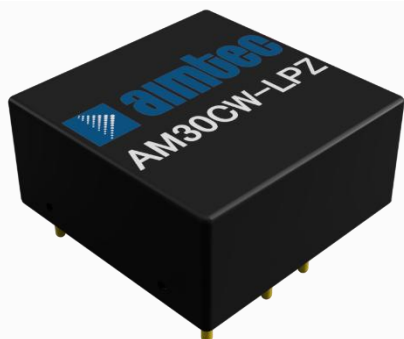


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## AM30CW-LPZ



1" x 1"

The AM30CW-LPZ is a 30W DC/DC converter that offers a regulated output which contributes to a more stable and reliable output performance. It features a wide 4:1 input voltage range of 9-75VDC, which will benefit your new system design.

This series offers great operating temperatures, from -40°C to 85°C. Furthermore, an output short circuit protection (OSCP), over-current protection (OCP), over-voltage protection (OVP), and under voltage lock-out (UVLO) come standard with the series.

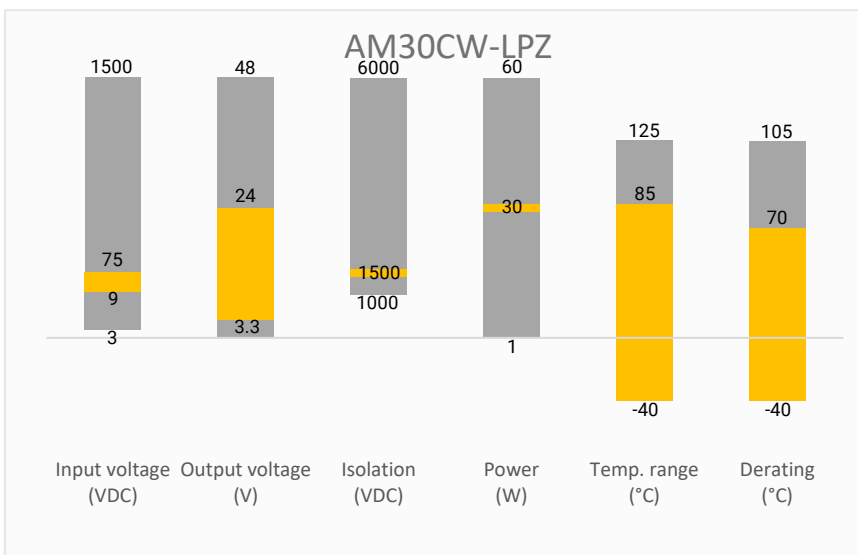
The AM30CW-LPZ is suitable for distributed power supply systems, industrial controls, power grid, instruments, and communications applications.

## Features

- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 1500VDC
- Low ripple & noise, 100mV (p-p), typ.
- Regulated Output
- 1" x 1" package
- Output short circuit, over-current, over-voltage, input under voltage protection



## Summary



## Training



Product Training Video  
(click to open)



Press Release

Coming Soon!

Application Notes

## Applications



Power Grid



Industrial



Telecom



Instrumentation

## Models & Specifications

### Single Output

| Model           | Input Voltage (VDC) | Output Voltage (VDC) | Input Current (mA TYP) |           | Output Current Max (mA) Full Load | Maximum Capacitive Load (μF) | Efficiency Full Load Typ. (%) |
|-----------------|---------------------|----------------------|------------------------|-----------|-----------------------------------|------------------------------|-------------------------------|
|                 |                     |                      | No Load                | Full Load |                                   |                              |                               |
| AM30CW-2403SLPZ | 24 (9-36)           | 3.3                  | 6                      | 982       | 6000                              | 10000                        | 84                            |
| AM30CW-2405SLPZ | 24 (9-36)           | 5                    | 4                      | 1420      | 6000                              | 10000                        | 88                            |
| AM30CW-2412SLPZ | 24 (9-36)           | 12                   | 4                      | 1388      | 2500                              | 1500                         | 89                            |
| AM30CW-2415SLPZ | 24 (9-36)           | 15                   | 4                      | 1388      | 2000                              | 1000                         | 89                            |
| AM30CW-2424SLPZ | 24 (9-36)           | 24                   | 4                      | 1388      | 1250                              | 750                          | 90                            |
| AM30CW-4803SLPZ | 48 (18-75)          | 3.3                  | 10                     | 497       | 6000                              | 7200                         | 83                            |
| AM30CW-4805SLPZ | 48 (18-75)          | 5                    | 8                      | 710       | 6000                              | 7200                         | 87                            |
| AM30CW-4812SLPZ | 48 (18-75)          | 12                   | 8                      | 710       | 2500                              | 1000                         | 88                            |
| AM30CW-4815SLPZ | 48 (18-75)          | 15                   | 8                      | 710       | 2000                              | 1500                         | 88                            |
| AM30CW-4824SLPZ | 48 (18-75)          | 24                   | 8                      | 710       | 1250                              | 470                          | 89                            |

### Input Specification

| Parameters                   | Conditions                                                                                              | Typical | Maximum  | Units |
|------------------------------|---------------------------------------------------------------------------------------------------------|---------|----------|-------|
| Voltage Types                |                                                                                                         |         | 4:1      |       |
| Filter                       | PI filter                                                                                               |         |          |       |
| Absolute maximum rating      | 24Vin models, 1 sec.                                                                                    |         | -0.7~50  | VDC   |
|                              | 48Vin models, 1 sec.                                                                                    |         | -0.7~100 | VDC   |
| Input reflected current      | 24Vin models                                                                                            | 100     |          | mA    |
|                              | 48Vin models                                                                                            | 40      |          | mA    |
| Input Under Voltage turn off | 24Vin models                                                                                            | 5.5~7.5 |          | VDC   |
|                              | 48Vin models                                                                                            | 12~15.5 |          | VDC   |
| Startup Voltage              | 24Vin models                                                                                            |         | 9        | VDC   |
|                              | 48Vin models                                                                                            |         | 18       | VDC   |
| Remote On/Off control        | ON - open or pulled high (3.5 - 12 VDC)<br>OFF - pulled low to GND (0 - 1.2 VDC), idle current 7mA max. |         |          |       |

### Isolation Specification

| Parameters               | Conditions                   | Typical | Maximum | Units |
|--------------------------|------------------------------|---------|---------|-------|
| Tested isolation voltage | Input / output 60 sec, ≤ 1mA | 1500    |         | VDC   |
| Resistance               | 500VDC                       | ≥1000   |         | MΩ    |
| Capacitance              | Input / output, 100KHz/0.1V  | 2000    |         | pF    |

### Output Specification

| Parameters                   | Conditions           | Typical | Maximum | Units |
|------------------------------|----------------------|---------|---------|-------|
| Voltage Tolerance            | 5% to 100% load      | ±1      | ±3      | %     |
| Line regulation              | Full load, LL to HL  | ±0.2    | ±0.5    | %     |
| Load regulation              | 5% to 100% load      | ±0.5    | ±1      | %     |
| Voltage adjustment           |                      |         | ±10     | %     |
| Transient recovery time      | 25% load step change | 250     | 500     | μs    |
| Transient recovery deviation | 25% load step change | ±3      | ±8      | %     |

|                |                 |     |     |          |
|----------------|-----------------|-----|-----|----------|
| Ripple & Noise | 20MHz bandwidth | 100 | 200 | mV pk-pk |
|----------------|-----------------|-----|-----|----------|

## General Specifications

| Parameters                    | Conditions                                           | Minimum | Typical | Maximum | Units |
|-------------------------------|------------------------------------------------------|---------|---------|---------|-------|
| Switching frequency           | 100% load                                            |         | 330     |         | KHz   |
| Over Current protection       | Input voltage range                                  | 110     | 150     |         | %Io   |
| Over voltage protection       | Input voltage range                                  | 110     | 140     |         | %Vo   |
| Short circuit protection      | Continuous, Auto recovery                            |         |         |         |       |
| Operating temperature         | With derating                                        | -40     |         | 85      | °C    |
| Storage temperature           |                                                      | -55     |         | 125     | °C    |
| Temperature coefficient       | 100% Load                                            |         |         | ± 0.02  | %/°C  |
| Maximum soldering temperature | 1.5mm from case for 10 sec.                          |         |         | 300     | °C    |
| Cooling                       | Free air convection                                  |         |         |         |       |
| Humidity                      | Non-condensing                                       | 5       |         | 95      | % RH  |
| Case material                 | Aluminum alloy                                       |         |         |         |       |
| Weight                        |                                                      |         | 21      |         | g     |
| Dimensions (L x W x H)        | 1.00 x 1.00 x 0.47 inches (25.40 × 25.40 × 12.00 mm) |         |         |         |       |
| MTBF                          | > 1 000 000 hrs (MIL-HDBK -217F, t=+25°C)            |         |         |         |       |

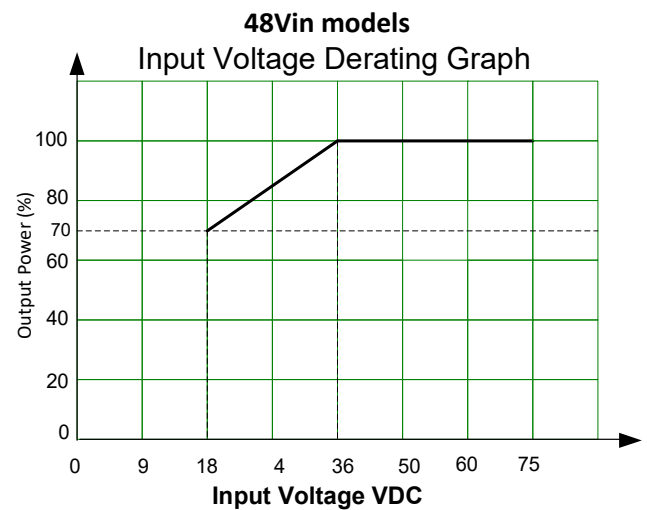
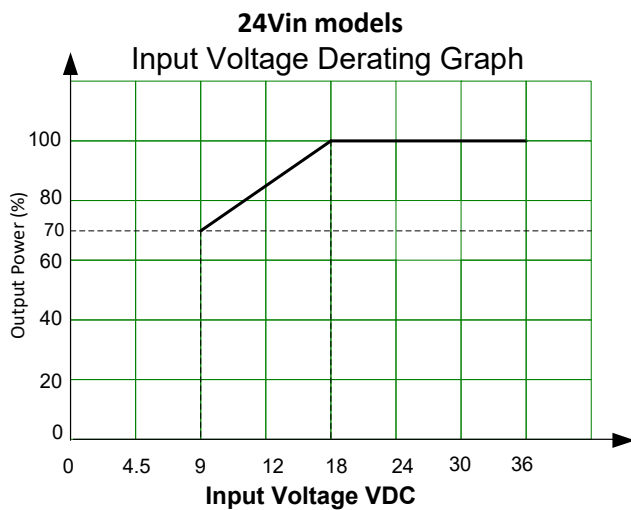
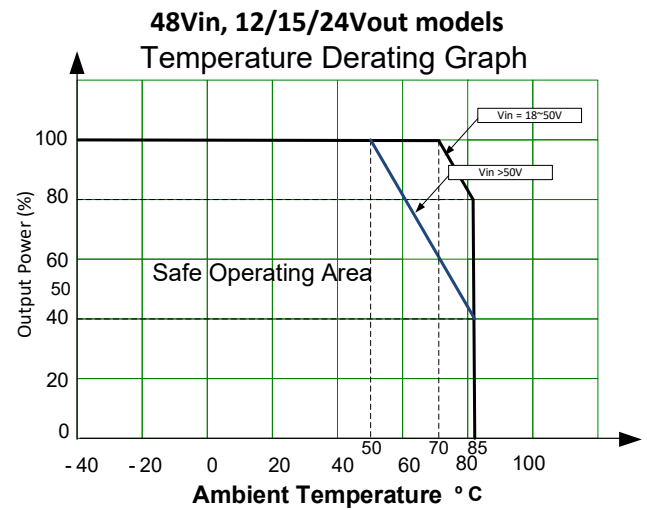
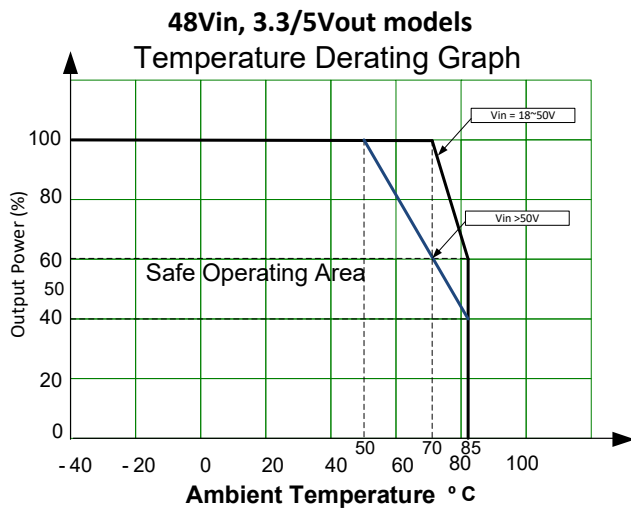
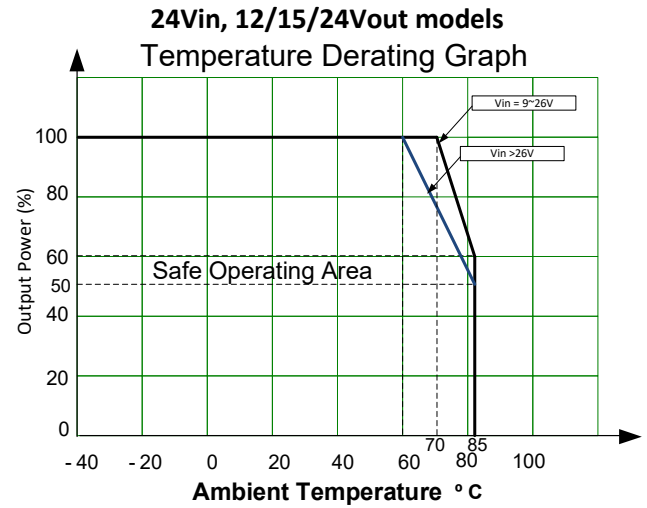
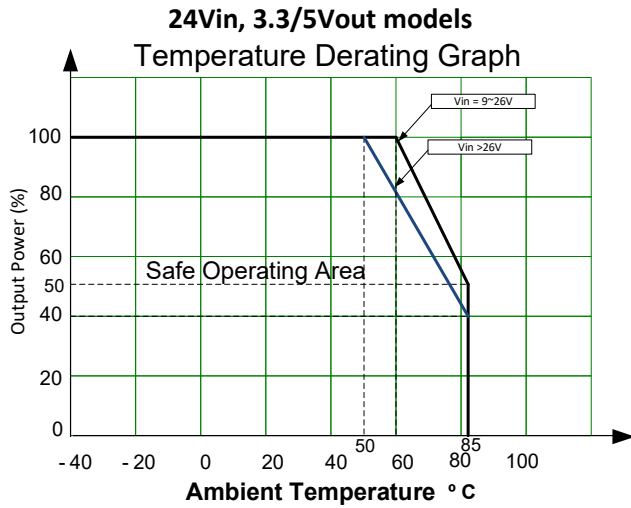
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

## Safety Specifications

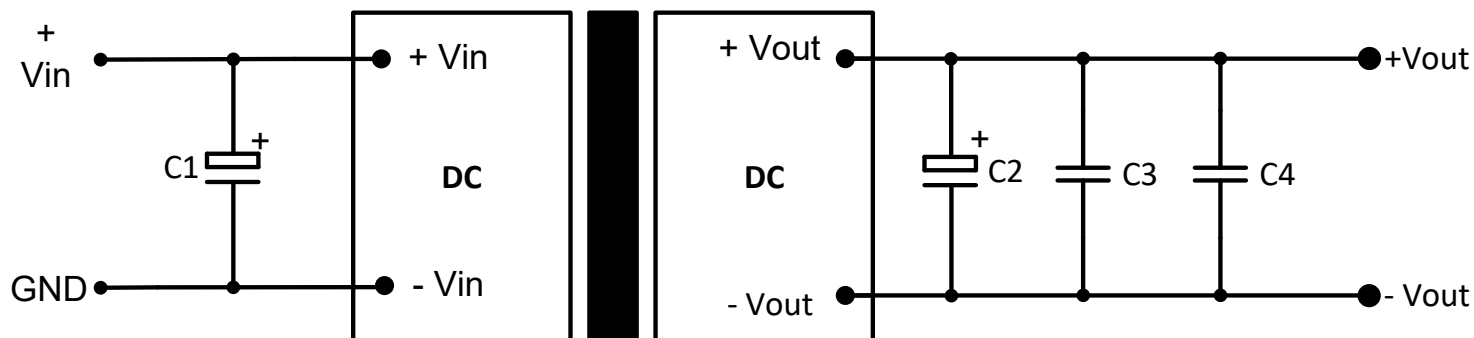
### Parameters

|           |                                          |                                 |
|-----------|------------------------------------------|---------------------------------|
| Standards | Designed to meet IEC/UL/EN62368-1        |                                 |
|           | EMI - Conducted and radiated emission    | CISPR32/EN55032, Class A        |
|           | Electrostatic Discharge Immunity         | IEC/EN 61000-4-2                |
|           | RF, Electromagnetic Field Immunity       | IEC/EN 61000-4-3                |
|           | Electrical Fast Transient/Burst Immunity | IEC/EN 61000-4-4                |
|           | Surge Immunity                           | IEC/EN 61000-4-5                |
|           | RF, Conducted Disturbance Immunity       | IEC/EN 61000-4-6                |
|           | Vibration                                | IEC/EN61373, category 1/grade B |

## Derating



## Typical Application Circuit



| Vin   | C1          | C2          | C3         | C4          |
|-------|-------------|-------------|------------|-------------|
| 24VDC | 100 $\mu$ F | 470 $\mu$ F | 10 $\mu$ F | 0.1 $\mu$ F |
| 48VDC | 100 $\mu$ F | 470 $\mu$ F | 22 $\mu$ F | 10 $\mu$ F  |

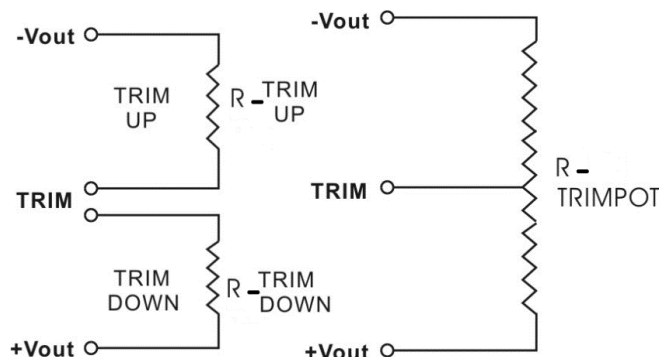
## Trimming



Output voltage can be externally trimmed by utilizing the methods as shown below

### Fixed Resistor

### Variable Potentiometer



Leave open if not used.

## 3.3V Output

| Trim down %  | 1        | 2       | 3       | 4       | 5       | 6      | 7      | 8      | 9      | 10     |
|--------------|----------|---------|---------|---------|---------|--------|--------|--------|--------|--------|
| Vout (VDC)   | 3.267    | 3.234   | 3.201   | 3.168   | 3.135   | 3.102  | 3.069  | 3.036  | 3.003  | 2.970  |
| Rt down (KΩ) | 1121.642 | 378.474 | 220.234 | 151.369 | 112.834 | 88.207 | 71.111 | 58.549 | 48.928 | 41.324 |
| Trim up %    | 1        | 2       | 3       | 4       | 5       | 6      | 7      | 8      | 9      | 10     |
| Vout (VDC)   | 3.333    | 3.366   | 3.399   | 3.432   | 3.465   | 3.498  | 3.531  | 3.564  | 3.597  | 3.630  |
| Rt up (KΩ)   | 243.933  | 139.191 | 95.012  | 70.649  | 55.211  | 44.554 | 36.755 | 30.799 | 26.103 | 22.305 |

## 5V Output

| Trim down %  | 1         | 2       | 3      | 4      | 5      | 6     | 7     | 8     | 9     | 10    |
|--------------|-----------|---------|--------|--------|--------|-------|-------|-------|-------|-------|
| Vout (VDC)   | 4.950     | 4.900   | 4.850  | 4.800  | 4.750  | 4.700 | 4.680 | 4.600 | 4.550 | 4.500 |
| Rt down (KΩ) | 36.242    | 18.716  | 9.546  | 3.907  | 0.089  | --    | --    | --    | --    | --    |
| Trim up %    | 1         | 2       | 3      | 4      | 5      | 6     | 7     | 8     | 9     | 10    |
| Vout (VDC)   | 5.060     | 5.100   | 5.150  | 5.200  | 5.250  | 5.300 | 5.350 | 5.400 | 5.450 | 5.500 |
| Rt up (KΩ)   | 21957.654 | 131.637 | 49.119 | 25.428 | 14.188 | 7.626 | 3.324 | 0.287 | --    | --    |

## 12V Output

| Trim down %  | 1       | 2       | 3       | 4       | 5      | 6      | 7      | 8      | 9      | 10     |
|--------------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|
| Vout (VDC)   | 11.880  | 11.760  | 11.640  | 11.520  | 11.400 | 11.280 | 11.160 | 11.040 | 10.920 | 10.800 |
| Rt down (KΩ) | 522.185 | 269.246 | 175.390 | 126.441 | 96.391 | 76.066 | 61.403 | 50.325 | 41.660 | 34.698 |
| Trim up %    | 1       | 2       | 3       | 4       | 5      | 6      | 7      | 8      | 9      | 10     |
| Vout (VDC)   | 12.120  | 12.240  | 12.360  | 12.480  | 12.600 | 12.720 | 12.840 | 12.960 | 13.080 | 13.200 |
| Rt up (KΩ)   | 187.313 | 72.848  | 39.563  | 23.705  | 14.426 | 8.337  | 4.033  | 0.830  | --     | --     |

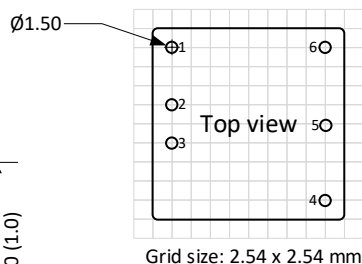
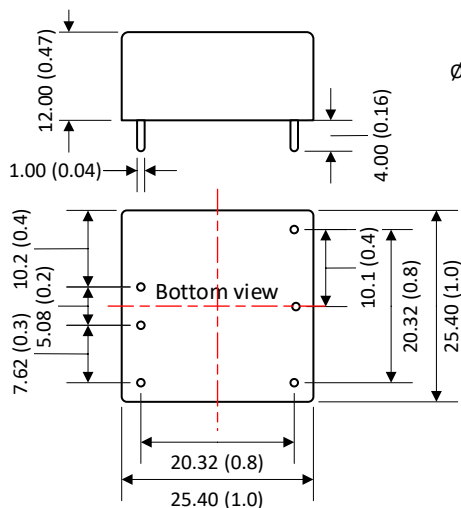
## 15V Output

| Trim down %  | 1       | 2       | 3       | 4       | 5       | 6       | 7       | 8      | 9      | 10     |
|--------------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|
| Vout (VDC)   | 14.850  | 14.700  | 14.550  | 14.400  | 14.250  | 14.100  | 13.950  | 13.800 | 13.650 | 13.500 |
| Rt down (KΩ) | 675.367 | 382.496 | 260.958 | 194.429 | 152.455 | 123.560 | 102.455 | 86.363 | 73.689 | 63.447 |
| Trim up %    | 1       | 2       | 3       | 4       | 5       | 6       | 7       | 8      | 9      | 10     |
| Vout (VDC)   | 15.150  | 15.300  | 15.450  | 15.600  | 15.750  | 15.900  | 16.050  | 16.200 | 16.350 | 16.500 |
| Rt up (KΩ)   | 323.076 | 105.467 | 56.466  | 34.831  | 22.640  | 14.818  | 9.373   | 5.365  | 2.291  | --     |

## 24V Output

| Trim down %  | 1       | 2       | 3       | 4       | 5       | 6       | 7       | 8      | 9      | 10     |
|--------------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|
| Vout (VDC)   | 23.760  | 23.520  | 23.280  | 23.040  | 22.800  | 22.560  | 22.320  | 22.080 | 21.840 | 21.600 |
| Rt down (KΩ) | 635.592 | 358.741 | 246.163 | 185.102 | 146.779 | 120.487 | 101.330 | 86.750 | 75.282 | 66.025 |
| Trim up %    | 1       | 2       | 3       | 4       | 5       | 6       | 7       | 8      | 9      | 10     |
| Vout (VDC)   | 24.240  | 24.480  | 24.720  | 24.960  | 25.200  | 25.440  | 25.680  | 25.920 | 26.160 | 26.400 |
| Rt up (KΩ)   | 154.790 | 53.216  | 28.902  | 17.987  | 11.787  | 7.790   | 4.999   | 2.939  | 1.357  | 0.104  |

## Dimensions



Note:  
Unit: mm (inch)  
Pin tolerance:  $\pm 0.10$  (0.004)  
General tolerance:  $\pm 0.5$  (0.02)

| Pin Out Specifications |               |               |
|------------------------|---------------|---------------|
| Pin                    | Single        | Dual          |
| 1                      | Remote On/Off | Remote On/Off |
| 2                      | -V Input      | -V Input      |
| 3                      | +V Input      | +V Input      |
| 4                      | +V Output     | +V Output     |
| 5                      | Trim          | Com           |
| 6                      | -V Output     | -V Output     |

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