

TEST DATA OF DHS200A15

Regulated DC Power Supply
Aug 3, 2010

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COSEL CO.,LTD.

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| | | | |
|--------|--|----------------------------------|--|
| Model | | DHS200A15 | |
| Item | | Input Current (by Input Voltage) | |
| Object | | | |

1.Graph

—△—

Load 100%

---□---

Load 50%

---○---

Load 0%

Input Current [A]

5.0

4.0

3.0

2.0

1.0

0.0

0

20

40

60

80

100

120

140

160

180

Input Voltage [V]

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

2.Values

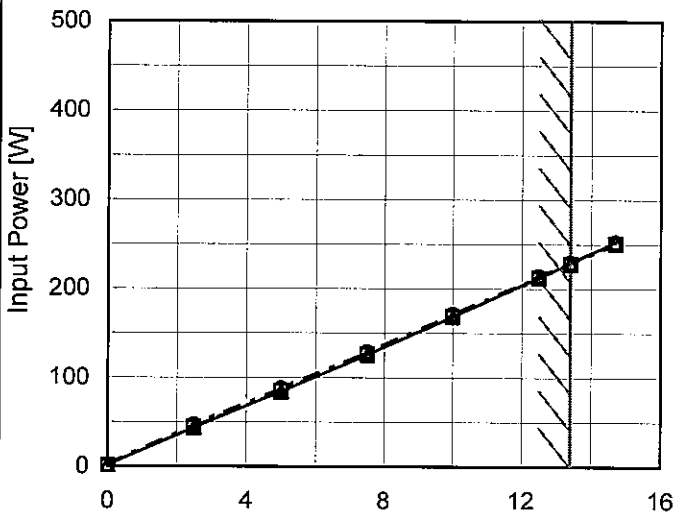
| Input Voltage [V] | Input Current [A] | | |
|-------------------|-------------------|----------|-----------|
| | Load 0% | Load 50% | Load 100% |
| 0 | 0.000 | 0.000 | 0.000 |
| 40 | 0.000 | 0.000 | 0.000 |
| 50 | 0.000 | 0.000 | 0.000 |
| 55 | 0.019 | 2.060 | 4.063 |
| 56 | 0.018 | 2.017 | 4.097 |
| 60 | 0.017 | 1.868 | 3.825 |
| 66 | 0.015 | 1.686 | 3.431 |
| 80 | 0.013 | 1.398 | 2.836 |
| 95 | 0.012 | 1.181 | 2.390 |
| 110 | 0.010 | 1.026 | 2.075 |
| 125 | 0.011 | 0.906 | 1.817 |
| 140 | 0.010 | 0.814 | 1.619 |
| 160 | 0.009 | 0.720 | 1.430 |
| 170 | 0.008 | 0.682 | 1.352 |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |

| Model | | DHS200A15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------------|--|--------------------|------------------|-------------------|--|--|-------------------|--------------------|--------------------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|----|---|---|---|----|---|---|---|----|---|---|---|
| Item | | Input Current (by Load Current) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div><div><div></div><div></div></div><div>—△—</div><div>Input Volt.</div><div>60V</div></div><div><div><div></div><div></div></div><div>- - -□- -</div><div>Input Volt.</div><div>110V</div></div><div><div><div></div><div></div></div><div>- · -○- · -</div><div>Input Volt.</div><div>160V</div></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></div></div> | | <table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Current [A]</th></tr><tr><th>Input Volt. 60[V]</th><th>Input Volt. 110[V]</th><th>Input Volt. 160[V]</th></tr><tr><td>0.0</td><td>0.017</td><td>0.010</td><td>0.009</td></tr><tr><td>2.5</td><td>0.722</td><td>0.397</td><td>0.290</td></tr><tr><td>5.0</td><td>1.397</td><td>0.769</td><td>0.545</td></tr><tr><td>7.5</td><td>2.092</td><td>1.144</td><td>0.801</td></tr><tr><td>10.0</td><td>2.801</td><td>1.527</td><td>1.065</td></tr><tr><td>12.5</td><td>3.535</td><td>1.922</td><td>1.332</td></tr><tr><td>13.4</td><td>3.825</td><td>2.075</td><td>1.430</td></tr><tr><td>14.7</td><td>4.204</td><td>2.272</td><td>1.570</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table> | | Load Current [A] | Input Current [A] | | | Input Volt. 60[V] | Input Volt. 110[V] | Input Volt. 160[V] | 0.0 | 0.017 | 0.010 | 0.009 | 2.5 | 0.722 | 0.397 | 0.290 | 5.0 | 1.397 | 0.769 | 0.545 | 7.5 | 2.092 | 1.144 | 0.801 | 10.0 | 2.801 | 1.527 | 1.065 | 12.5 | 3.535 | 1.922 | 1.332 | 13.4 | 3.825 | 2.075 | 1.430 | 14.7 | 4.204 | 2.272 | 1.570 | -- | - | - | - | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Input Current [A] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 60[V] | Input Volt. 110[V] | Input Volt. 160[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.0 | 0.017 | 0.010 | 0.009 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.5 | 0.722 | 0.397 | 0.290 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.0 | 1.397 | 0.769 | 0.545 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.5 | 2.092 | 1.144 | 0.801 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.0 | 2.801 | 1.527 | 1.065 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12.5 | 3.535 | 1.922 | 1.332 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13.4 | 3.825 | 2.075 | 1.430 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14.7 | 4.204 | 2.272 | 1.570 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

- 2 -

BC-10437

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|------------------|--|--|--|----------------------------------|------------------|
| Model | | DHS200A15 | | Temperature Testing Circuitry | 25°C Figure A |
| Item | | Input Power (by Load Current) | | | |
| Object | | | | | |
| 1.Graph | | | | | |
| | | —△— Input Volt. 60V | | 2.Values | |
| | | ---□--- Input Volt. 110V | | | |
| | | -·-○-·- Input Volt. 160V | | | |
| Input Power [W] | |  | | | |
| Load Current [A] | | | | | |
| | | Note: Slanted line shows the range of the rated load current. | | | |

| | | | |
|------------------|-------------------|--------------------|--------------------|
| Load Current [A] | Input Power [W] | | |
| | Input Volt. 60[V] | Input Volt. 110[V] | Input Volt. 160[V] |
| 0.0 | 1.0 | 1.1 | 1.4 |
| 2.5 | 43.5 | 43.8 | 46.6 |
| 5.0 | 84.0 | 84.8 | 87.5 |
| 7.5 | 125.7 | 126.2 | 128.5 |
| 10.0 | 168.4 | 168.3 | 170.8 |
| 12.5 | 212.6 | 212.1 | 213.6 |
| 13.4 | 228.8 | 227.8 | 229.3 |
| 14.7 | 252.7 | 250.8 | 252.1 |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |

- 3 -

BC-10437

| | | | |
|--------|--|-------------------------------|--|
| Model | | DHS200A15 | |
| Item | | Efficiency (by Input Voltage) | |
| Object | | | |

1.Graph

□

Load 50%

△

Load 100%

Efficiency [%]

96

88

80

72

64

56

48

40

50

70

90

110

130

150

170

Input Voltage [V]

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

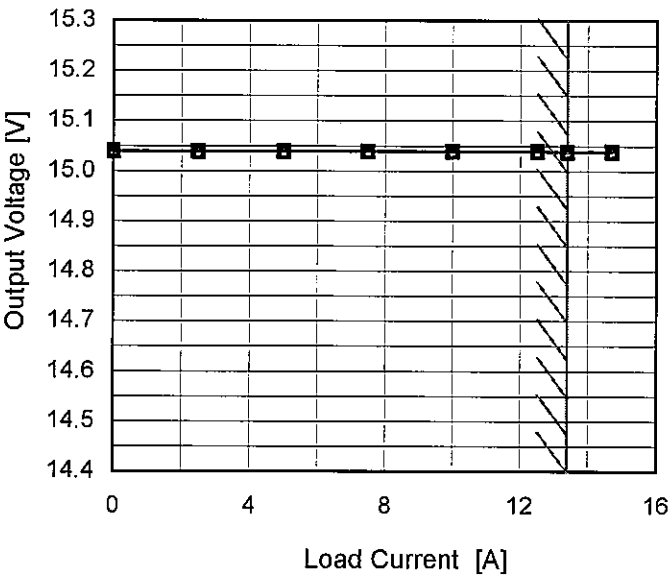
2.Values

| Input Voltage [V] | Efficiency [%] | |
|-------------------|----------------|-----------|
| | Load 50% | Load 100% |
| 56 | 88.8 | 87.1 |
| 60 | 89.1 | 87.8 |
| 66 | 90.0 | 88.0 |
| 90 | 89.6 | 88.2 |
| 110 | 89.0 | 88.2 |
| 125 | 88.6 | 88.3 |
| 140 | 88.0 | 88.0 |
| 160 | 87.1 | 87.7 |
| 170 | 86.5 | 87.2 |

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| Model | | DHS200A15 | | Temperature | | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------------|------------------------------|--------------------|--|--|----------|--|------------------|----------------|--|--|-------------------|--------------------|--------------------|-----|---|---|---|-----|------|------|------|-----|------|------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|---|---|---|----|---|---|---|----|---|---|---|
| Item | | Efficiency (by Load Current) | | Testing Circuitry | | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div><div><div></div><div>—△—</div><div>Input Volt.</div><div>60V</div></div><div><div>---□---</div><div>Input Volt.</div><div>110V</div></div><div><div>- - -○- - -</div><div>Input Volt.</div><div>160V</div></div></div><div><p>Efficiency [%]</p><p>Load Current [A]</p></div><p>Note: Slanted line shows the range of the rated load current.</p></div></div> | | | | <table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Efficiency [%]</th></tr><tr><th>Input Volt. 60[V]</th><th>Input Volt. 110[V]</th><th>Input Volt. 160[V]</th></tr><tr><td>0.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>2.5</td><td>86.5</td><td>85.7</td><td>80.8</td></tr><tr><td>5.0</td><td>89.3</td><td>88.6</td><td>85.8</td></tr><tr><td>7.5</td><td>89.6</td><td>89.2</td><td>87.4</td></tr><tr><td>10.0</td><td>88.8</td><td>89.1</td><td>87.8</td></tr><tr><td>12.5</td><td>88.1</td><td>88.4</td><td>87.8</td></tr><tr><td>13.4</td><td>87.8</td><td>88.2</td><td>87.7</td></tr><tr><td>14.7</td><td>87.2</td><td>87.9</td><td>87.4</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] | Efficiency [%] | | | Input Volt. 60[V] | Input Volt. 110[V] | Input Volt. 160[V] | 0.0 | - | - | - | 2.5 | 86.5 | 85.7 | 80.8 | 5.0 | 89.3 | 88.6 | 85.8 | 7.5 | 89.6 | 89.2 | 87.4 | 10.0 | 88.8 | 89.1 | 87.8 | 12.5 | 88.1 | 88.4 | 87.8 | 13.4 | 87.8 | 88.2 | 87.7 | 14.7 | 87.2 | 87.9 | 87.4 | -- | - | - | - | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Efficiency [%] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 60[V] | Input Volt. 110[V] | Input Volt. 160[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.0 | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.5 | 86.5 | 85.7 | 80.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.0 | 89.3 | 88.6 | 85.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.5 | 89.6 | 89.2 | 87.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.0 | 88.8 | 89.1 | 87.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12.5 | 88.1 | 88.4 | 87.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13.4 | 87.8 | 88.2 | 87.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14.7 | 87.2 | 87.9 | 87.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

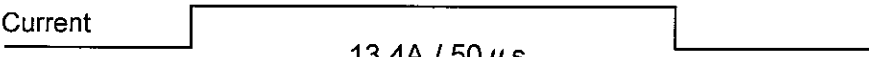
| Model | DHS200A15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------------------|------------------------------|-----------------------------|------------------------------|----|--------|--------|----|--------|--------|----|--------|--------|----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|--|--|
| Item | Line Regulation | Temperature | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +15V13.4A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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>56</td><td>15.039</td><td>15.038</td></tr><tr><td>60</td><td>15.039</td><td>15.038</td></tr><tr><td>66</td><td>15.038</td><td>15.038</td></tr><tr><td>90</td><td>15.038</td><td>15.038</td></tr><tr><td>110</td><td>15.039</td><td>15.038</td></tr><tr><td>125</td><td>15.038</td><td>15.038</td></tr><tr><td>140</td><td>15.038</td><td>15.038</td></tr><tr><td>160</td><td>15.038</td><td>15.038</td></tr><tr><td>170</td><td>15.038</td><td>15.038</td></tr></tbody></table> | | Input Voltage [V] | Output Voltage [V] Load 50% | Output Voltage [V] Load 100% | 56 | 15.039 | 15.038 | 60 | 15.039 | 15.038 | 66 | 15.038 | 15.038 | 90 | 15.038 | 15.038 | 110 | 15.039 | 15.038 | 125 | 15.038 | 15.038 | 140 | 15.038 | 15.038 | 160 | 15.038 | 15.038 | 170 | 15.038 | 15.038 | | |
| Input Voltage [V] | Output Voltage [V] Load 50% | Output Voltage [V] Load 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 56 | 15.039 | 15.038 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | 15.039 | 15.038 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 66 | 15.038 | 15.038 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 90 | 15.038 | 15.038 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 110 | 15.039 | 15.038 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 125 | 15.038 | 15.038 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 140 | 15.038 | 15.038 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 160 | 15.038 | 15.038 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 170 | 15.038 | 15.038 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Note: Slanted line shows the range of the rated input voltage. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Model | DHS200A15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------------|---|--------------------|------------------|--------------------|--|--|-------------------|--------------------|--------------------|-----|--------|--------|--------|-----|--------|--------|--------|-----|--------|--------|--------|-----|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|----|---|---|---|----|---|---|---|----|---|---|---|
| Item | Load Regulation | Temperature | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +15V13.4A | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>—△—</div><div>Input Volt.</div><div>60V</div></div><div><div>---□---</div><div>Input Volt.</div><div>110V</div></div><div><div>---○---</div><div>Input Volt.</div><div>160V</div></div></div>  <p>Output Voltage [V]</p> <p>Load Current [A]</p> | | <table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 60[V]</th><th>Input Volt. 110[V]</th><th>Input Volt. 160[V]</th></tr><tr><td>0.0</td><td>15.040</td><td>15.040</td><td>15.040</td></tr><tr><td>2.5</td><td>15.040</td><td>15.039</td><td>15.039</td></tr><tr><td>5.0</td><td>15.039</td><td>15.040</td><td>15.040</td></tr><tr><td>7.5</td><td>15.039</td><td>15.039</td><td>15.039</td></tr><tr><td>10.0</td><td>15.039</td><td>15.039</td><td>15.039</td></tr><tr><td>12.5</td><td>15.039</td><td>15.039</td><td>15.039</td></tr><tr><td>13.4</td><td>15.038</td><td>15.038</td><td>15.038</td></tr><tr><td>14.7</td><td>15.038</td><td>15.039</td><td>15.038</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. 60[V] | Input Volt. 110[V] | Input Volt. 160[V] | 0.0 | 15.040 | 15.040 | 15.040 | 2.5 | 15.040 | 15.039 | 15.039 | 5.0 | 15.039 | 15.040 | 15.040 | 7.5 | 15.039 | 15.039 | 15.039 | 10.0 | 15.039 | 15.039 | 15.039 | 12.5 | 15.039 | 15.039 | 15.039 | 13.4 | 15.038 | 15.038 | 15.038 | 14.7 | 15.038 | 15.039 | 15.038 | -- | - | - | - | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Output Voltage [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 60[V] | Input Volt. 110[V] | Input Volt. 160[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.0 | 15.040 | 15.040 | 15.040 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.5 | 15.040 | 15.039 | 15.039 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.0 | 15.039 | 15.040 | 15.040 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.5 | 15.039 | 15.039 | 15.039 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.0 | 15.039 | 15.039 | 15.039 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12.5 | 15.039 | 15.039 | 15.039 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13.4 | 15.038 | 15.038 | 15.038 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14.7 | 15.038 | 15.039 | 15.038 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Note: Slanted line shows the range of the rated load current. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

COSEL

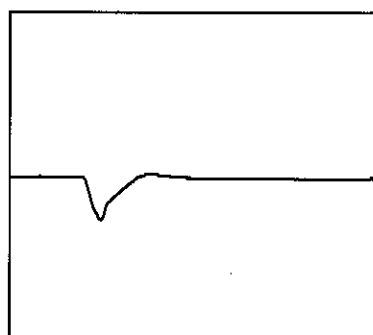
| | | | |
|--------|-----------------------|-------------------|----------|
| | | | |
| Model | DHS200A15 | | |
| Item | Dynamic Load Response | Temperature | 25°C |
| Object | +15V13.4A | Testing Circuitry | Figure A |

Input Volt. 110 V
Cycle 1000 ms

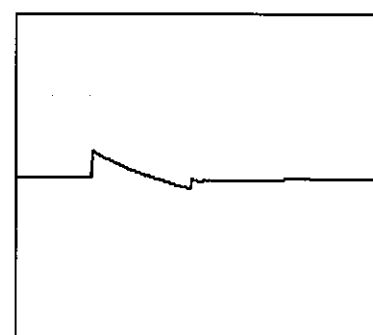
Load Current  13.4A / 50 μ s

Min. Load (0A) \longleftrightarrow
Load 100% (13.4A)

1V/div



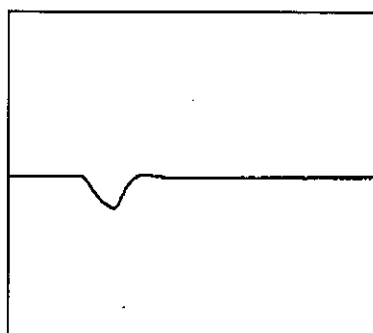
200 μ s/div



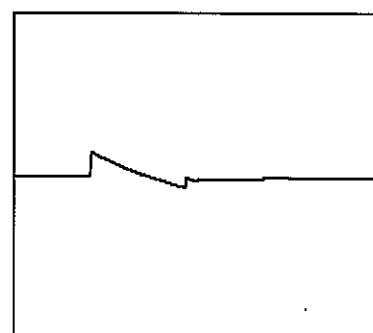
50 ms/div

Min. Load (0A) \longleftrightarrow
Load 50% (6.7A)

1V/div



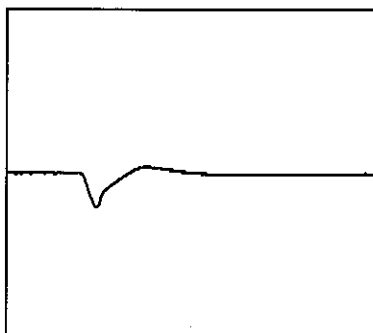
200 μ s/div



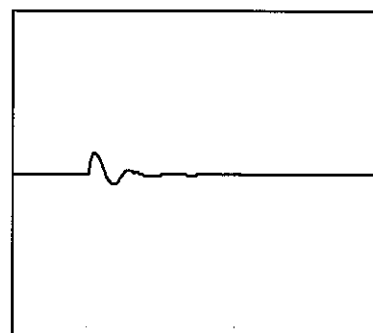
50 ms/div

Load 10% (1.34A) \longleftrightarrow
Load 100% (13.4A)

1V/div



200 μ s/div



2 ms/div

| Model | | DHS200A15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------|----------------------------------|--------------------|---------------------|-----|---|----|-----|----|----|-----|----|----|-----|----|----|------|----|----|------|----|----|------|----|----|------|----|----|----|---|---|----|---|---|----|---|---|--|--|------------------|---------------------|--|--------------------|---------------------|-----|---|----|-----|----|----|-----|----|----|-----|----|----|------|----|----|------|----|----|------|----|----|------|----|----|----|---|---|----|---|---|----|---|---|
| Item | | Ripple Voltage (by Load Current) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | +15V13.4A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>—△— Input Volt. 60V</div><div>- -○- - Input Volt. 160V</div></div><table><thead><tr><th>Load Current [A]</th><th>Input Volt. 60 [V]</th><th>Input Volt. 160 [V]</th></tr></thead><tbody><tr><td>0.0</td><td>5</td><td>15</td></tr><tr><td>2.5</td><td>35</td><td>50</td></tr><tr><td>5.0</td><td>35</td><td>60</td></tr><tr><td>7.5</td><td>35</td><td>60</td></tr><tr><td>10.0</td><td>35</td><td>60</td></tr><tr><td>12.5</td><td>30</td><td>60</td></tr><tr><td>13.4</td><td>30</td><td>60</td></tr><tr><td>14.7</td><td>30</td><td>60</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table></div> | | Load Current [A] | Input Volt. 60 [V] | Input Volt. 160 [V] | 0.0 | 5 | 15 | 2.5 | 35 | 50 | 5.0 | 35 | 60 | 7.5 | 35 | 60 | 10.0 | 35 | 60 | 12.5 | 30 | 60 | 13.4 | 30 | 60 | 14.7 | 30 | 60 | -- | - | - | -- | - | - | -- | - | - | <table><thead><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 60 [V]</th><th>Input Volt. 160 [V]</th></tr></thead><tbody><tr><td>0.0</td><td>5</td><td>15</td></tr><tr><td>2.5</td><td>35</td><td>50</td></tr><tr><td>5.0</td><td>35</td><td>60</td></tr><tr><td>7.5</td><td>35</td><td>60</td></tr><tr><td>10.0</td><td>35</td><td>60</td></tr><tr><td>12.5</td><td>30</td><td>60</td></tr><tr><td>13.4</td><td>30</td><td>60</td></tr><tr><td>14.7</td><td>30</td><td>60</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table> | | Load Current [A] | Ripple Voltage [mV] | | Input Volt. 60 [V] | Input Volt. 160 [V] | 0.0 | 5 | 15 | 2.5 | 35 | 50 | 5.0 | 35 | 60 | 7.5 | 35 | 60 | 10.0 | 35 | 60 | 12.5 | 30 | 60 | 13.4 | 30 | 60 | 14.7 | 30 | 60 | -- | - | - | -- | - | - | -- | - | - |
| Load Current [A] | Input Volt. 60 [V] | Input Volt. 160 [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.0 | 5 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.5 | 35 | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.0 | 35 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.5 | 35 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.0 | 35 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12.5 | 30 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13.4 | 30 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14.7 | 30 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Load Current [A] | Ripple Voltage [mV] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 60 [V] | Input Volt. 160 [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.0 | 5 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.5 | 35 | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.0 | 35 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.5 | 35 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.0 | 35 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12.5 | 30 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13.4 | 30 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14.7 | 30 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div>Measured by 100 MHz Oscilloscope.</div> <div>Ripple Voltage is shown as p-p in the figure below.</div> <div>Note: Slanted line shows the range of the rated load current.</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div>Ripple [mVp-p]</div><div>Fig.Complex Ripple Wave Form</div></div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

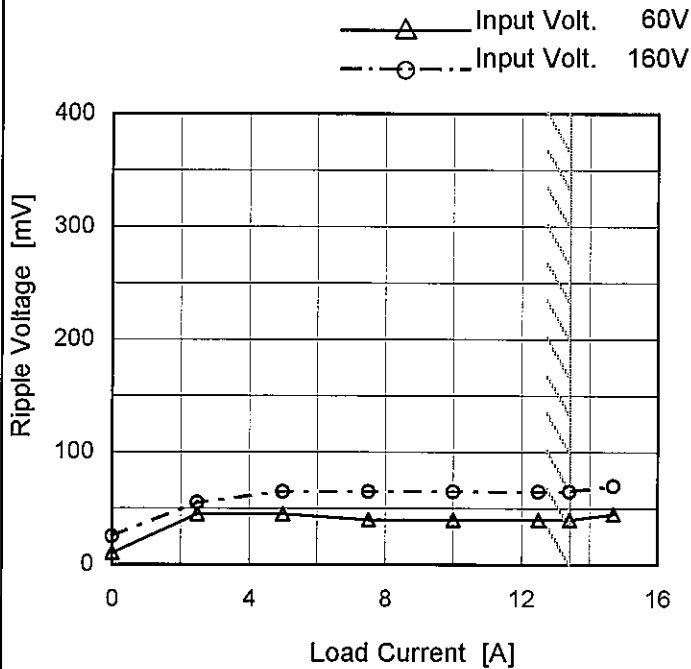
Model DHS200A15

Item Ripple-Noise

Object +15V13.4A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



Measured by 100 MHz Oscilloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

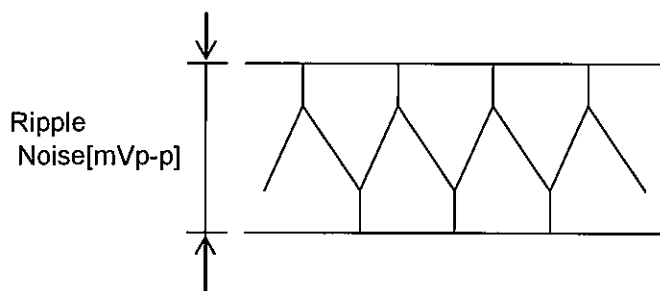


Fig.Complex Ripple Noise Wave Form

2.Values

| Load Current [A] | Ripple-Noise [mV] | |
|------------------|--------------------|---------------------|
| | Input Volt. 60 [V] | Input Volt. 160 [V] |
| 0.0 | 10 | 25 |
| 2.5 | 45 | 55 |
| 5.0 | 45 | 65 |
| 7.5 | 40 | 65 |
| 10.0 | 40 | 65 |
| 12.5 | 40 | 65 |
| 13.4 | 40 | 65 |
| 14.7 | 45 | 70 |
| -- | - | - |
| -- | - | - |
| -- | - | - |

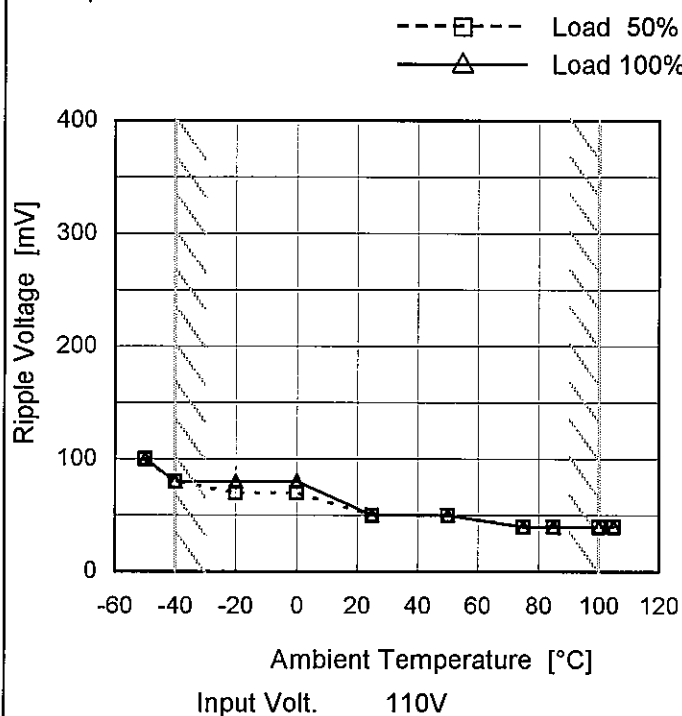
Model DHS200A15

Item Ripple Voltage (by Ambient Temp.)

Object +15V13.4A

Testing Circuitry Figure B

1. Graph



Measured by 100 MHz Oscilloscope.

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

2. Values

| Ambient Temperature [°C] | Ripple Voltage [mV] | |
|--------------------------|---------------------|-----------|
| | Load 50% | Load 100% |
| -50 | 100 | 100 |
| -40 | 80 | 80 |
| -20 | 70 | 80 |
| 0 | 70 | 80 |
| 25 | 50 | 50 |
| 50 | 50 | 50 |
| 75 | 40 | 40 |
| 85 | 40 | 40 |
| 100 | 40 | 40 |
| 105 | 40 | 40 |
| -- | - | - |

BC-10437



| | | |
|--------|-------------------------|----------------------------|
| | | Testing Circuitry Figure A |
| Model | DHS200A15 | |
| Item | Output Voltage Accuracy | |
| Object | +15V13.4A | |

1. Output Voltage Accuracy

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

Temperature : -40 - 100°C

Input Voltage : 60 - 160V

Load Current : 0 - 13.4A

* 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

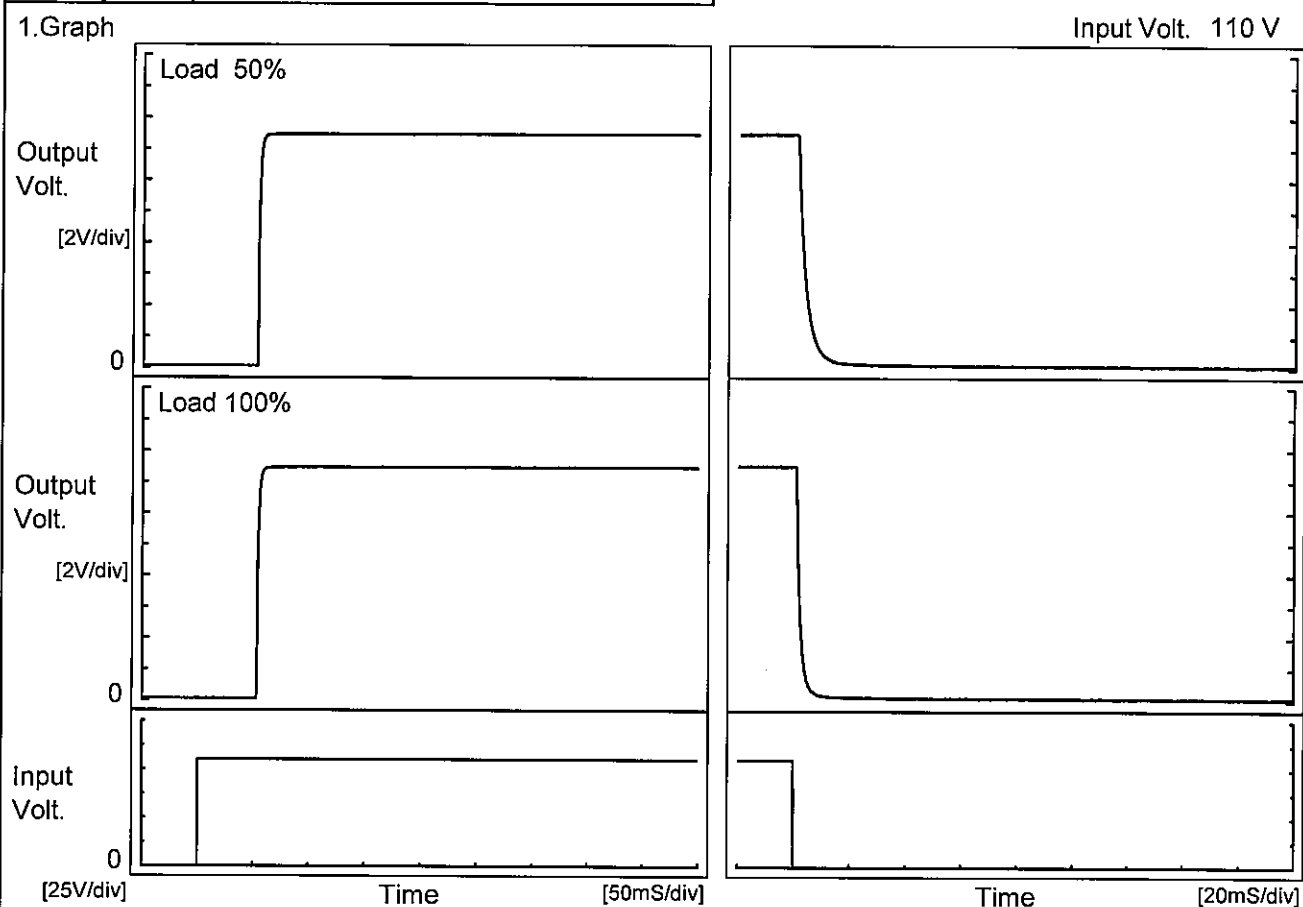
| Item | Temperature [°C] | Input Voltage[V] | Output | | Output Voltage Accuracy | |
|-----------------|---------------------|---------------------|------------|------------|-------------------------|------------|
| | | | Current[A] | Voltage[V] | Value [mV] | Ration [%] |
| Maximum Voltage | 100 | 110 | 0 | 15.048 | ±41 | ±0.3 |
| Minimum Voltage | -40 | 60 | 13.4 | 14.966 | | |

| | | | |
|---|------------------|-------------------|----------|
| | | | |
| Model | DHS200A15 | | |
| Item | Time Lapse Drift | Temperature | 25°C |
| | | Testing Circuitry | Figure A |
| Object | +15V13.4A | | |
| 1.Graph | | 2.Values | |
| <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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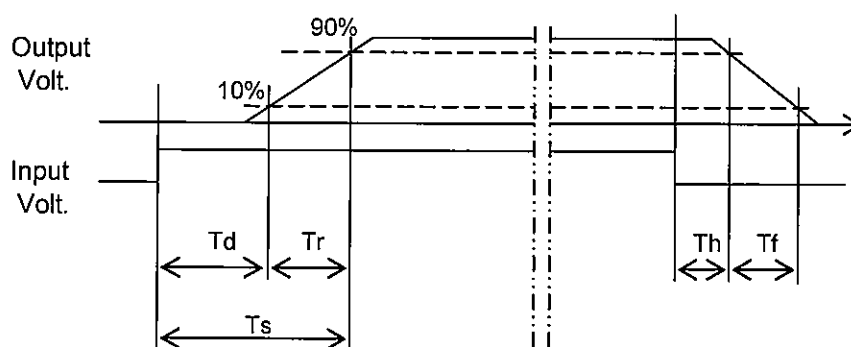
| | | | |
|--------|--------------------|-------------------|----------|
| Model | DHS200A15 | Temperature | 25°C |
| Item | Rise and Fall Time | Testing Circuitry | Figure A |
| Object | +15V13.4A | | |

1. Graph



2. Values

| | | [mS] | | | | |
|-------|------|------|-----|------|-----|-----|
| Load | Time | Td | Tr | Ts | Th | Tf |
| 50 % | | 53.5 | 3.0 | 56.5 | 1.2 | 6.3 |
| 100 % | | 53.3 | 3.0 | 56.3 | 1.0 | 3.2 |



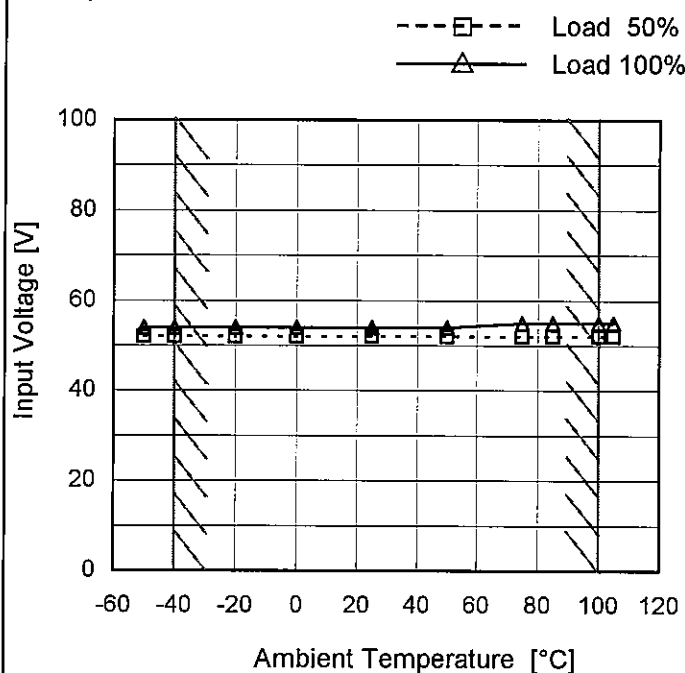
Model DHS200A15

Item Minimum Input Voltage
for Regulated Output Voltage

Object +15V13.4A

Testing Circuitry Figure A

1. Graph



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

2. Values

| Ambient Temperature [°C] | Input Voltage [V] | |
|--------------------------|-------------------|-----------|
| | Load 50% | Load 100% |
| -50 | 52 | 54 |
| -40 | 52 | 54 |
| -20 | 52 | 54 |
| 0 | 52 | 54 |
| 25 | 52 | 54 |
| 50 | 52 | 54 |
| 75 | 52 | 55 |
| 85 | 52 | 55 |
| 100 | 52 | 55 |
| 105 | 52 | 55 |
| -- | - | - |

COSEL

| | | | |
|--------|--|------------------------|--|
| Model | | DHS200A15 | |
| Item | | Overcurrent Protection | |
| Object | | +15V13.4A | |

1.Graph

Input Volt. 60V

Input Volt. 110V

Input Volt. 160V

Output Voltage [V]

<

| | | |
|--------|--|------------------------|
| Model | | DHS200A15 |
| Item | | Overvoltage Protection |
| Object | | +15V13.4A |

1.Graph

△

Input Volt. 60V

□

Input Volt. 160V

Operating Point [V]

22

21

20

19

18

17

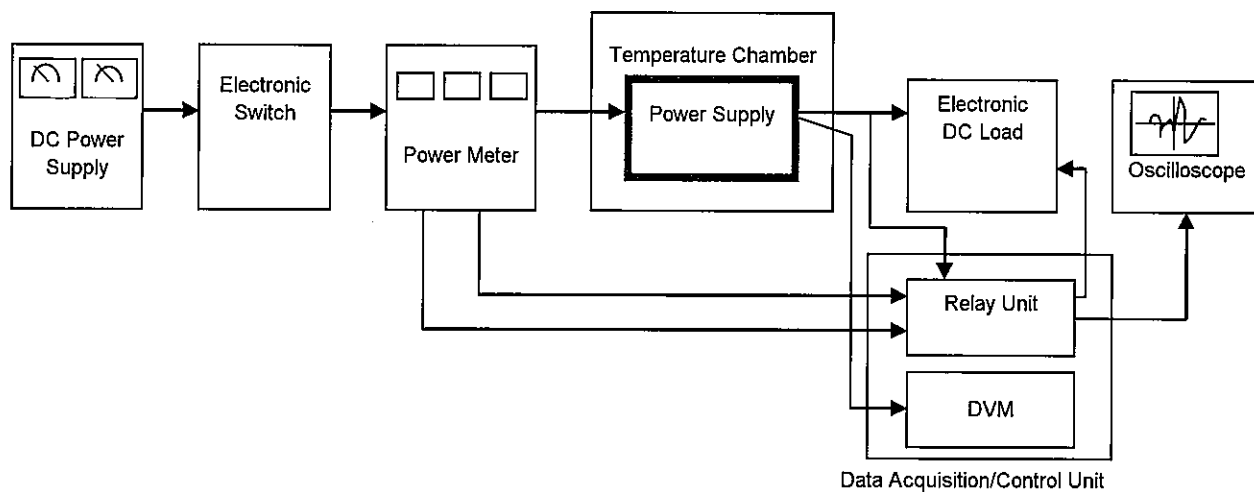


Figure A

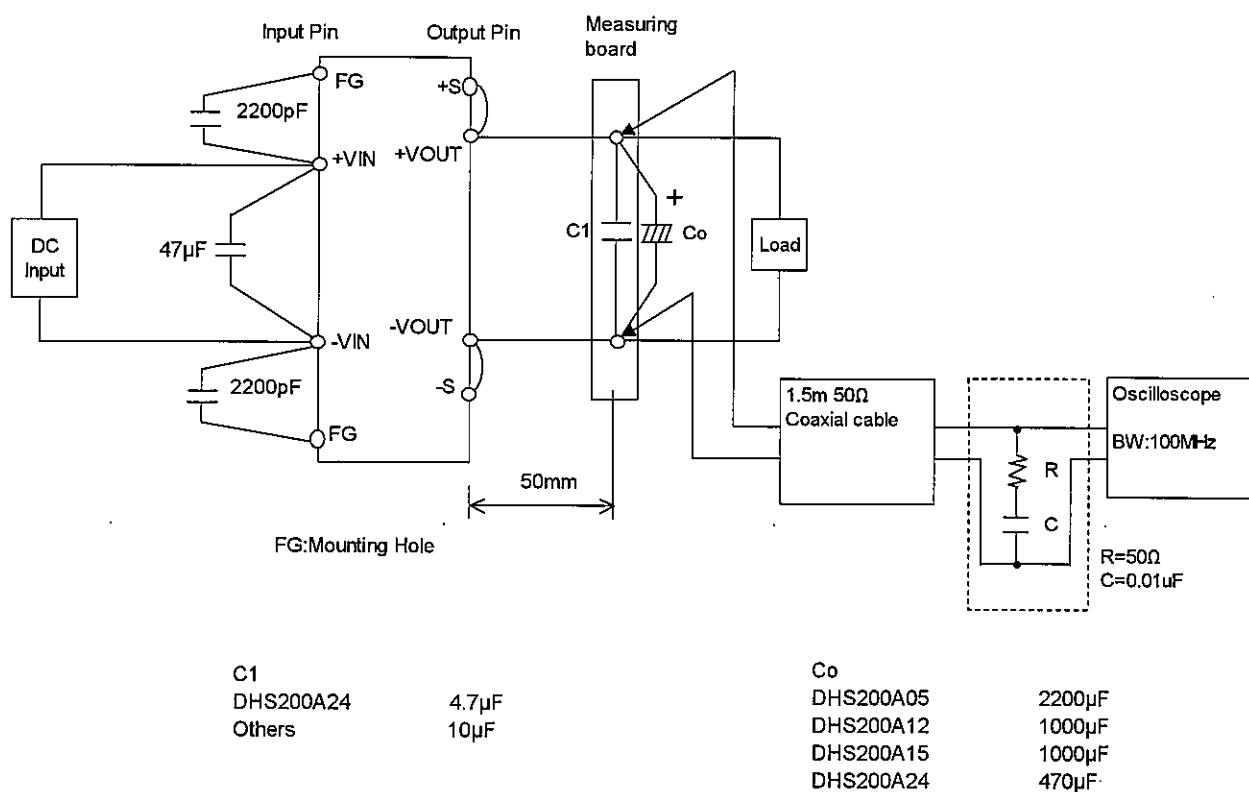


Figure B