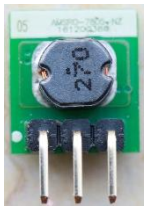
aimtec
Your Power Partner

Series AMSRO-78-NZ

Up to7.5Watt | DC-DC Switching Regulator



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		%/ºC
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 71ºC	-40 to +85		ºC
Storage temperature		-55 to +125		ºC
Max Case temperature			100	ºC
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=+25ºC)			
Soldering Temperature	1.5 mm from case for 10 sec		260	ºC

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.

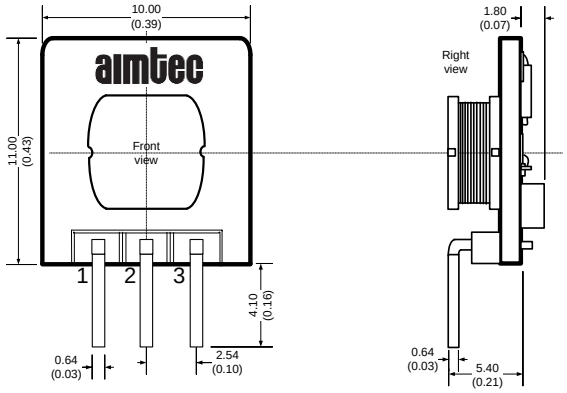
Safety Specifications

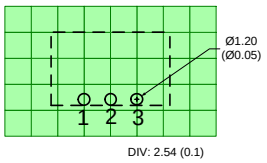
Parameters	
Standards	IEC/EN/UL60950-1
	EN55022, Class B (with recommended circuit)
	IEC61000-4-2 (ESD): Contact ±4KV, Perf. Criteria B
	IEC61000-4-3 (Radiation Immunity): 10V/m, Perf. Criteria A
	IEC61000-4-4 (EFT): ±1KV, Perf. Criteria B (with recommended circuit)
	IEC61000-4-6 (CDI): 3Vrms, Perf: Criteria A

Pin Out Specifications

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

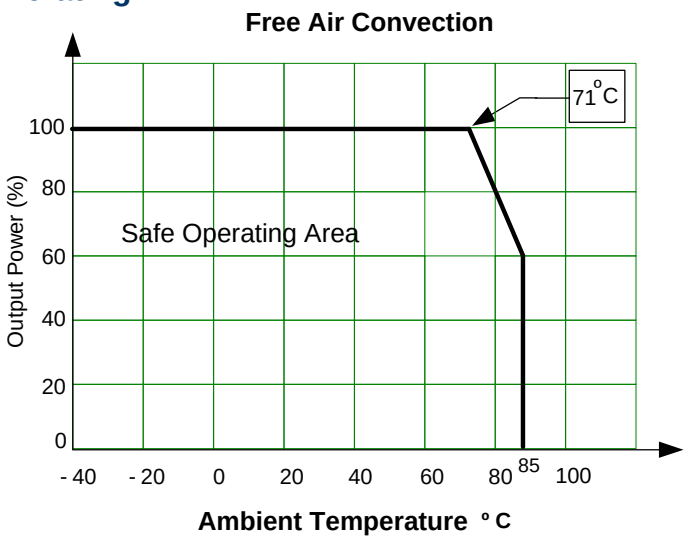
Dimensions



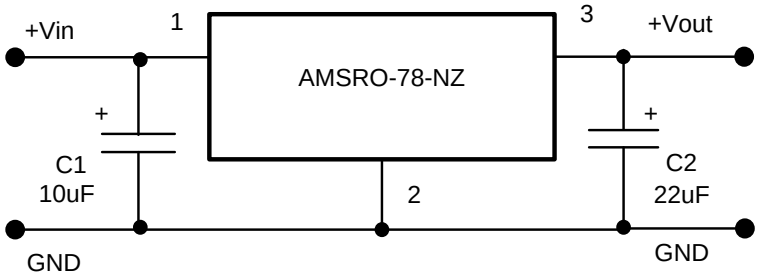


Dimensions are typical values: mm (inch)
General Tolerance: ± 0.50 (± 0.02)
Pin Tolerance: ± 0.10 (± 0.004)

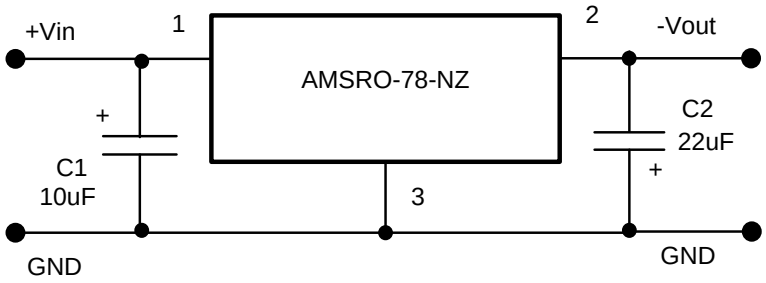
Derating



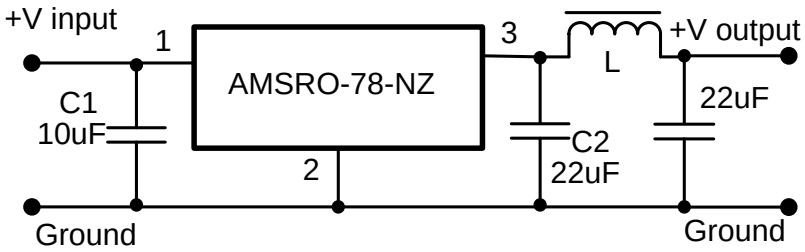
Standard Application circuit – positive output



Standard Application circuit – negative output

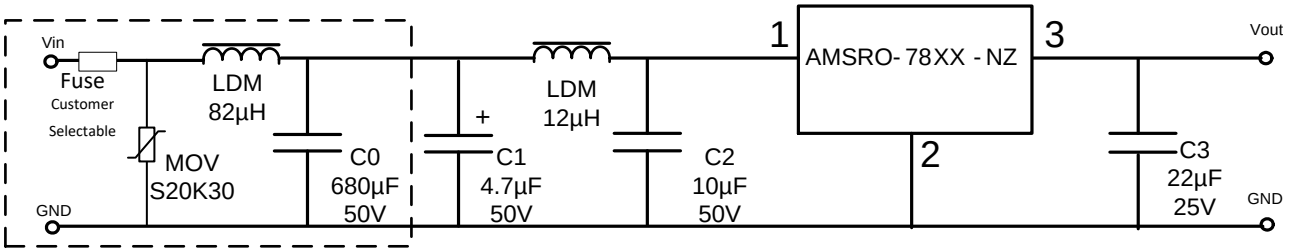


Ripple and Noise Reduction



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

Recommended EMC circuit



NOTE: This part is not designed for parallel operation