

**FEATURES:**

- Low Profile SMD
- 1500 and 3000 VDC I/O Isolation
- Pin-out compatible with DCP01 Series
- Short circuit protection
- Operating Temperature: -40°C to +85°C
- 3000 VDC Isolation regulated modes
- RoHS Compliant

**Models****Single output**

| Model             | Input Voltage(V) | Output Voltage (V) | Output Current max(mA) | Isolation (VDC) | Efficiency (%) |
|-------------------|------------------|--------------------|------------------------|-----------------|----------------|
| AM1LT-0505S-NZ    | 4.5-5.5          | 5                  | 200                    | 1500            | 74             |
| AM1LT-0512S-NZ    | 4.5-5.5          | 12                 | 83                     | 1500            | 77             |
| AM1LT-0515S-NZ    | 4.5-5.5          | 15                 | 67                     | 1500            | 76             |
| AM1LT-1212S-NZ    | 10.8-13.2        | 12                 | 83                     | 1500            | 76             |
| AM1LT-0505SH30-NZ | 4.75 -5.25       | 5                  | 200                    | 3000            | 70             |

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      | 5         | 4.5-5.5 & 4.75-5.25<br>10.8-13.2 |           | VDC   |
|                    | 12        |                                  |           |       |
| Absolute Max Input | 5         |                                  | -0.7 – 9  | VDC   |
|                    | 12        |                                  | -0.7 - 18 |       |
| Filter             | Capacitor |                                  |           |       |

**Isolation Specifications**

| Parameters         | Conditions  | Typical | Rated       | Units |
|--------------------|-------------|---------|-------------|-------|
| Tested I/O voltage | 60 Sec, 1mA |         | 1500 & 3000 | VDC   |
| Resistance         | 500Vdc      | 1000    |             | MOhm  |
| Capacitor          |             | 25      |             | pF    |

**Output Specifications**

| Parameters               | Conditions                                    | Typical                      | Maximum | Units    |
|--------------------------|---|------------------------------|---------|----------|
| Voltage accuracy         | 1500V Isolation models                        | See tolerance envelope graph |         | %        |
|                          | 3000V Isolation models                        | ±3                           |         |          |
| Short Circuit protection | Continuous                                    |                              |         |          |
| Short circuit restart    | Auto-Recovery                                 |                              |         |          |
| Line voltage regulation  | For 1500V Isolation models & Vin change of 1% | ±1.2                         |         | % of Vin |
|                          | For 3000V Isolation models & Vin change of 5% | ±0.25                        |         |          |
| Load voltage regulation  | 10% to 100% load for 1500V Isolation models   | ±12.8                        |         | %        |
|                          | 10% to 100% load for 3000V Isolation models   | ±1                           |         |          |
| Temperature coefficient  | Nominal input, 100% full load                 | 0.03                         |         | %/°C     |
| Ripple & Noise           | 20MHz Bandwidth                               | 75                           |         | mVp-p    |
| Minimum Load Current     |   | 10                           |         | % of Max |

NOTE: It is not recommended to have the outputs connected in parallel

### General Specifications

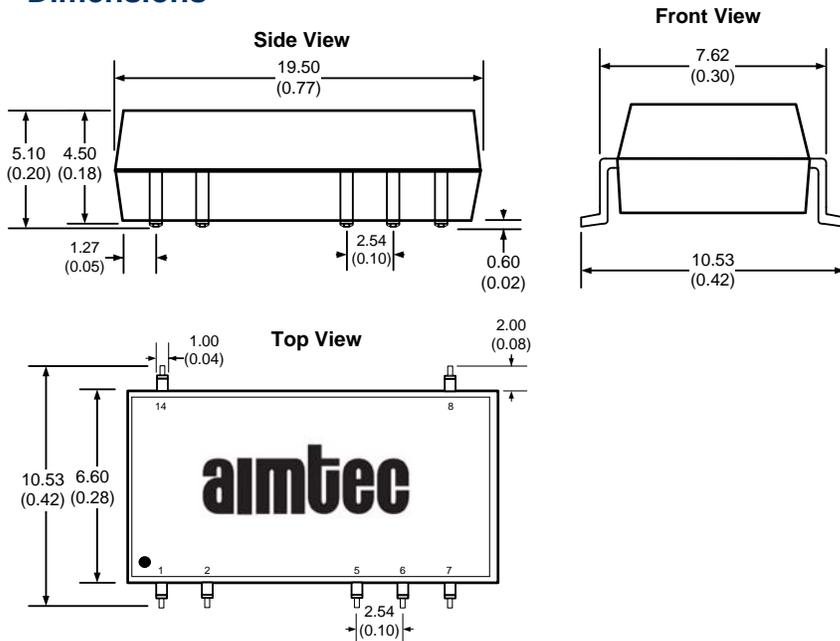
| Parameters                    | Conditions   | Typical     | Maximum | Units |
|-------------------------------|--|-------------|---------|-------|
| Switching frequency           | 100% load  | 100         |         | KHz   |
| Operating temperature         | For 3000V Isolation derating above 71°C  | -40 to + 85 |         | °C    |
| Storage temperature           |  | -55 to +125 |         | °C    |
| Maximum case temperature      |  |             | 100     | °C    |
| Cooling                       | Free Air Convection  |             |         |       |
| Humidity                      |  |             | 95      | % RH  |
| Case material                 | Epoxy Resin(UL94-V0)   |             |         |       |
| Weight                        |  | 1.4         |         | g     |
| Dimensions (L x W x H)        | 0.77 x 0.42 x 0.20inches 19.50 x 10.53 x 5.10 mm                                     |             |         |       |
| MTBF                          | >1,500,000 hours (MIL-HDBK -217F, Ground Benign, t=+25°C) for 1500V Isolation models |             |         |       |
|                               | >3,500,000 hours (MIL-HDBK -217F, Ground Benign, t=+25°C) for 3000V Isolation models |             |         |       |
| Maximum Soldering Temperature | 1.5mm from case for 10 seconds   |             | 260     | °C    |

### Pin Out Specifications

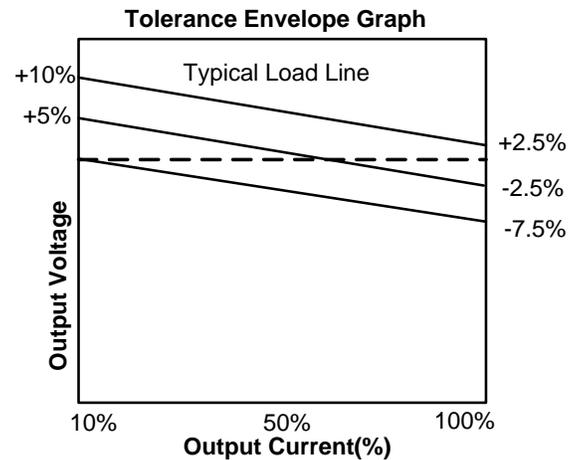
| Pin | Single |
|-----|--------|
| 1   | +Vin   |
| 2   | -Vin   |
| 5   | -Vout  |
| 6   | +Vout  |
| 7   | NC     |
| 8   | NC     |
| 14  | NC     |

NC: not connected

### Dimensions



### Typical Characteristics

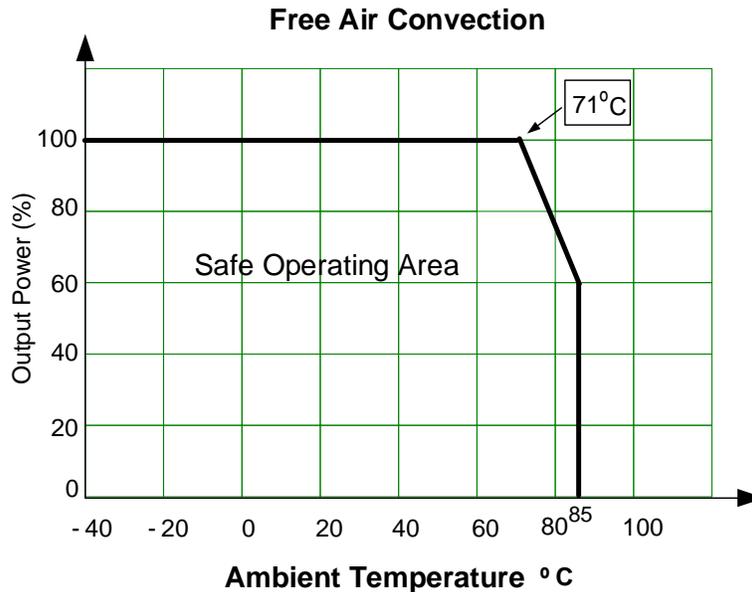


### Minimum Load Requirement

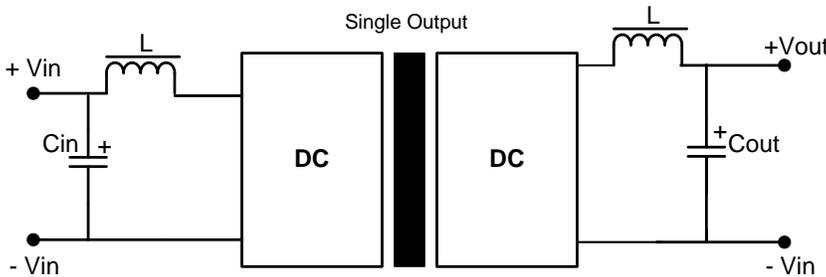
In order for this module to operate efficiently and reliably a minimum load of no less than 10% of its maximum needs to be maintained at all times during operation.

NOTE: this converter should never be operated under no load. If it is required to operate the converter with less than 10% load, it is recommended to install a resistor in parallel with the application load to draw additional current from the converter's output to maintain the minimum load condition, or use a converter rated at a lower power.

**Derating for 3000VDC Isolated models**



**Recommended Filter Circuit**



If it is required to decrease the input/output ripple, an “LC” filtering network may be connected to the input and output of the converter, see above.

It should be noted that the inductance and the resonant frequency of the “LC” filtering network should differ from the DC/DC converter switching frequency to avoid mutual interference.

The capacitance of the output filter capacitor must not exceed the values in the table below to avoid startup problems and ensure safe and reliable operation.

It is not recommended to connect any external capacitor in the application field when output loading is less than 0.5 watt.

**External Capacitor Tables**

**Input Capacitor (Cin)**

| Vin (VDC) | Cin (uF) |
|-----------|----------|
| 5         | 4.7      |
| 12        | 2.2      |

**Output Capacitor (Cout)**

| Vout (VDC) | Cout (uF) |
|------------|-----------|
| 5          | 10        |
| 9          | 4.7       |
| 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](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 than 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).