

# Features

## Regulated Converter

- 2:1 input voltage range
- 1.6kVDC isolation
- UL certified
- Efficiency up to 91%
- Six-sided continuous shield
- No minimum load required

**RECOM**  
DC/DC Converter

## RP10-A

10 Watt

1" x 1"

Single and Dual Output



### Description

The RP10-A series are wide input voltage range 1"x1" power DC/DC converters. Despite their small size, the RP10-A converters are fully specified devices with built-in Class A EMC filters, no minimum load, 1.6kVDC isolation, under-voltage lockout and low ripple/noise figures. The outputs are fully protected against short circuits, overcurrent and overvoltage and can be trimmed over a  $\pm 10\%$  range. The RP10-A series will find many uses in applications where board space is at a premium as no external components are required.

### Selection Guide

| Part Number                   | Input Voltage Range [VDC] | Output Voltage [VDC] | Output Current [mA] | Input <sup>(1)</sup> Current [mA] | Efficiency <sup>(1)</sup> typ. [%] | Max. Capacitive Load <sup>(2)</sup> [ $\mu$ F] |
|-------------------------------|---------------------------|----------------------|---------------------|-----------------------------------|------------------------------------|------------------------------------------------|
| RP10-123.3SA <sup>(2,3)</sup> | 9-18                      | 3.3                  | 3000                | 994                               | 83                                 | 3500                                           |
| RP10-1205SA <sup>(2,3)</sup>  | 9-18                      | 5                    | 2000                | 969                               | 86                                 | 2500                                           |
| RP10-1212SA <sup>(2,3)</sup>  | 9-18                      | 12                   | 830                 | 933                               | 89                                 | 430                                            |
| RP10-1215SA <sup>(2,3)</sup>  | 9-18                      | 15                   | 670                 | 931                               | 90                                 | 350                                            |
| RP10-1224SA <sup>(2,3)</sup>  | 9-18                      | 24                   | 416                 | 914                               | 91                                 | 125                                            |
| RP10-243.3SA <sup>(2,3)</sup> | 18-36                     | 3.3                  | 3000                | 485                               | 85                                 | 3500                                           |
| RP10-2405SA <sup>(2,3)</sup>  | 18-36                     | 5                    | 2000                | 484                               | 86                                 | 2500                                           |
| RP10-2412SA <sup>(2,3)</sup>  | 18-36                     | 12                   | 830                 | 456                               | 91                                 | 430                                            |
| RP10-2415SA <sup>(2,3)</sup>  | 18-36                     | 15                   | 670                 | 465                               | 90                                 | 350                                            |
| RP10-2424SA <sup>(2,3)</sup>  | 18-36                     | 24                   | 416                 | 457                               | 91                                 | 125                                            |
| RP10-483.3SA <sup>(2,3)</sup> | 36-75                     | 3.3                  | 3000                | 243                               | 85                                 | 3500                                           |
| RP10-4805SA <sup>(2,3)</sup>  | 36-75                     | 5                    | 2000                | 239                               | 87                                 | 2500                                           |
| RP10-4812SA <sup>(2,3)</sup>  | 36-75                     | 12                   | 830                 | 230                               | 90                                 | 430                                            |
| RP10-4815SA <sup>(2,3)</sup>  | 36-75                     | 15                   | 670                 | 233                               | 90                                 | 350                                            |
| RP10-4824SA <sup>(2,3)</sup>  | 36-75                     | 24                   | 416                 | 229                               | 91                                 | 125                                            |
| RP10-1205DA <sup>(2,3)</sup>  | 9-18                      | $\pm 5$              | $\pm 1000$          | 969                               | 86                                 | $\pm 1440$                                     |
| RP10-1212DA <sup>(2,3)</sup>  | 9-18                      | $\pm 12$             | $\pm 416$           | 935                               | 89                                 | $\pm 250$                                      |
| RP10-1215DA <sup>(2,3)</sup>  | 9-18                      | $\pm 15$             | $\pm 333$           | 925                               | 90                                 | $\pm 180$                                      |
| RP10-2405DA <sup>(2,3)</sup>  | 18-36                     | $\pm 5$              | $\pm 1000$          | 484                               | 86                                 | $\pm 1440$                                     |
| RP10-2412DA <sup>(2,3)</sup>  | 18-36                     | $\pm 12$             | $\pm 416$           | 462                               | 90                                 | $\pm 250$                                      |
| RP10-2415DA <sup>(2,3)</sup>  | 18-36                     | $\pm 15$             | $\pm 333$           | 463                               | 90                                 | $\pm 180$                                      |
| RP10-4805DA <sup>(2,3)</sup>  | 36-75                     | $\pm 5$              | $\pm 1000$          | 239                               | 87                                 | $\pm 1440$                                     |
| RP10-4812DA <sup>(2,3)</sup>  | 36-75                     | $\pm 12$             | $\pm 416$           | 229                               | 91                                 | $\pm 250$                                      |
| RP10-4815DA <sup>(2,3)</sup>  | 36-75                     | $\pm 15$             | $\pm 333$           | 231                               | 90                                 | $\pm 180$                                      |

#### Notes:

Note1: Maximum values at nominal input voltage and full load

Note2: Max. Cap load is tested at nominal input and full resistive load

### Model Numbering



#### Notes:

Note3: add suffix "P" for CTRL function with positive logic (1=ON, 0=OFF) and Trim pin  
add suffix "N" for CTRL function with negative logic (0=ON, 1=OFF) and Trim pin  
or add suffix "XC" for omitted CTRL pin (refer to "Dimension Drawing (mm)")

Note4: add suffix "-HC" for premounted Heat-sink with clamps

#### Ordering Examples

RP10-1205SA/P = 12V input, 5V output, single, positive Logic CTRL pin

RP10-4805DA/XC-HC = 48V input,  $\pm 5$ V output, dual, without CTRL pin, Heat-sink premounted



C **UL** **US**  
E196683

UL60950-1 certified  
EN55032 compliant

**Specifications** (measured @ Ta= 25°C, nom. Vin, full load unless otherwise stated)

### BASIC CHARACTERISTICS

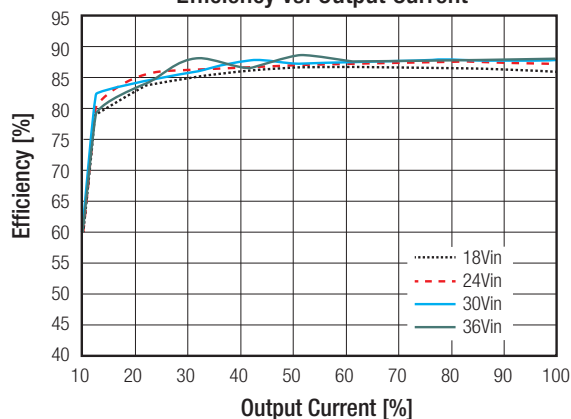
| Parameter                                            | Condition                                                |                                                          | Min.                                                                                     | Typ.                    | Max.                     |
|------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------|--------------------------|
| Internal Input Filter                                |                                                          |                                                          | Pi-Type                                                                                  |                         |                          |
| Input Voltage Range                                  | nom. Vin = 12VDC<br>nom. Vin = 24VDC<br>nom. Vin = 48VDC |                                                          | 9VDC<br>18VDC<br>36VDC                                                                   | 12VDC<br>24VDC<br>48VDC | 18VDC<br>36VDC<br>75VDC  |
| Input Surge Voltage                                  | 1s max.                                                  | nom. Vin = 12VDC<br>nom. Vin = 24VDC<br>nom. Vin = 48VDC |                                                                                          |                         | 25VDC<br>50VDC<br>100VDC |
| Under Voltage Lockout (UVLO)                         | nom. Vin = 12VDC                                         | DC-DC ON<br>DC-DC OFF                                    |                                                                                          | 8VDC                    | 9VDC                     |
|                                                      | nom. Vin = 24VDC                                         | DC-DC ON<br>DC-DC OFF                                    |                                                                                          | 16VDC                   | 18VDC                    |
|                                                      | nom. Vin = 48VDC                                         | DC-DC ON<br>DC-DC OFF                                    |                                                                                          | 33VDC                   | 36VDC                    |
| Output Voltage Trimming                              | refer to<br>"OUTPUT VOLTAGE TRIMMING"                    | 3.3Vout, 12Vout<br>Others                                | -10%<br>-10%                                                                             |                         | +10%<br>+20%             |
| Minimum Load                                         |                                                          |                                                          | 0%                                                                                       |                         |                          |
| Start-up Time                                        | Power up<br>ON/OFF CTRL                                  |                                                          |                                                                                          |                         | 30ms<br>30ms             |
| ON/OFF CTRL <sup>(6)</sup><br>refer to "ON/OFF CTRL" | Positive Logic                                           | DC-DC ON<br>DC-DC OFF                                    | Open or 3.0VDC < V <sub>CTRL</sub> < 15VDC<br>Short or 0VDC < V <sub>CTRL</sub> < 1.2VDC |                         |                          |
|                                                      | Negative Logic                                           | DC-DC ON<br>DC-DC OFF                                    | Short or 0VDC < V <sub>CTRL</sub> < 1.2VDC<br>Open or 3.0VDC < V <sub>CTRL</sub> < 15VDC |                         |                          |
| Input Current of CTRL pin                            | drive current                                            | I <sub>CTRL</sub>                                        | -0.5mA                                                                                   |                         | +1.0mA                   |
| Standby Current                                      | DC-DC OFF                                                | I <sub>in</sub>                                          |                                                                                          | 2.5mA                   |                          |
| Internal Operating Frequency                         |                                                          |                                                          | 297kHz                                                                                   | 330kHz                  | 363kHz                   |
| Output Ripple and Noise                              | measured at 20MHz BW,<br>with a 10µF/25V X7R 1206 MLCC   | 3.3Vout, 5Vout<br>12Vout, 15Vout                         |                                                                                          | 40mVp-p<br>60mVp-p      |                          |
|                                                      | measured at 20MHz BW,<br>with a 1µF/50V X7R 1206 MLCC    | 24Vout                                                   |                                                                                          | 60mVp-p                 |                          |
| Input Reflected Ripple Current                       |                                                          |                                                          |                                                                                          | 30mA <sub>p-p</sub>     |                          |

**Notes:**

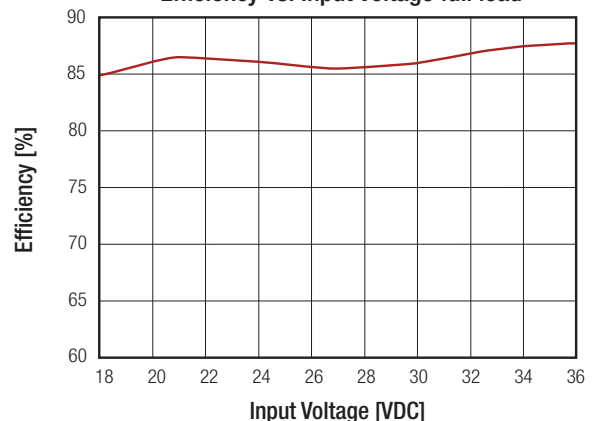
Note5: If suffix "XC" is specified, the control pin will be absent. If fitted, the ON/OFF control function can be positive or negative logic. The pin voltage is referenced to -Vin

### RP10-2405SA

Efficiency vs. Output Current

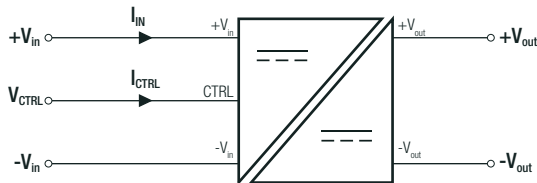


Efficiency vs. Input Voltage full load



**Specifications** (measured @  $T_a = 25^\circ\text{C}$ , nom.  $V_{in}$ , full load unless otherwise stated)

### ON/OFF CTRL

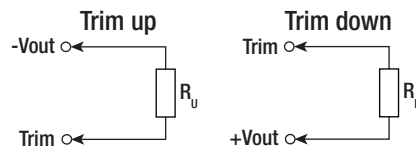


|                |           |                                                   |
|----------------|-----------|---------------------------------------------------|
| Positive Logic | DC-DC ON  | Open or $3.0\text{VDC} < V_{CTRL} < 15\text{VDC}$ |
|                | DC-DC OFF | Short or $0\text{VDC} < V_{CTRL} < 1.2\text{VDC}$ |
| Negativ Logic  | DC-DC ON  | Short or $0\text{VDC} < V_{CTRL} < 1.2\text{VDC}$ |
|                | DC-DC OFF | Open or $3.0\text{VDC} < V_{CTRL} < 15\text{VDC}$ |

### OUTPUT VOLTAGE TRIMMING

#### Output Voltage Trimming

Single output Powerline converters offer the feature of trimming the output voltage over a certain range around the nominal value by using external trim resistors. No general equation can be given for calculating the trim resistors, but the following trimtables give typical values for choosing these trimming resistors. If voltages between the given trim points are required, extrapolate between the two nearest given values to work out the resistor required or use a variable resistor to set the output voltage. Output can be externally trimmed by using the method shown below.



#### RP10-xx3.3SA

|           |         |         |         |        |        |        |        |        |        |        |       |
|-----------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|-------|
| Trim up   | 1       | 2       | 3       | 4      | 5      | 6      | 7      | 8      | 9      | 10     | [%]   |
| Vout =    | 3.333   | 3.366   | 3.399   | 3.432  | 3.465  | 3.498  | 3.531  | 3.564  | 3.597  | 3.63   | [VDC] |
| $R_u =$   | 385.071 | 191.511 | 126.990 | 94.730 | 75.374 | 62.470 | 53.253 | 46.340 | 40.963 | 36.662 | [kΩ]  |
| Trim down | 1       | 2       | 3       | 4      | 5      | 6      | 7      | 8      | 9      | 10     | [%]   |
| Vout =    | 3.267   | 3.234   | 3.201   | 3.168  | 3.135  | 3.102  | 3.069  | 3.036  | 3.003  | 2.97   | [VDC] |
| $R_d =$   | 116.719 | 54.779  | 34.133  | 23.810 | 17.616 | 13.486 | 10.537 | 8.325  | 6.604  | 5.228  | [kΩ]  |

#### RP10-xx05SA

|           |         |         |        |        |        |        |        |        |        |        |       |
|-----------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| Trim up   | 1       | 2       | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | [%]   |
| Vout =    | 5.05    | 5.10    | 5.15   | 5.20   | 5.25   | 5.30   | 5.35   | 5.4    | 5.45   | 5.50   | [VDC] |
| $R_u =$   | 253.450 | 125.700 | 83.117 | 61.825 | 49.050 | 40.533 | 34.450 | 29.888 | 26.339 | 23.500 | [kΩ]  |
| Trim up   | 11      | 12      | 13     | 14     | 15     | 16     | 17     | 18     | 19     | 20     | [%]   |
| Vout =    | 5.55    | 5.60    | 5.65   | 5.70   | 5.75   | 5.80   | 5.85   | 5.90   | 5.95   | 6.00   | [VDC] |
| $R_u =$   | 21.177  | 19.242  | 17.604 | 16.200 | 14.983 | 13.919 | 12.979 | 12.144 | 11.397 | 10.725 | [kΩ]  |
| Trim down | 1       | 2       | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | [%]   |
| Vout =    | 4.95    | 4.90    | 4.85   | 4.80   | 4.75   | 4.70   | 4.65   | 4.60   | 4.55   | 4.50   | [VDC] |
| $R_d =$   | 248.340 | 120.590 | 78.007 | 56.715 | 43.940 | 35.423 | 29.340 | 24.778 | 21.229 | 18.390 | [kΩ]  |

#### RP10-xx12SA

|           |         |         |         |         |         |         |        |        |        |        |       |
|-----------|---------|---------|---------|---------|---------|---------|--------|--------|--------|--------|-------|
| Trim up   | 1       | 2       | 3       | 4       | 5       | 6       | 7      | 8      | 9      | 10     | [%]   |
| Vout =    | 12.12   | 12.24   | 12.36   | 12.48   | 12.60   | 12.72   | 12.84  | 12.96  | 13.08  | 13.20  | [VDC] |
| $R_u =$   | 203.223 | 99.057  | 64.334  | 46.973  | 36.557  | 29.612  | 24.652 | 20.932 | 18.038 | 15.723 | [kΩ]  |
| Trim down | 1       | 2       | 3       | 4       | 5       | 6       | 7      | 8      | 9      | 10     | [%]   |
| Vout =    | 11.88   | 11.76   | 11.64   | 11.52   | 11.40   | 11.28   | 11.16  | 11.04  | 10.92  | 10.8   | [VDC] |
| $R_d =$   | 776.557 | 380.723 | 248.779 | 182.807 | 143.223 | 116.834 | 97.985 | 83.848 | 72.853 | 64.057 | [kΩ]  |

continued on next page

### Specifications (measured @ Ta= 25°C, nom. Vin, full load unless otherwise stated)

| RP10-xx15SA      |          |          |          |          |         |         |         |         |         |         |       |
|------------------|----------|----------|----------|----------|---------|---------|---------|---------|---------|---------|-------|
| Trim up          | 1        | 2        | 3        | 4        | 5       | 6       | 7       | 8       | 9       | 10      | [%]   |
| Vout =           | 15.15    | 15.30    | 15.45    | 15.60    | 15.75   | 15.90   | 16.05   | 16.20   | 16.35   | 16.50   | [VDC] |
| R <sub>u</sub> = | 161.557  | 78.223   | 50.446   | 36.557   | 28.223  | 22.668  | 18.700  | 15.723  | 13.409  | 11.557  | [kΩ]  |
| Trim up          | 11       | 12       | 13       | 14       | 15      | 16      | 17      | 18      | 19      | 20      | [%]   |
| Vout =           | 16.65    | 16.80    | 16.95    | 17.10    | 17.25   | 17.40   | 17.55   | 17.70   | 17.85   | 18.00   | [VDC] |
| R <sub>u</sub> = | 10.042   | 8.779    | 7.711    | 6.795    | 6.001   | 5.307   | 4.694   | 4.149   | 3.662   | 3.223   | [kΩ]  |
| Trim down        | 1        | 2        | 3        | 4        | 5       | 6       | 7       | 8       | 9       | 10      | [%]   |
| Vout =           | 14.85    | 14.70    | 14.55    | 14.40    | 14.25   | 14.10   | 13.95   | 13.80   | 13.65   | 13.50   | [VDC] |
| R <sub>d</sub> = | 818.223  | 401.557  | 262.668  | 193.223  | 151.557 | 123.779 | 103.938 | 89.057  | 77.483  | 68.223  | [kΩ]  |
| RP10-xx24SA      |          |          |          |          |         |         |         |         |         |         |       |
| Trim up          | 1        | 2        | 3        | 4        | 5       | 6       | 7       | 8       | 9       | 10      | [%]   |
| Vout =           | 24.24    | 24.48    | 24.72    | 24.96    | 25.20   | 25.44   | 25.68   | 25.92   | 26.16   | 26.40   | [VDC] |
| R <sub>u</sub> = | 570.333  | 278.667  | 181.444  | 132.833  | 13.667  | 84.222  | 70.333  | 59.917  | 51.815  | 45.333  | [kΩ]  |
| Trim up          | 11       | 12       | 13       | 14       | 15      | 16      | 17      | 18      | 19      | 20      | [%]   |
| Vout =           | 26.64    | 26.88    | 27.12    | 27.36    | 27.60   | 27.84   | 28.08   | 28.32   | 28.56   | 28.80   | [VDC] |
| R <sub>u</sub> = | 40.030   | 35.611   | 31.872   | 28.667   | 25.889  | 23.458  | 21.314  | 19.407  | 17.702  | 16.167  | [kΩ]  |
| Trim down        | 1        | 2        | 3        | 4        | 5       | 6       | 7       | 8       | 9       | 10      | [%]   |
| Vout =           | 23.76    | 23.52    | 23.28    | 23.04    | 22.80   | 22.56   | 22.32   | 22.08   | 21.84   | 21.60   | [VDC] |
| R <sub>d</sub> = | 4947.667 | 2439.333 | 1603.222 | 1185.167 | 934.333 | 767.111 | 647.667 | 558.083 | 488.407 | 432.667 | [kΩ]  |

### REGULATIONS

| Parameter                        | Condition                           |        | Value      |
|----------------------------------|-------------------------------------|--------|------------|
| Output Accuracy                  |                                     |        | ±1.0%      |
| Line Regulation                  | low line to high line,<br>full load | Single | ±0.2%      |
|                                  |                                     | Dual   | ±0.5%      |
| Load Regulation                  | 0% to 100% load                     | Single | ±0.2%      |
|                                  |                                     | Dual   | ±1.0%      |
|                                  | 10% to 90% load                     | Single | ±0.1%      |
|                                  |                                     | Dual   | ±0.8%      |
| Cross Regulation                 | asymmetrical 25%<>100% load         |        | ±5.0%      |
| Transient Response Recovery Time | 25% load step change                |        | 250µs typ. |

**Specifications** (measured @ Ta= 25°C, nom. Vin, full load unless otherwise stated)

**PROTECTIONS**

| Parameter                        | Condition          |         | Value                          |
|----------------------------------|--------------------|---------|--------------------------------|
| Short Circuit Protection (SCP)   |                    |         | continuous, automatic recovery |
| Over Voltage Protection (OVP)    | zener diode clamp  | 3.3Vout | 3.7 - 5.4VDC                   |
|                                  |                    | 5Vout   | 6.3 - 7.4VDC                   |
|                                  |                    | 12Vout  | 13.5 - 19.6VDC                 |
|                                  |                    | 15Vout  | 18.3 - 22.0VDC                 |
|                                  |                    | 24Vout  | 29.1 - 32.5VDC                 |
| Over Load Protection (OLP)       | % of lout rated    |         | 150% typ., Hiccup mode         |
| Isolation Voltage <sup>(6)</sup> | I/P to O/P         |         | 1.6kVDC/ 1 minute              |
|                                  | I/P to O/P to case |         | 1.0kVDC/ 1 minute              |
| Isolation Resistance             | Viso= 500VDC       |         | 1GΩ min.                       |
| Isolation Capacitance            |                    |         | 1500pF max.                    |

**Notes:**

Note6: For repeat Hi-Pot testing, reduce the time and/or the test voltage

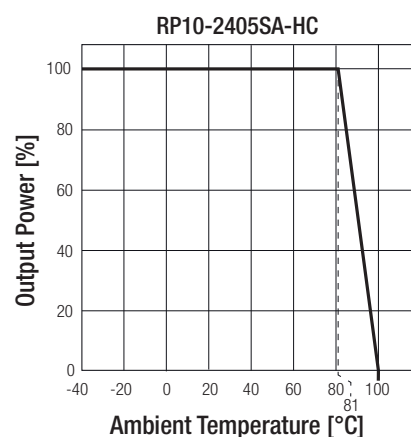
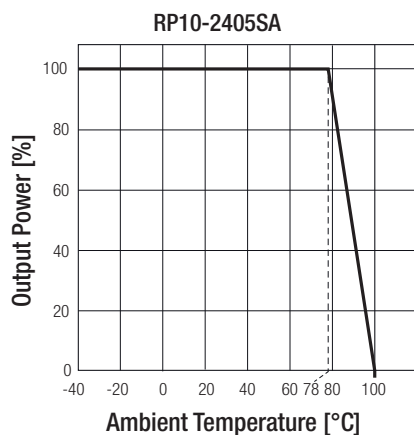
Note7: This power module is not internally fused. An input line fuse must always be used

Recom suggests: 12Vin= T2A; 24Vin= T1A; 48Vin= T0.5A slow blow types

**ENVIRONMENTAL**

| Parameter                   | Condition                        |                   | Value                        |
|-----------------------------|----------------------------------|-------------------|------------------------------|
| Operating Temperature Range | without derating                 |                   | -40°C to +78°C               |
|                             | with derating                    |                   | -40°C to +100°C              |
| Maximum Case Temperature    |                                  |                   | +105°C                       |
| Temperature Coefficient     |                                  |                   | ±0.02%/K max.                |
| Thermal Impedance           | @ natural convection             | without heat-sink | 18.2K/W                      |
|                             | 0.1m/s, vertical direction       | with heat-sink    | 15.8K/W                      |
| Operating Humidity          | non-condensing                   |                   | 5% - 95% RH                  |
| Thermal Shock               |                                  |                   | according to MIL-STD-810F    |
| Vibration                   |                                  |                   | according to MIL-STD-810F    |
| MTBF                        | according to MIL-HDBK-217F, G.B. | +25°C             | 3308 x 10 <sup>3</sup> hours |

**Derating Graph <sup>(8)</sup>**



**Notes:**

Note8: Derating graphs are valid only for the shown part numbers. If you need detailed derating-information about a part-number not shown here please contact RECOM Techsupport for detailed information

**Specifications** (measured @ Ta= 25°C, nom. Vin, full load unless otherwise stated)

### SAFETY AND CERTIFICATIONS

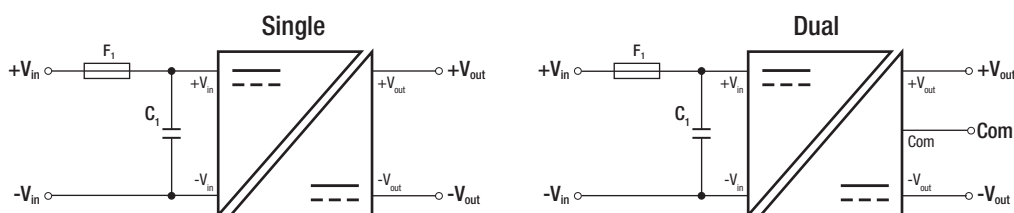
| Certificate Type (Safety)                                         | Condition | Standard                                                         |
|-------------------------------------------------------------------|-----------|------------------------------------------------------------------|
| Information Technology Equipment, General Requirements for Safety | E196683   | UL60950-1, 1st Edition<br>CAN/CSA-C22.2 No. 60950-1, 1st Edition |
| RoHS2                                                             |           | RoHS-2011/65/EU + AM-2015/863                                    |

| EMC Compliance                                                                | Condition                                                              | Standard / Criterion                 |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------|
| Electromagnetic compatibility of multimedia equipment - Emission requirements | without external filter<br>refer to <b>"EMC Filtering Suggestions"</b> | EN55032, Class A<br>EN55032, Class B |
| ESD Electrostatic discharge immunity test                                     | Air ±8kV and Contact ±6kV                                              | EN61000-4-2, Criteria A              |
| Radiated, radio-frequency, electromagnetic field immunity test                | 10V/m                                                                  | EN61000-4-3, Criteria A              |
| Fast Transient and Burst Immunity <sup>(9)</sup>                              | ±2kV                                                                   | EN61000-4-4, Criteria A              |
| Surge Immunity <sup>(9)</sup>                                                 | ±1kV                                                                   | EN61000-4-5, Criteria A              |
| Immunity to conducted disturbances, induced by radio-frequency fields         | 3Vr.m.s                                                                | EN61000-4-6, Criteria A              |
| Power Magnetic Field Immunity                                                 | 100A/m continuous; 1000A/m 1s                                          | EN61000-4-8, Criteria A              |

**Notes:**

Note9: An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5  
Recom suggests Nippon chemi-con KY series 220µF/100V

### EMC Filtering Suggestions according to EN55032



### Component List Class B

| MODEL                    | C1                    |
|--------------------------|-----------------------|
| RP10-12xxSA, RP10-12xxDA | 10µF/25V, 1812 MLCC   |
| RP10-24xxSA, RP10-24xxDA | 6.8µF/50V, 1812 MLCC  |
| RP10-48xxSA, RP10-48xxDA | 4.7µF/100V, 1812 MLCC |

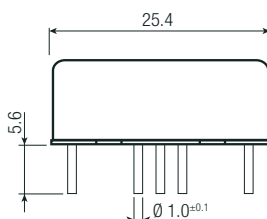
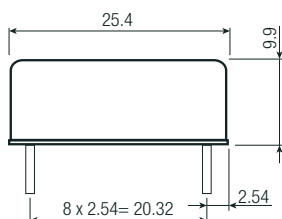
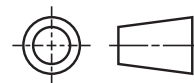
### DIMENSIONS AND PHYSICAL CHARACTERISTICS

| Parameter          | Type                                | Value                                             |
|--------------------|-------------------------------------|---------------------------------------------------|
| Material           | case<br>base<br>potting             | copper alloy C2680<br>FR4 PCB<br>epoxy (UL94 V-0) |
| Dimensions (LxWxH) | without Heat-sink<br>with Heat-sink | 25.4 x 25.4 x 9.9mm<br>31.4 x 25.4 x 16.5mm       |
| Weight             | without Heat-sink<br>with Heat-sink | 16.5g<br>23g                                      |

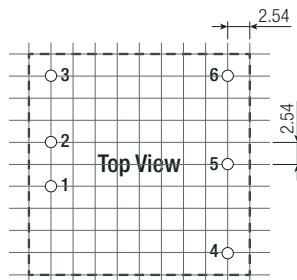
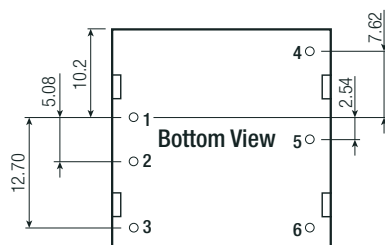
continued on next page

Specifications (measured @ Ta= 25°C, nom. Vin, full load unless otherwise stated)

Dimension Drawing (mm)



Recommended Footprint Details



Pinning Information

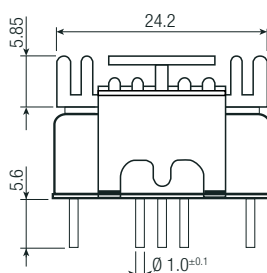
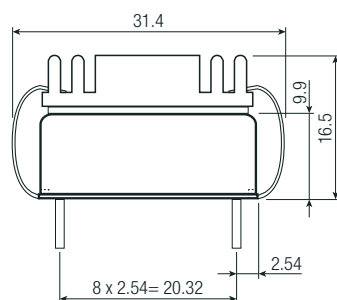
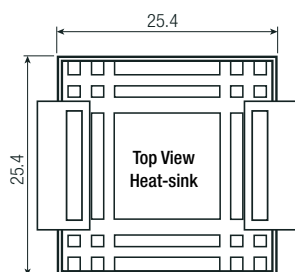
| Pin # | Single              | Dual                | "/XC"                 |
|-------|---------------------|---------------------|-----------------------|
| 1     | +Vin                | +Vin                | +Vin                  |
| 2     | -Vin                | -Vin                | -Vin                  |
| 3     | CTRL <sup>(3)</sup> | CTRL <sup>(3)</sup> | no Pin <sup>(3)</sup> |
| 4     | +Vout               | +Vout               | +Vout                 |
| 5     | Trim                | Com                 | Trim                  |
| 6     | -Vout               | -Vout               | -Vout                 |

Pin Pitch Tolerance  $\pm 0.25\text{mm}$

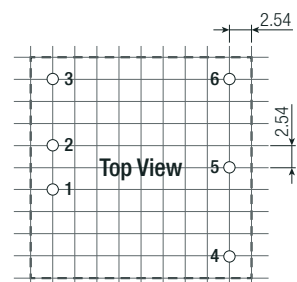
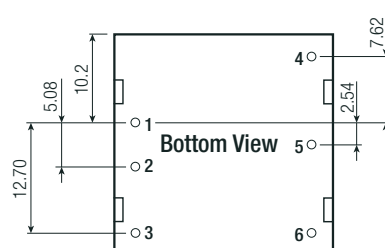
Tolerance: xx.x=  $\pm 0.5\text{mm}$

xx.xx=  $\pm 0.25\text{mm}$

Dimension Drawing with Heat-sink (mm)



Recommended Footprint Details



Pinning Information

| Pin # | Single              | Dual                | "/XC"                 |
|-------|---------------------|---------------------|-----------------------|
| 1     | +Vin                | +Vin                | +Vin                  |
| 2     | -Vin                | -Vin                | -Vin                  |
| 3     | CTRL <sup>(3)</sup> | CTRL <sup>(3)</sup> | no Pin <sup>(3)</sup> |
| 4     | +Vout               | +Vout               | +Vout                 |
| 5     | Trim                | Com                 | Trim                  |
| 6     | -Vout               | -Vout               | -Vout                 |

Pin Pitch Tolerance  $\pm 0.25\text{mm}$

Tolerance: xx.x=  $\pm 0.5\text{mm}$

xx.xx=  $\pm 0.25\text{mm}$

**Specifications** (measured @ Ta= 25°C, nom. Vin, full load unless otherwise stated)

**PACKAGING INFORMATION**

| Parameter                   | Type           |                   | Value                  |
|-----------------------------|----------------|-------------------|------------------------|
| Packaging Dimension (LxWxH) | tube           | without heat-sink | 257.0 x 28.5 x 21.0mm  |
|                             | tray           | with heat-sink    | 230.0 x 180.0 x 28.0mm |
| Packaging Quantity          | tube           | without heat-sink | 8pcs                   |
|                             | tray           | with heat-sink    | 20pcs                  |
| Storage Temperature Range   |                |                   | -55°C to +125°C        |
| Storage Humidity            | non-condensing |                   | 5% - 95% RH            |

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