



Your Power Partner

Series AMSR-78Z

Up to 7.5Watt | DC-DC Switching Regulator



FEATURES:

- RoHS Compliant
- 3 Pin SIP Package
- Non-Isolated
- Low ripple and noise
- Operating temperature -40°C to +85
- Very high efficiency up to 97%
- Pin compatible to multiple manufacturers



Models Single output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Maximum Capacitive load (µF) | Efficiency Vin Min (%) | Efficiency Vin Max (%) |
|-------------|-------------------|--------------------|-------------------------|------------------------------|------------------------|------------------------|
| AMSR-781.5Z | 4.75-30 | 1.5 | 500 | 220 | 78 | 65 |
| AMSR-781.8Z | 4.75-34 | 1.8 | 500 | 220 | 82 | 70 |
| AMSR-782.5Z | 4.75-34 | 2.5 | 500 | 220 | 87 | 76 |
| AMSR-783.3Z | 4.75-34 | 3.3 | 500 | 220 | 91 | 81 |
| AMSR-7805Z | 6.5-34 | 5 | 500 | 220 | 94 | 85 |
| AMSR-786.5Z | 8-34 | 6.5 | 500 | 220 | 95 | 88 |
| AMSR-787.2Z | 9-34 | 7.2 | 500 | 220 | 95 | 89 |
| AMSR-7809Z | 11-34 | 9 | 500 | 220 | 96 | 92 |
| AMSR-7812Z | 15-34 | 12 | 500 | 220 | 97 | 94 |
| AMSR-7815Z | 18-34 | 15 | 500 | 220 | 97 | 95 |

Input Specifications

| Parameters | Nominal | Typical | Maximum | Units |
|----------------------------------|---------------------|---------|---------|--------|
| Voltage range | See the table above | | | |
| Filter | Capacitor | | | |
| No load Input Current | | | 8 | mA |
| Input Reflected Ripple Current * | | 35 | | mA p-p |
| Absolute Maximum Stress rating | | | -0.3-34 | VDC |

* The input reflected ripple current should be measured with a 12µH inductor.

Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|--------------------------|-------------------------------|---------|---------|--------|
| Voltage accuracy | | | ±2 | % |
| Short Circuit protection | Continuous | | | |
| Short Circuit restart | Auto recovery | | | |
| Line voltage regulation | | | ±0.5 | % |
| Load voltage regulation | 10-100% load | | ±0.6 | % |
| Temperature coefficient | | ±0.02 | | %/°C |
| Ripple & Noise | 20MHz Bandwidth, 10-100% load | | 60 | mV p-p |

General Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|------------------------|--|-------------|---------|-------|
| Switching frequency | 100% load | 330 | | KHz |
| Operating temperature | Without derating | -40 to +85 | | °C |
| Storage temperature | | -40 to +125 | | °C |
| Max Case temperature | | | 100 | °C |
| Cooling | Free air convection | | | |
| Humidity | | | 95 | % |
| Case material | Non-conductive black plastic (UL94V-0 rated) | | | |
| Weight | | 2 | | g |
| Dimensions (L x W x H) | 0.46 x 0.29 x 0.38 inches 11.70 x 7.50 x 9.70 mm | | | |
| MTBF | > 4 500 000 hrs (MIL-HDBK-217F, Ground Benign, t=+25 °C) | | | |
| Soldering Temperature | 1.5 mm from case for 10 sec | | 260 | °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.

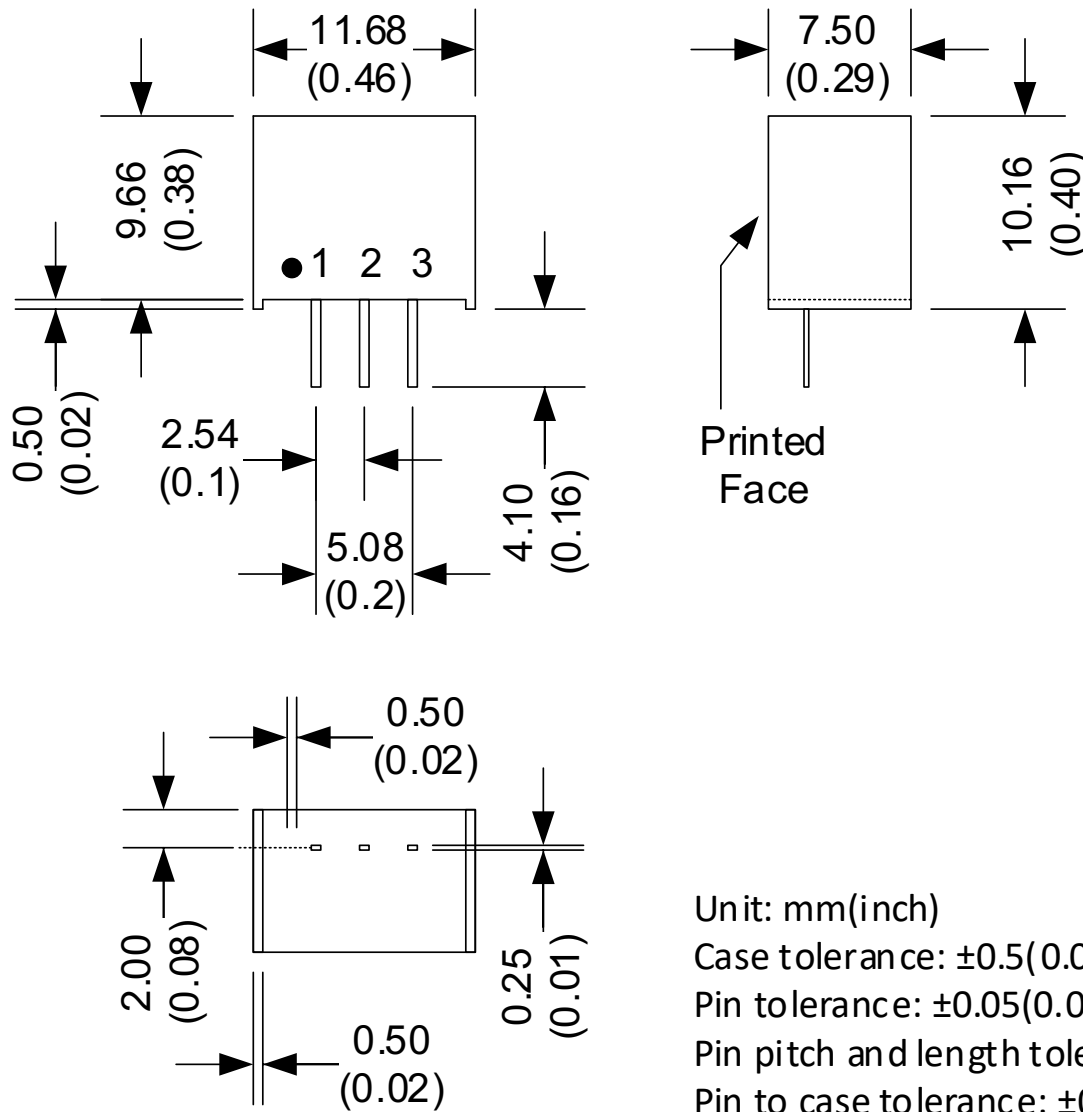
Safety Specifications

| Parameters | |
|-----------------|---|
| Agency Approval | CE |
| Standards | EN55032, Class B |
| | IEC61000-4-2, Perf. Criteria A |
| | IEC61000-4-3, Perf. Criteria A |
| | IEC61000-4-4, Perf. Criteria A (external 220uF/100V cap required) |
| | IEC61000-4-6, Perf. Criteria A |
| | IEC61000-4-8, Perf: Criteria A |

Pin Out Specifications

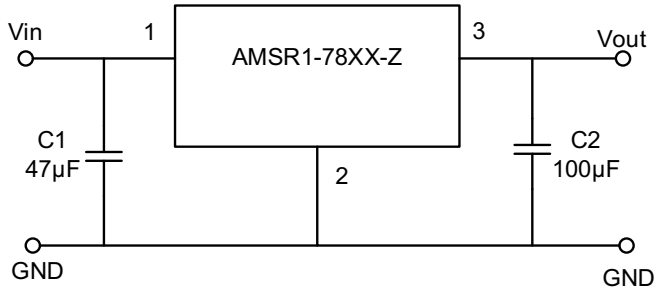
| Pin | Single |
|-----|-----------|
| 1 | +V Input |
| 2 | Ground |
| 3 | +V Output |

Dimensions



Unit: mm(inch)
Case tolerance: $\pm 0.5(0.02)$
Pin tolerance: $\pm 0.05(0.002)$
Pin pitch and length tolerance: $\pm 0.35(0.014)$
Pin to case tolerance: $\pm 0.5(0.02)$

Typical Application Circuit



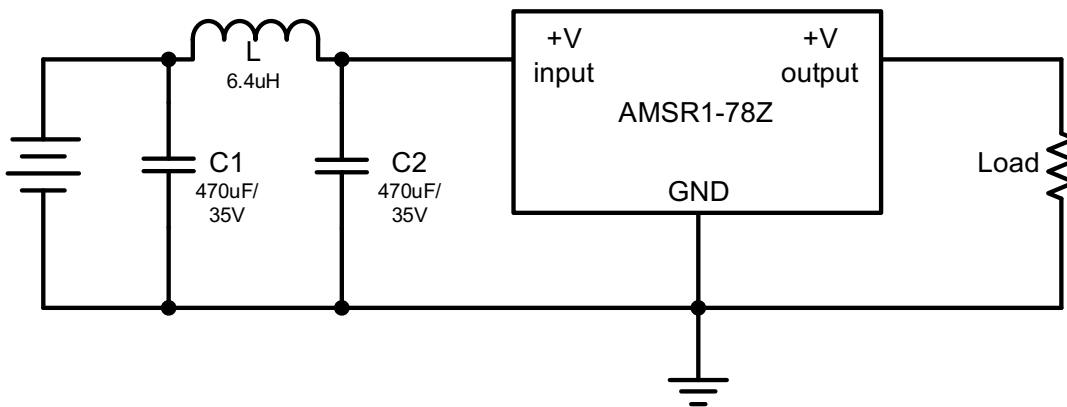
C1: A low ESR capacitor is required to keep the converter to a minimum. Ceramic capacitors are recommended, but tantalum or electrolytic may be used. Typical value is 47µF.

C2: Installation of C2 is recommended but optional. Typical value 100µF.

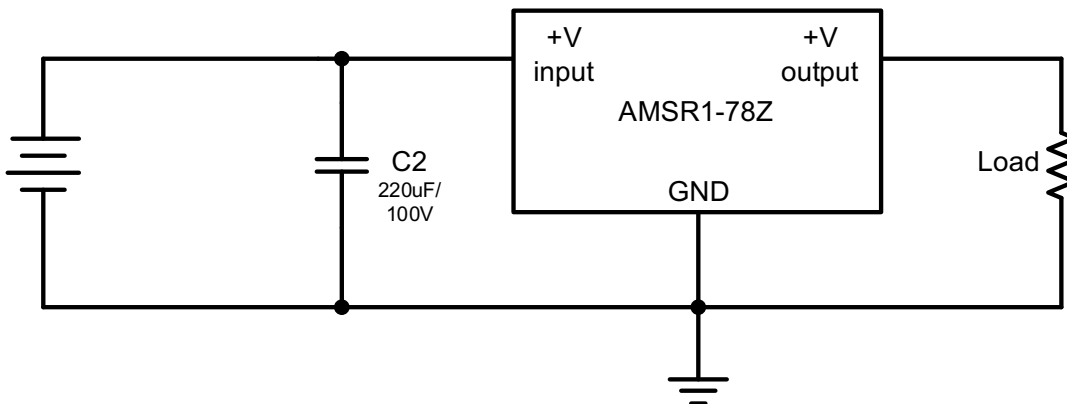
NOTE: It is not recommended to connect in parallel.

Recommended circuit

Conducted and Radiated Emissions



EFT/Surge



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