

**FEATURES:**

- Regulated output
- Continuous short circuit protection
- Efficiency up to 75%
- Operating temperature: -40°C to +85 °C
- Isolation Voltage of 1500 & 3000VDC
- Small SMD package
- Universal industry pinout



Models

Single output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current (mA) | Isolation (VDC) | Max Capacitive Load (µF) | Efficiency (%) |
|-------------------|-------------------|--------------------|---------------------|-----------------|--------------------------|----------------|
| AM1LR-0505S-NZ | 4.75-5.25 | 5 | 200 | 1500 | 220 | 72 |
| AM1LR-1205S-NZ | 11.4-12.6 | 5 | 200 | 1500 | 220 | 71 |
| AM1LR-1212S-NZ | 11.4-12.6 | 12 | 84 | 1500 | 220 | 73 |
| AM1LR-1215S-NZ | 11.6-12.6 | 15 | 67 | 1500 | 220 | 75 |
| AM1LR-2405S-NZ | 22.8-25.2 | 5 | 200 | 1500 | 220 | 73 |
| AM1LR-2412S-NZ | 22.8-25.2 | 12 | 84 | 1500 | 220 | 73 |
| AM1LR-2415S-NZ | 22.8-25.2 | 15 | 67 | 1500 | 220 | 73 |
| AM1LR-1205SH30-NZ | 11.4-12.6 | 5 | 200 | 3000 | 220 | 71 |
| AM1LR-1212SH30-NZ | 11.4-12.6 | 12 | 83 | 3000 | 220 | 73 |
| AM1LR-2405SH30-NZ | 22.8-25.2 | 5 | 200 | 3000 | 220 | 73 |

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.

NOTE2: AM1LR-1212S-NZ and AM1LR-1215S-NZ will be discontinued (EOL) by December 30, 2021; for new designs, please refer to AM1LR-JZ series.

Input Specifications

| Parameters | Nominal | Typical | Maximum | Units |
|--|---------------------------|-----------|---------------|-------|
| Voltage Range | 5 | 4.75-5.25 | | VDC |
| | 12 | 11.4-12.6 | | |
| | 24 | 22.8-25.2 | | |
| Absolute Max Input Voltage (1 sec max) | 5 Vin 12 Vin 24 Vin | | 9 18 30 | VDC |
| Filter | | Capacitor | | |
| Quiescent Current | 5 | 15 | | mA |
| | 12 | 10 | | |
| | 24 | 7 | | |
| Input Reflected Ripple current | | 15 | | mA |

Isolation Specifications

| Parameters | Conditions | Typical | Rated | Units |
|--------------------|--------------|---------|-------------|-------|
| Tested I/O Voltage | 60 sec, <1mA | | 1500 & 3000 | VDC |
| Resistance | 500VDC | >1000 | | MOhm |
| Capacitance | | 20 | | pF |

Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|--------------------------|---------------------------------|---------------|---------|----------|
| Voltage Accuracy | 100% load (see tolerance chart) | | ±3 | % |
| Short Circuit Protection | | Continuous | | |
| Short Circuit Restart | | Auto-Recovery | | |
| Line Voltage Regulation | For ±1% of Vin | | ±0.25 | % of Vin |
| Load Voltage Regulation | (10% - 100% Load) 3.3V | | ±3 | % |
| | (10% - 100% Load) Other outputs | | ±2 | |
| Temperature Coefficient | 100% load | | ±0.03 | %/°C |
| Ripple & Noise | | 50 | | mV p-p |

General Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|-------------------------------|---|-------------|---------|-------|
| Switching frequency | 100% load | 100 | 300 | KHz |
| Operating temperature | With derating above +71 | -40 to +85 | | °C |
| Storage temperature | | -55 to +125 | | °C |
| Cooling | Free air convection | | | |
| Storage Humidity | Non Condensing | | 95 | % RH |
| Case material | Epoxy resin (UL94-V0) | | | |
| Weight | | 2 | | g |
| Dimensions (L x W x H) | 0.60 x 0.44 x 0.28inches 15.24 x 11.20 x 7.25mm | | | |
| MTBF | >3,500,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C) | | | |
| Maximum soldering temperature | 1.5mm from case for 10 sec | | 300 | °C |
| Maximum case temperature | | | 130 | °C |

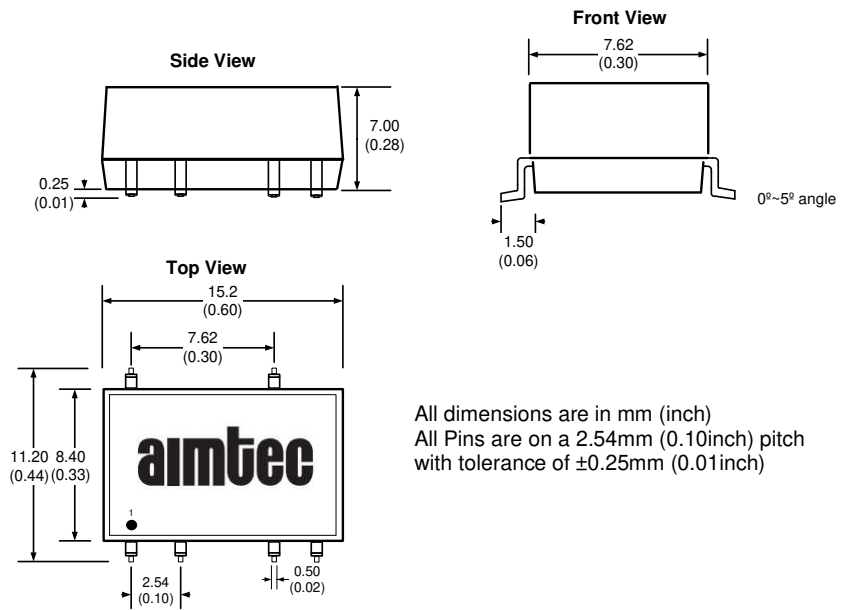
Safety Specifications

| Parameters | |
|------------|---|
| Standards | CISPR32/EN55032 Class B with the EMI recommended circuit IEC/EN61000-4-2, Contact ±6KV, Criteria B |

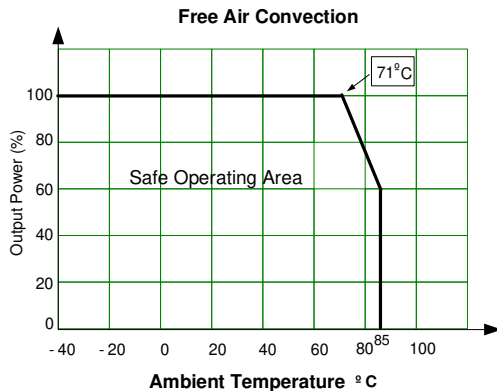
Pin Out Specifications

| Pin | Single |
|-----|-----------|
| 1 | -V Input |
| 2 | +V Input |
| 3 | No Pin |
| 4 | -V Output |
| 5 | -V Output |
| 6 | No Pin |
| 7 | +V Output |
| 8 | No Pin |
| 9 | No Pin |
| 10 | N.C. |

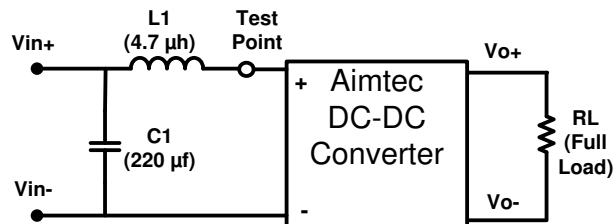
Dimensions



Derating

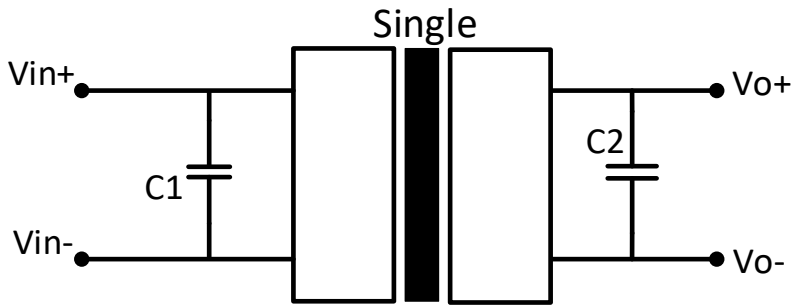


Input Reflected Ripple Current Test Circuit



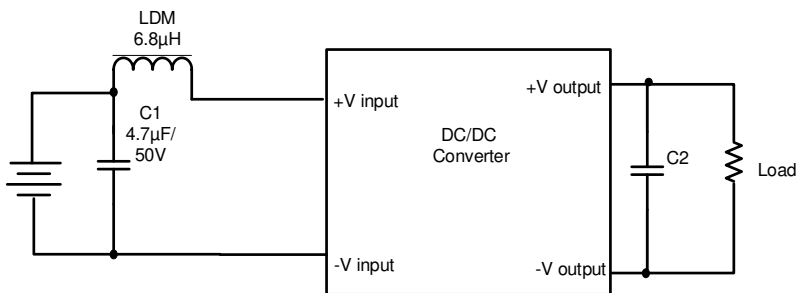
* Tested at full load, and nominal input

Typical Application Circuits



| Vin (VDC) | C1 (μF) | Vout (VDC) | C2 (μF) |
|-----------|---------|------------|---------|
| 5 | 4.7 | 3.3 & 5 | 10 |
| 12 | 2.2 | 12 | 2.2 |
| 24 | 1 | 15 | 1 |

EMI Recommended Circuit (Class B)



| Vout (VDC) | C2 (μF) |
|------------|---------|
| 3.3 & 5 | 10 |
| 12 | 2.2 |
| 15 | 1 |

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.