

**FEATURES:**

- RoHS compliant
- Full SMD internal technology
- Wide 2:1 input range
- High efficiency up to 88%
- Pin compatible with multiple manufacturers
- Operating temperature -40°C to + 85°C
- Input/Output Isolation 1500VDC
- Continuous short circuit protection
- Low profile metal package

### Models

#### Single output



| Model        | Input Voltage (V) | Output Voltage (V) | Output Current max (A) | Capacitive load, max (μF) | Efficiency (%) |
|--------------|-------------------|--------------------|------------------------|---------------------------|----------------|
| AM15E-1203SZ | 9-18              | 3.3                | 3                      | 3300                      | 80             |
| AM15E-1205SZ | 9-18              | 5                  | 3                      | 3300                      | 82             |
| AM15E-1207SZ | 9-18              | 7.2                | 2.083                  | 2200                      | 83             |
| AM15E-1209SZ | 9-18              | 9                  | 1.66                   | 1000                      | 85             |
| AM15E-1212SZ | 9-18              | 12                 | 1.25                   | 1000                      | 85             |
| AM15E-1215SZ | 9-18              | 15                 | 1                      | 680                       | 85             |
| AM15E-1218SZ | 9-18              | 18                 | 0.833                  | 470                       | 85             |
| AM15E-1224SZ | 9-18              | 24                 | 0.625                  | 470                       | 86             |
| AM15E-2403SZ | 18-36             | 3.3                | 3                      | 3300                      | 80             |
| AM15E-2405SZ | 18-36             | 5                  | 3                      | 3300                      | 84             |
| AM15E-2407SZ | 18-36             | 7.2                | 2.083                  | 2200                      | 84             |
| AM15E-2409SZ | 18-36             | 9                  | 1.66                   | 1000                      | 85             |
| AM15E-2412SZ | 18-36             | 12                 | 1.25                   | 1000                      | 85             |
| AM15E-2415SZ | 18-36             | 15                 | 1                      | 680                       | 86             |
| AM15E-2418SZ | 18-36             | 18                 | 0.833                  | 470                       | 86             |
| AM15E-2424SZ | 18-36             | 24                 | 0.625                  | 470                       | 87             |
| AM15E-4803SZ | 36-72             | 3.3                | 3                      | 3300                      | 80             |
| AM15E-4805SZ | 36-72             | 5                  | 3                      | 3300                      | 84             |
| AM15E-4807SZ | 36-72             | 7.2                | 2.083                  | 2200                      | 84             |
| AM15E-4809SZ | 36-72             | 9                  | 1.66                   | 1000                      | 85             |
| AM15E-4812SZ | 36-72             | 12                 | 1.25                   | 1000                      | 86             |
| AM15E-4815SZ | 36-72             | 15                 | 1                      | 680                       | 87             |
| AM15E-4818SZ | 36-72             | 18                 | 0.833                  | 470                       | 87             |
| AM15E-4824SZ | 36-72             | 24                 | 0.625                  | 470                       | 87             |

### Models

#### Dual output

| Model        | Input Voltage (V) | Output Voltage (V) | Output Current max (A) | Capacitive load, max (μF) | Efficiency (%) |
|--------------|-------------------|--------------------|------------------------|---------------------------|----------------|
| AM15E-1203DZ | 9-18              | ±3.3               | ±1.5                   | ±1000                     | 80             |
| AM15E-1205DZ | 9-18              | ±5                 | ±1.5                   | ±1000                     | 82             |
| AM15E-1207DZ | 9-18              | ±7.2               | ±1.041                 | ±680                      | 83             |
| AM15E-1209DZ | 9-18              | ±9                 | ±0.833                 | ±470                      | 84             |
| AM15E-1212DZ | 9-18              | ±12                | ±0.625                 | ±470                      | 84             |
| AM15E-1215DZ | 9-18              | ±15                | ±0.5                   | ±330                      | 84             |
| AM15E-1218DZ | 9-18              | ±18                | ±0.416                 | ±220                      | 85             |
| AM15E-1224DZ | 9-18              | ±24                | ±0.312                 | ±220                      | 85             |
| AM15E-2403DZ | 18-36             | ±3.3               | ±1.5                   | ±1000                     | 80             |
| AM15E-2405DZ | 18-36             | ±5                 | ±1.5                   | ±1000                     | 83             |
| AM15E-2407DZ | 18-36             | ±7.2               | ±1.041                 | ±680                      | 84             |
| AM15E-2409DZ | 18-36             | ±9                 | ±0.833                 | ±470                      | 85             |

## Models

### Dual output (continued)

| Model        | Input Voltage (V) | Output Voltage (V) | Output Current max (A) | Capacitive load, max (μF) | Efficiency (%) |
|--------------|-------------------|--------------------|------------------------|---------------------------|----------------|
| AM15E-2412DZ | 18-36             | ±12                | ±0.625                 | ±470                      | 86             |
| AM15E-2415DZ | 18-36             | ±15                | ±0.5                   | ±330                      | 86             |
| AM15E-2418DZ | 18-36             | ±18                | ±0.416                 | ±220                      | 87             |
| AM15E-2424DZ | 18-36             | ±24                | ±0.312                 | ±220                      | 87             |
| AM15E-4803DZ | 36-72             | ±3.3               | ±1.5                   | ±1000                     | 80             |
| AM15E-4805DZ | 36-72             | ±5                 | ±1.5                   | ±1000                     | 84             |
| AM15E-4807DZ | 36-72             | ±7.2               | ±1.041                 | ±680                      | 84             |
| AM15E-4809DZ | 36-72             | ±9                 | ±0.833                 | ±470                      | 85             |
| AM15E-4812DZ | 36-72             | ±12                | ±0.625                 | ±470                      | 86             |
| AM15E-4815DZ | 36-72             | ±15                | ±0.5                   | ±330                      | 87             |
| AM15E-4818DZ | 36-72             | ±18                | ±0.416                 | ±220                      | 87             |
| AM15E-4824DZ | 36-72             | ±24                | ±0.312                 | ±220                      | 87             |

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                  | 12             | 9-18    |         | VDC    |
|                                | 24             | 18-36   |         | VDC    |
|                                | 48             | 36-72   |         | VDC    |
| Filter                         | π (Pi) Network |         |         |        |
| Start up time                  |                | 20      |         | ms     |
| Absolute Maximum Rating        | 12 Vin         | > -0.7  | 25      | VDC    |
|                                | 24 Vin         | > -0.7  | 50      | VDC    |
|                                | 48 Vin         | > -0.7  | 100     | VDC    |
| Peak Input Voltage time        |                |         | 100     | ms     |
| Input reflected ripple current |                | 35      |         | mA p-p |

## Isolation Specifications

| Parameters         | Conditions | Typical | Rated | Units |
|--------------------|------------|---------|-------|-------|
| Tested I/O voltage | 60 sec     |         | 1500  | VDC   |
| Case to Input      | 60 sec     | 1000    |       | VDC   |
| Case to Output     | 60 sec     | 1000    |       | VDC   |
| Resistance         |            | > 1000  |       | MOhm  |
| Capacitance        |            | 500     |       | pF    |

## Output Specifications

| Parameters                       | Conditions                               | Typical | Maximum | Units     |
|----------------------------------|------------------------------------------|---------|---------|-----------|
| Voltage accuracy                 |                                          |         | ±1      | %         |
| Short Circuit protection         | Continuous                               |         |         |           |
| Short circuit restart            | Auto Recovery                            |         |         |           |
| Over current protection          |                                          | 140     |         | % of Iout |
| Line voltage regulation          | HL-LL                                    |         | ±0.5    | %         |
| Load voltage regulation (Single) | 0-100% load                              |         | ±0.5    | %         |
| Load voltage regulation (Dual)   | 0-100% load                              |         | ±1.0    | %         |
| Temperature coefficient          |                                          | ±0.02   |         | %/°C      |
| Ripple & Noise*                  | At 20MHz Bandwidth                       |         | 100     | mV p-p    |
| Start up time                    | Nominal Vin with constant resistive load | 20      |         | ms        |

\* Measured at 20MHz bandwidth with a 1uF ceramic capacitor.

## General Specifications

| Parameters                    | Conditions                                               | Typical                  | Maximum                 | Units |
|-------------------------------|----------------------------------------------------------|--------------------------|-------------------------|-------|
| Switching frequency           | 100% load                                                | 200                      |                         | KHz   |
| Operating temperature         | derating above 70°C                                      | -40 to +85               |                         | °C    |
| Storage temperature           |                                                          | -40 to +125              |                         | °C    |
| Maximum case temperature      |                                                          |                          | 100                     | °C    |
| Derating                      | 60 to 85°C                                               | 2.5                      |                         | %/°C  |
| Cooling                       | Free air convection                                      |                          |                         |       |
| Humidity                      |                                                          |                          | 95                      | %     |
| Case material                 | Nickel coated copper                                     |                          |                         |       |
| Potting material              | UL94V-0 rated                                            |                          |                         |       |
| Weight                        |                                                          | 31                       |                         | g     |
| Dimensions (L x W x H)        | Tolerance ±0.5mm                                         | 2.00 x 1.00 x 0.40inches | 50.80 x 25.40 x 10.16mm |       |
| MTBF                          | > 1,121,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C) |                          |                         |       |
| Maximum soldering temperature | 1.5mm from case for 10 sec                               |                          | 260                     | °C    |
| Transient recovery time       | Load step change 75% to 50% to 25%                       | 250                      |                         | µS    |
| Transient recovery deviation  | Load step change 75% to 50% to 25%                       |                          | ±3                      | %     |

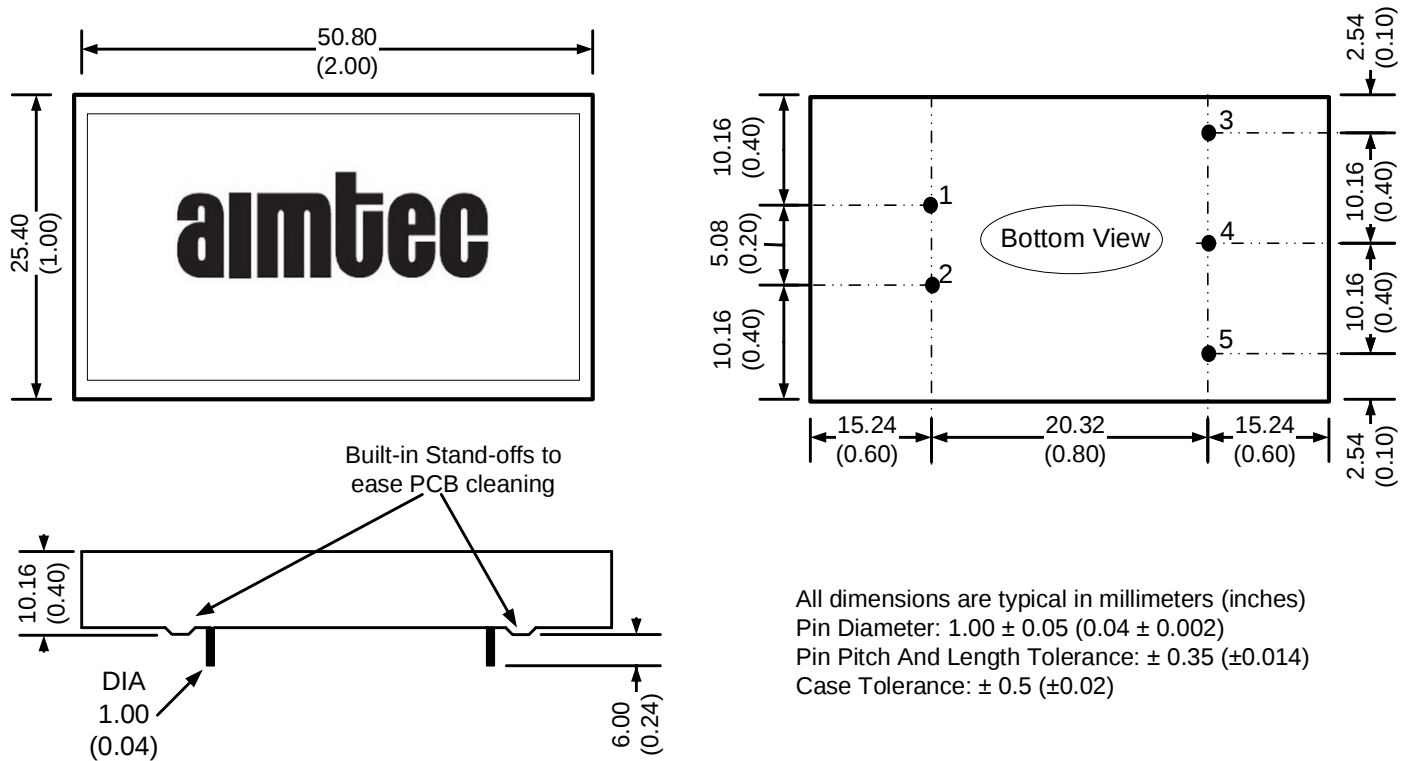
## Safety Specifications

| Parameters       |                                                             |
|------------------|-------------------------------------------------------------|
| Agency approvals | CE, cULus 62368-1                                           |
| Standards        | Design to meet IEC/EN62368-1                                |
|                  | EN 55032 – Class A with recommended EMC circuit             |
|                  | EN 55024 – Class A                                          |
|                  | IEC61000-4-2, Criteria A                                    |
|                  | IEC61000-4-3, Criteria A                                    |
|                  | IEC61000-4-4, Criteria A                                    |
|                  | IEC61000-4-5, Criteria A (external 220uF/100V cap required) |
|                  | IEC61000-4-6, Criteria A                                    |
|                  | IEC61000-4-8, Criteria A                                    |

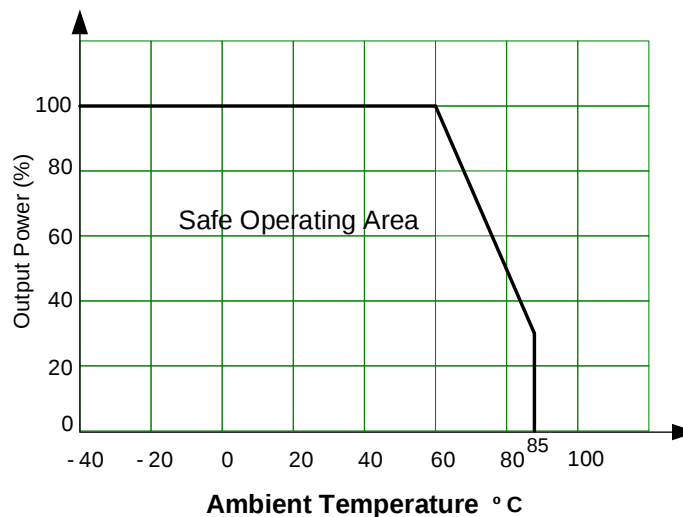
## Pin Out Specifications

| Pin | 1500VDC   |           |
|-----|-----------|-----------|
|     | Single    | Dual      |
| 1   | +V Input  | +V Input  |
| 2   | -V Input  | -V Input  |
| 3   | +V Output | +V Output |
| 4   | No Pin    | Common    |
| 5   | -V Output | -V Output |

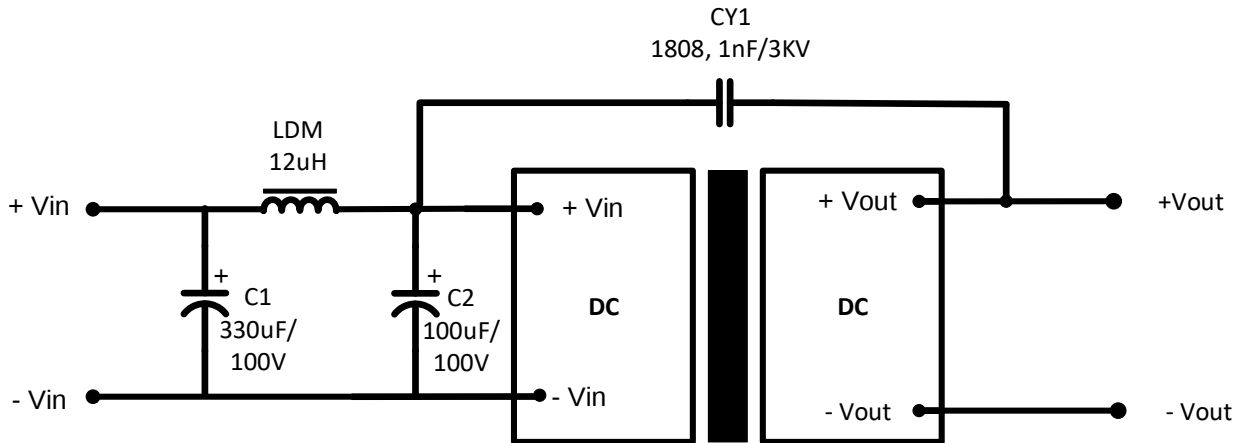
## Dimensions:



## Derating



## EMC recommended circuit



**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).