



Series AMSRW-78-NZ

Up to 12 Watt | DC-DC Switching Regulator



FEATURES:

- 3 Pin SIP Package
- Pin-out compatible with LM78XX Linear Regulators
- Continuous Short Circuit Protection
- Thermal shutdown
- Operating temperature -40°C to +85°C
- Wide input range up to 8:1
- Very High Efficiency Up To 91%
- Low ripple and noise



Models Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Efficiency Vin Min (%)	Efficiency Vin Max (%)
AMSRW-783.3-NZ	9 - 72	3.3	500	82	75
AMSRW-7805-NZ	9 - 72	5	500	87	81
AMSRW-786.5-NZ	9 - 72	6.5	500	91	84
AMSRW-7812-NZ	17 - 72	12	500	93	89
AMSRW-7815-NZ	20 - 72	15	500	94	90
AMSRW-7824-NZ	36 - 72	24	300	95	91
90 Degree Angle Pins Version (L)					
AMSRW-783.3L-NZ	9 - 72	3.3	500	82	75
AMSRW-7805L-NZ	9 - 72	5	500	87	81
AMSRW-7812L-NZ	17 - 72	12	500	93	89
AMSRW-7815L-NZ	20 - 72	15	500	94	90
AMSRW-7824L-NZ	36 - 72	24	300	95	91

Input Specifications

Input Specifications	Nominal	Typical	Maximum	Units
Voltage range	See the table above			VDC
Quiescent Current	Vin= Nom, min load	1	5	mA
Short Circuit consumption	Vin = Nominal	0.72	1.2	W

Output Specifications

Output Specifications	Conditions	Typical	Maximum	Units
Voltage accuracy	100% load	±2	±3	%
Short Circuit protection	Continuous.			
Short circuit restart	Auto recovery			
Thermal shutdown		160		°C
Output current limit			1.2	A
Dynamic load stability	10-100% load, 1 / 1.5ms		±100	mV
Line voltage regulation	Vin=(LL-HL) at full load	±0.4	±1	%
Load voltage regulation	10-100% load	±0.3	±0.6	%
Temperature coefficient	-40°C to +85°C ambient		±0.015	%/°C
Ripple & Noise	20MHz Bandwidth (10-100% load)	60		mV p-p
Maximum Capacitive Load			100	µF

General Specifications

Input Specifications	Conditions	Minimum	Maximum	Units
Switching frequency	100% load	120	800	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			95	%

General Specifications (continued)

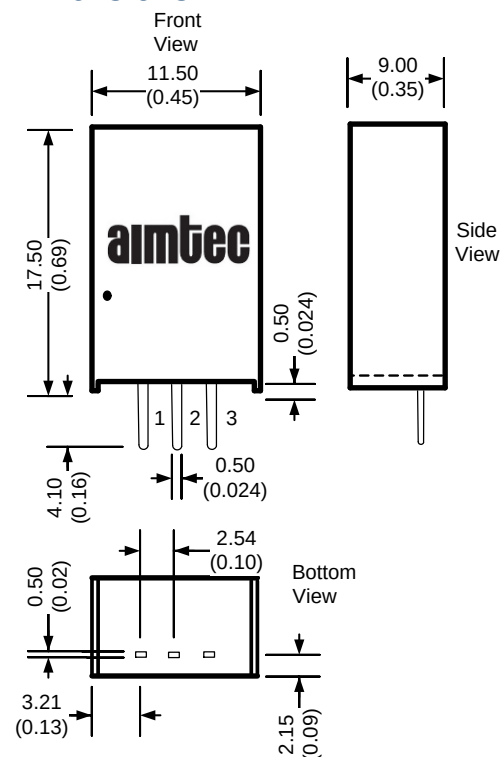
Input Specifications	Conditions	Minimum	Maximum	Units
Case material	Non-conductive black plastic (UL94V-0 rated)			
Weight		4		g
Dimensions (L x W x H)		0.45 X 0.35 X 0.69 inch	11.50 X 9.00 X 17.50 mm	
MTBF		> 3 500 000hrs (MIL-HDBK-217F, Ground Benign, t=+25°C)		
		> 1 500 000hrs (MIL-HDBK-217F, Ground Benign, t=+71°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.

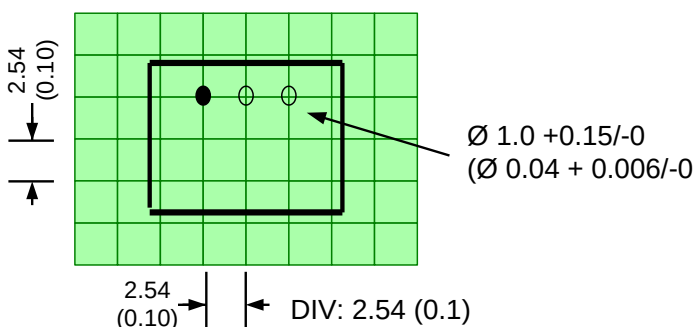
Pin Out Specifications

Pin	Single
1	+Vin
2	GND
3	+Vout

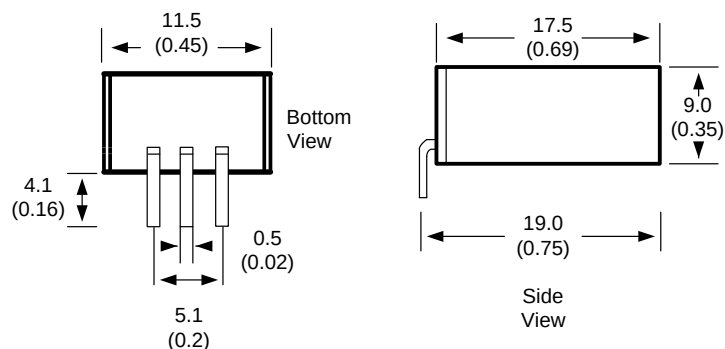
Dimensions



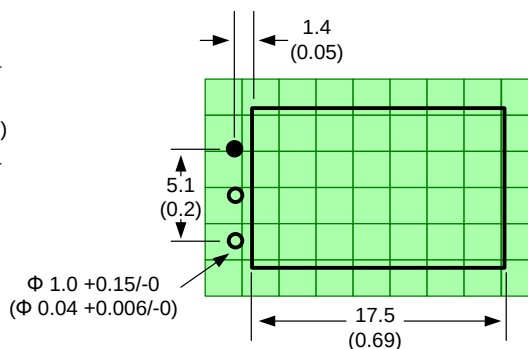
Footprint



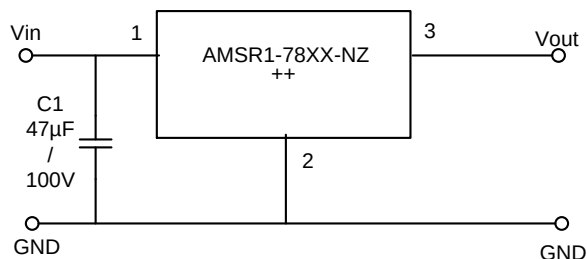
L Models



Footprint

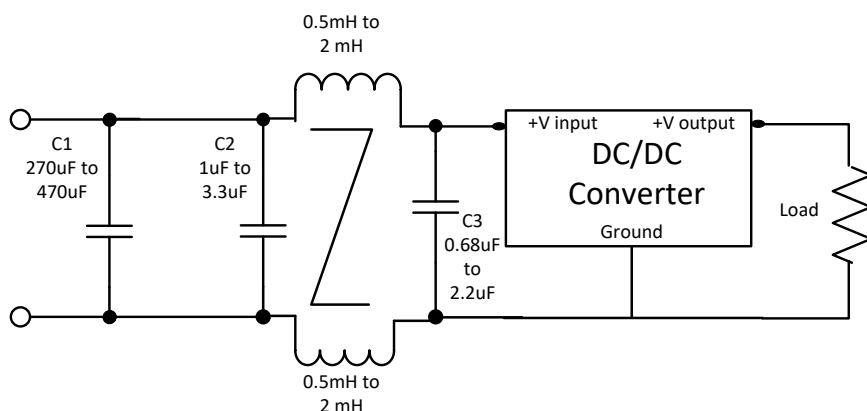


Typical Application Circuit



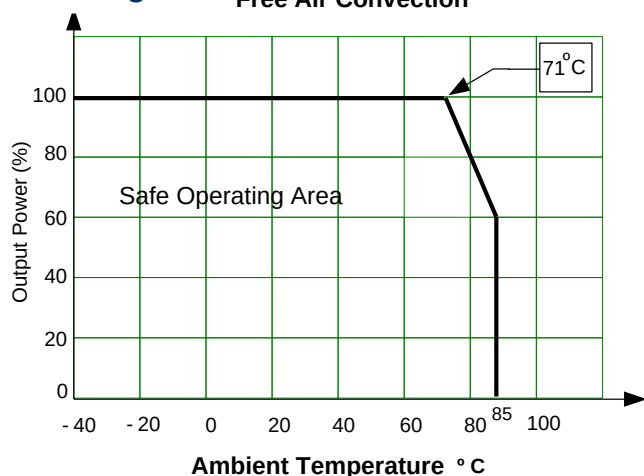
Abrupt low to high inputs may damage the regulator. $C1$ capacitor is required to filter potentially damaging voltage spikes if high voltage is applied. Typical value is (47 μ F / 100V). **NOTE: This part is not designed for parallel operation.**

Recommended Circuits for EN55022, class B compliance Conducted and Radiated Emissions



Derating

Free Air Convection



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