



FEATURES:

- Ultra Wide 4:1 input range
- Efficiency up to 91%
- Soft start
- Continuous short circuit protection
- Remote on/off control
- Input/Output Isolation 1600VDC
- Operating temperature -40°C to + 75°C
- RoHS compliant



Models Single output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (A) | Maximum Capacitive Load (uF) | Efficiency (%) |
|-----------------|-------------------|--------------------|------------------------|------------------------------|----------------|
| AM30EW-2403SZ | 9-36 | 3.3 | 7.5 | 20000 | 89 |
| AM30EW-2405SZ | 9-36 | 5 | 6 | 14000 | 90 |
| AM30EW-2405.1SZ | 9-36 | 5.1 | 6 | 14000 | 90 |
| AM30EW-2412SZ | 9-36 | 12 | 2.5 | 2000 | 89 |
| AM30EW-2415SZ | 9-36 | 15 | 2 | 2000 | 89 |
| AM30EW-4803SZ | 18-75 | 3.3 | 7.5 | 20000 | 89 |
| AM30EW-4805SZ | 18-75 | 5 | 6 | 14000 | 90 |
| AM30EW-4805.1SZ | 18-75 | 5.1 | 6 | 14000 | 90 |
| AM30EW-4812SZ | 18-75 | 12 | 2.5 | 2000 | 90 |
| AM30EW-4815SZ | 18-75 | 15 | 2 | 2000 | 91 |

Add suffix “-K” for optional heat sink

Models Dual output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (A) | Maximum Capacitive Load (uF) | Efficiency (%) |
|---------------|-------------------|--------------------|------------------------|------------------------------|----------------|
| AM30EW-2405DZ | 9-36 | ±5 | ±3 | ±3000 | 89 |
| AM30EW-2412DZ | 9-36 | ±12 | ±1.25 | ±1300 | 89 |
| AM30EW-2415DZ | 9-36 | ±15 | ±1 | ±1300 | 89 |
| AM30EW-4805DZ | 18-75 | ±5 | ±3 | ±3000 | 90 |
| AM30EW-4812DZ | 18-75 | ±12 | ±1.25 | ±1300 | 89 |
| AM30EW-4815DZ | 18-75 | ±15 | ±1 | ±1300 | 89 |

Add suffix “-K” for optional heat sink

Models Triple output

| Model | Input Voltage (V) | Output Voltage (V) | Output Auxiliary Voltage (V) | Output Current max (A) | Maximum Capacitive Load (uF) | Efficiency (%) |
|-----------------|-------------------|--------------------|------------------------------|------------------------|------------------------------|----------------|
| AM30EW-240312TZ | 9-36 | 3.3 | ±12 | 5 / ±0.42 | 15000 / ±220 | 88 |
| AM30EW-240315TZ | 9-36 | 3.3 | ±15 | 5 / ±0.33 | 15000 / ±220 | 88 |
| AM30EW-240512TZ | 9-36 | 5 | ±12 | 4 / ±0.42 | 8000 / ±220 | 89 |
| AM30EW-240515TZ | 9-36 | 5 | ±15 | 4 / ±0.33 | 8000 / ±220 | 89 |
| AM30EW-480312TZ | 18-75 | 3.3 | ±12 | 5 / ±0.42 | 15000 / ±220 | 89 |
| AM30EW-480315TZ | 18-75 | 3.3 | ±15 | 5 / ±0.33 | 15000 / ±220 | 88 |
| AM30EW-480512TZ | 18-75 | 5 | ±12 | 4 / ±0.42 | 8000 / ±220 | 90 |
| AM30EW-480515TZ | 18-75 | 5 | ±15 | 4 / ±0.33 | 8000 / ±220 | 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

| Parameters | Nominal | Typical | Maximum | Units |
|---------------------------|--|------------|-----------|-------|
| Voltage range | 24 | 9-36 | | VDC |
| | 48 | 36-75 | | VDC |
| Filter | π (Pi) Network | | | |
| Start up time | | 30 | | ms |
| Absolute Maximum Rating | 24 | -0.7 ~ 50 | | VDC |
| | 48 | -0.7 ~ 100 | | VDC |
| Peak Input Voltage time | | | 100 | ms |
| On/Off control | ON: 3 ~12VDC or open circuit | | | |
| | OFF: 0 ~ 1.2VDC or Short circuit between pin 2 and pin 3 (Idle current: 5mA, typ.) | | | |
| No Load Input Current | Single 3.3/5/5.1Vout, dual \pm 5Vout, triple 9-36Vin | | 100 | mA |
| | Other models | | 50 | mA |
| Under voltage lockout | 24V ON/OFF | | 8.6 / 7.9 | VDC |
| | 48V ON/OFF | | 17.8 / 16 | VDC |
| Input reflected current * | | 20 | | mAp-p |

* The input reflected ripple current should be measured with a 4.7 μ H inductor and a 33 μ F input capacitor (ESR<1 Ω at 100 KHz)

Isolation Specifications

| Parameters | Conditions | Typical | Rated | Units |
|---------------------------|------------|---------|-------|-------|
| Tested I/O voltage | 60 sec | | 1600 | VDC |
| Case/Input tested voltage | 60 sec | 1600 | | VDC |
| Resistance | | 1000 | | MOhm |
| Capacitance | | 1000 | | pF |

Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|------------------------------------|---|-------------------|-------------------|-----------------|
| Voltage accuracy (Single and Dual) | | \pm 1 | | % |
| Voltage accuracy (Triple) | Main / Auxiliary | \pm 1 / \pm 5 | | |
| Cross Regulation (Dual) | 25% load 1 st output - 100% load on 2 nd load | \pm 5 | | % |
| Cross Regulation (Triple) | Main 100%, 25% load on Aux1 and 100% on Aux2 | \pm 5 | | |
| Over voltage protection | Zener diode clamp | | | |
| Over current protection | | 150 | | % |
| Short Circuit protection | Continuous | | | |
| Short circuit restart | Auto-Recovery | | | |
| Thermal Shutdown | Case temp | 115 | | $^{\circ}$ C |
| Line voltage regulation (Single) | HL-LL | | \pm 0.5 | % |
| Line voltage regulation (Dual) | HL-LL | | \pm 0.5 | % |
| Line voltage regulation (Triple) | HL-LL Main / Auxiliary | | \pm 1 / \pm 5 | % |
| Load voltage regulation (Single) | 0-100% load | | \pm 0.5 | % |
| Load voltage regulation (Dual) | Balanced load | | \pm 1 | % |
| Load voltage regulation (Triple) | 10~100% Main / Auxiliary | | \pm 1 / \pm 5 | % |
| Temperature coefficient | | \pm 0.02 | | %/ $^{\circ}$ C |
| Ripple & Noise (Single and Dual) * | 20MHz bandwidth | | 100 | mV p-p |
| Ripple & Noise (Triple) * | 20MHz bandwidth, Main / Auxiliary | | 50 / 75 | mV p-p |
| Voltage adjustment range (single) | | | \pm 10 | % |
| Minimum Load Current | Triple output models | 10 | | % of Max |

* Measured with a 1 μ F ceramic capacitor.

General Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|--------------------------|---------------------|-------------|---------|-----------------|
| Switching frequency | 100% load | 330 | | KHz |
| Operating temperature | Derating above 50 | -40 to +75 | | $^{\circ}$ C |
| Storage temperature | | -55 to +125 | | $^{\circ}$ C |
| Maximum case temperature | | | 105 | $^{\circ}$ C |
| Derating | | 2 | | %/ $^{\circ}$ C |
| Cooling | Free Air Convection | | | |
| Humidity | | | 95 | % RH |

| | | | | |
|-------------------------------|---|-----|-----|----|
| Case material | Nickel coated Copper | | | |
| Weight | | 35 | | g |
| Dimensions (L x W x H) | 2.00 x 1.00 x 0.4 inches 50.80 x 25.40 x 10.16 mm | | | |
| MTBF | Single & Dual: >435 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C) Triple: >320 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C) | | | |
| Maximum soldering temperature | 1.5mm from case for 10 sec | | 260 | °C |
| Transient recovery time | 25% load step change | 250 | | uS |
| Transient recovery deviation | 25% load step change | | ±3 | % |

Safety Specifications

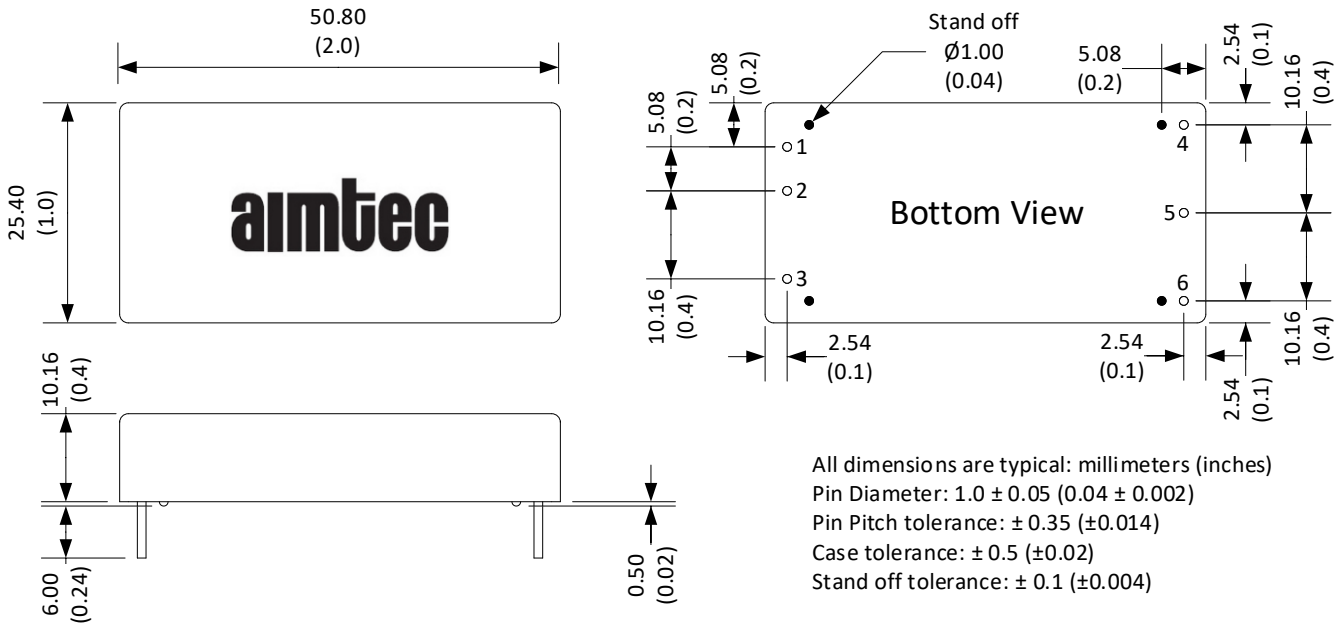
| Parameters | |
|-----------------|---|
| Agency Approval | CE |
| Standards | EN55032 Class A, with the recommended circuit |
| | IEC61000-4-2, Perf. Criteria A |
| | IEC61000-4-3, Perf. Criteria A |
| | IEC61000-4-4, Perf. Criteria A (external 220uF/100V cap required) |
| | IEC61000-4-5, Perf. Criteria A (external 220uF/100V cap required) |
| | IEC61000-4-6, Perf. Criteria A |
| | IEC61000-4-8, Perf. Criteria A |

Pin Out Specifications

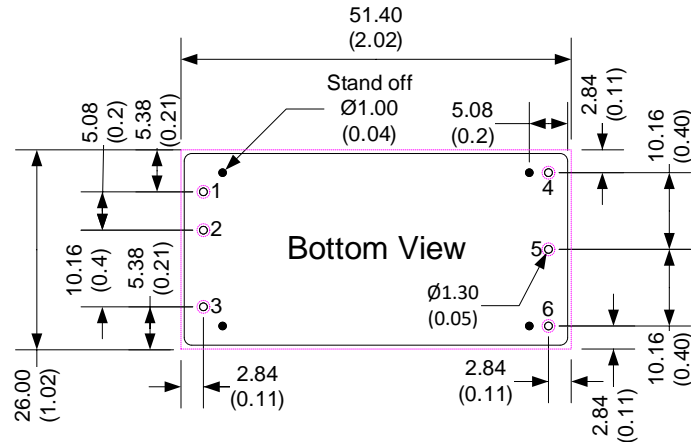
| Pin | Single | Dual | Triple |
|-----|----------------|----------------|----------------|
| 1 | + V Input | + V Input | + V Input |
| 2 | - V Input | - V Input | - V Input |
| 3 | On/Off Control | On/Off Control | On/Off Control |
| 4 | + V Output | + V Output | + Vaux Output |
| 5 | -V Output | Common | - Vaux Output |
| 6 | Trim | - V Output | Common |
| 7 | No Pin | No Pin | + V Output |

Dimensions

Single and Dual Output Models

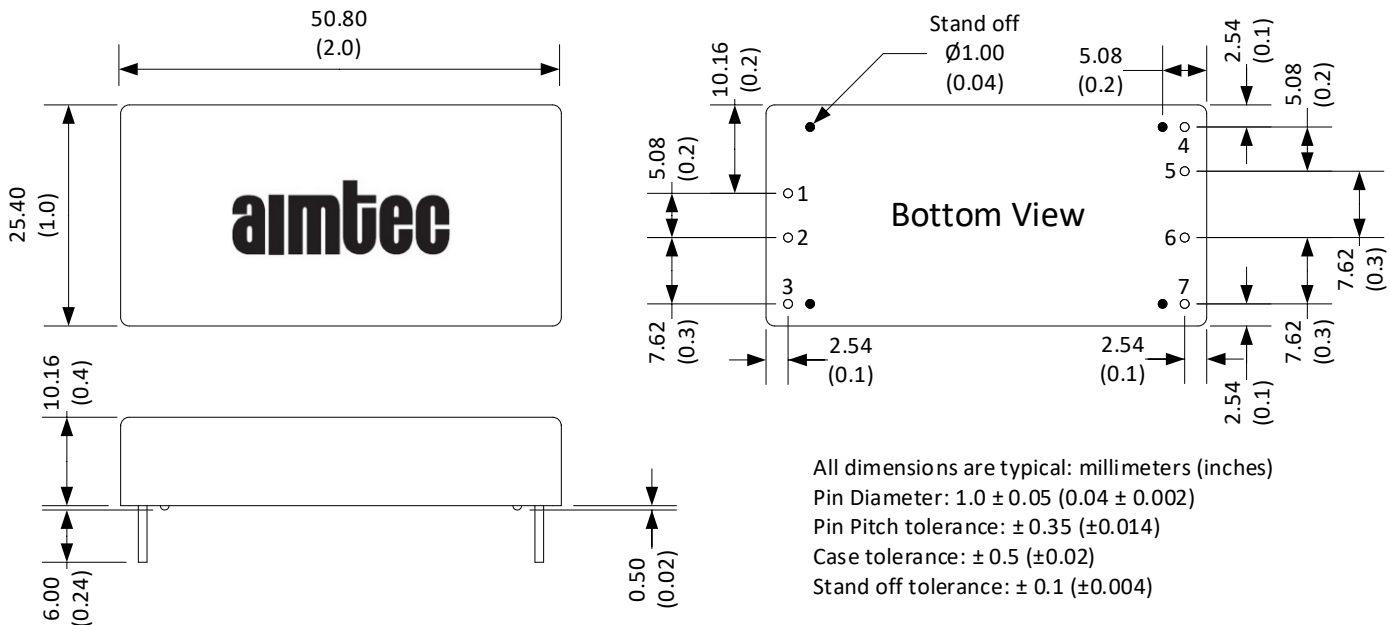


Single and Dual Output Models



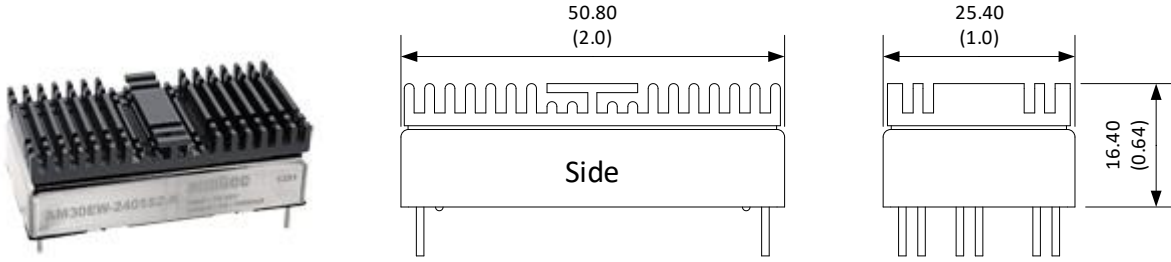
All dimensions are typical: millimeters (inches)
 Pin Diameter: 1.0 ± 0.05 (0.04 ± 0.002)
 Pin Pitch tolerance: ± 0.35 (± 0.014)
 Case tolerance: ± 0.5 (± 0.02)
 Stand off tolerance: ± 0.1 (± 0.004)
 Through hole (black) 1~6: $\varnothing 1.3$ (0.051)
 Top view pad (green) 1~6: $\varnothing 1.5$ (0.059)
 Bottom view pad (pink) 1~6: $\varnothing 2.6$ (0.102)

Triple Output Models



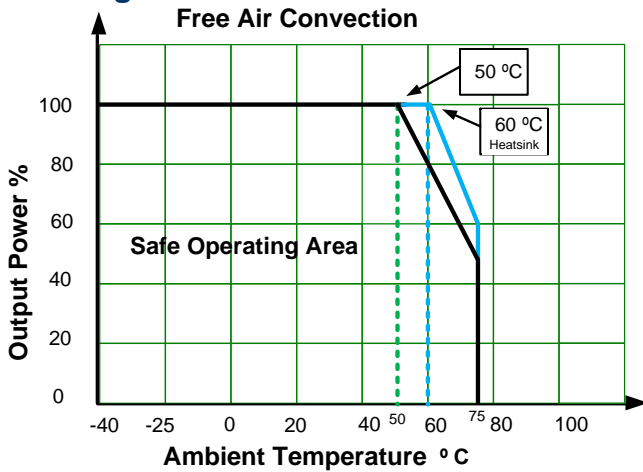
All dimensions are typical: millimeters (inches)
 Pin Diameter: 1.0 ± 0.05 (0.04 ± 0.002)
 Pin Pitch tolerance: ± 0.35 (± 0.014)
 Case tolerance: ± 0.5 (± 0.02)
 Stand off tolerance: ± 0.1 (± 0.004)

Dimensions with Optional Heat Sink



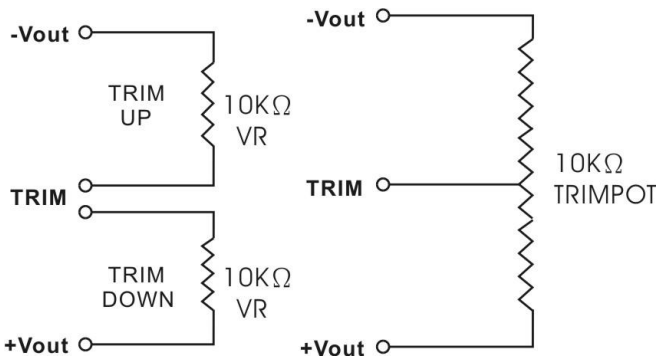
Notes: Add “-K” suffix for ordering, heat sink is affixed with thermally dissipative adhesive tape.
See derating graph for temperature performance. Heat sink material is anodized (black) aluminum, adds weight 11.3g to total mass (46.3g).

Derating

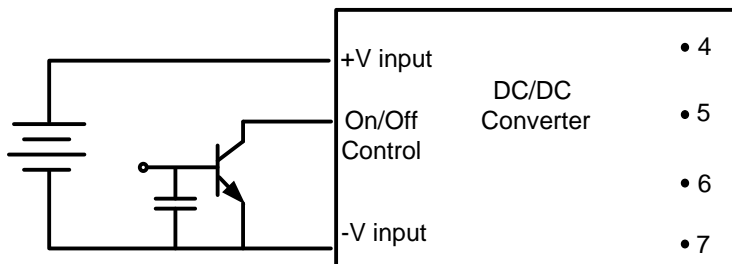


Extended temperature performance can be achieved with optional heat sink. (add suffix “-K” to part number)

Trimming



On/Off Control

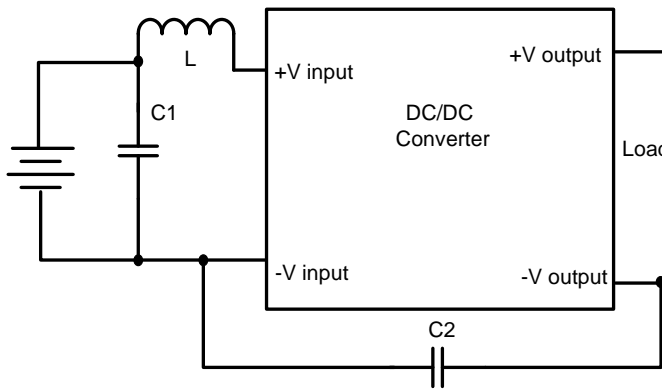


Positive logic turns on the module during high logic and off during low logic. Module can be controlled by an external switch between the On/Off CTRL terminal and -Vinput terminal. The switch can be either open collector or open drain.

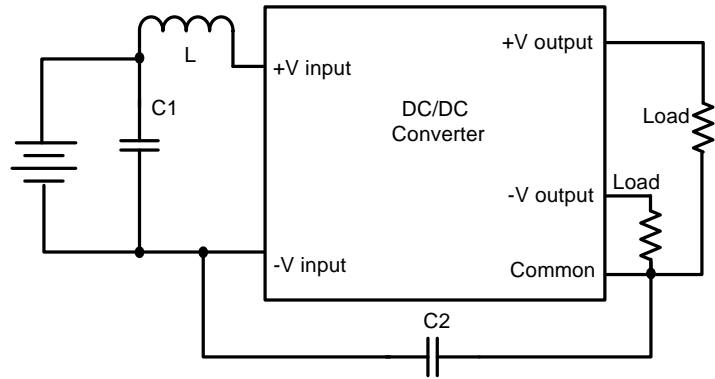
Recommended Circuits

| C1 | L | C2 |
|-------------|------|------------------|
| 100uF, 100V | 12uH | 1206, 470pF, 2KV |

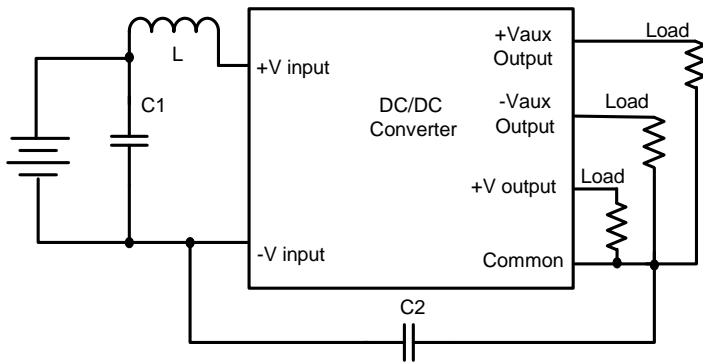
Conducted/Radiated Emissions
Single Output



Conducted/Radiated Emissions
Dual Output

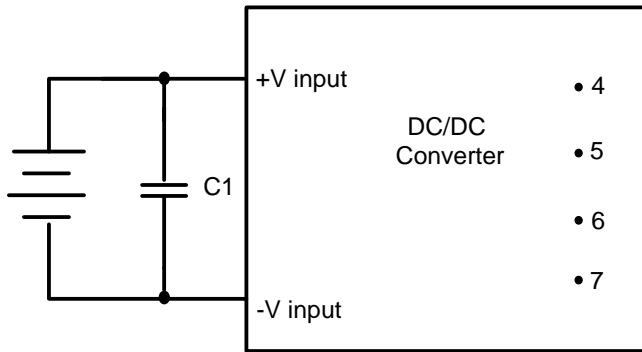


Conducted/Radiated Emissions
Triple Output



Surge/EFT

| C1 |
|-------------|
| 220uF, 100V |



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 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 than the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.