

**FEATURES:**

- 3 Pin SIP package
- Non-isolated regulated output
- Short circuit protection
- Pin-out compatible with LM78XX Linear Regulators
- No heatsink required
- Operating temperature -40°C to +85°C
- High efficiency Up To 94%
- Low ripple and noise


Models
Single output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Max Capacitive Load (uF) | Efficiency Vin Min (%) | Efficiency Vin Max (%) |
|--------------|-------------------|--------------------|-------------------------|--------------------------|------------------------|------------------------|
| AMSR1-781.5Z | 4.75-18 | 1.5 | 1000 | 220 | 78 | 72 |
| AMSR1-781.8Z | 4.75-18 | 1.8 | 1000 | 220 | 82 | 76 |
| AMSR1-782.5Z | 4.75-18 | 2.5 | 1000 | 220 | 87 | 81 |
| AMSR1-783.3Z | 4.75-18 | 3.3 | 1000 | 220 | 90 | 85 |
| AMSR1-7805Z | 6.50-18 | 5 | 1000 | 220 | 94 | 89 |

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 | See the table above | | | |
| Filter | Capacitor | | | |
| Absolute Maximum Rating | | -0.3~20 | | VDC |
| Peak Input Voltage Time | | 100 | | mS |
| Input reflected ripple current* | Full Load | 40 | | mA p-p |

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

Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|--------------------------|-------------------------------|---------|---------|---------------|
| Voltage accuracy | | | ±2 | % |
| Short Circuit protection | Continuous | | | |
| Short Circuit restart | Auto-Recovery | | | |
| Line voltage regulation | Vin=(LL-HL) at full load | | ±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 |
| Minimum Load Current | | 10 | | % of Iout max |
| Capacitive load | | | 220 | uF |

General Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|-------------------------------|--|-------------------------|---------|-------|
| Switching frequency | 100% load | 330 | | KHz |
| Operating temperature | | -40 to +60 | | °C |
| Storage temperature | | -40 to +125 | | °C |
| Maximum case temperature | | | 100 | °C |
| Cooling | Free Air Convection | | | |
| Humidity | | | 95 | % RH |
| Case material | Non-conductive black plastic (UL94V-0 rated) | | | |
| Weight | | 2 | | g |
| Dimensions (L x W x H) | 0.46 x 0.29 x 0.40 inches | 11.70 x 7.40 x 10.20 mm | | |
| MTBF | > 4 300 000 hrs (MIL-HDBK-217F, Ground Benign, t=+25 °C) | | | |
| Maximum soldering temperature | 1.5 mm from case for 10sec | | 260 | °C |

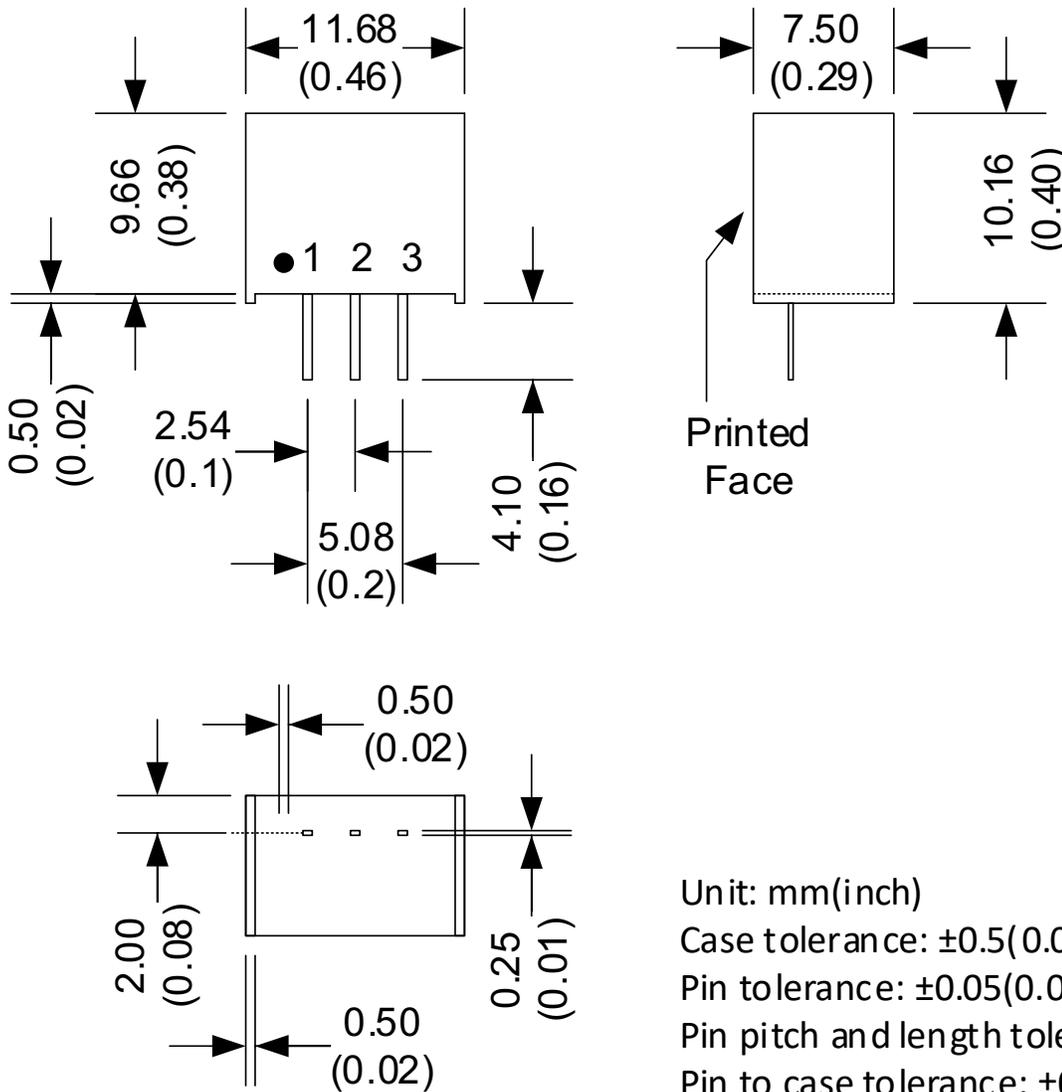
Safety Specifications

| Parameters | |
|------------|--|
| Standards | EN 55032 class B, with the recommended circuit |
| | IEC 61000-4-2, Perf. Criteria A |
| | IEC 61000-4-3, Perf. Criteria A |
| | IEC 61000-4-4, Perf. Criteria A (external 220uF/100V cap required) |
| | IEC 61000-4-6, Perf. Criteria A |
| | IEC 61000-4-8, Perf. Criteria A |

Pin Out Specifications

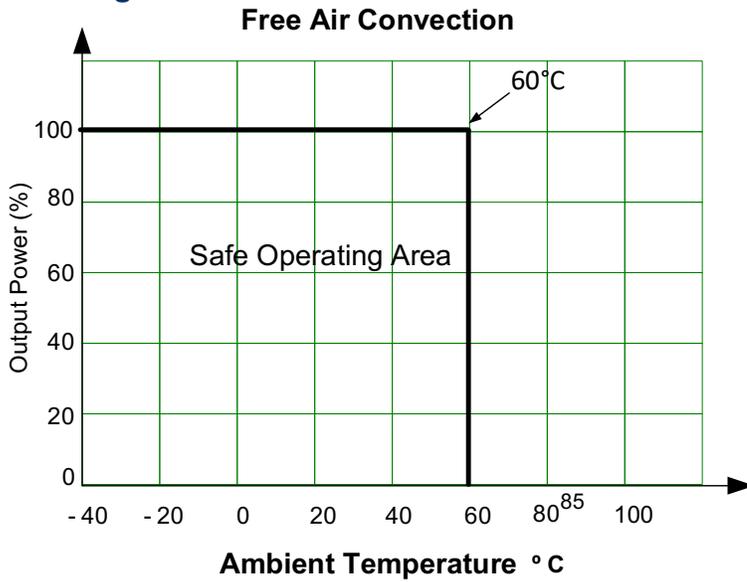
| Pin | Single |
|-----|--------|
| 1 | +Vin |
| 2 | GND |
| 3 | +Vout |

Dimensions



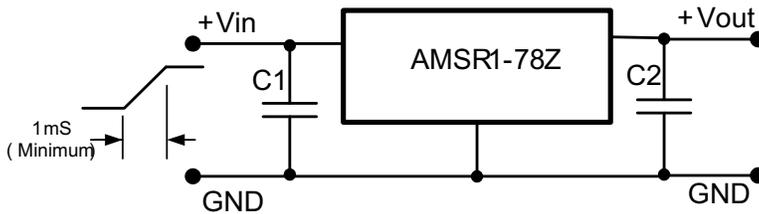
Unit: mm(inch)
 Case tolerance: $\pm 0.5(0.02)$
 Pin tolerance: $\pm 0.05(0.002)$
 Pin pitch and length tolerance: $\pm 0.35(0.014)$
 Pin to case tolerance: $\pm 0.5(0.02)$

Derating



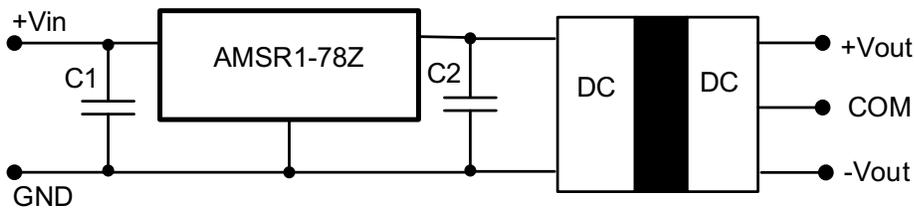
Application Circuits

Recommended soft start circuit



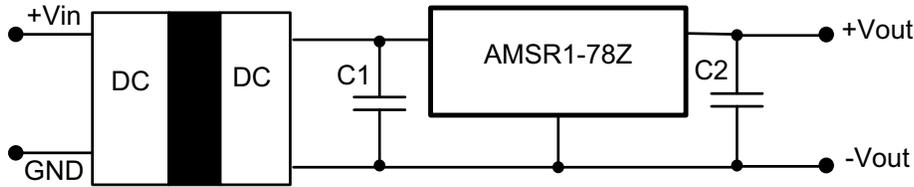
To protect converter during power up use "soft start" V_{in} and $C1 = 47 \mu F$
 $C2 = 10 \mu F$ (optional)

Wide input isolated (up to 6000VDC) dual outputs with high efficiency



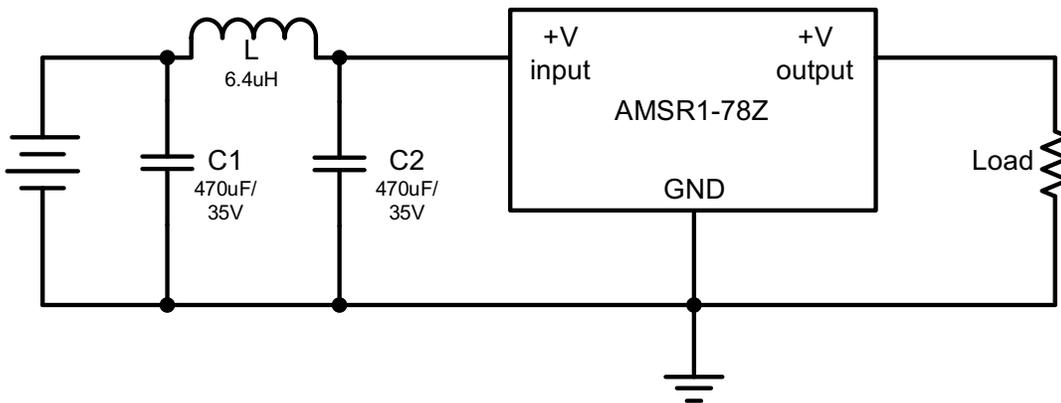
Isolated Dual Outputs
Wide Input Range 4.7V to 18V
 $C1$: Optional
 $C2$: Required for Decoupling (further decoupling may be required between the two converters).

Isolated (up to 6000VDC) single and regulated output



Isolated Single Output
 Wide Input Range 6.5V to 18V
 Point of Load Architecture
 Improved Line/Load Regulation
 C1: Required for Decoupling (further decoupling may be required between the two converters).
 C2: Optional

Recommended EMI/EMS circuit



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