aimtec
Your Power Partner

Series AMSR-78-NZ

Up to7.5Watt | DC-DC Switching Regulator

FEATURES:

- Short Circuit Protection
- Thermal Shutdown
- Non-Isolated
- Low ripple and noise
- Pin Compatible to LM78xx
- Operating temperature -40°C to +85°C
- Very high efficiency up to 96%
- Pin compatible to multiple manufacturers
- Regulated Outputs

CE RoHS

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Efficiency Vin Min (%)	Efficiency Vin Max (%)
AMSR-783.3-NZ	4.75-28	3.3	500	91	81
AMSR-7805-NZ	6.5-32	5	500	94	86
AMSR-786.5-NZ	8-32	6.5	500	94	87
AMSR-7809-NZ	11-32	9	500	95	91
AMSR-7812-NZ	15-32	12	500	95	92
AMSR-7815-NZ	18-32	15	500	96	93

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage range	See the table above			VDC
Filter	Capacitor			
Quiescent current	Vin=(LL-HL) at 0% load		7	mA

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	100% load	±2		%
Short Circuit protection	Continuous			
Short circuit restart	Auto recovery			
Thermal shutdown	Internal IC junction	150		°C
Thermal Impedance		85		°C/W
Line voltage regulation	Vin=(LL-HL) at full load	±0.2		%
Load voltage regulation	10-100% load	±0.4		%
Temperature coefficient	-40°C to +85°C ambient	±0.02		%/°C
Dynamic Load Stability	Nominal Input, 25% load step change	55 - 250		mV
Dynamic Load Recovery		0.5 - 1		mSec
Ripple & Noise	20MHz Bandwidth	20		mV p-p
Maximum capacitive load			1000	uF

General Specifications

Parameters	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	Non condensing		95	%
Case material	Non-conductive black plastic (UL94V-0 rated)			
Weight	2			g
Dimensions (L x W x H)	0.45 x 0.30 x 0.40 inches 11.60 x 7.50 x 10.20 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.

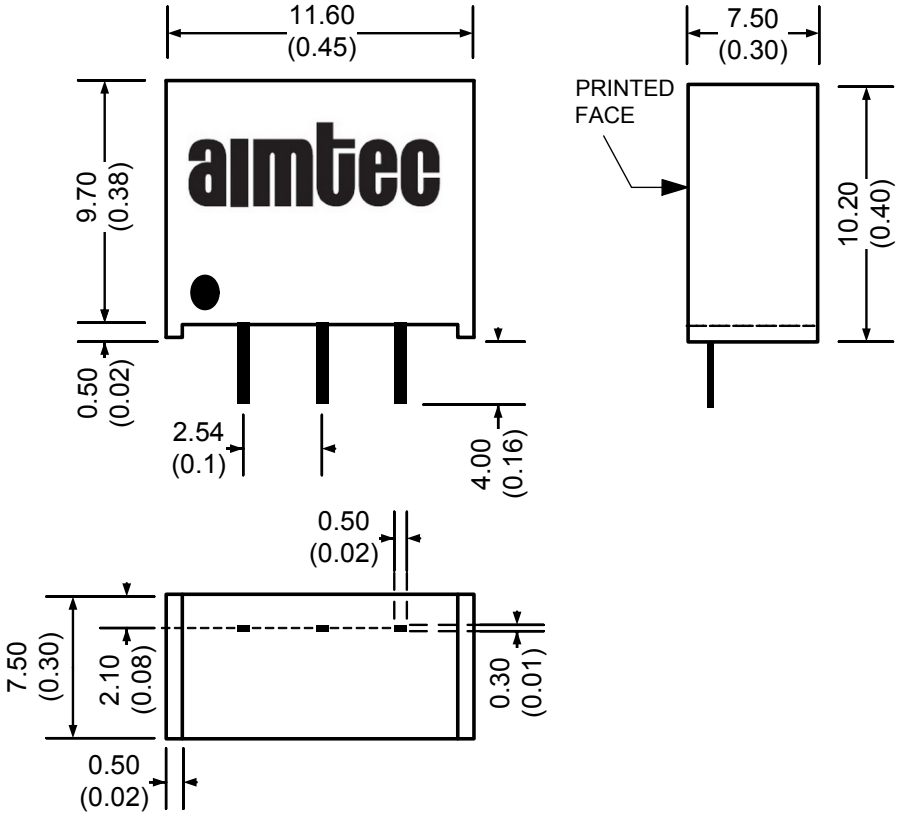
Safety Specifications

Parameters	
Agency Approvals	CE
	IEC 60950-1

Pin Out Specifications

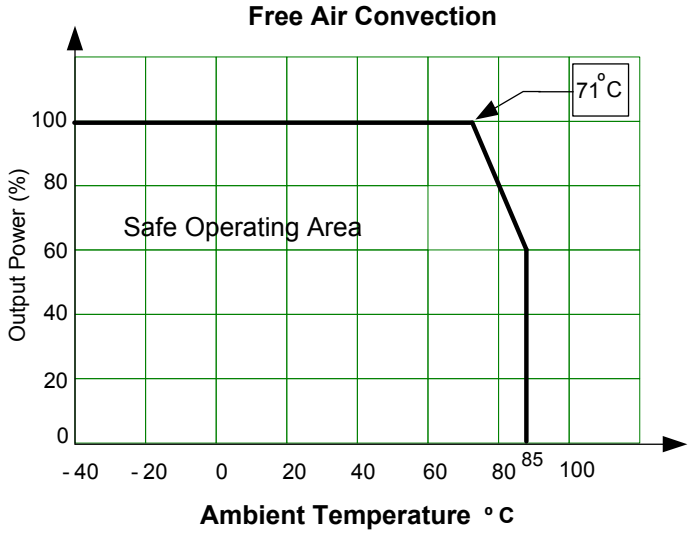
Pin	Single
1	+V Input
2	Ground
3	+V Output

Dimensions

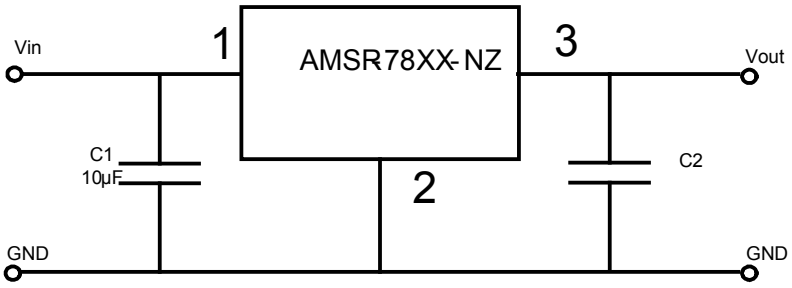


Dimensions are in mm (inch)
Pin Tolerance: ±0.16 mm (0,004 inch)
Case Tolerance: ±0.25 mm (0.01 inch)

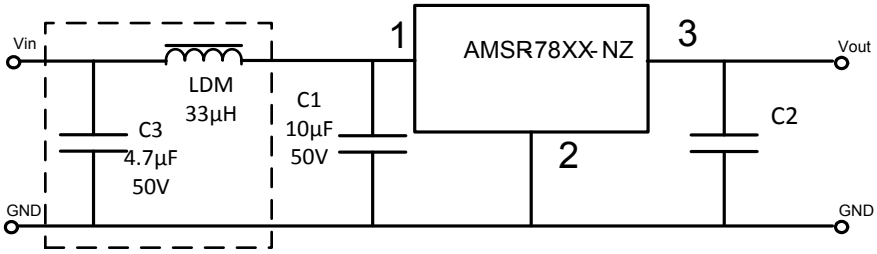
Derating



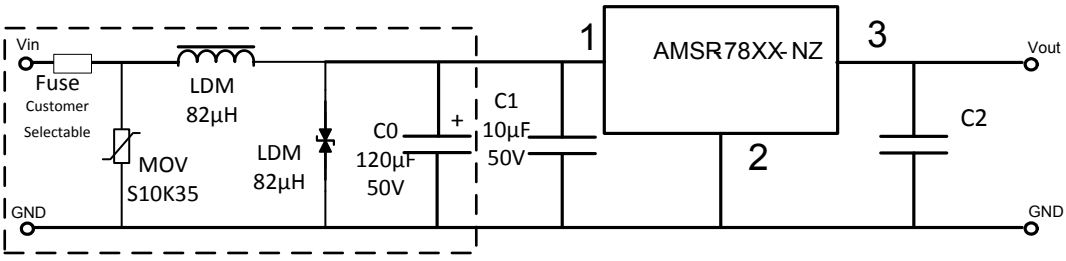
Standard Application Circuit



Optional EMI Circuit



Optional Surge 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 10µF / 50V.
C2: Installation of C2 is recommended but optional. Typical recommended value is 3.3V output 10µF / 6.3V electrolytic, 5V output 10µF / 10V electrolytic, 6.5V & 9V output 10µF / 16V electrolytic, 12V& 15V 10µF / 25V electrolytic.
NOTE: This part is not designed for parallel operation