

FEATURES:

- Short Circuit Protection
- High efficiency up to 95%
- Non-Isolated
- Operating temperature -40°C to +85°C
- Very low No load input current
- Pin Compatible to LM78xx



Models Single output

| Model | Input Voltage Nom/Range (V) | Output Voltage (V) | Output Current max (mA) | Efficiency Vin Min (%) | Efficiency Vin Max (%) | Max. Capacitive load (µF) |
|----------------|-----------------------------|--------------------|-------------------------|------------------------|------------------------|---------------------------|
| AMSRO-783.3-NZ | 24 / 4.75-36 | 3.3 | 500 | 86 | 80 | 680 |
| AMSRO-7805-NZ | 24 / 6.5-36 | 5 | 500 | 90 | 84 | 680 |
| | 12 / 7-31 | -5 | -300 | 80 | 81 | 330 |
| AMSRO-7812-NZ | 24 / 15-36 | 12 | 500 | 94 | 91 | 680 |
| | 12 / 8-24 | -12 | -150 | 84 | 85 | 330 |
| AMSRO-7815-NZ | 24 / 19-36 | 15 | 500 | 95 | 93 | 680 |
| | 12 / 8-21 | -15 | -150 | 85 | 87 | 330 |

NOTE: For Input voltage >30VDC, an input capacitor 22µF/50V is required.

Input Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|-------------------|------------------------|---------|---------|-------|
| Voltage range | See the table above | | | VDC |
| Filter | Capacitor | | | |
| Quiescent current | Vin=(LL-HL) at 0% load | | 1.5 | mA |

Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|------------------------------|---|---------|----------|--------|
| Voltage accuracy | 100% load, 3.3V output 100% load, Others | ±2 | ±4 ±3 | % |
| Short Circuit protection | Continuous | | | |
| Short circuit restart | Auto recovery | | | |
| Line voltage regulation | Vin=(LL-HL) at full load | ±0.2 | | % |
| Load voltage regulation | Nominal Input, 10-100% load | ±0.4 | | % |
| Temperature coefficient | -40°C to +85°C ambient | ±0.03 | | %/°C |
| Transient response deviation | Nominal Input, 25% load step change | | 250 | mV |
| Transient Recovery time | | | 1 | mSec |
| Ripple & Noise | 20MHz Bandwidth, 10-100% load | 20 | 75 | mV p-p |

General Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|------------------------|--|-------------|---------|-------|
| Switching frequency | 100% load | 330-850 | | 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 | Non condensing | | 95 | % |
| Weight | | 1 | | g |
| Dimensions (L x W x H) | 0.39 x 0.28 x 0.43 inches 10.00 x 7.20 x 11.00 mm | | | |
| MTBF | >2 000 000 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.

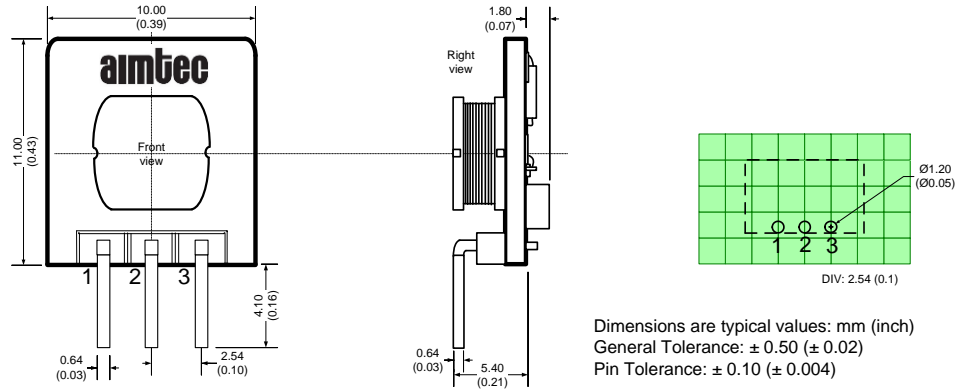
Safety Specifications

| Parameters | |
|------------|--|
| Approvals | UL |
| Standards | IEC/EN/UL60950-1 |
| | EN55022, Class B (with recommended circuit) |
| | IEC61000-4-2 (ESD): Contact $\pm 4\text{KV}$, Perf. Criteria B |
| | IEC61000-4-3 (Radiation Immunity): 10V/m, Perf. Criteria A |
| | IEC61000-4-4 (EFT): $\pm 1\text{KV}$, Perf. Criteria B (with recommended circuit) |
| | IEC61000-4-6 (CDI): 3Vrms, Perf: Criteria A |

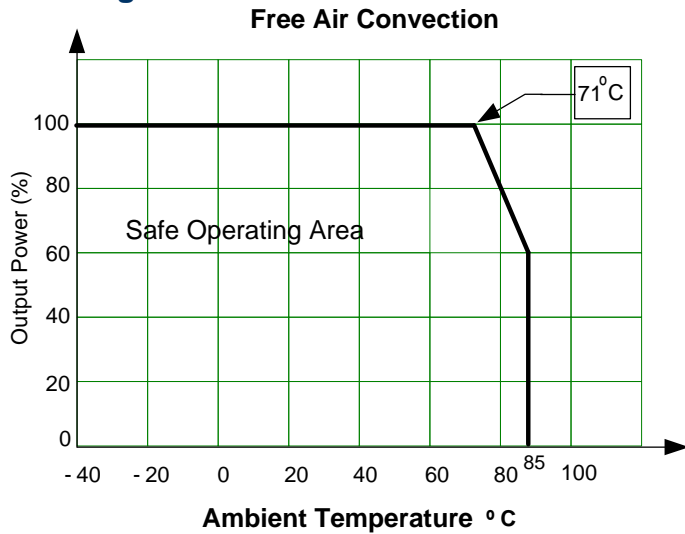
Pin Out Specifications

| Pin | Positive | Negative |
|-----|-----------|-----------|
| 1 | +V Input | +V Input |
| 2 | Ground | -V Output |
| 3 | +V Output | Ground |

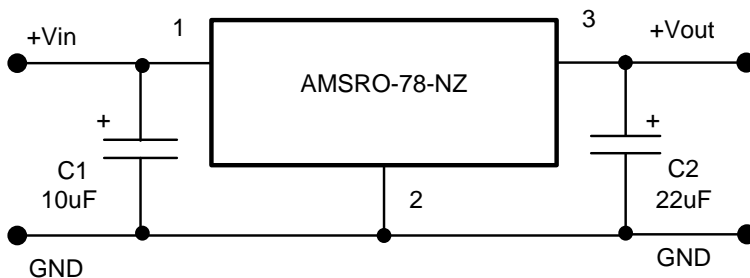
Dimensions



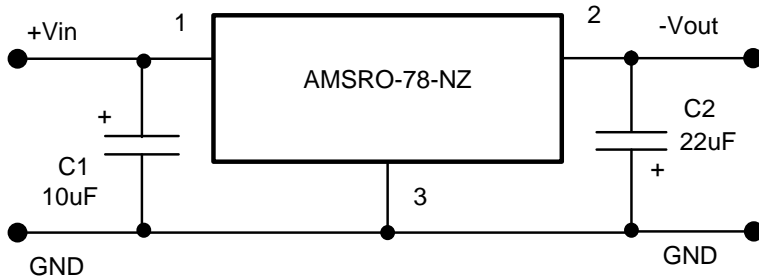
Derating



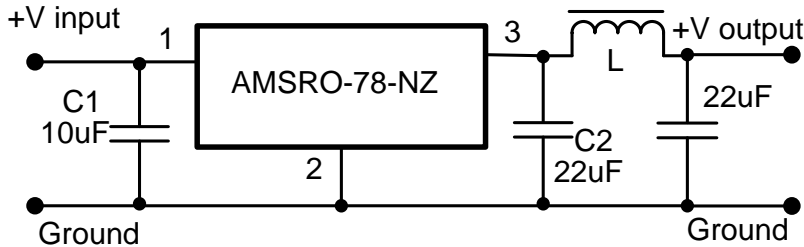
Standard Application circuit – positive output



Standard Application circuit – negative output

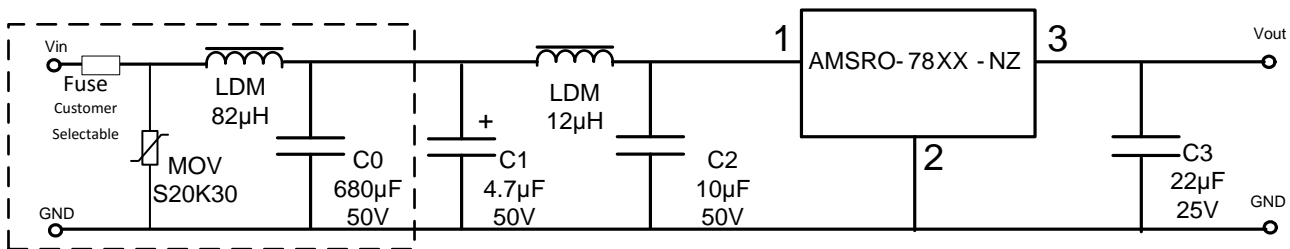


Ripple and Noise Reduction



Recommended value of inductor L is between 10uH to 47uH

Recommended EMC circuit



NOTE: This part is not designed for parallel operation

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