



FEATURES:

- RoHS compliant
- 24 Pin DIP Package
- High efficiency up to 83%
- Wide 2:1 input range
- Operating temperature -40°C to +85°C
- Input / Output isolation 1500 and 3500VDC
- Pin compatible with multiple manufacturers
- Continuous short circuit protection



Models
Single Output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Capacitive load, max (µF) | Efficiency (%) | Isolation (VDC) |
|----------------|-------------------|--------------------|-------------------------|---------------------------|----------------|-----------------|
| AM5T-0503SZ | 4.5-9 | 3.3 | 1300 | 3300 | 73 | 1500 |
| AM5T-0505SZ | 4.5-9 | 5 | 1000 | 1000 | 76 | 1500 |
| AM5T-0512SZ | 4.5-9 | 12 | 410 | 220 | 82 | 1500 |
| AM5T-0515SZ | 4.5-9 | 15 | 330 | 100 | 82 | 1500 |
| AM5T-1203SZ | 9-18 | 3.3 | 1300 | 1000 | 73 | 1500 |
| AM5T-1205SZ | 9-18 | 5 | 1000 | 1000 | 77 | 1500 |
| AM5T-1207SZ | 9-18 | 7.2 | 690 | 680 | 80 | 1500 |
| AM5T-1209SZ | 9-18 | 9 | 550 | 680 | 78 | 1500 |
| AM5T-1212SZ | 9-18 | 12 | 410 | 330 | 81 | 1500 |
| AM5T-1215SZ | 9-18 | 15 | 330 | 220 | 80 | 1500 |
| AM5T-1218SZ | 9-18 | 18 | 270 | 68 | 80 | 1500 |
| AM5T-1224SZ | 9-18 | 24 | 208 | 68 | 80 | 1500 |
| AM5T-2403SZ | 18-36 | 3.3 | 1300 | 3300 | 75 | 1500 |
| AM5T-2405SZ | 18-36 | 5 | 1000 | 1000 | 80 | 1500 |
| AM5T-2407SZ | 18-36 | 7.2 | 690 | 680 | 82 | 1500 |
| AM5T-2409SZ | 18-36 | 9 | 550 | 680 | 82 | 1500 |
| AM5T-2412SZ | 18-36 | 12 | 410 | 330 | 80 | 1500 |
| AM5T-2415SZ | 18-36 | 15 | 330 | 220 | 82 | 1500 |
| AM5T-2418SZ | 18-36 | 18 | 270 | 100 | 82 | 1500 |
| AM5T-2424SZ | 18-36 | 24 | 208 | 100 | 82 | 1500 |
| AM5T-4803SZ | 36-72 | 3.3 | 1300 | 1000 | 75 | 1500 |
| AM5T-4805SZ | 36-72 | 5 | 1000 | 1000 | 80 | 1500 |
| AM5T-4807SZ | 36-72 | 7.2 | 690 | 470 | 81 | 1500 |
| AM5T-4809SZ | 36-72 | 9 | 550 | 470 | 82 | 1500 |
| AM5T-4812SZ | 36-72 | 12 | 410 | 330 | 80 | 1500 |
| AM5T-4815SZ | 36-72 | 15 | 330 | 220 | 83 | 1500 |
| AM5T-4818SZ | 36-72 | 18 | 270 | 100 | 82 | 1500 |
| AM5T-4824SZ | 36-72 | 18 | 208 | 100 | 83 | 1500 |
| AM5T-0503SH35Z | 4.5-9 | 3.3 | 1300 | 3300 | 73 | 3500 |
| AM5T-0505SH35Z | 4.5-9 | 5 | 1000 | 1000 | 76 | 3500 |
| AM5T-0512SH35Z | 4.5-9 | 12 | 410 | 220 | 82 | 3500 |
| AM5T-0515SH35Z | 4.5-9 | 15 | 330 | 100 | 82 | 3500 |
| AM5T-1203SH35Z | 9-18 | 3.3 | 1300 | 1000 | 73 | 3500 |
| AM5T-1205SH35Z | 9-18 | 5 | 1000 | 1000 | 77 | 3500 |
| AM5T-1207SH35Z | 9-18 | 7.2 | 690 | 680 | 80 | 3500 |
| AM5T-1209SH35Z | 9-18 | 9 | 550 | 680 | 78 | 3500 |
| AM5T-1212SH35Z | 9-18 | 12 | 410 | 330 | 81 | 3500 |
| AM5T-1215SH35Z | 9-18 | 15 | 330 | 220 | 80 | 3500 |
| AM5T-1218SH35Z | 9-18 | 18 | 270 | 68 | 80 | 3500 |
| AM5T-1224SH35Z | 9-18 | 24 | 208 | 68 | 80 | 3500 |
| AM5T-2403SH35Z | 18-36 | 3.3 | 1300 | 3300 | 75 | 3500 |
| AM5T-2405SH35Z | 18-36 | 5 | 1000 | 1000 | 80 | 3500 |
| AM5T-2407SH35Z | 18-36 | 7.2 | 690 | 680 | 82 | 3500 |
| AM5T-2409SH35Z | 18-36 | 9 | 550 | 680 | 82 | 3500 |
| AM5T-2412SH35Z | 18-36 | 12 | 410 | 330 | 80 | 3500 |
| AM5T-2415SH35Z | 18-36 | 15 | 330 | 220 | 82 | 3500 |
| AM5T-2418SH35Z | 18-36 | 18 | 270 | 100 | 82 | 3500 |
| AM5T-2424SH35Z | 18-36 | 24 | 208 | 100 | 82 | 3500 |

Models

Single Output (continued)

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Capacitive load, max (µF) | Efficiency (%) | Isolation (VDC) |
|----------------|-------------------|--------------------|-------------------------|---------------------------|----------------|-----------------|
| AM5T-4803SH35Z | 36-72 | 3.3 | 1300 | 1000 | 75 | 3500 |
| AM5T-4805SH35Z | 36-72 | 5 | 1000 | 1000 | 80 | 3500 |
| AM5T-4807SH35Z | 36-72 | 7.2 | 690 | 470 | 81 | 3500 |
| AM5T-4809SH35Z | 36-72 | 9 | 550 | 470 | 82 | 3500 |
| AM5T-4815SH35Z | 36-72 | 15 | 330 | 220 | 83 | 3500 |
| AM5T-4818SH35Z | 36-72 | 18 | 270 | 100 | 82 | 3500 |
| AM5T-4824SH35Z | 36-72 | 24 | 208 | 100 | 83 | 3500 |
| AM5T-4812SH35Z | 36-72 | 12 | 410 | 330 | 80 | 3500 |

Models

Dual Output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Capacitive load, max (µF) | Efficiency (%) | Isolation (VDC) |
|----------------|-------------------|--------------------|-------------------------|---------------------------|----------------|-----------------|
| AM5T-0503DZ | 4.5-9 | ±3.3 | ±650 | 3300 | 76 | 1500 |
| AM5T-0505DZ | 4.5-9 | ±5 | ±500 | 1000 | 79 | 1500 |
| AM5T-0512DZ | 4.5-9 | ±12 | ±208 | 220 | 82 | 1500 |
| AM5T-0515DZ | 4.5-9 | ±15 | ±160 | 100 | 82 | 1500 |
| AM5T-1203DZ | 9-18 | ±3.3 | ±650 | ±680 | 73 | 1500 |
| AM5T-1205DZ | 9-18 | ±5 | ±500 | ±330 | 77 | 1500 |
| AM5T-1207DZ | 9-18 | ±7.2 | ±340 | ±220 | 79 | 1500 |
| AM5T-1209DZ | 9-18 | ±9 | ±270 | ±220 | 80 | 1500 |
| AM5T-1212DZ | 9-18 | ±12 | ±208 | ±100 | 80 | 1500 |
| AM5T-1215DZ | 9-18 | ±15 | ±160 | ±47 | 79 | 1500 |
| AM5T-1218DZ | 9-18 | ±18 | ±130 | ±33 | 80 | 1500 |
| AM5T-1224DZ | 9-18 | ±24 | ±100 | ±33 | 80 | 1500 |
| AM5T-2403DZ | 18-36 | ±3.3 | ±650 | ±1000 | 75 | 1500 |
| AM5T-2405DZ | 18-36 | ±5 | ±500 | ±330 | 78 | 1500 |
| AM5T-2407DZ | 18-36 | ±7.2 | ±340 | ±330 | 81 | 1500 |
| AM5T-2409DZ | 18-36 | ±9 | ±270 | ±330 | 83 | 1500 |
| AM5T-2412DZ | 18-36 | ±12 | ±208 | ±100 | 80 | 1500 |
| AM5T-2415DZ | 18-36 | ±15 | ±160 | ±47 | 80 | 1500 |
| AM5T-2418DZ | 18-36 | ±18 | ±130 | ±33 | 81 | 1500 |
| AM5T-2424DZ | 18-36 | ±24 | ±100 | ±33 | 80 | 1500 |
| AM5T-4803DZ | 36-72 | ±3.3 | ±650 | ±1000 | 73 | 1500 |
| AM5T-4805DZ | 36-72 | ±5 | ±500 | ±330 | 79 | 1500 |
| AM5T-4807DZ | 36-72 | ±7.2 | ±340 | ±330 | 81 | 1500 |
| AM5T-4809DZ | 36-72 | ±9 | ±270 | ±330 | 79 | 1500 |
| AM5T-4812DZ | 36-72 | ±12 | ±208 | ±100 | 80 | 1500 |
| AM5T-4815DZ | 36-72 | ±15 | ±160 | ±47 | 80 | 1500 |
| AM5T-4818DZ | 36-72 | ±18 | ±130 | ±33 | 77 | 1500 |
| AM5T-4824DZ | 36-72 | ±24 | ±100 | ±33 | 80 | 1500 |
| AM5T-0503DH35Z | 4.5-9 | ±3.3 | ±650 | 3300 | 76 | 3500 |
| AM5T-0505DH35Z | 4.5-9 | ±5 | ±500 | 1000 | 79 | 3500 |
| AM5T-0512DH35Z | 4.5-9 | ±12 | ±208 | 220 | 82 | 3500 |
| AM5T-0515DH35Z | 4.5-9 | ±15 | ±160 | 100 | 82 | 3500 |
| AM5T-1203DH35Z | 9-18 | ±3.3 | ±650 | ±680 | 73 | 3500 |
| AM5T-1205DH35Z | 9-18 | ±5 | ±500 | ±330 | 77 | 3500 |
| AM5T-1207DH35Z | 9-18 | ±7.2 | ±340 | ±220 | 79 | 3500 |
| AM5T-1209DH35Z | 9-18 | ±9 | ±270 | ±220 | 80 | 3500 |
| AM5T-1212DH35Z | 9-18 | ±12 | ±208 | ±100 | 80 | 3500 |
| AM5T-1215DH35Z | 9-18 | ±15 | ±160 | ±47 | 79 | 3500 |
| AM5T-1218DH35Z | 9-18 | ±18 | ±130 | ±33 | 80 | 3500 |
| AM5T-1224DH35Z | 9-18 | ±24 | ±100 | ±33 | 80 | 3500 |
| AM5T-2403DH35Z | 18-36 | ±3.3 | ±650 | ±1000 | 75 | 3500 |
| AM5T-2405DH35Z | 18-36 | ±5 | ±500 | ±330 | 78 | 3500 |
| AM5T-2407DH35Z | 18-36 | ±7.2 | ±340 | ±330 | 81 | 3500 |

Models

Dual Output (continued)

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Capacitive load, max (μF) | Efficiency (%) | Isolation (VDC) |
|----------------|-------------------|--------------------|-------------------------|---------------------------|----------------|-----------------|
| AM5T-2409DH35Z | 18-36 | ±9 | ±270 | ±330 | 83 | 3500 |
| AM5T-2412DH35Z | 18-36 | ±12 | ±208 | ±100 | 80 | 3500 |
| AM5T-2415DH35Z | 18-36 | ±15 | ±160 | ±47 | 80 | 3500 |
| AM5T-2418DH35Z | 18-36 | ±18 | ±130 | ±33 | 81 | 3500 |
| AM5T-2424DH35Z | 18-36 | ±24 | ±100 | ±33 | 80 | 3500 |
| AM5T-4803DH35Z | 36-72 | ±3.3 | ±650 | ±1000 | 73 | 3500 |
| AM5T-4805DH35Z | 36-72 | ±5 | ±500 | ±330 | 79 | 3500 |
| AM5T-4807DH35Z | 36-72 | ±7.2 | ±340 | ±330 | 81 | 3500 |
| AM5T-4809DH35Z | 36-72 | ±9 | ±270 | ±330 | 79 | 3500 |
| AM5T-4812DH35Z | 36-72 | ±12 | ±208 | ±100 | 80 | 3500 |
| AM5T-4815DH35Z | 36-72 | ±15 | ±160 | ±47 | 80 | 3500 |
| AM5T-4818DH35Z | 36-72 | ±18 | ±130 | ±33 | 77 | 3500 |
| AM5T-4824DH35Z | 36-72 | ±24 | ±100 | ±33 | 80 | 3500 |

Input Specifications

| Parameters | Nominal | Typical | Maximum | Units |
|--------------------------------|----------------|---------|---------|-------|
| Voltage range | 5 | 4.5-9 | | VDC |
| | 12 | 9-18 | | |
| | 24 | 18-36 | | |
| | 48 | 36-72 | | |
| Filter | π (Pi) Network | | | |
| Turn on Transient process time | | | 350 | ms |
| Start up time | | 500 | | ms |
| Absolute Maximum Rating | 5 Vin | -0.7-15 | | VDC |
| | 12 Vin | -0.7-24 | | |
| | 24 Vin | -0.7-40 | | |
| | 48 Vin | -0.7-80 | | |
| Peak Input Voltage time | | 100 | | ms |

Isolation Specifications

| Parameters | Conditions | Typical | Rated | Units |
|--------------------|------------|---------|--------------|-------|
| Tested I/O voltage | 3 sec | | 1500 or 3500 | VDC |
| Resistance | | > 1000 | | MOhm |
| Capacitance | | 470 | | pF |

Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|---|--------------------|---------------|---------|--------|
| Voltage accuracy | | ±1 | | % |
| Voltage balance (Dual Output) | Balanced Load | ±1 | | % |
| Short Circuit protection | | Continuous | | |
| Short circuit restart | | Auto recovery | | |
| Over current protection | | 120% Iout | | |
| Line voltage regulation (Single) | | ±0.5 | | % |
| Line voltage regulation (Dual) | | ±0.5 | | % |
| Load voltage regulation (Single) | 0 – 100% load | ±0.5 | | % |
| Load voltage regulation (Single) 3.3V output model | 0 – 100% load | ±1.5 | | % |
| Load voltage regulation (Dual) | 0 – 100% load | ±0.5 | | % |
| Load voltage regulation (Dual) ±3.3V output model | 0 – 100% load | ±1.5 | | % |
| Temperature coefficient | | ±0.02 | | %/°C |
| Ripple & Noise | At 20MHz Bandwidth | 60 | | mV p-p |
| Rising time | | 10 | | ms |

General Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|-----------------------|--|---------------------------|--------------------------|-------|
| Switching frequency | 100% load | 266 | | KHz |
| Operating temperature | Full Load without Derating | -40 to +85 | | °C |
| Storage temperature | | -40 to +125 | | °C |
| Max Case temperature | | | +100 | °C |
| Derating | Not Required | | | |
| Cooling | Free air convection | | | |
| Humidity | | | 90 | % |
| Case material | Nickel coated copper | | | |
| Weight | | 17 | | g |
| Dimensions(L x W x H) | Tolerance ± 0.5 mm or ± 0.02 inches | 1.28 x 0.84 x 0.41 inches | 32.25 x 21.35 x 10.50 mm | |
| MTBF | >1 121 000 hrs (MIL-HDBK -217F, Ground Benign, $t=+25^{\circ}\text{C}$) | | | |

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.

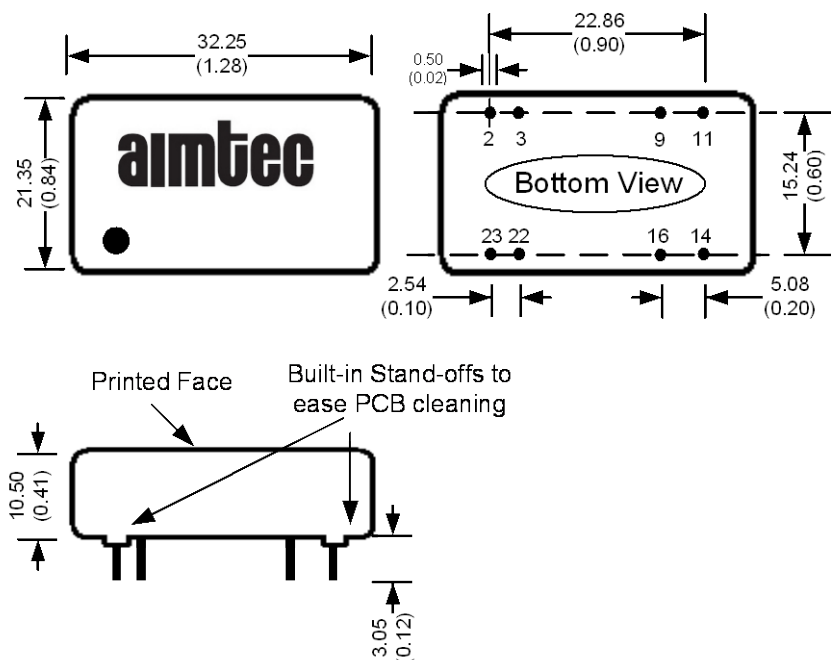
Safety Specifications

| Parameters | |
|------------------|---|
| Agency Approvals | CE (except for 5V input models) |
| Standards | EN55022 Class A, EN55024 |
| | IEC61000-4-2, Perf. Criteria B |
| | IEC61000-4-3, Perf. Criteria A |
| | IEC61000-4-4, Perf. Criteria B (external 220uF/100V cap required) |
| | IEC61000-4-5, Perf. Criteria B (external 220uF/100V cap required) |
| | IEC61000-4-6, Perf. Criteria A |
| | IEC61000-4-8, Perf. Criteria A |
| | NOTE: designed to meet IEC 60950-1:2001 |

Pin Out Specifications

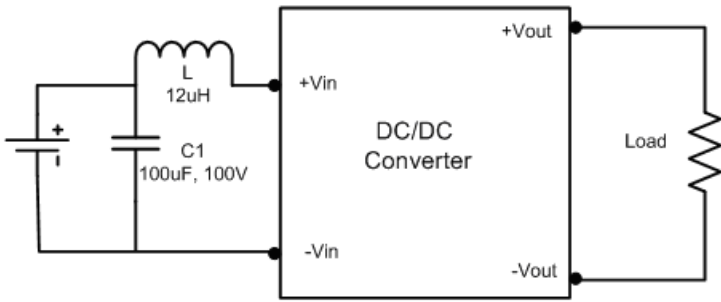
| Pin | 1500 and 3500VDC | |
|-----|------------------|-----------|
| | Single | Dual |
| 2 | -V Input | -V Input |
| 3 | -V Input | -V Input |
| 9 | NO PIN. | Common |
| 11 | N. C. | -V Output |
| 14 | +V Output | +V Output |
| 16 | -V Output | Common |
| 22 | +V Input | +V Input |
| 23 | +V Input | +V Input |

Dimensions

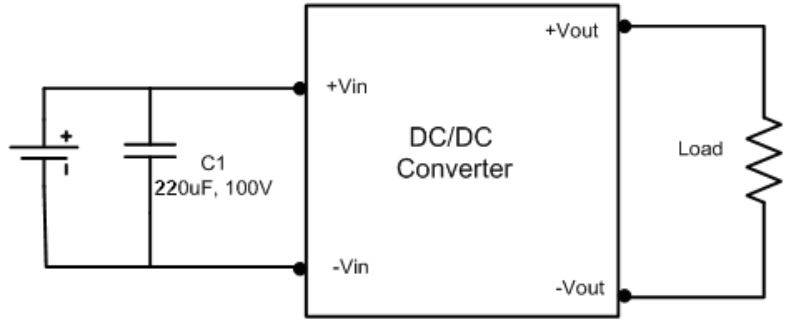


Test Circuits

Conducted Emissions:

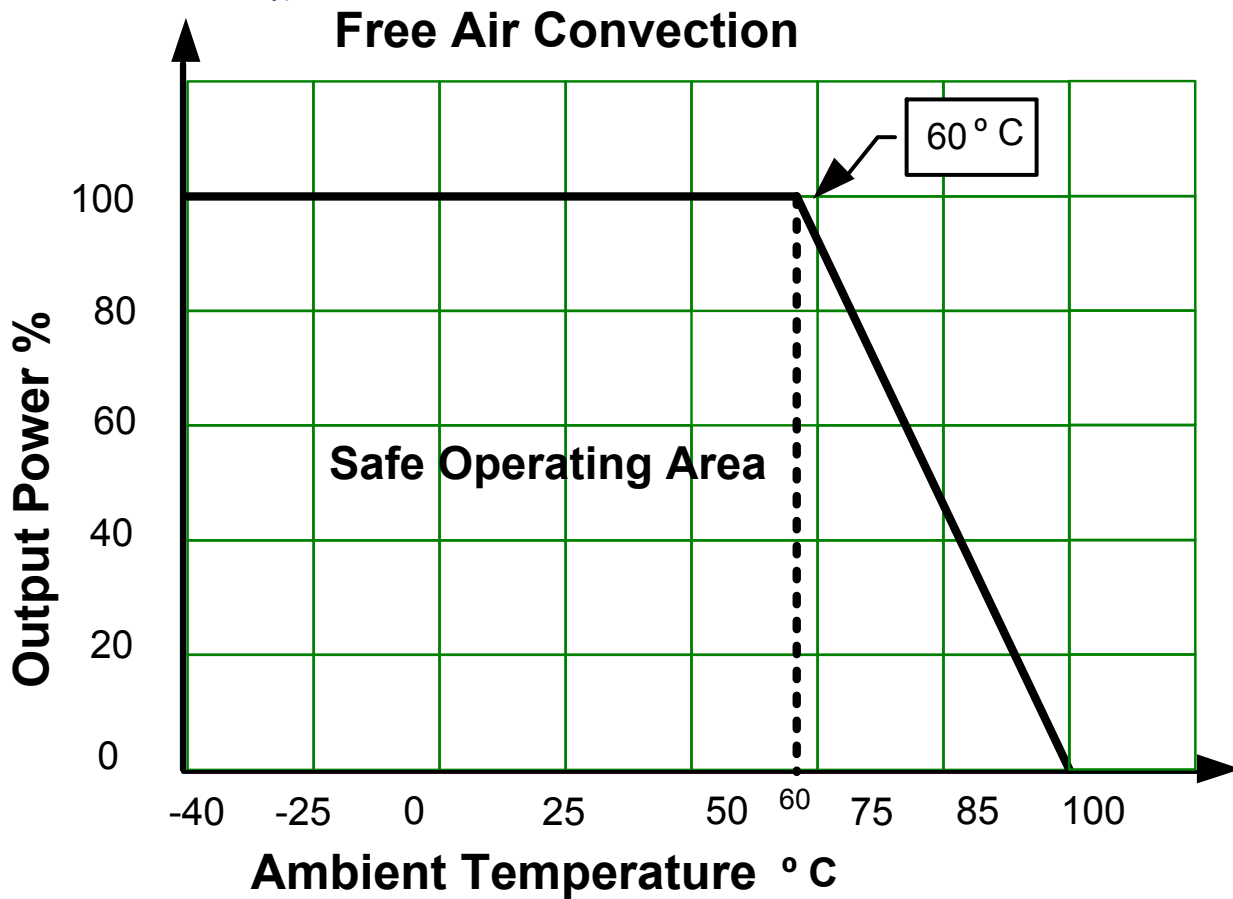


Surge:



Derating

(AM5T-05xxxx Devices only)



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