

**FEATURES:**

- Wide Input 2:1 Range
- Full SMD Technology
- 1500 VDC Isolation
- Efficiency up to 91%
- Adjustable Output Voltage
- Remote ON/OFF Function
- Over Current, Voltage, & Temperature Protection
- Soft Start

**Models: Single output**

| Model        | Input – Voltage (V) | Output Voltage (V) | Output Current max (A) | Isolation (VDC) | Max Capacitive Load (uF) | Efficiency (%) |
|--------------|---------------------|--------------------|------------------------|-----------------|--------------------------|----------------|
| AM30K-1203SZ | 9-18                | 3.3                | 5.5                    | 1500            | 15000                    | 83             |
| AM30K-1205SZ | 9-18                | 5                  | 5.0                    | 1500            | 10000                    | 86             |
| AM30K-1212SZ | 9-18                | 12                 | 2.5                    | 1500            | 2200                     | 90             |
| AM30K-1215SZ | 9-18                | 15                 | 2.0                    | 1500            | 1000                     | 90             |
| AM30K-2403SZ | 18-36               | 3.3                | 5.5                    | 1500            | 15000                    | 84             |
| AM30K-2405SZ | 18-36               | 5                  | 5.0                    | 1500            | 10000                    | 87             |
| AM30K-2412SZ | 18-36               | 12                 | 2.5                    | 1500            | 2200                     | 91             |
| AM30K-2415SZ | 18-36               | 15                 | 2.0                    | 1500            | 1000                     | 91             |
| AM30K-4803SZ | 36-75               | 3.3                | 5.5                    | 1500            | 15000                    | 84             |
| AM30K-4805SZ | 36-75               | 5                  | 5.0                    | 1500            | 10000                    | 87             |
| AM30K-4812SZ | 36-75               | 12                 | 2.5                    | 1500            | 2200                     | 91             |
| AM30K-4815SZ | 36-75               | 15                 | 2.0                    | 1500            | 1000                     | 91             |

Add suffix “-K” for optional heat sink

**Models: Dual output**

| Model        | Input – Voltage (V) | Output Voltage (V) | Output Current max (A) | Isolation (VDC) | Max Capacitive Load (uF) | Efficiency (%) |
|--------------|---------------------|--------------------|------------------------|-----------------|--------------------------|----------------|
| AM30K-1212DZ | 9-18                | ±12                | ±1.25                  | 1500            | ±1000                    | 90             |
| AM30K-1215DZ | 9-18                | ±15                | ±1.0                   | 1500            | ±680                     | 90             |
| AM30K-2412DZ | 18-36               | ±12                | ±1.25                  | 1500            | ±1000                    | 91             |
| AM30K-2415DZ | 18-36               | ±15                | ±1.0                   | 1500            | ±680                     | 91             |
| AM30K-4812DZ | 36-75               | ±12                | ±1.25                  | 1500            | ±1000                    | 90             |
| AM30K-4815DZ | 36-75               | ±15                | ±1.0                   | 1500            | ±680                     | 90             |

Add suffix “-K” for optional heat sink

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.

**Input Specifications**

| Input Specifications                 | Nominal                                                                                        | Typical                | Maximum         | Units |
|--------------------------------------|------------------------------------------------------------------------------------------------|------------------------|-----------------|-------|
| Voltage range                        | 12<br>24<br>48                                                                                 | 9-18<br>18-36<br>36-75 |                 | VDC   |
| Filter                               | $\pi$ (Pi) Network                                                                             |                        |                 |       |
| Start up time                        |                                                                                                | 20                     |                 | ms    |
| Absolute Maximum Rated Input Voltage | 12<br>24<br>48                                                                                 |                        | 25<br>50<br>100 | VDC   |
| Peak Input Voltage time              |                                                                                                |                        | 100             | ms    |
| On/Off Control                       | ON – high or open (2.5V TO 5.5V); OFF – low (-0.7V to 0.8V or short circuit between pin 2 & 3) |                        |                 |       |

**Isolation Specifications**

| Parameters         | Conditions | Typical | Rated | Units |
|--------------------|------------|---------|-------|-------|
| Tested I/O voltage | 3 sec      |         | 1500  | VDC   |
| Resistance         |            | 1000    |       | MOhm  |
| Capacitance        |            | 1200    |       | pF    |

## Output Specifications

| Output Specifications               | Conditions         | Typical | Maximum | Units  |
|-------------------------------------|--------------------|---------|---------|--------|
| Voltage accuracy                    |                    | ±5      |         | %      |
| Voltage balance (Dual Output model) | Balanced Load      | ±5      |         | %      |
| Over voltage protection             |                    | 125     |         | %      |
| Over current protection             |                    | 120     |         | %      |
| Short Circuit protection            | Continuous         |         |         |        |
| Short circuit restart               | Auto Recovery      |         |         |        |
| Line voltage regulation (Single)    | HL-LL              | ±5      |         | %      |
| Line voltage regulation (Dual)      | HL-LL              | ±5      |         | %      |
| Load voltage regulation (Single)    | 10% to 100% Load   | ±0.5    |         | %      |
| Load voltage regulation (Dual)      | 10% to 100% Load   | ±0.5    |         | %      |
| Temperature coefficient             |                    | ±0.02   |         | %/°C   |
| Ripple & Noise                      | At 20MHz Bandwidth | 75      |         | m Vp-p |
| Voltage adjustment range            |                    | ±10     |         | %      |

## General Specifications

| Input Specifications        | Conditions                                             | Typical                  | Maximum     | Units |
|-----------------------------|--------------------------------------------------------|--------------------------|-------------|-------|
| Switching frequency         | 100% load                                              | 270                      |             | KHz   |
| Operating temperature       | With derating above 60 °C (see graph below)            |                          | -40 to +85  | °C    |
| Storage temperature         |                                                        |                          | -40 to +125 | °C    |
| Max Case temperature        |                                                        |                          | 100         |       |
| Cooling                     | Free air convection                                    |                          |             |       |
| Humidity                    |                                                        |                          | 95          | %     |
| Over Temperature Protection |                                                        | 110                      |             |       |
| Case material               | Nickel-coated Copper and Epoxy (UL94V-0 rated)         |                          |             |       |
| Weight                      |                                                        | 48                       |             | g     |
| Dimensions (L X W X H)      | 2.00 x1.60 x0.40 inches                                | 50.80 x 40.60 x 10.20 mm |             |       |
| MTBF                        | >1000000 hrs Calculated using MIL-HDBK-217 F at +25 °C |                          |             |       |

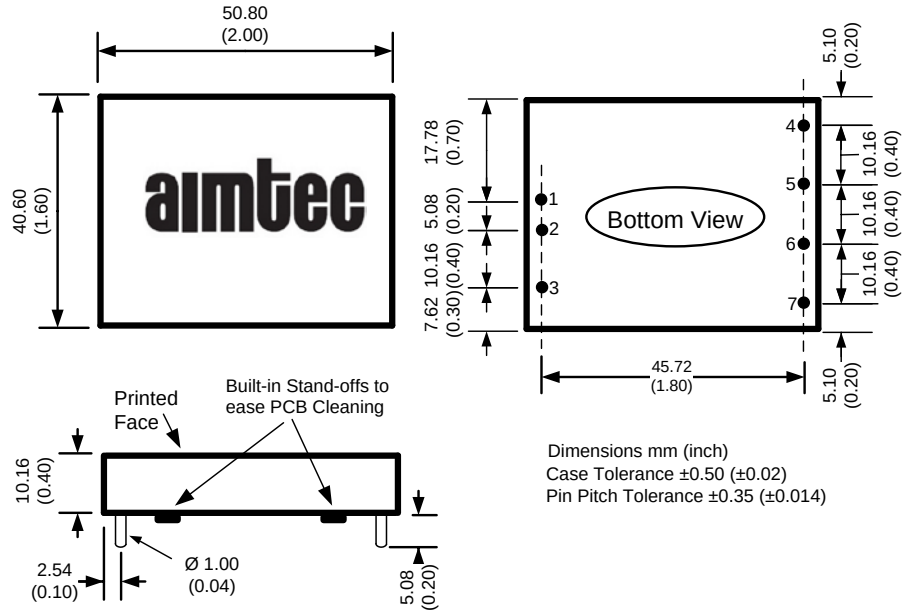
## Safety Specifications

| Standards        |                              |
|------------------|------------------------------|
| Agency approvals | CE                           |
| Safety           | IEC/EN 60950-1               |
|                  | EN55022 Class A              |
|                  | EN55022 Class A              |
|                  | EN61000-4-2 Perf. Criteria B |
|                  | EN61000-4-3 Perf. Criteria A |
|                  | EN61000-4-4 Perf. Criteria B |
|                  | EN61000-4-5 Perf. Criteria B |
|                  | EN61000-4-6 Perf. Criteria A |
|                  | EN61000-4-8 Perf. Criteria A |

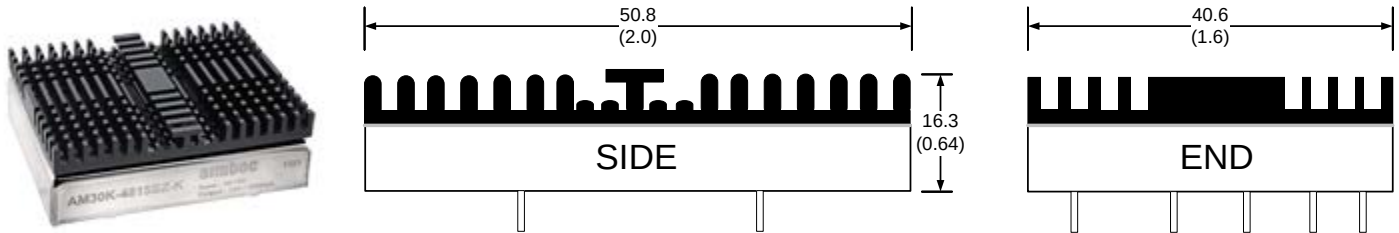
## Pin Out Specifications

| Pin | Single         | Dual           |
|-----|----------------|----------------|
| 1   | +Vin           | +Vin           |
| 2   | -Vin           | -Vin           |
| 3   | On/Off Control | On/Off Control |
| 4   | No Pin         | +Vout          |
| 5   | +Vout          | Com            |
| 6   | -Vout          | -Vout          |
| 7   | Trim           | Trim           |

## Dimensions

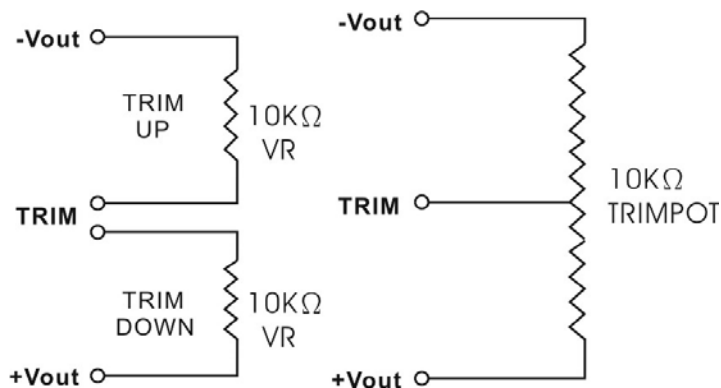


## Dimensions with Optional Heat Sink

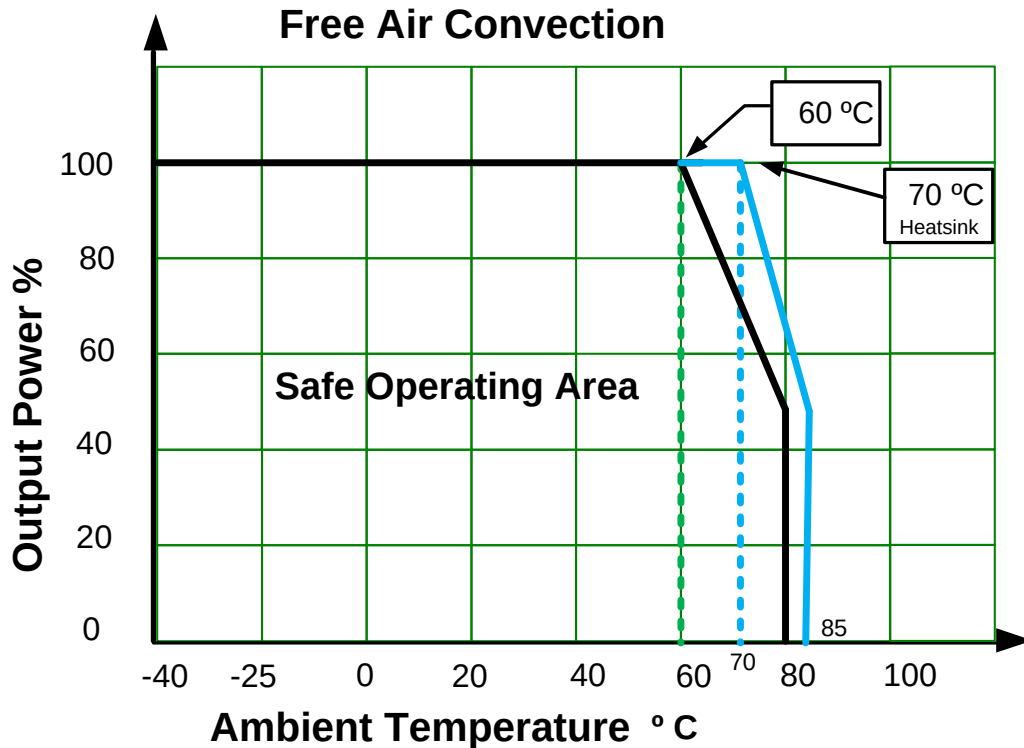


Notes: Add “-K” suffix for ordering, heat sink is affixed with thermally dissipative adhesive tape.  
 See derating graph for temperature performance. Heat sink material is anodized (black) aluminum, adds weight 17g to total mass (65g). Thermal impedance of converter is: with heatsink 8.7 °C/W and 10°C/W without heat sink.

## Trimming

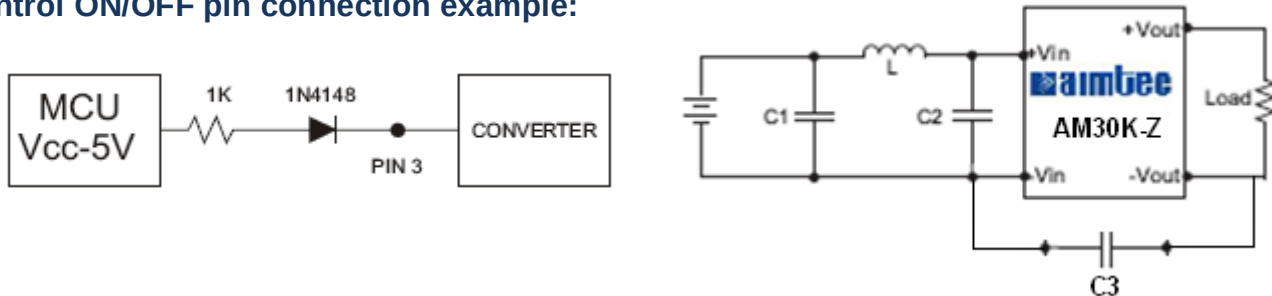


## Derating



Extended temperature performance can be achieved with optional heat sink. (add suffix “-K” to part number)

## Control ON/OFF pin connection example:



**Note A:** An external filter capacitor is required if the module has to meet EN61000-4-4 and EN61000-4-5. The filter capacitor Aimtec suggests: 1000uF, 100V.

| Models       | C1                | L          | C2               | C3            |
|--------------|-------------------|------------|------------------|---------------|
| AM30K-12XXXZ | 330 $\mu$ f, 100V | 12 $\mu$ H | 100 $\mu$ , 100V | N/A           |
| AM30K-24XXXZ | 330 $\mu$ f, 100V | 12 $\mu$ H | 100 $\mu$ , 100V | N/A           |
| AM30K-48XXXZ | 330 $\mu$ f, 100V | 12 $\mu$ H | 100 $\mu$ , 100V | 1000Pf, 2000V |

**Note B:** Input filter components (C1, C2, L) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.

**NOTE:** 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to [www.aimtec.com](http://www.aimtec.com) for the most current product specifications. 2. Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. 3. Mechanical drawings and specifications are for reference only. 4. All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. 5. Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. 6. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at [www.aimtec.com](http://www.aimtec.com).