### Specifications

#### Model

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<tbody>
<tr>
<td>Max Output Wattage [W]</td>
<td>6</td>
<td>10</td>
<td>10.8</td>
<td>10.5</td>
<td>12</td>
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<tr>
<td>DC Output</td>
<td>3V 2.0A</td>
<td>5V 2.0A</td>
<td>12V 0.9A</td>
<td>15V 0.7A</td>
<td>24V 0.5A</td>
</tr>
</tbody>
</table>

#### Input

- **Voltage [V]**
  - AC85 - 132 V or DC110 - 170
- **Current [A]**
  - 24V typ (Io=100%)
- **Frequency [Hz]**
  - 47 - 440 or DC
- **Efficiency [%]**
  - 64 typ
- **Inrush Current [mA]**
  - 20 typ (Io=100%) (At cold start)
- **Leakage Current [mA]**
  - 0.5 max (According to UL, CSA and DEN-AN)

#### Output

- **Voltage [V]**
  - 3, 5, 12, 15, 24
- **Current [A]**
  - 2.0, 2.0, 0.9, 0.7, 0.5
- **Line Regulation [mV]**
  - 20 max, 20 max, 48 max, 60 max, 96 max
- **Load Regulation [mV]**
  - 40 max, 40 max, 100 max, 120 max, 150 max
- **Ripple [mVp-p]**
  - 0 to +50°C, 0 to -50°C
  - 80 max, 140 max, 120 max, 160 max, 160 max
- **Ripple Noise [mVp-p]**
  - 0 to +50°C, 0 to -50°C
  - 50 max, 120 max, 120 max, 180 max, 180 max
- **Temperature Regulation [mA]**
  - 0 to +50°C, 0 to -50°C
  - 60 max, 60 max, 150 max, 180 max, 290 max
- **Drift [mV]**
  - *1 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
  - 20 max, 20 max, 48 max, 60 max, 96 max

- **Start-Up Time [ms]**
  - 100 max (AC85V, Io=100%)
- **Hold-Up Time [ms]**
  - 10 typ (AC85V, Io=100%, 0 to +50°C), 20 typ (AC100V, Io=100%, 0 to +50°C)
- **Output Voltage Adjustment Range [V]**
  - 2.85 - 3.6, 4.5 - 5.5, 10.8 - 13.2, 13.5 - 16.5, 21.6 - 26.4

#### Protection, Circuit and Others

- **Overcurrent Protection**
  - Works over 105% of rating and recovers automatically (AC100V)
- **OverVoltage Protection**
  - 4.00V min
- **Operating Indication**
  - LED (Green)
- **Remote Sensing**
  - Not provided
- **Remote On/Off**
  - Not provided

#### Isolation

- **Input-Output**
  - AC2.000V 1minute, Cutoff current = 10mA max. DC500V 50MΩ min (At Room Temperature)
- **Input-FG, COVER**
  - AC2.000V 1minute. Cutoff current = 10mA max. DC500V 50MΩ min (At Room Temperature)
- **Output-FG, COVER**
  - AC500V 1minute. Cutoff current = 100mA max. DC500V 50MΩ min (At Room Temperature)
- **Operating Temp, Humid. and Altitude**
  - -10 to +60°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3.000m (10,000feet) max
- **Storage Temp, Humid. and Altitude**
  - -20 to +75°C, 20 - 90%RH (Non condensing), 9.000m (30,000feets) max
- **Vibration**
  - 10 - 55Hz. 19.6m/s² (2G), 3minutes period. 60minutes each along X, Y and Z axis
- **Impact**
  - 196.1m/s² (20G), 11ms. once each X, Y and Z axis

#### Safety and Noise Regulations

- **Agency Approvals**
  - UL60950-1, C-UL Complies with DEN-AN
- **Conducted Noise**
  - Complies with FCC-B, VCCI-B

#### Others

- **Case/Weight**
  - 26 x 68 x 68mm (W x H x D) / 150g max (without cover)
- **Cooling Method**
  - Convection

---

1. Series name
2. Output wattage
3. Output voltage
4. Optional
5. G: Low leakage current
6. J: Connector type
7. N: with Cover

---

*Avoid prolonged use under over-load.*

*Series/Parallel operation with other model is not possible.*

*Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.*

*Derating is required when operated with case cover.*
**Static Characteristics (R10A-5)**

![Static Characteristics Graph](image)

**Overcurrent Characteristics (R10A-5)**

![Overcurrent Characteristics Graph](image)

**Derating Curve**

![Derating Curve Graph](image)

**External View**

![External View Image](image)

**Performance Data**

- **I/O Connector | Mating Connector**
  - CN1: B3P5-VH, VH-5N
  - CN2: B4P-VH, VH-4N

- **Terminal**
  - Chain: SVH-21-P1.1
  - Loose: BVH-21-P1.1

- **Connector type**
  - Barrier strip type
  - Terminal:
    - CN1: AC(L), AC(N)
    - CN2: B3P5-VH, B4P-VH

- **Dimensions in mm**
  - Inside of:
    - Cover: (without cover)
    - Tolerance: ±1

- **Mounting Hole**
  - Chain: SVH-21-P1.1
  - Loose: BVH-21-P1.1

- **Mounting torque:** 0.6N•m (6.3kgf•cm) max

- **Cover**
  - Optional

- **Safety Cover**
  - Optional

- **Weight**
  - 150g or less

- **Dimensions in mm**
  - Chain:
    - Chain: SVH-21-P1.1
    - Loose: BVH-21-P1.1
  - Terminal:
    - CN1: AC(L), AC(N)
    - CN2: B3P5-VH, B4P-VH

- **Performance data**
  - **Output Voltage**
    - Voltage Range:
      - CN1: AC(L), AC(N)

- **LED Name Plate**
  - Voltage Adjust

- **Name Plate**
  - 2-M3 Mounting Hole

- **Name Plate**
  - 2-M3 Mounting Hole

- **Cover**
  - Optional

- **Weight**
  - 150g or less

- **Cover**
  - Optional

- **Dimensions in mm**
  - Chain:
    - Chain: SVH-21-P1.1
    - Loose: BVH-21-P1.1
  - Terminal:
    - CN1: AC(L), AC(N)
    - CN2: B3P5-VH, B4P-VH

- **Mounting torque:** 0.6N•m (6.3kgf•cm) max
### SPECIFICATIONS

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<tbody>
<tr>
<td>MAX OUTPUT WATTAGE [W]</td>
<td>9</td>
<td>15</td>
<td>15.3</td>
<td>15.6</td>
<td>15</td>
<td>15.3</td>
<td>16.8</td>
</tr>
<tr>
<td>DC OUTPUT</td>
<td>3V 3.0A</td>
<td>5V 3A</td>
<td>9V 1.7A</td>
<td>12V 1.3A</td>
<td>15V 1.0A</td>
<td>18V 0.85A</td>
<td>24V 0.7A</td>
</tr>
</tbody>
</table>

#### INPUT

| VOLTAGE [V] | AC85 - 132 V or DC110 - 170 |
| CURRENT [A] | ACIN 100V 0.37 typ (Io=100%) |
| FREQUENCY [Hz] | 47 - 440 or DC |
| EFFICIENCY [%] | 68 typ, 72 typ, 73 typ, 75 typ, 75 typ, 76 typ, 78 typ |
| INRUSH CURRENT [mA] | 20 typ (Io=100%) (At cold start) |
| LEAKAGE CURRENT [mA] | 0.5 max (According to UL, CSA and DEN-AN) |

#### OUTPUT

| VOLTAGE [V] | 3 | 5 | 9 | 12 | 15 | 18 | 24 |
| CURRENT [A] | 3.0 | 3.0 | 1.7 | 1.3 | 1.0 | 0.85 | 0.7 |
| LINE REGULATION [mV] | 20 max | 20 max | 36 max | 48 max | 60 max | 72 max | 96 max |
| LOAD REGULATION [mV] | 40 max | 40 max | 100 max | 100 max | 120 max | 120 max | 150 max |
| RIPPLE [mVp-p] | 80 max | 80 max | 120 max | 120 max | 120 max | 120 max | 120 max |
| RIPPLE NOISE [mVp-p] | 140 max | 140 max | 160 max | 160 max | 160 max | 160 max | 160 max |
| TEMPERATURE REGULATION [mV] | 0 to +50°C | 160 max | 160 max | 180 max | 180 max | 180 max | 180 max |
| DRIFT [mV] | 20 max | 20 max | 36 max | 48 max | 60 max | 72 max | 96 max |

#### PROTECTION, CIRCUIT AND OTHERS

| OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically (ACIN 100V) |
| OVERVOLTAGE PROTECTION | 4.00V min |
| OPERATING INDICATION | LED (Green) |
| REMOTE SENSING | Not provided |
| REMOTE ON/OFF | Not provided |
| INPUT-OUTPUT | AC2.000V 1minute. Cutoff current = 10mA max. DC500V 50MΩ min (At Room Temperature) |
| INPUT-FG. COVER | AC2.000V 1minute. Cutoff current = 10mA max. DC500V 50MΩ min (At Room Temperature) |
| OUTPUT-FG. COVER | AC500V 1minute. Cutoff current = 100mA max. DC500V 50MΩ min (At Room Temperature) |
| OPERATING TEMP., HUMID. AND ALTITUDE | -10 to +60°C, 20% to 90%RH (Non condensing) (Refer to DERATING CURVE). 3.000m (10.000feet) max |
| STORAGE TEMP., HUMID. AND ALTITUDE | -20 to +75°C, 20% to 90%RH (Non condensing). 9.000m (30.000feet) max |
| VIBRATION | 10 - 55Hz. 19.6m/s² (2G), 3minutes period. 60minutes each along X, Y and Z axis |
| IMPACT | 196.1m/s² (20G). 11ms. once each X, Y and Z axis |
| SAFETY AND NOISE REGULATIONS | UL60950-1, C-UL Complies with DEN-AN |
| CONDUCTED NOISE | Complies with FCC-B, VCCI-B |
| COOLING METHOD | Convection |

### ORDERING INFORMATION

1. **Series name**
2. **Output wattage**
3. **Output voltage**
4. **Optional**
   - C : with Coating
   - G : Low leakage current
   - J : Connector type
   - N : with Cover

### Notes:

- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
- Avoid prolonged use under over-load.
- Series/Parallel operation with other model is not possible.
- Derating is required when operated with case cover.
**STATIC CHARACTERISTICS (R15A-5)**

- **Output Voltage** vs. **Input Voltage**
  - **Input Voltage**: 50 to 130 V @ 60 Hz
  - **Output Voltage**: 4.20 to 5.20 V
  - **Ripple**: 0 to 10 mVp-p

**RISE TIME & FALL TIME (R15A-5)**

- **DC Output** vs. **AC Input**
  - **AC Input**: AC100V
  - **ACIN 100V Io=100%**
  - **20ms/DIV**

**OVERCURRENT CHARACTERISTICS (R15A-5)**

- **Output Voltage** vs. **Output Current**
  - **Output Current**: 0 to 4.0 A
  - **Output Voltage**: 4.20 to 5.20 V

**INRUSH CURRENT (R15A-5)**

- **Frequency**: 60Hz
- **Load**: 100%
- **Input Voltage**: AC100V
  - **10ms/DIV**
## SPECIFICATIONS

### MODEL

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<tbody>
<tr>
<td>MAX OUTPUT WATTAGE [W]</td>
<td>15</td>
<td>25</td>
<td>25.2</td>
<td>25.2</td>
<td>25.5</td>
<td>25.2</td>
<td>26.4</td>
</tr>
<tr>
<td>DC OUTPUT</td>
<td>3V 5.0A</td>
<td>5V 5.0A</td>
<td>9V 2.8A</td>
<td>12V 2.1A</td>
<td>15V 1.7A</td>
<td>18V 1.4A</td>
<td>24V 1.1A</td>
</tr>
</tbody>
</table>

### INPUT

| VOLTAGE [V] | AC85 - 132 1 ph or DC110 - 170 |
| CURRENT [A] | ACIN | 0.58typ (Io=100%) |
| FREQUENCY [Hz] | 47 - 440 or DC |
| EFFICIENCY [%] | 69typ 73typ 75typ 76typ 76typ 77typ 79typ |
| INRUSH CURRENT [A] | 20typ (Io=100%) (At cold start) |
| LEAKAGE CURRENT [mA] | 0.5max (According to UL, CSA and DEN-AN) |

### OUTPUT

| VOLTAGE [V] | 3 5 9 |
| CURRENT [A] | 5.0 5.0 2.8 |
| LINE REGULATION [mV] | 20max 20max 36max |
| LOAD REGULATION [mV] | 40max 40max 100max |
| RIPPLE [mVp-p] | 0 to +50°C 80max 80max 120max |
| RIPPLE NOISE [mVp-p] | 0 to +50°C 120max 120max 150max |
| TEMPERATURE REGULATION [mV] | 0 to +50°C 140max 140max 160max |
| DRIFT [mV] | 0.25typ 0.25typ 0.25typ |

| START-UP TIME [ms] | 200max (ACIN 85V, Io=100%) |
| HOLD-UP TIME [ms] | 10typ (ACIN 85V, Io=100%, 0 to +50°C) 20typ (ACIN 100V, Io=100%, 0 to +50°C) |
| OUTPUT VOLTAGE ADJUSTMENT RANGE [V] | 2.85 - 3.6 4.5 - 5.5 8.1 - 9.9 10.8 - 13.2 13.5 - 16.5 16.2 - 19.8 21.6 - 26.4 |

### PROTECTION, CIRCUIT AND OTHERS

| OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically (ACIN 100V) |
| OVERVOLTAGE PROTECTION | 4.00 - 5.25V Works at 115 - 140% of rating |
| OPERATING INDICATION | LED (Green) |

### ISOLATION

| INPUT-OUTPUT | AC2.000V 1minute. Cutoff current = 10mA max. DC500V 50MΩ min (At Room Temperature) |
| INPUT-FG. COVER | AC2.000V 1minute. Cutoff current = 10mA max. DC500V 50MΩ min (At Room Temperature) |
| OUTPUT-FG. COVER | AC500V 1minute. Cutoff current = 100mA max. DC500V 50MΩ min (At Room Temperature) |

### ENVIRONMENT

| OPERATING TEMP. HUMID. AND ALTITUDE | -10 to +60°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE). 3.000m (10.000feet) max |
| TEMPERATURE, HUMID. AND ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing). 9.000m (30.000feet) max |
| VIBRATION | 10 - 55Hz. 19.6m/s² (2G). 3minutes period. 60minutes each along X, Y and Z axis |
| IMPACT | 196.1m/s² (20G). 11ms, once each X, Y and Z axis |

### SAFETY AND NOISE REGULATIONS

| AGENCY APPROVALS | UL69095-1. C-UL Complies with DEN-AN |
| CONDUCTED NOISE | Complies with FCC-B, VCCI-B |
| OTHERS | CASE SIZE/WEIGHT 31 x 69 x 104mm (W x H x D) / 250g max (without cover) |
| COOLING METHOD | Convection |

* Above is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, the input voltage held constant at the rated input/output. Avoid prolonged use under over-load. Series/Parallel operation with other model is not possible. Derating is required when operated with case cover.
**External view**

- **I/O Connector Mating Housing**
  - CN1: B3P5-VH, VHR-5N
  - CN2: B4P-VH, VHR-4N

- **Terminal**
  - Chain: SVH-21-P1.1
  - Loose: BVH-21-P1.1

- **Connector type**
  - (Mfr.: J.S.T.)

- **Barrier strip type**
  - (Mfr.: J.S.T.)

- **Weight**: 250g or less (without cover)
- **Cover**: Optional
- **Tolerance**: ±1
- **Dimensions in mm.**

**Performance data**

1. **STATIC CHARACTERISTICS (R25A-5)**
   - Output Voltage
   - Ripple
   - Input Voltage 60Hz

2. **RISE TIME & FALL TIME (R25A-5)**
   - AC Input 100V
   - Io=100%
   - 20ms/DIV

3. **OVERCURRENT CHARACTERISTICS (R25A-5)**
   - Output Voltage
   - Output Current 10A/DIV

4. **INRUSH CURRENT (R25A-5)**
   - Frequency 60Hz
   - Load 100%
   - Input voltage AC100V
   - 10ms/DIV
### SPECIFICATIONS

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</thead>
<tbody>
<tr>
<td>MAX OUTPUT WATTAGE [W]</td>
<td>30</td>
<td>50</td>
<td>50.4</td>
<td>50.4</td>
<td>51</td>
<td>50.4</td>
<td>52.8</td>
</tr>
<tr>
<td>DC OUTPUT</td>
<td>3V 10A</td>
<td>5V 10A</td>
<td>9V 5.6A</td>
<td>12V 4.2A</td>
<td>15V 3.4A</td>
<td>18V 2.8A</td>
<td>24V 2.2A</td>
</tr>
</tbody>
</table>

#### INPUT

- **VOLTAGE [V]**
  - AC85 - 132 V, or DC110 - 170
- **CURRENT [A]**
  - ACIN 100V: 1.1typ (Io=100%) (At cold start)
- **FREQUENCY [Hz]**
  - 47 - 440 or DC
- **EFFICIENCY [%]**
  - 74typ, 78typ, 79typ, 80typ, 81typ, 82typ, 83typ
- **INRUSH CURRENT [mA]**
  - 30typ (Io=100%)
- **LEAKAGE CURRENT [mA]**
  - 0.5max (According to UL, CSA and DEN-AN)

#### OUTPUT

- **VOLTAGE [V]**
  - 3591, 2, 1, 5, 1, 8, 2, 4
- **CURRENT [A]**
  - 10, 10, 5.6, 4.2, 3.4, 2.8, 2.2
- **LINE REGULATION [mV]**
  - 20max
- **LOAD REGULATION [mV]**
  - 40max
- **RIPPLE [mVp-p]**
  - 0 to +50°C: 80max
  - -10 to -0°C: 140max
- **RIPPLE NOISE [mVp-p]**
  - 0 to +50°C: 120max
  - -10 to -0°C: 160max
- **TEMPERATURE REGULATION [mV]**
  - 0 to +50°C: 50max
  - 10°C to 0°C: 60max
- **DRIFT [mV]**
  - 20max

#### PROTECTION, CIRCUIT AND OTHERS

- **OVERCURRENT PROTECTION**
  - Works over 105% of rating and recovers automatically (AC100V)
- **OVERVOLTAGE PROTECTION**
  - Works at 115 - 140% of rating
- **REMOTE SENSING**
  - Not provided
- **REMOTE ON/OFF**
  - Not provided

#### ISOLATION

- **INPUT-OUTPUT**
  - AC2.000V 1minute. Cutoff current = 10mA max. DC500V 50MΩ min (At Room Temperature)
- **INPUT-FG. COVER**
  - AC2.000V 1minute. Cutoff current = 10mA max. DC500V 50MΩ min (At Room Temperature)
- **OUTPUT-FG. COVER**
  - AC500V 1minute. Cutoff current = 100mA max. DC500V 50MΩ min (At Room Temperature)

#### ENVIRONMENT

- **OPERATING TEMP., HUMID. AND ALTITUDE**
  - -10°C to +60°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3.000m (10,000feet) max
- **STORAGE TEMP., HUMID. AND ALTITUDE**
  - -20°C to +75°C, 20 - 90%RH (Non condensing), 9.000m (30,000feet) max
- **VIBRATION**
  - 10 - 55Hz, 19.6m/s² (2G), 3minutes period. 60minutes each along X, Y and Z axis
- **IMPACT**
  - 196.1m/s² (20G), 11ms, once each X, Y and Z axis

#### SAFETY AND NOISE REGULATIONS

- **AGENCY APPROVALS**
  - UL60950-1, C-UL Complies with DEN-AN
- **CONDUCTED NOISE**
  - Complies with FCC-B, VCCI-B

#### OTHERS

- **CASE SIZE/WEIGHT**
  - 33 x 85 x 119mm (W x H x D) / 300g max (without cover)
- **COOLING METHOD**
  - Convection

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*1 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

*2 Avoid prolonged use under over-load.

*3 Parallel operation is not possible.

*4 Derating is required when operated with case cover.
### Performance data

#### STATIC CHARACTERISTICS (R50A-5)

![Output Voltage vs. Input Voltage graph](image)

<table>
<thead>
<tr>
<th>INPUT VOLTAGE (V) 60Hz</th>
<th>OUTPUT VOLTAGE (V)</th>
<th>Ripple (mVp-p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>4.20</td>
<td>50</td>
</tr>
<tr>
<td>60</td>
<td>4.40</td>
<td>60</td>
</tr>
<tr>
<td>70</td>
<td>4.60</td>
<td>70</td>
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<tr>
<td>80</td>
<td>4.80</td>
<td>80</td>
</tr>
<tr>
<td>90</td>
<td>5.00</td>
<td>90</td>
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<tr>
<td>100</td>
<td>5.20</td>
<td>100</td>
</tr>
<tr>
<td>110</td>
<td>5.40</td>
<td>110</td>
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#### RISE TIME & FALL TIME (R50A-5)

![ACIN 100V Io=100% graph](image)

- **ACIN 100V Io=100%**
- **DC Output**
- **AC Input**
- **20ms/DIV**

#### OVERCURRENT CHARACTERISTICS (R50A-5)

![Output Voltage vs. Output Current graph](image)

<table>
<thead>
<tr>
<th>OUTPUT CURRENT (A)</th>
<th>OUTPUT VOLTAGE (V)</th>
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<tr>
<td>0</td>
<td>5.00</td>
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<td>5</td>
<td>4.50</td>
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<tr>
<td>10</td>
<td>4.00</td>
</tr>
<tr>
<td>15</td>
<td>3.50</td>
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</tbody>
</table>

#### INRUSH CURRENT (R50A-5)

![Frequency 60Hz Load 100% Input voltage AC100V graph](image)

- **Frequency 60Hz**
- **Load 100%**
- **Input voltage AC100V**
- **10A/DIV**
- **10ms/DIV**
SPECIFICATIONS

**MODEL**
- **R100U-3**
- **R100U-5**
- **R100U-9**
- **R100U-12**
- **R100U-15**
- **R100U-18**
- **R100U-24**

**MAX OUTPUT WATTAGE [W]**
- **R100U-3**: 60
- **R100U-5**: 100
- **R100U-9**: 103.5
- **R100U-12**: 102
- **R100U-15**: 105
- **R100U-18**: 100.8
- **R100U-24**: 108

**DC OUTPUT**
- **3V**: 20A
- **5V**: 20A
- **9V**: 11.5A
- **12V**: 8.5A
- **15V**: 7A
- **18V**: 5.6A
- **24V**: 4.5A

**INPUT**
- **VOLTAGE [V]**
  - AC85 - 132 V
  - For DC110 - 170 V
- **CURRENT [A]**
  - ACIN 100V: 2.8typ (Io=100%)
- **FREQUENCY [Hz]**
  - 47 - 440 or DC
- **EFFICIENCY [%]**
  - 75typ, 79typ, 80typ, 82typ, 83typ, 84typ, 85typ
- **INRUSH CURRENT [A]**
  - 15typ (Io=100%)
- **LEAKAGE CURRENT [mA]**
  - 0.5max (60Hz, According to UL, CSA and DEN-AN)

**OUTPUT**
- **VOLTAGE [V]**
  - 3591, 2, 1, 5, 1, 8, 2, 4
- **CURRENT [A]**
  - 20
- **LINE REGULATION [mV]**
  - 20max, 50max
- **LOAD REGULATION [mV]**
  - 40max, 100max
- **ripples [mVp-p]**
  - 0 to +80°
  - 0 to -60°
- **TEMPERATURE REGULATION [mV]**
  - 0 to +8°C
  - 0 to -6°C
- **DRIFT [mV]**
  - 20max
- **START-UP TIME [ms]**
  - 200max (ACIN 85V, Io=100%)
- **HOLD-UP TIME [ms]**
  - 20typ (ACIN 100V, Io=100%, 0 to +50°C), 10typ (ACIN 85V, Io=100%, 0 to +50°C)
- **OUTPUT VOLTAGE ADJUSTMENT RANGE [V]**
  - 2.85 - 3.6, 4.5 - 5.5, 8.1 - 9.9, 10.8 - 13.2, 13.5 - 16.5, 16.2 - 19.8, 21.6 - 26.4

**PROTECTION, CIRCUIT AND OTHERS**
- **OVERCURRENT PROTECTION**
  - Works over 105% of rating and recovers automatically
- **OVERVOLTAGE PROTECTION**
  - 4.00 - 5.25V
  - Works at 115% - 140% of rating
- **OPERATING INDICATION**
  - LED (Green)
- **REMOTE SENSING**
  - Provided
- **REMOTE ON/OFF**
  - Not provided

**ISOLATION**
- **INPUT-OUTPUT**
  - AC2.000V 1minute, Cutoff current = 10mA max, DC500V 50MΩ min (At Room Temperature)
- **INPUT-FG, COVER**
  - AC2.000V 1minute, Cutoff current = 10mA max, DC500V 50MΩ min (At Room Temperature)
- **OUTPUT-FG, COVER**
  - AC500V 1minute, Cutoff current = 100mA max, DC500V 50MΩ min (At Room Temperature)
- **OPERATING TEMP., HUMID. AND ALTITUDE**
  - -10 to +60°C, 20% - 90%RH (Non condensing) (Refer to DERATING CURVE), 3.000m (10,000feet) max
- **STORAGE TEMP., HUMID. AND ALTITUDE**
  - -20 to +75°C, 20% - 90%RH (Non condensing), 9.000m (30,000feet) max
- **VIBRATION**
  - 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis
- **IMPACT**
  - 196.1m/s² (20G), 11ms, once each X, Y and Z axis

**SAFETY AND NOISE REGULATIONS**
- **AGENCY APPROVALS**
  - UL60950-1, CSA C22.2 No.234, EN60950-1
  - Complies with DEN-AN and IEC60950-1
- **CONDUCTED NOISE**
  - Complies with FCC-B, VCCI-B
- **COOLING METHOD**
  - Convection

**NOTES**
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
- Avoid prolonged use under over-load.
- Parallel operation with other model is not possible.
- Derating is required when operated with case cover.
Performance data

**STATIC CHARACTERISTICS (R100U-5)**

- Output Voltage
  - Lo = 100%
  - Ripple

- Input Voltage [V/60Hz]
  - 0 to 5.20
  - 50 to 130

**RISE TIME & FALL TIME (R100U-5)**

- DC Output
- AC Input
- ACIN 100V Lo = 100%
- 20ms/DIV

**OVERCURRENT CHARACTERISTICS (R100U-5)**

- Output Voltage [V]
  - 0 to 6.00
  - 4.0 to 32.0

- Output Current [A]
  - 0 to 24.0
  - 20.0 to 8.0

**DERATING CURVE**

- Load Factor [%]
  - 0 to 100
  - 10 to 80

- Ambient Temperature [°C]
  - A: Open frame
  - B: Cover attached
  - 0 to 80
  - 10 to 70

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- **Weight:** 600g or less (without cover)
- **Cover is optional**
- **Tolerance:** ±1
- **Dimensions in mm.**
- **Mounting torque:** 1.2N•m (12.8kgf•cm) max
## UNIT TYPE

**R150U**

### SPECIFICATIONS

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</thead>
<tbody>
<tr>
<td>MAX OUTPUT WATTAGE[W]</td>
<td>90</td>
<td>150</td>
<td>153</td>
<td>156</td>
<td>150</td>
<td>153</td>
<td>156</td>
</tr>
<tr>
<td>DC OUTPUT</td>
<td>3V 30A</td>
<td>5V 30A</td>
<td>9V 17A</td>
<td>12V 13A</td>
<td>15V 10A</td>
<td>18V 8.5A</td>
<td>24V 6.5A</td>
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</table>

### INPUT

| VOLTAGE[V] | AC85 - 132 1ф or DC110 - 170 |
| CURRENT[A] | 4.2typ (Io=100%) |
| FREQUENCY[Hz] | 47 - 440 or DC |
| EFFICIENCY[%] | 74typ, 78typ, 79typ, 80typ, 82typ, 83typ, 84typ |
| INRUSH CURRENT[A] | 15typ (Io=100%) |
| LEAKAGE CURRENT[mA] | 0.5max (60Hz, According to UL, CSA and DEN-AN) |

### OUTPUT

| VOLTAGE[V] | 3, 5, 9, 12, 15, 18, 24 |
| CURRENT[A] | 30, 30, 17, 13, 10, 8.5, 6.5 |
| LINE REGULATION[mV] | 20max, 36max, 43max, 50max, 60max, 67max, 72max |
| LOAD REGULATION[mV] | 40max, 100max, 120max, 150max, 180max, 200max, 240max |
| RIPPLE[mV-p-p] | 0 to +50°, 80max, 120max, 160max, 200max, 240max |
| RIPPLE NOISE[mV-p-p] | 0 to +50°, 100max, 150max, 180max, 180max, 180max |
| TEMPERATURE REGULATION[mV] | 0 to +50°, 50max, 100max, 150max, 180max, 200max |
| DRIFT[mV] | 0 to +50°, 20max, 48max, 72max, 96max |
| START-UP TIME[ms] | 200max (ACIN 85V, Io=100%) |
| HOLD-UP TIME[ms] | 20typ (ACIN 100V, Io=100%, 0 to +50°C), 10typ (ACIN 85V, Io=100%, 0 to +50°C) |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | 2.85 - 3.6, 4.5 - 5.5, 8.1 - 9.9, 10.8 - 13.2, 13.5 - 16.5, 16.2 - 19.8, 21.6 - 26.4 |

### PROTECTION CIRCUIT AND OTHERS

| OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically |
| OVERVOLTAGE PROTECTION | 4.00 - 5.25V, Works at 115% - 140% of rating |
| OPERATING INDICATION | LED (Green) |
| REMOTE SENSING | Provided |
| REMOTE ON/OFF | Not provided |

### ISOLATION

| INPUT-OUTPUT | AC2.000V 1minute, Cutoff current = 10mA max. DC500V 50MΩ min (At Room Temperature) |
| INPUT-FG, COVER | AC2.000V 1minute, Cutoff current = 10mA max. DC500V 50MΩ min (At Room Temperature) |
| OUTPUT-FG, COVER | AC500V 1minute, Cutoff current = 100mA max. DC500V 50MΩ min (At Room Temperature) |
| OPERATING TEMP, HUMIDITY AND ALTITUDE | -10 to +60°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3.000m (10,000feet) max |
| STORAGE TEMP, HUMIDITY AND ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9.000m (30,000feet) max |
| VIBRATION | 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis |
| IMPACT | 196.1m/s² (20G), 11ms. once each X, Y and Z axis |

### SAFETY AND NOISE REGULATIONS

| AGENCY APPROVALS | UL60950-1, CSA C22.2 No.234, EN60950-1 Complies with DEN-AN and IEC60950-1 |
| CONDUCTED NOISE | Complies with FCC-B, VCCI-B |

### OTHERS

| CASE SIZE/WEIGHT | 44.5×93×175mm (W×H×D) / 900g max (without cover) |
| COOLING METHOD | Convection |

*1 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

*2 Avoid prolonged use under over-load.

*3 Parallel operation with other model is not possible.

*4 Derating is required when operated with case cover.
OVERCURRENT CHARACTERISTICS (R150U-5)

STATIC CHARACTERISTICS (R150U-5)

RISE TIME & FALL TIME (R150U-5)

DERATING CURVE

Performance data

- Weight: 900g or less (without cover)
- Cover is optional
- Tolerance: ±1%
- Dimensions in mm.

Mounting torque: 1.2N•m (12.8kgf•cm) max