



## FEATURES:

- 3 Pin SIP Package
- Pin-out compatible with LM78XX Linear Regulators
- Continuous Short Circuit Protection
- Non-Isolated Regulated Output
- Operating temperature -40°C to +85°C
- Wide input range
- Very High Efficiency Up To 95%
- Low ripple and noise



## Models Single output

| Model             | Input Voltage (V) | Output Voltage (V) | Output Current max (A) | Efficiency Vin Min (%) | Efficiency Vin Max (%) |
|-------------------|-------------------|--------------------|------------------------|------------------------|------------------------|
| AMSR1.5-782.5-NZ  | 4.75-18           | 2.5                | 1.5                    | 85                     | 88                     |
| AMSR1.5-783.3-NZ  | 4.75-18           | 3.3                | 1.5                    | 88                     | 91                     |
| AMSR1.5-7805-NZ   | 6.5-18            | 5                  | 1.5                    | 91                     | 93                     |
| AMSR1.5-786.5-NZ  | 8-18              | 6.5                | 1.5                    | 93                     | 95                     |
| AMSR1.5-782.5L-NZ | 4.75-18           | 2.5                | 1.5                    | 85                     | 88                     |
| AMSR1.5-783.3L-NZ | 4.75-18           | 3.3                | 1.5                    | 88                     | 91                     |
| AMSR1.5-7805L-NZ  | 6.5-18            | 5                  | 1.5                    | 91                     | 93                     |
| AMSR1.5-786.5L-NZ | 8-18              | 6.5                | 1.5                    | 93                     | 95                     |

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

| Input Specifications      | Nominal                  | Typical | Maximum | Units |
|---------------------------|--------------------------|---------|---------|-------|
| Voltage range             | See the table above      |         |         | VDC   |
| Filter                    | Capacitor                |         |         |       |
| Quiescent Current         | Vin=(LL-HL) at full load | 5       | 10      | mA    |
| Short Circuit consumption |                          | 0.5     | 1.8     | W     |

## Output Specifications

| Output Specifications    | Conditions               | Typical | Maximum | Units  |
|--------------------------|--------------------------|---------|---------|--------|
| Voltage accuracy         | 100% load                | ±3      |         | %      |
| Short Circuit protection | Continuous.              |         |         |        |
| Short circuit restart    | Auto recovery            |         |         |        |
| Output current limit     |                          |         | 5       | A      |
| Thermal shutdown         | Internal IC junction     | 150     |         | °C     |
| Dynamic load stability   | 10-100% load             |         | ±100    | mV     |
| Line voltage regulation  | Vin=(LL-HL) at full load | ±0.75   |         | %      |
| Load voltage regulation  | 10-100% load             | ±1      |         | %      |
| Temperature coefficient  | -40°C to +85°C ambient   | ±0.02   |         | %/°C   |
| Ripple & Noise           | 20MHz Bandwidth          | 45      |         | mV p-p |
| Maximum Capacitive Load  |                          |         | 1000    | µF     |

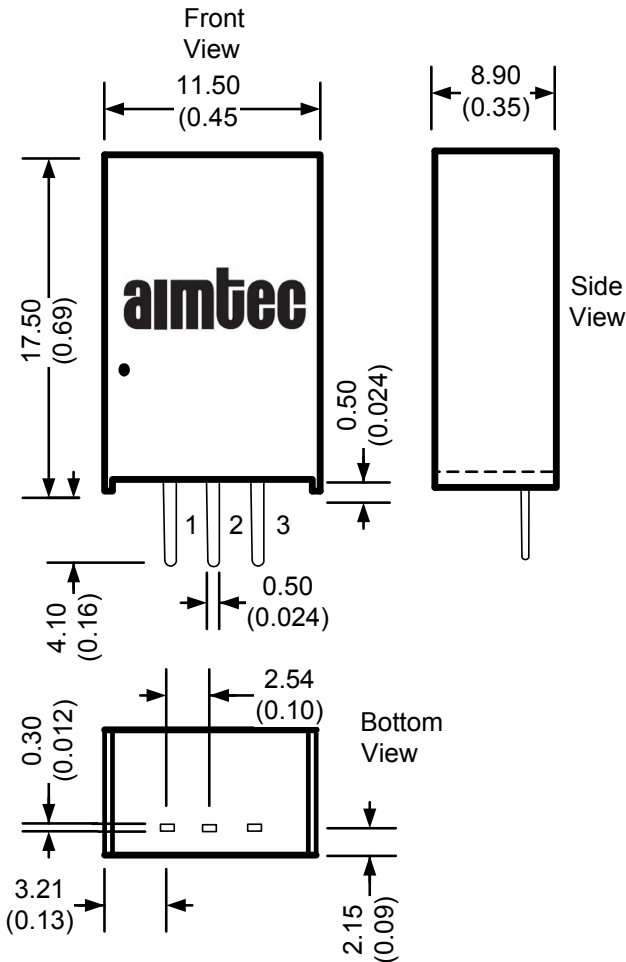
## General Specifications

| Input Specifications   | Conditions                                   | Typical   | Maximum                 | Units |
|------------------------|--|---|-------------------------|-------|
| Switching frequency    | 100% load                                    | 340   |                         | KHz   |
| Operating temperature  | With derating above 71°C                     | -40 to +85  |                         | °C    |
| Storage temperature    |  | -55 to +125   |                         | °C    |
| Max Case temperature   |  |   | 100                     | °C    |
| Cooling                | Free air convection                          |   |                         |       |
| Humidity               |  |   | 95                      | %     |
| Case material          | Non-conductive black plastic (UL94-V0 rated) |   |                         |       |
| Weight                 |  | 4   |                         | g     |
| Dimensions (L x W x H) |  | 0.45 X 0.35 X 0.69 inch                                 | 11.50 X 8.90 X 17.50 mm |       |
| MTBF                   |  | > 2 000 000 hrs (MIL-HDBK-217F, Ground Benign, t=+25°C) |                         |       |
| Soldering Temperature  | 1.5 mm from case for 10 sec                  |   | 300                     | °C    |

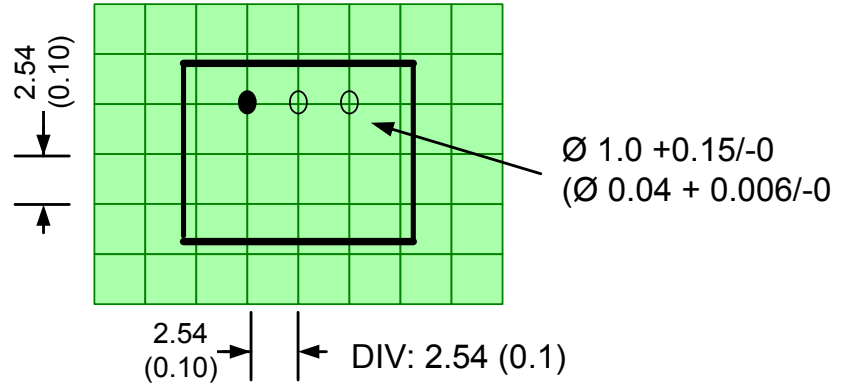
### Pin Out Specifications

| Pin | Single |
|-----|--------|
| 1   | +Vin   |
| 2   | GND    |
| 3   | +Vout  |

### Dimensions

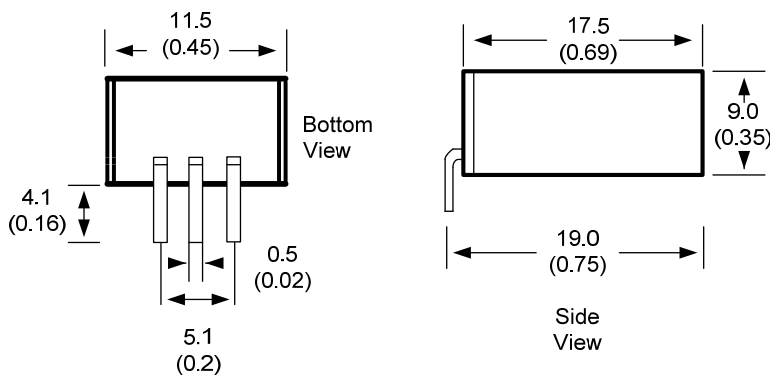


### Footprint

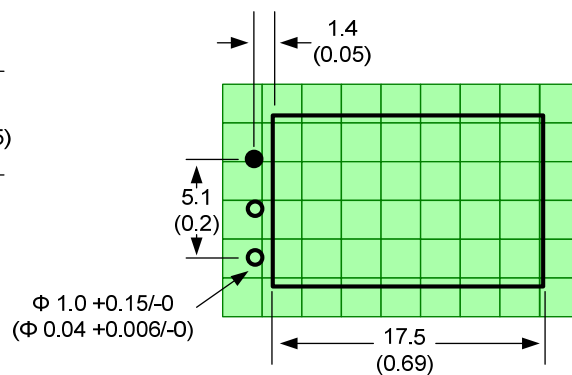


Dimensions are typical values: mm (inch)  
 General Tolerance:  $\pm 0.25$  ( $\pm 0.01$ )  
 Pin Tolerance:  $\pm 0.1$  ( $\pm 0.004$ )

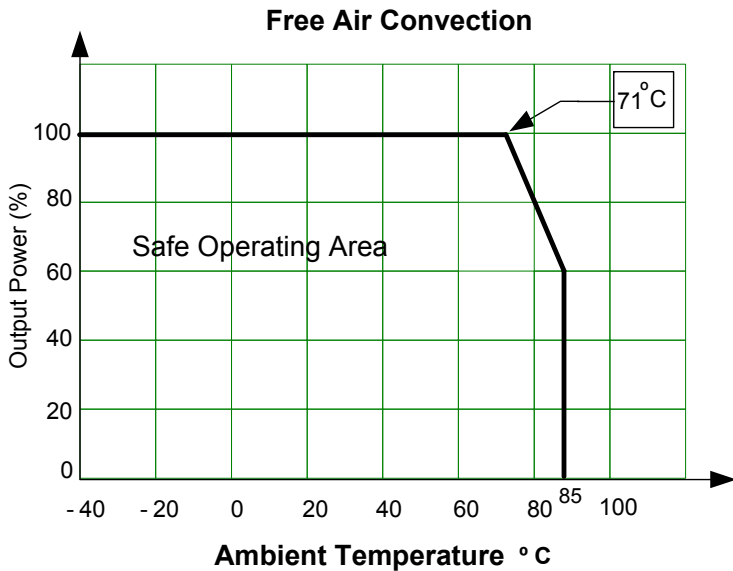
### L Models



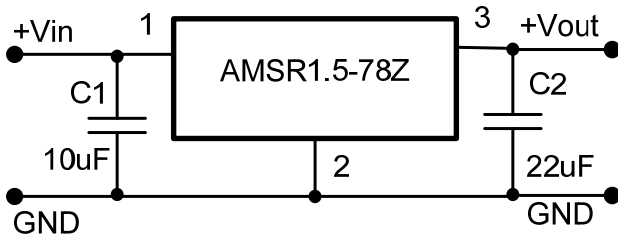
### Footprint



## Derating



## Typical Application Circuits

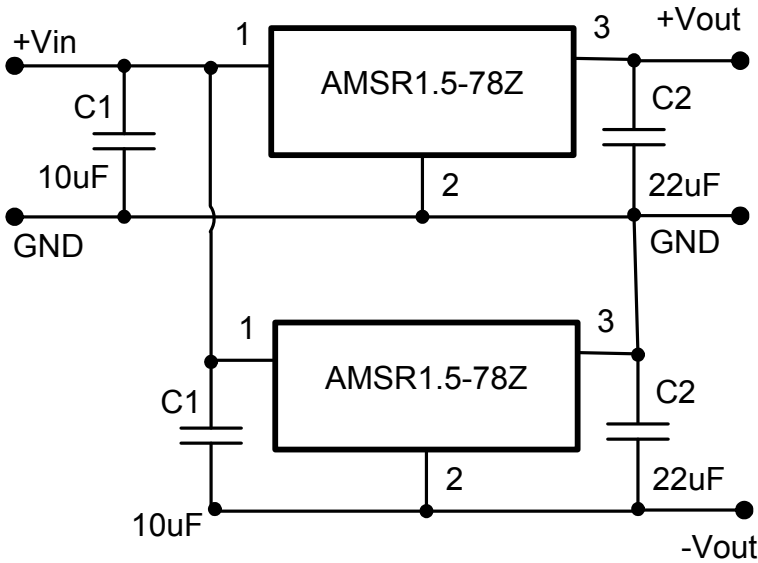


C1: A low ESR capacitor is required to keep the noise of the converter to a minimum. Ceramic capacitors are recommended with typical value is 10µF / 25V.

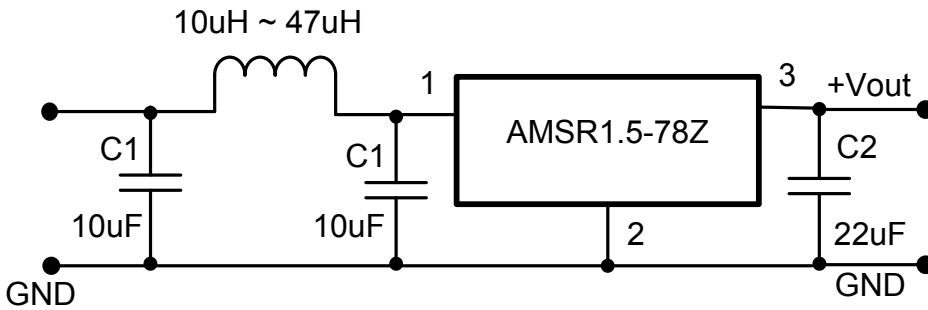
C2: Installation of C2 is recommended with typical value of 22µF / 16V ceramic for 5V and 6.5V output signal and 22µF / 6.3V ceramic for 2.5V and 3.3V output signal.

**NOTE: This part is not designed for parallel operation.**

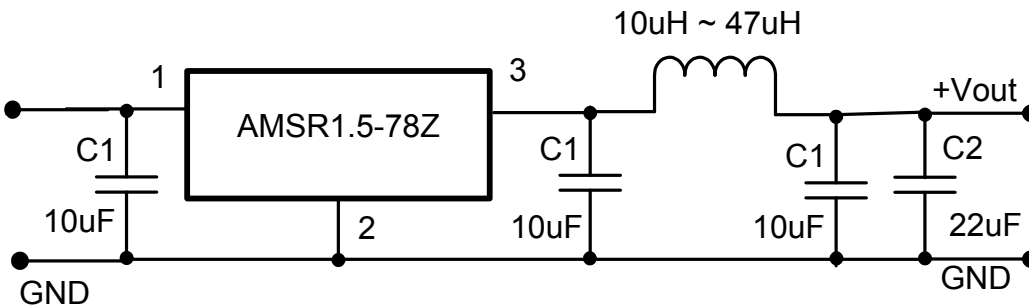
### Dual Output Connection



### Input Filter



### Output Filter



**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 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).