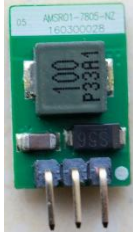


Series AMSRO1-78-NZ

Up to 15Watt | DC-DC Switching Regulator



FEATURES:

- Short Circuit Protection
- High efficiency up to 96%
- 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)
AMSRO1-783.3-NZ	24 / 6-36	3.3	1000	90	81	680
AMSRO1-7805-NZ	24 / 8-36	5	1000	93	86	680
	12 / 8-27	-5	-300	86	82	330
AMSRO1-7812-NZ	24 / 16-36	12	1000	96	93	680
	12 / 8-20	-12	-300	89	88	330
AMSRO1-7815-NZ	24 / 20-36	15	1000	96	94	680
	12 / 8-18	-15	-300	89	89	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	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	±0.4	%
Load voltage regulation	Nominal Input, 10-100% load	±0.4	±0.6	%
Temperature coefficient	-40°C to +85°C ambient	±0.03		%/°C
Transient response deviation	Nominal Input, 25% load step change		300	mV
Transient Recovery time			1	mSec
Ripple & Noise	20MHz Bandwidth, 10-100% load	20	75	mV p-p

General Specifications

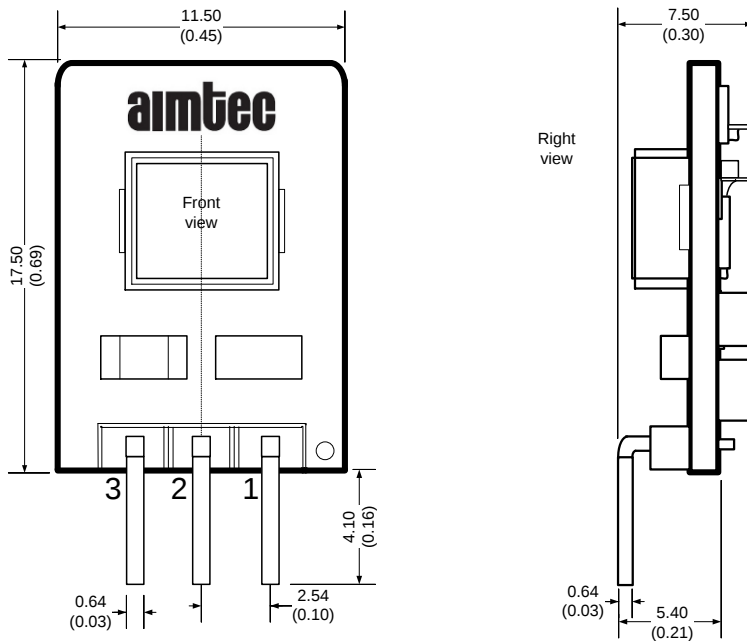
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	420-780		KHz
Operating temperature	With derating above 71°C	-40 to +85		°C
Storage temperature		-55 to +125		°C
Max Case temperature			100	°C
Cooling	Free air convection			
Humidity	Non condensing		95	%
Weight	2.1			g
Dimensions (L x W x H)	0.45 x 0.30 x 0.69 inches 11.50 x 7.50 x 17.50 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

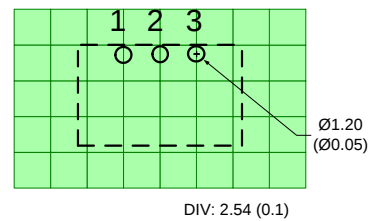
Parameters	
Approval	EN 60950-1, EN/BS EN 62368-1
Standards	Designed to meet IEC/UL 60950-1, IEC/UL 62368-1
	EN55022, Class B (with recommended circuit)
	IEC61000-4-2 (ESD): Contact $\pm 4\text{KV}$, Perf. Criteria B
	IEC61000-4-3 (Radiation Immunity): 10V/m , Perf. Criteria A
	IEC61000-4-4 (EFT): $\pm 1\text{KV}$, Perf. Criteria B (with recommended circuit)
	IEC61000-4-5 (Surge): line to line $\pm 1\text{KV}$, Perf: Criteria B
	IEC61000-4-6 (CDI): 3Vrms , Perf: Criteria A

Dimensions



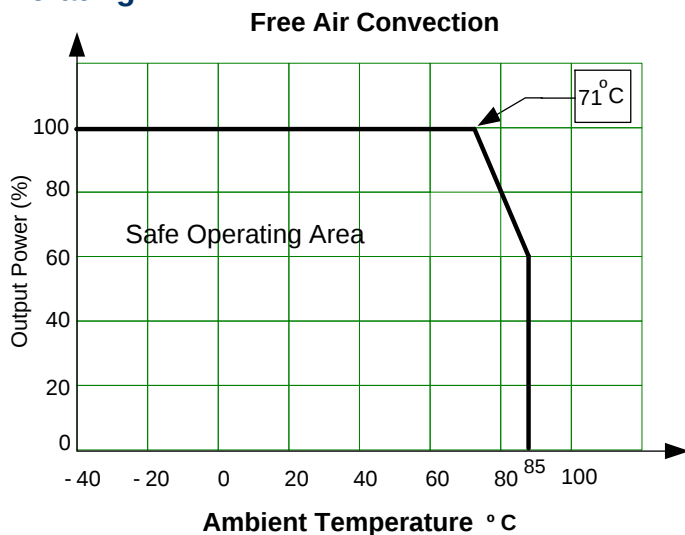
Pin Out Specifications

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



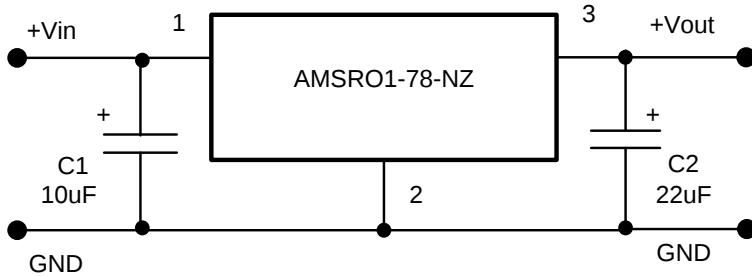
Dimensions are typical values: mm (inch)
General Tolerance: ± 0.50 (± 0.02)
Pin Tolerance: ± 0.10 (± 0.004)

Derating

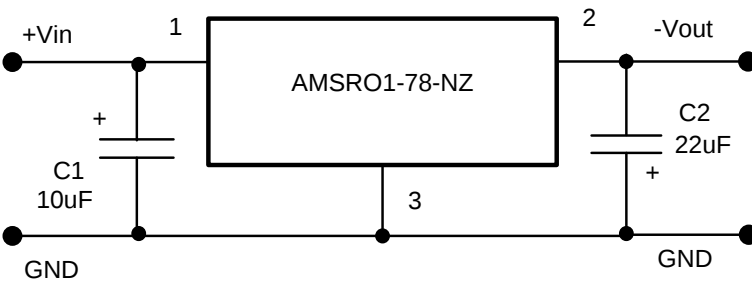


NOTE: With air convection speed of 0.8m/sec

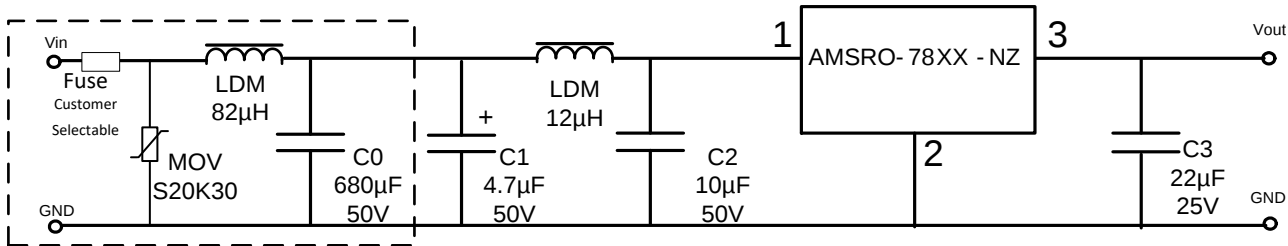
Standard Application circuit – positive output



Standard Application circuit – negative output



Recommended EMC circuit



NOTE: This part is not designed for parallel operation

NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. 2. Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. 3. Mechanical drawings and specifications are for reference only. 4. All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. 5. Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. 6. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.