



Your Power Partner

Series AMSR1-78-NZ

Up to 12 Watt | DC-DC Switching Regulator



FEATURES:

- 3 Pin SIP Package
- Pin-out compatible with LM78XX Linear Regulators
- Short Circuit Protection
- Non-Isolated Regulated Outputs
- Operating temperature -40°C to +85°C
- Wide input range
- Very High Efficiency Up To 96%
- Low ripple and noise



Models Single output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (A) | Efficiency Vin Min (%) | Efficiency Vin Max (%) |
|-----------------|-------------------|--------------------|------------------------|------------------------|------------------------|
| AMSR1-783.3-NZ | 4.75-28 | 3.3 | 1 | 90 | 83 |
| AMSR1-7805-NZ | 6.5-32 | 5 | 1 | 93 | 88 |
| AMSR1-786.5-NZ | 9.0-32 | 6.5 | 1 | 94 | 90 |
| AMSR1-7809-NZ | 12-32 | 9 | 1 | 95 | 92 |
| AMSR1-7812-NZ | 16-32 | 12 | 1 | 96 | 94 |
| AMSR1-783.3L-NZ | 4.75-28 | 3.3 | 1 | 90 | 83 |
| AMSR1-7805L-NZ | 6.5-32 | 5 | 1 | 93 | 88 |
| AMSR1-786.5L-NZ | 9.0-32 | 6.5 | 1 | 94 | 90 |
| AMSR1-7809L-NZ | 12-32 | 9 | 1 | 95 | 92 |
| AMSR1-7812L-NZ | 16-32 | 12 | 1 | 96 | 94 |

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 | 7 | mA |
| Short Circuit consumption | | 0.5 | 1.2 | 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 | | | 2 | 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 | ±0.4 | | % |
| Load voltage regulation | 10-100% load | ±0.6 | | % |
| Temperature coefficient | -40°C to +85°C ambient | ±0.02 | | %/°C |
| Ripple & Noise | 20MHz Bandwidth | 35 | | mV p-p |
| Maximum Capacitive Load | | | 2000 | µF |

General Specifications

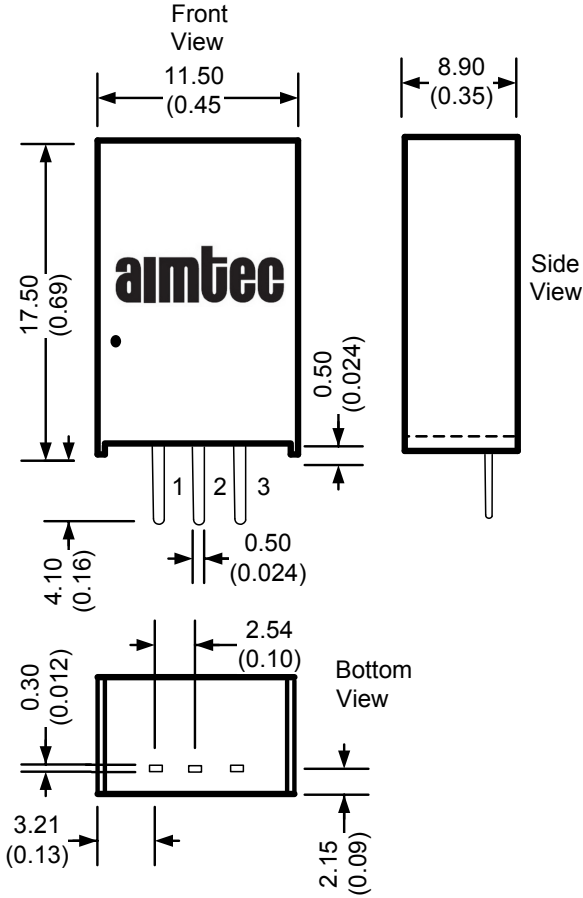
| Input Specifications | Conditions | Typical | Maximum | Units |
|------------------------|---|-------------------------|-------------------------|-------|
| Switching frequency | 100% load | 330 | | KHz |
| Operating temperature | With derating above 71°C | -40 to +85 | | °C |
| Storage temperature | | -55 to +125 | | °C |
| Max Case temperature | | | 100 | °C |
| Cooling | Free air convection | | | |
| Humidity | | | 95 | % |
| Case material | Non-conductive black plastic (UL94V-0 rated) | | | |
| Weight | | 3.7 | | 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 |

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.

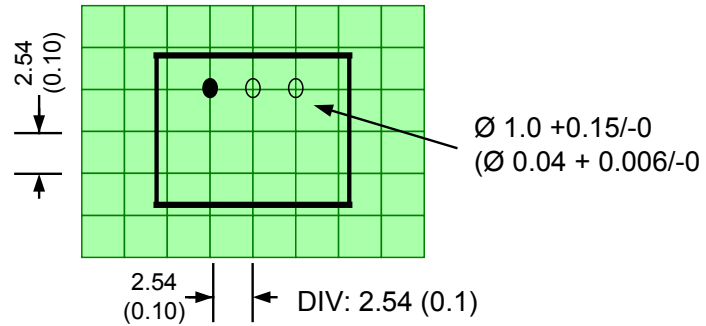
Pin Out Specifications

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

Dimensions

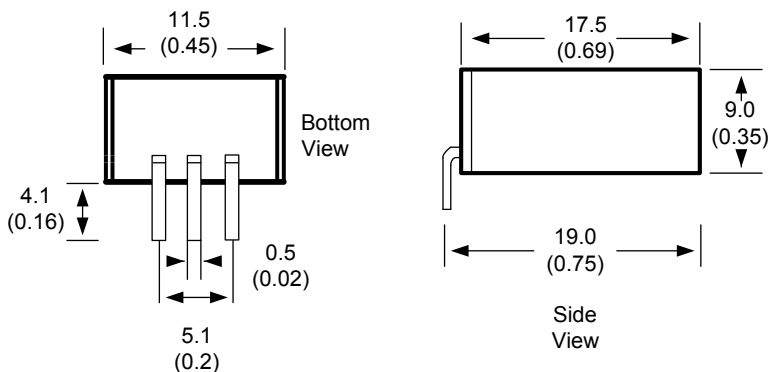


Footprint

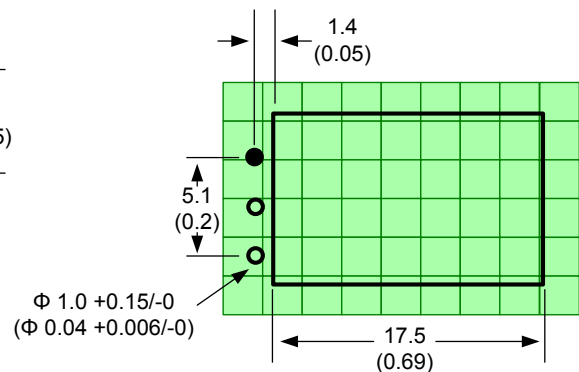


Dimensions are typical values: mm (inch)
 General Tolerance: ± 0.25 (± 0.01)
 Pin Tolerance: ± 0.1 (± 0.004)

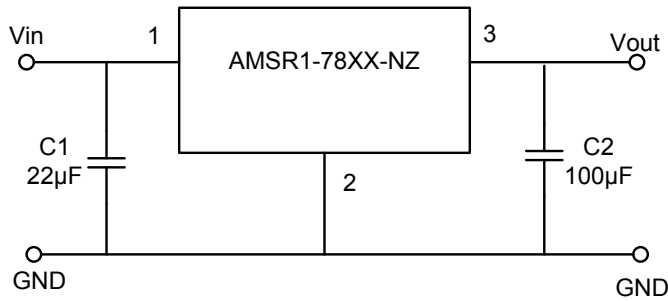
L Models



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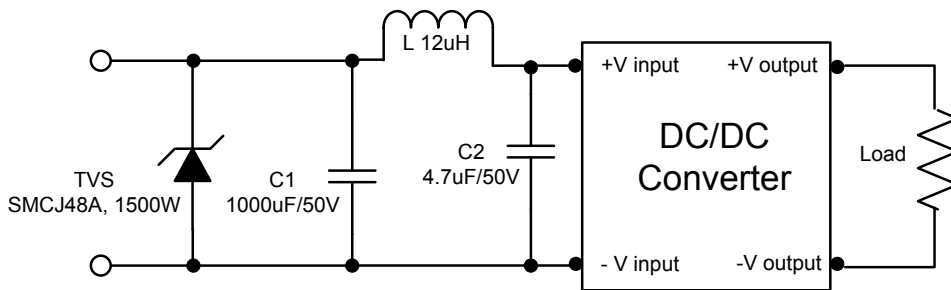


Typical Application Circuit

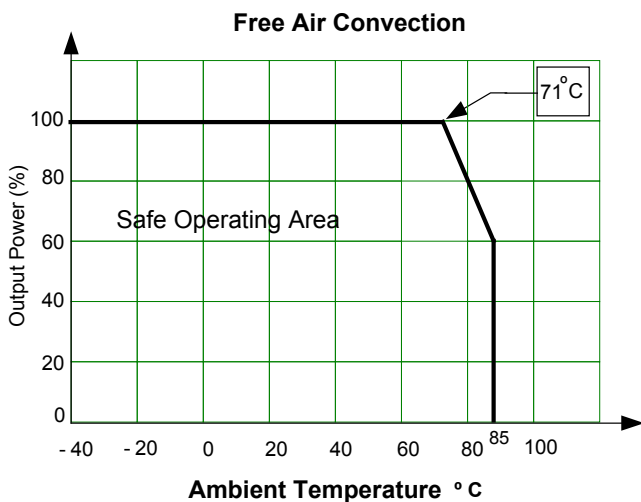


C1: A low ESR capacitor is required to keep the noise of the converter to a minimum. Ceramic capacitors are recommended, but tantalum or electrolytic may be used. Typical value is 22µF / 50V.
 C2: Installation of C2 is recommended but optional. Typical recommended value is 100µF / 25V electrolytic.
NOTE: This part is not designed for parallel operation.

Recommended Circuits Conducted and Radiated Emissions



Derating



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