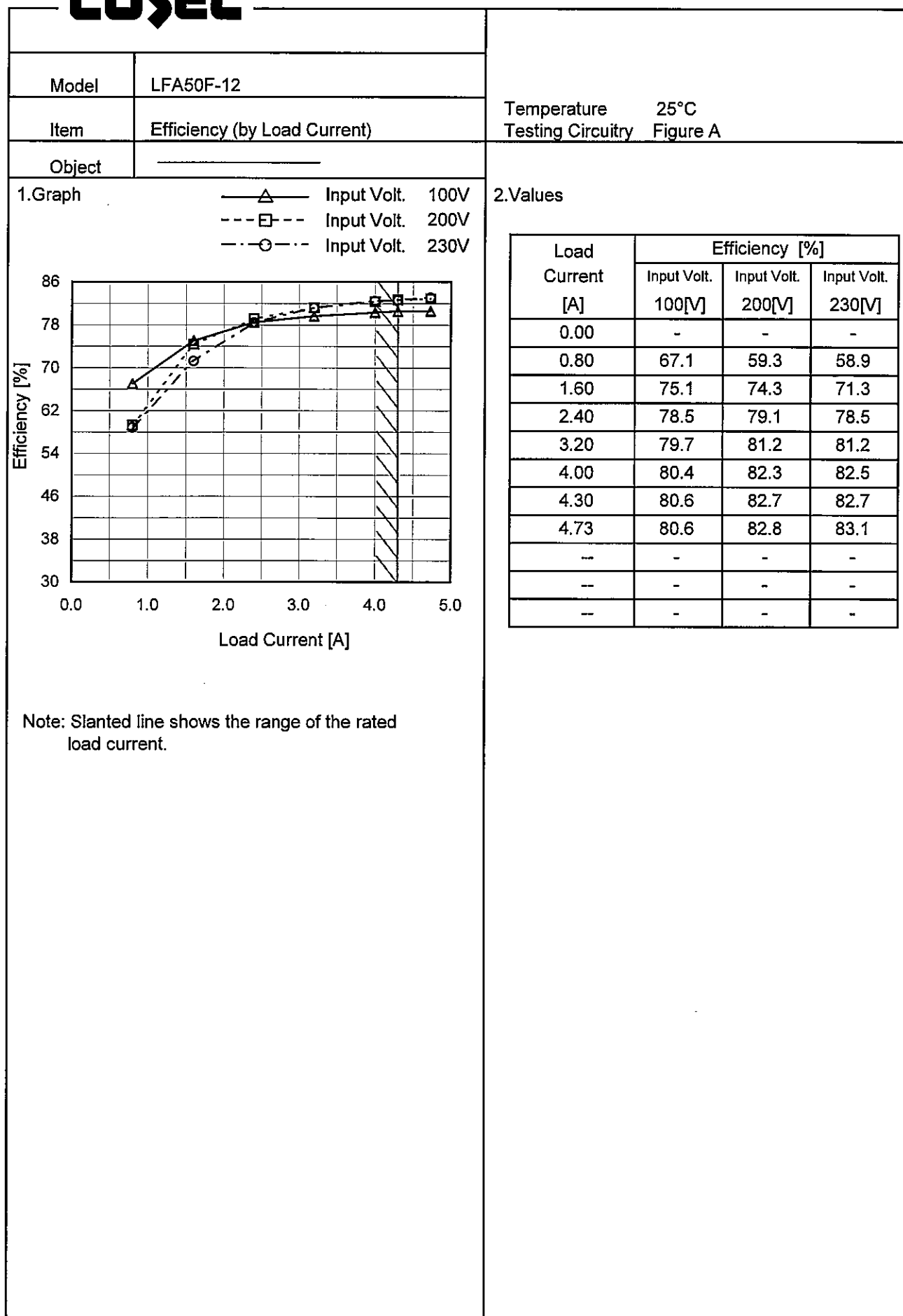
2. Values

| Load Current [A] | Input Power [W] | | |
|------------------|--------------------|--------------------|--------------------|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| 0.00 | 3.18 | 3.40 | 3.40 |
| 0.80 | 14.13 | 16.00 | 16.10 |
| 1.60 | 25.35 | 25.60 | 26.70 |
| 2.40 | 36.39 | 36.10 | 36.40 |
| 3.20 | 47.80 | 46.90 | 46.90 |
| 4.00 | 59.20 | 57.80 | 57.70 |
| 4.30 | 63.50 | 61.80 | 61.80 |
| 4.73 | 69.80 | 67.90 | 67.70 |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |

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| Model | | LFA50F-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|----------------|-------------------------------|----------------|--|----------|-----------|----|------|------|----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|----|---|---|--|--|
| Item | | Efficiency (by Input Voltage) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 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>76.3</td><td>77.9</td></tr><tr><td>85</td><td>77.0</td><td>79.3</td></tr><tr><td>100</td><td>77.7</td><td>80.6</td></tr><tr><td>120</td><td>78.1</td><td>81.4</td></tr><tr><td>200</td><td>78.0</td><td>82.7</td></tr><tr><td>230</td><td>76.6</td><td>82.7</td></tr><tr><td>264</td><td>74.8</td><td>82.1</td></tr><tr><td>280</td><td>79.4</td><td>82.1</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table> | | Input Voltage [V] | Efficiency [%] | | Load 50% | Load 100% | 75 | 76.3 | 77.9 | 85 | 77.0 | 79.3 | 100 | 77.7 | 80.6 | 120 | 78.1 | 81.4 | 200 | 78.0 | 82.7 | 230 | 76.6 | 82.7 | 264 | 74.8 | 82.1 | 280 | 79.4 | 82.1 | -- | - | - | | |
| Input Voltage [V] | Efficiency [%] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Load 50% | Load 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 75 | 76.3 | 77.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 85 | 77.0 | 79.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 | 77.7 | 80.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 120 | 78.1 | 81.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 200 | 78.0 | 82.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 230 | 76.6 | 82.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 264 | 74.8 | 82.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 280 | 79.4 | 82.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Note: Slanted line shows the range of the rated input voltage. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Model | | LFA50F-12 | |
| Item | | Power Factor (by Input Voltage) | |
| Object | | | |

1.Graph

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|--------|--------------------------------|
| Model | LFA50F-12 |
| Item | Power Factor (by Load Current) |
| Object | _____ |

1.Graph

—△—

Input Volt. 100V

---□---

Input Volt. 200V

---○---

Input Volt. 230V

Power Factor

Load Current [A]

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

Temperature

25°C

Testing Circuitry

Figure A

2.Values

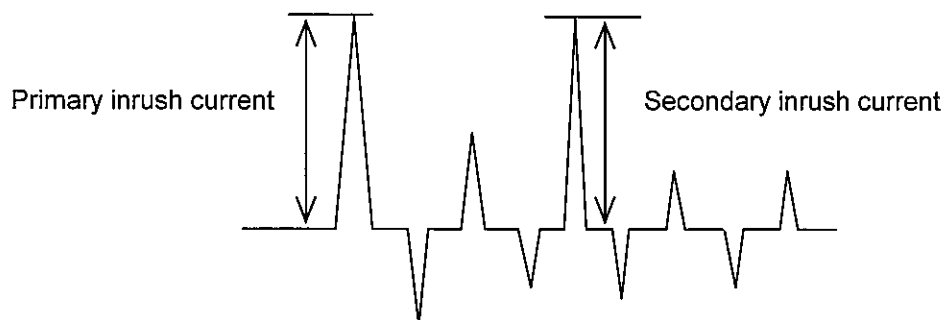
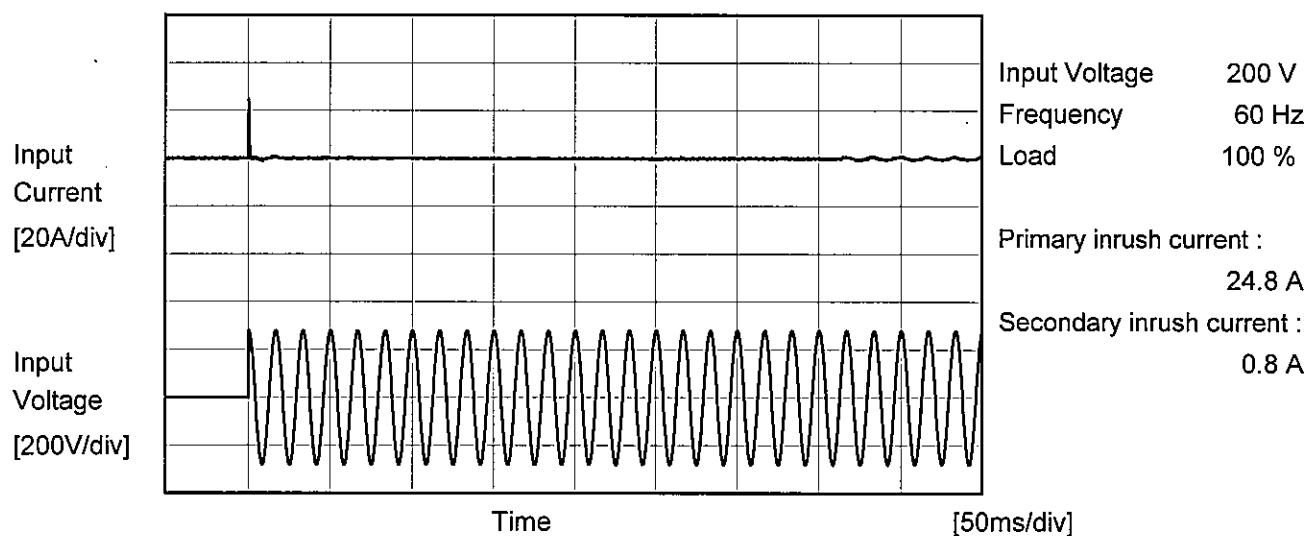
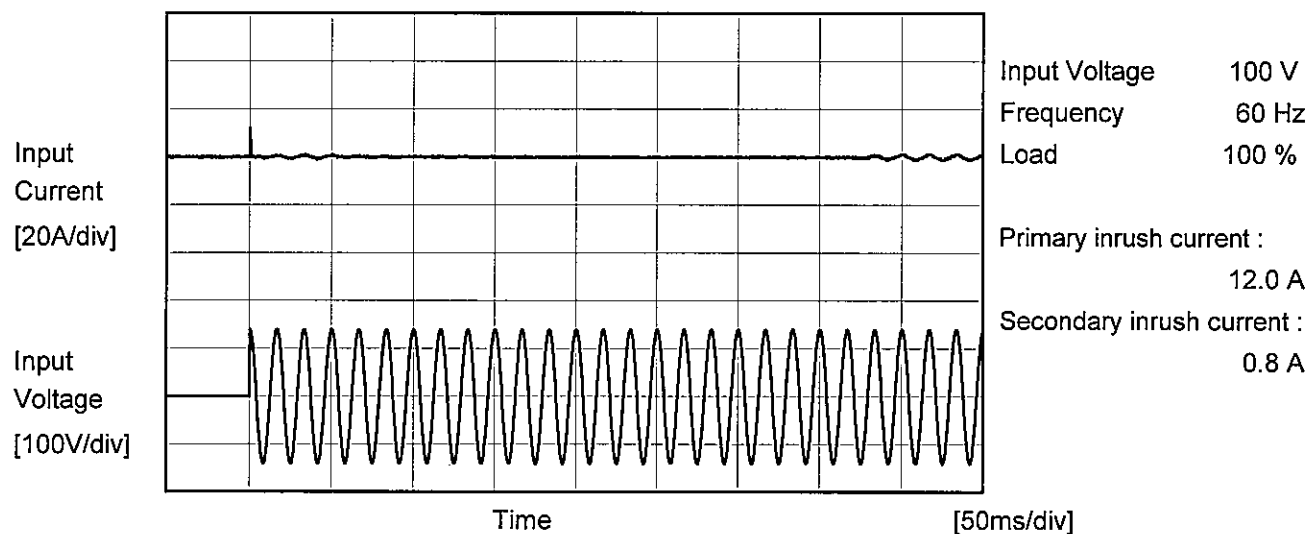
| Load Current [A] | Power Factor | | |
|------------------|--------------------|--------------------|--------------------|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| 0.00 | 0.746 | 0.479 | 0.436 |
| 0.80 | 0.946 | 0.812 | 0.770 |
| 1.60 | 0.972 | 0.874 | 0.834 |
| 2.40 | 0.982 | 0.923 | 0.879 |
| 3.20 | 0.990 | 0.938 | 0.912 |
| 4.00 | 0.992 | 0.946 | 0.922 |
| 4.30 | 0.992 | 0.949 | 0.925 |
| 4.73 | 0.993 | 0.952 | 0.929 |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |

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|--------|----------------|-------------------|----------|
| Model | LFA50F-12 | Temperature | 25°C |
| Item | Inrush Current | Testing Circuitry | Figure A |
| Object | _____ | | |



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|--------|-----------------|--|
| | | Temperature 25°C Testing Circuitry Figure B |
| Model | LFA50F-12 | |
| Item | Leakage Current | |
| Object | | |

1.Results

[mA]

| Standards | | Input Volt. | | | Note |
|-----------|---------------|-------------|---------|---------|-----------|
| | | 100 [V] | 200 [V] | 240 [V] | |
| DEN-AN | Both phases | 0.13 | 0.25 | 0.31 | Operation |
| | One of phases | 0.19 | 0.48 | 0.57 | Stand by |
| IEC60950 | Both phases | 0.14 | 0.29 | 0.34 | Operation |
| | One of phases | 0.22 | 0.43 | 0.50 | 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.

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|--------|-----------------|
| Model | LFA50F-12 |
| Item | Line Regulation |
| Object | +12V4.3A |

1.Graph

□

Load 50%

△

Load 100%

| Input Voltage [V] | Output Voltage [V] (Load 50%) | Output Voltage [V] (Load 100%) |
|-------------------|-------------------------------|--------------------------------|
| 75 | 12.054 | 12.046 |
| 85 | 12.054 | 12.046 |
| 100 | 12.054 | 12.046 |
| 120 | 12.052 | 12.044 |
| 200 | 12.051 | 12.043 |
| 230 | 12.050 | 12.042 |
| 264 | 12.050 | 12.042 |
| 280 | 12.050 | 12.042 |

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

| | |
|-------------------|----------|
| Temperature | 25°C |
| Testing Circuitry | Figure A |

2.Values

| Input Voltage [V] | Output Voltage [V] | |
|-------------------|--------------------|-----------|
| | Load 50% | Load 100% |
| 75 | 12.054 | 12.046 |
| 85 | 12.054 | 12.046 |
| 100 | 12.054 | 12.046 |
| 120 | 12.052 | 12.044 |
| 200 | 12.051 | 12.043 |
| 230 | 12.050 | 12.042 |
| 264 | 12.050 | 12.042 |
| 280 | 12.050 | 12.042 |
| -- | - | - |

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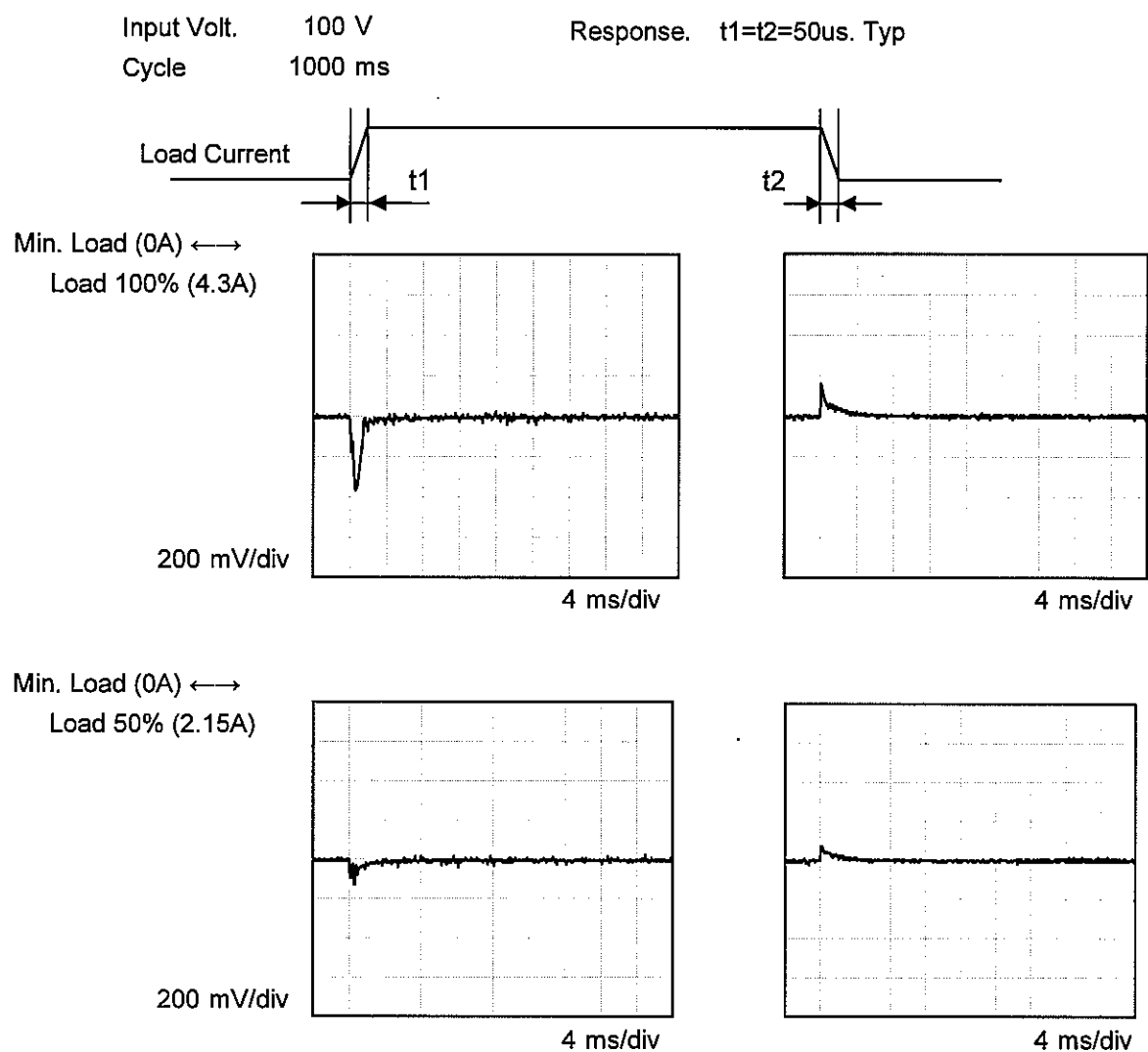
| Model | LFA50F-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------|--|--------------------|------------------|--------------------|--|--|--------------------|--------------------|--------------------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|----|---|---|---|----|---|---|---|----|---|---|---|
| Item | Load Regulation | Temperature | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +12V4.3A | 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> <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">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>12.067</td><td>12.065</td><td>12.064</td></tr><tr><td>0.80</td><td>12.061</td><td>12.058</td><td>12.057</td></tr><tr><td>1.60</td><td>12.057</td><td>12.054</td><td>12.053</td></tr><tr><td>2.40</td><td>12.054</td><td>12.051</td><td>12.050</td></tr><tr><td>3.20</td><td>12.050</td><td>12.047</td><td>12.046</td></tr><tr><td>4.00</td><td>12.047</td><td>12.044</td><td>12.043</td></tr><tr><td>4.30</td><td>12.046</td><td>12.043</td><td>12.042</td></tr><tr><td>4.73</td><td>12.044</td><td>12.042</td><td>12.040</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 | 12.067 | 12.065 | 12.064 | 0.80 | 12.061 | 12.058 | 12.057 | 1.60 | 12.057 | 12.054 | 12.053 | 2.40 | 12.054 | 12.051 | 12.050 | 3.20 | 12.050 | 12.047 | 12.046 | 4.00 | 12.047 | 12.044 | 12.043 | 4.30 | 12.046 | 12.043 | 12.042 | 4.73 | 12.044 | 12.042 | 12.040 | -- | - | - | - | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Output Voltage [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | 12.067 | 12.065 | 12.064 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.80 | 12.061 | 12.058 | 12.057 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.60 | 12.057 | 12.054 | 12.053 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.40 | 12.054 | 12.051 | 12.050 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.20 | 12.050 | 12.047 | 12.046 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.00 | 12.047 | 12.044 | 12.043 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.30 | 12.046 | 12.043 | 12.042 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.73 | 12.044 | 12.042 | 12.040 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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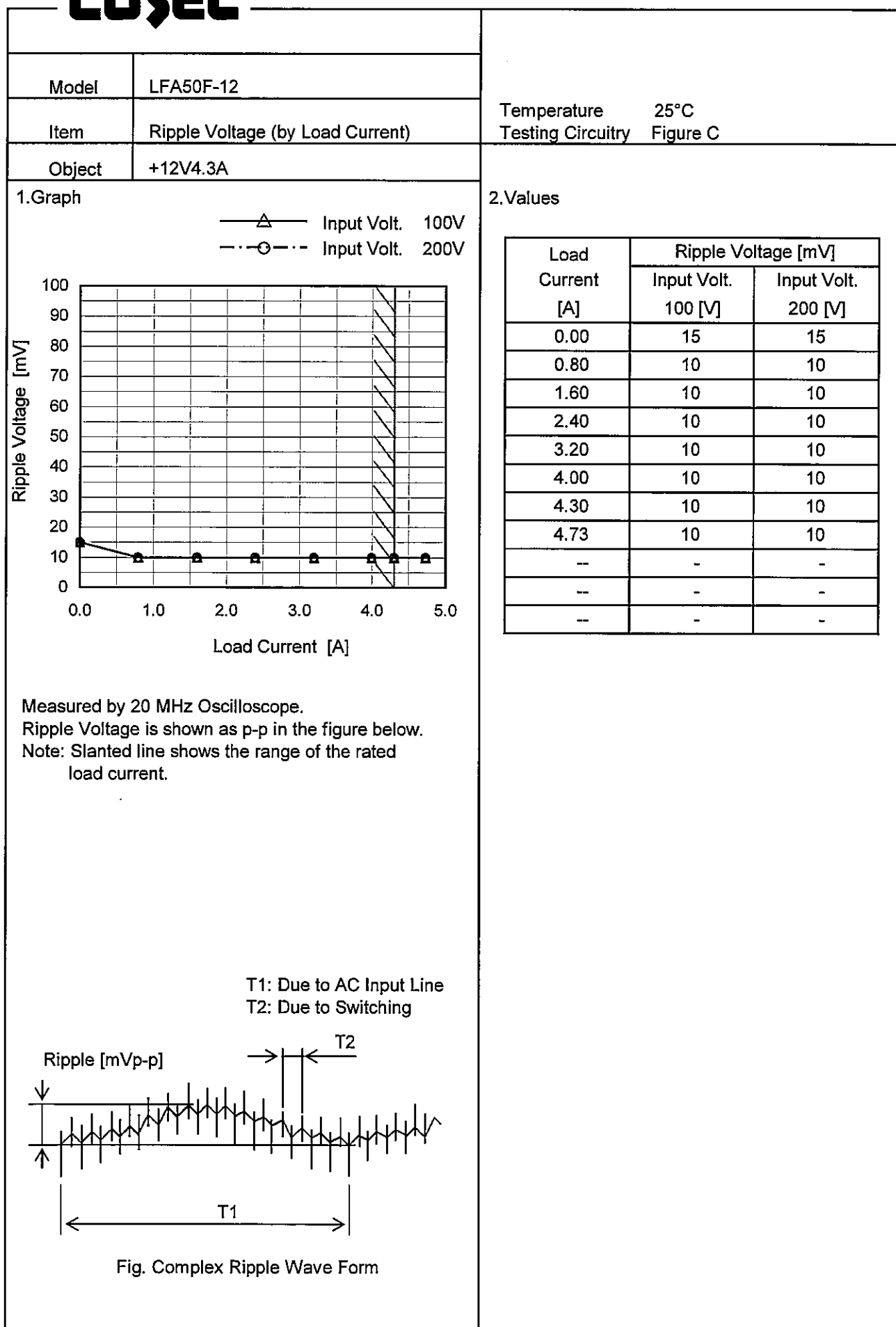
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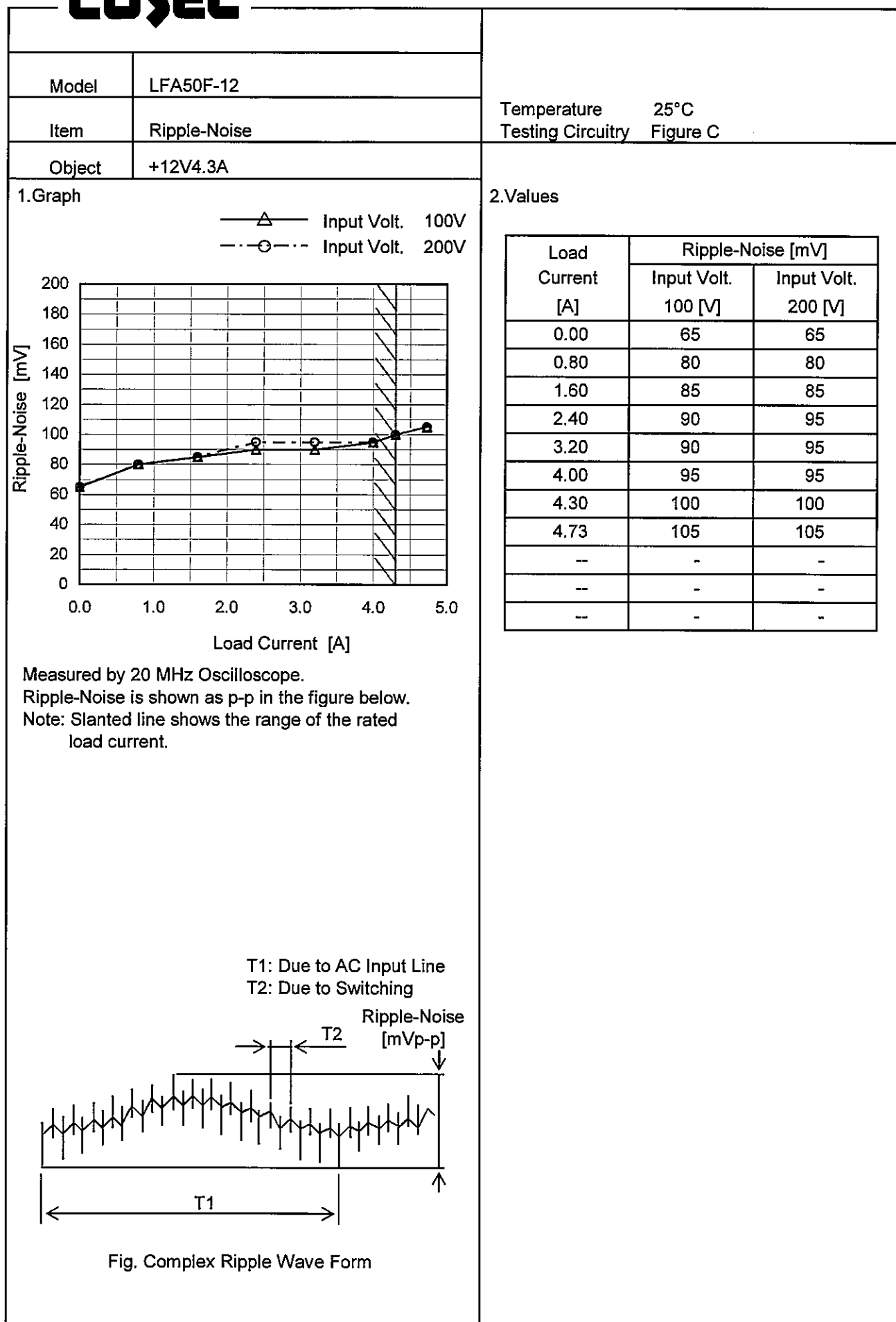
| | | | |
|--------|-----------------------|----------------------------------|------------------|
| Model | LFA50F-12 | Temperature Testing Circuitry | 25°C Figure A |
| Item | Dynamic Load Response | | |
| Object | +12V4.3A | | |



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| Model | | LFA50F-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------|---|--|--------------------------|---------------------|--|---------------------|---------------------|-----|----|----|-----|----|----|---|----|----|----|----|----|----|----|----|----|---|---|----|---|---|----|---|---|----|---|---|----|---|---|----|---|---|----|---|---|
| Item | | Ripple Voltage (by Ambient Temp.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | +12V4.3A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>---□--- Input Volt. 100V</div><div>---△--- Input Volt. 200V</div></div><div>Ripple Voltage [mV]</div><div>Ambient Temperature [°C]</div><div>Load 100 %</div></div> | | <table><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><tr><td>-30</td><td>30</td><td>30</td></tr><tr><td>-10</td><td>20</td><td>20</td></tr><tr><td>0</td><td>15</td><td>15</td></tr><tr><td>25</td><td>10</td><td>10</td></tr><tr><td>50</td><td>10</td><td>10</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> | | Ambient Temperature [°C] | Ripple Voltage [mV] | | Input Volt. 100 [V] | Input Volt. 200 [V] | -30 | 30 | 30 | -10 | 20 | 20 | 0 | 15 | 15 | 25 | 10 | 10 | 50 | 10 | 10 | -- | - | - | -- | - | - | -- | - | - | -- | - | - | -- | - | - | -- | - | - | -- | - | - |
| Ambient Temperature [°C] | Ripple Voltage [mV] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100 [V] | Input Volt. 200 [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -30 | 30 | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -10 | 20 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 15 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 10 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 10 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Measured by 20 MHz Oscilloscope. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Note: Slanted line shows the range of the rated ambient temperature. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Testing Circuitry Figure A



| Ambient Temperature [°C] | Output Voltage [V] | | |
|-----------------------------|-----------------------|-----------------------|-----------------------|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| -20 | 12.051 | 12.051 | 12.050 |
| -10 | 12.050 | 12.050 | 12.049 |
| 0 | 12.049 | 12.049 | 12.048 |
| 10 | 12.048 | 12.048 | 12.047 |
| 20 | 12.046 | 12.046 | 12.045 |
| 25 | 12.046 | 12.043 | 12.042 |
| 30 | 12.046 | 12.043 | 12.042 |
| 40 | 12.039 | 12.035 | 12.034 |
| 50 | 12.032 | 12.028 | 12.027 |
| 60 | 12.025 | 12.020 | 12.019 |
| -- | - | - | - |

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



| | | | |
|--------|--|-------------------------|----------------------------|
| Model | | LFA50F-12 | Testing Circuitry Figure A |
| Item | | Output Voltage Accuracy | |
| Object | | +12V4.3A | |

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 - 4.3A

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

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

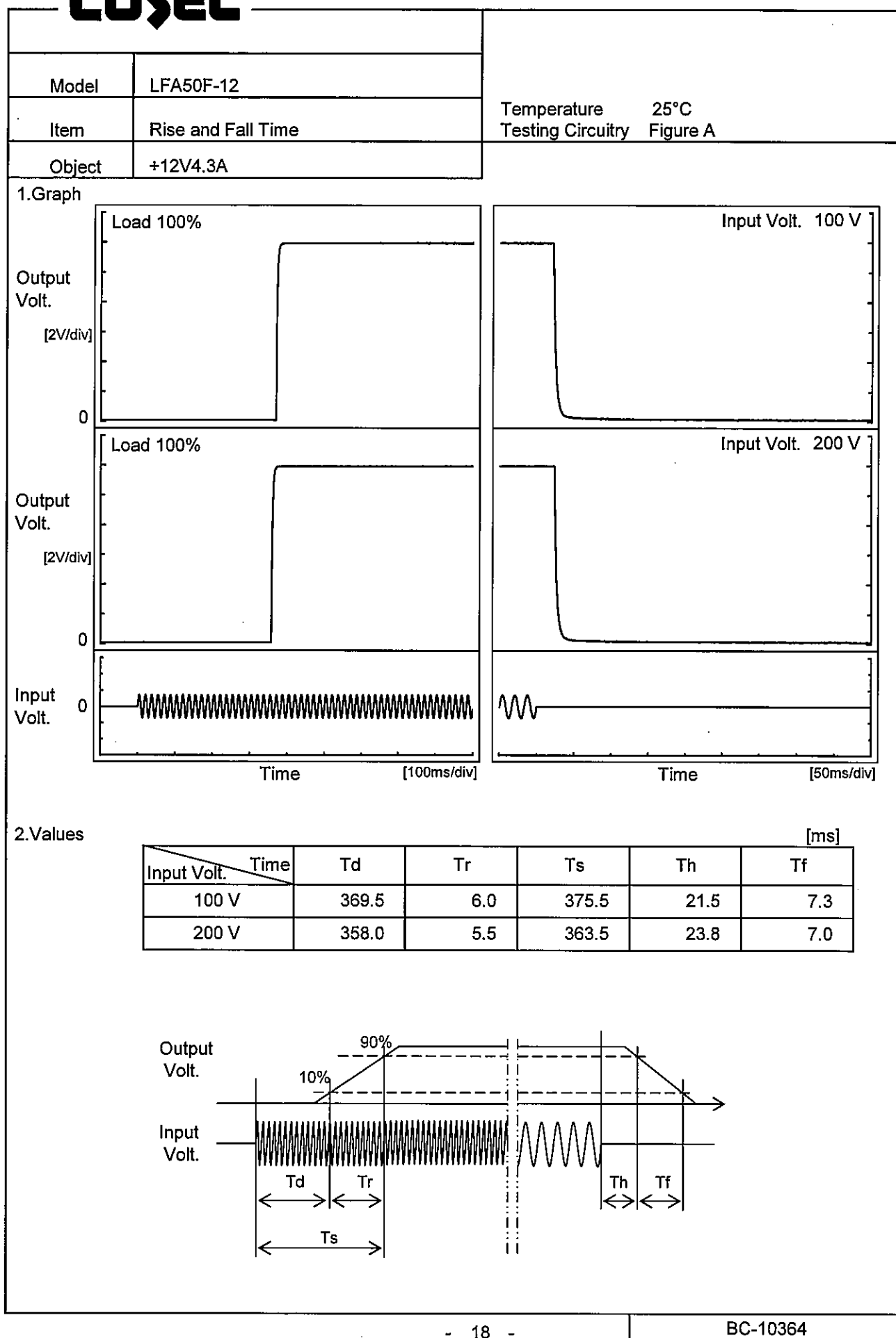
2. Values

| Item | Temperature [°C] | Input Voltage[V] | Output | | Output Voltage Accuracy | |
|-----------------|---------------------|---------------------|------------|------------|-------------------------|------------|
| | | | Current[A] | Voltage[V] | Value [mV] | Ration [%] |
| Maximum Voltage | -10 | 85 | 0 | 12.109 | ±41 | ±0.3 |
| Minimum Voltage | 50 | 200 | 4.3 | 12.028 | | |

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| | | | |
|---|--|------------------|--|
| Model | | LFA50F-12 | |
| Item | | Time Lapse Drift | |
| Object | | +12V4.3A | |
| 1.Graph | | 2.Values | |
| <div><div><div>Output Voltage [V]</div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></di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| | | | |
|---------|--|--------------|--|
| Model | | LFA50F-12 | |
| Item | | Hold-Up Time | |
| Object | | +12V4.3A | |
| 1.Graph | | 2.Values | |

□

Load 50%

△

Load 100%

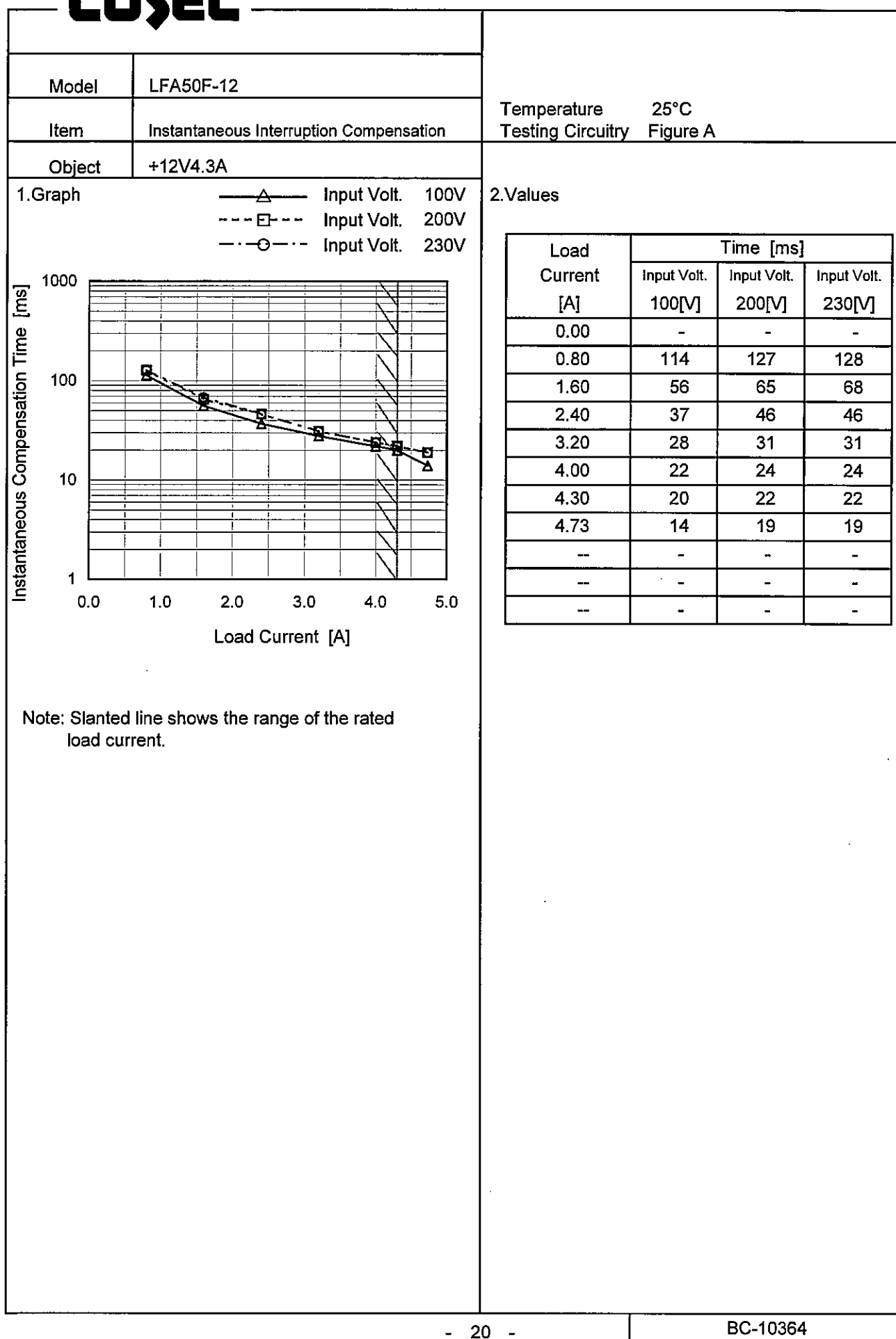
| Input Voltage [V] | Hold-Up Time [ms] | |
|-------------------|-------------------|-----------|
| | Load 50% | Load 100% |
| 75 | 46 | 19 |
| 85 | 48 | 20 |
| 100 | 49 | 21 |
| 120 | 50 | 22 |
| 200 | 52 | 24 |
| 230 | 52 | 24 |
| 264 | 53 | 24 |
| 280 | 55 | 24 |
| -- | - | - |

This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.
Note: Slanted line shows the range of the rated input voltage.

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BC-10364

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| | | | |
|--------|--|---|--|
| Model | | LFA50F-12 | |
| Item | | Minimum Input Voltage for Regulated Output Voltage | |
| Object | | +12V4.3A | |

1.Graph

□

Load 50%

—

△

—

Load 100%

Input Voltage [V]

COSEL

| | | | |
|--------|--|------------------------|--|
| Model | | LFA50F-12 | |
| Item | | Overcurrent Protection | |
| Object | | +12V4.3A | |

1.Graph

△

Input Volt. 100V

○

Input Volt. 200V

Output Voltage [V]

16

12

8

4

0

0.0

2.0

4.0

6.0

Load Current [A]

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

Intermittent operation occurs when the output voltage is less than rated output voltage.

2.Values

| Output Voltage [V] | Load Current [A] | |
|--------------------|--------------------|--------------------|
| | Input Volt. 100[V] | Input Volt. 200[V] |
| 12.0 | 5.39 | 5.44 |
| 11.4 | - | - |
| 10.8 | - | - |
| 9.6 | - | - |
| 8.4 | - | - |
| 7.2 | - | - |
| 6.0 | - | - |
| 4.8 | - | - |
| 3.6 | - | - |
| 2.4 | - | - |
| 1.2 | - | - |
| 0.0 | - | - |

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BC-10364

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| | | | |
|--------|--|------------------------|--|
| Model | | LFA50F-12 | |
| Item | | Overvoltage Protection | |
| Object | | +12V4.3A | |

1.Graph

—△—

Input Volt. 100V

---□---

Input Volt. 200V

Operating Point [V]

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 | 14.67 | 14.67 |
| -10 | 14.67 | 14.67 |
| 0 | 14.84 | 14.84 |
| 10 | 14.89 | 14.89 |
| 20 | 15.02 | 15.02 |
| 25 | 15.07 | 15.02 |
| 30 | 15.08 | 15.08 |
| 40 | 15.19 | 15.19 |
| 50 | 15.25 | 15.25 |
| 60 | 15.37 | 15.37 |
| -- | - | - |

COSEL

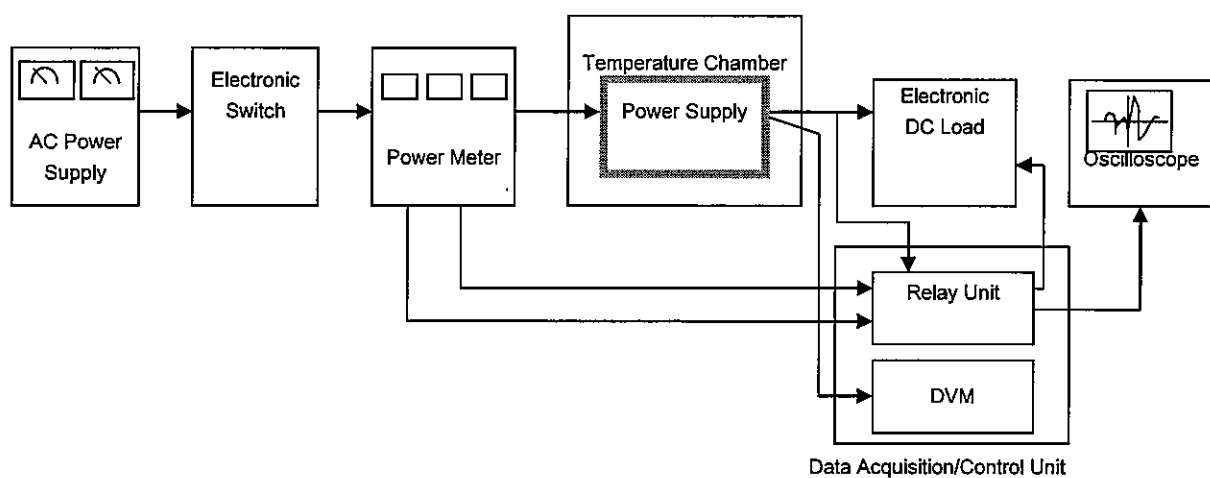


Figure A

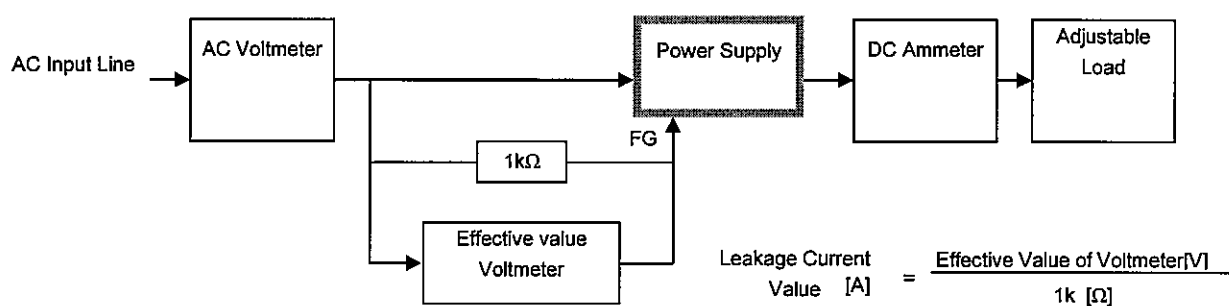


Figure B (DEN-AN)

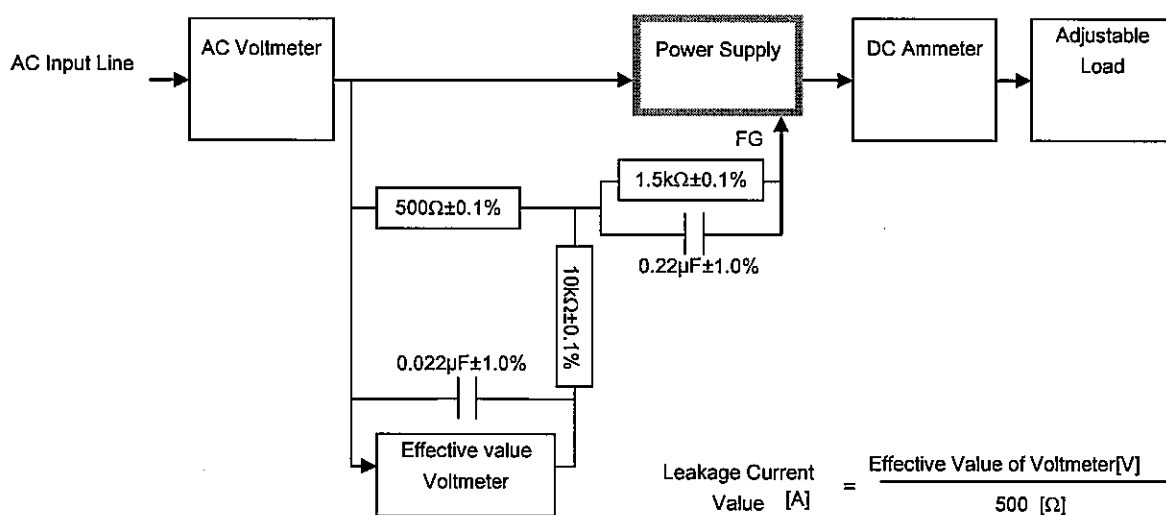


Figure B (IEC60950-1)

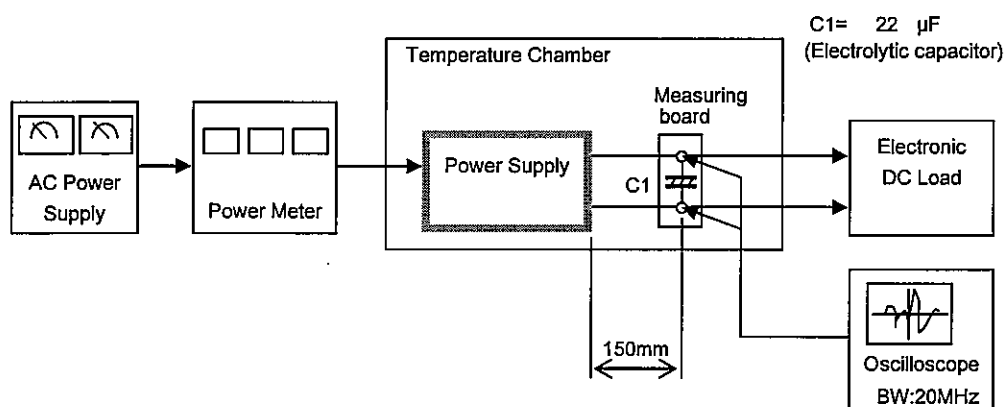


Figure C