

Series AMSRB1-78Z

Up to 7.5Watt | DC-DC Converter



FEATURES:

- No heatsink required
- SIP 3 package
- Non-isolated
- Extra low no load current <1.5mA
- Operating temperature -40°C to +85°C
- Very high efficiency up to 93%
- Pin-out compatible with LM78XX
- Highly Regulated Outputs



Models

Single output

Model	Input Voltage (V)	Input current FL Max Min Vin (mA)	Output Voltage (V)	Output Current max (mA)	Efficiency Vin Max (%)	Efficiency Vin Min (%)	Max Capacitive Load (μF)
AMSRB1-783.3Z	7 ~ 28	143.73 529.70	3.3	1000	82	89	220
AMSRB1-7805Z	8 ~ 28	207.64 672.04	5	1000	86	93	220

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.

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage range	See the table above			VDC
Filter	Capacitor			
Input Current (No Load)			1.5	mA
Startup Time		10		ms
Input Reflected Current		35		mA pk-pk
Absolute Max Stress Rating	For 100ms		30	V

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	100% load	±5	±3	%
Short circuit protection	Continuous			
Short circuit restart	Auto recovery			
Output current limit			1000	mA
Transient Response Deviation	25% load step change		±3	%
Transient recovery time	25% load step change	250		μs
Line voltage regulation	LL-HL		±1	% of Vin
Load voltage regulation	10-100% load		±1.5	%
Temperature coefficient		±0.02		%/°C
Ripple & Noise	20MHz Bandwidth		100	mV p-p

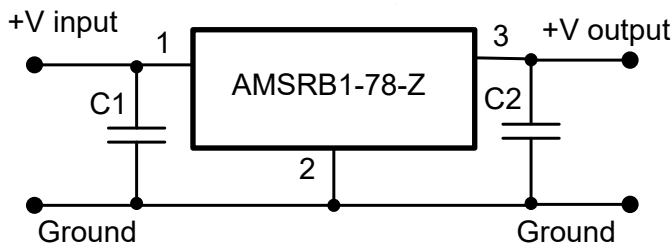
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	330		KHz
Operating temperature	With derating above 60 °C	-40 to +85		°C
Storage temperature		-55 to +125		°C
Maximum case temperature			105	°C
Cooling	Free air convection (30-65 LFM)			
Humidity			95	% RH
Case material	Non-conductive black plastic (UL94V-0 rated)			
Weight		2.1		g
Dimensions (L x W x H)		0.46 x 0.30 x 0.40 inches	11.68 x 7.70 x 10.16 mm	
MTBF		> 3 800 000 hrs (MIL-HDBK-217F, Ground Benign, t=+25 °C)		
Soldering temperature	1.5 mm from case for 10 sec		260	°C

Safety Specifications

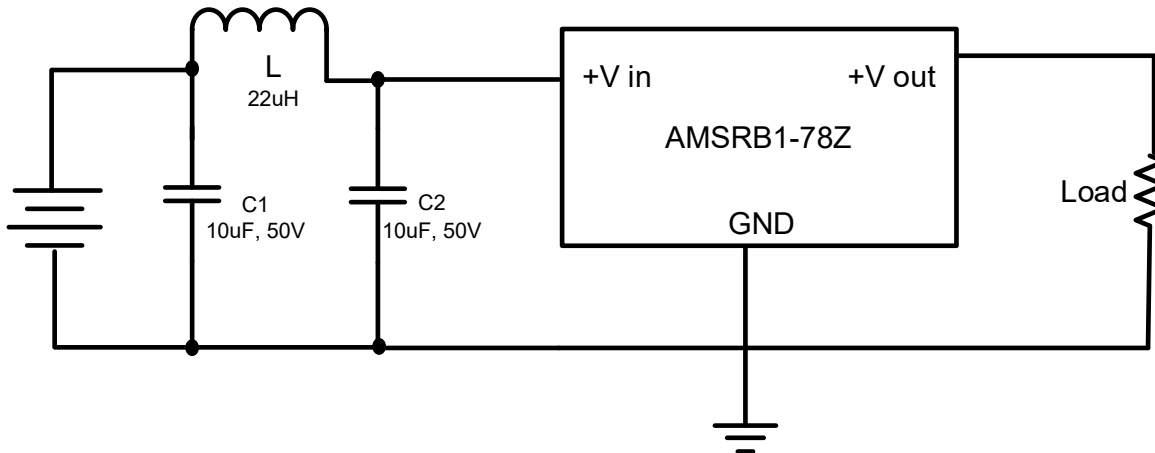
Parameters	
Standards	Designed to meet IEC/EN60950-1
	EN 55032, class B, EN 55024 (with the recommended EMI filter circuit)
	Electrostatic Discharge Immunity
	RF, Electromagnetic Field Immunity
	Electrical Fast Transient/Burst Immunity
	Surge Immunity
	RF, Conducted Disturbance Immunity
	Power frequency Magnetic Field Immunity
	IEC 61000-4-2: Criteria A
	IEC 61000-4-3: Criteria A
	IEC 61000-4-4: Criteria A (with the recommended EMC filter circuit)
	IEC 61000-4-5: Criteria A (with the recommended EMC filter circuit)
	IEC 61000-4-6: Criteria A
	IEC 61000-4-8: Criteria A

Standard Application Circuit

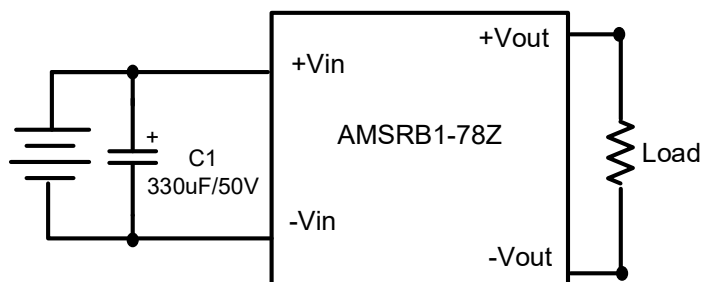


C1 (ceramic capacitor)	C2 (ceramic capacitor)
22uF/50V	47uF/16V

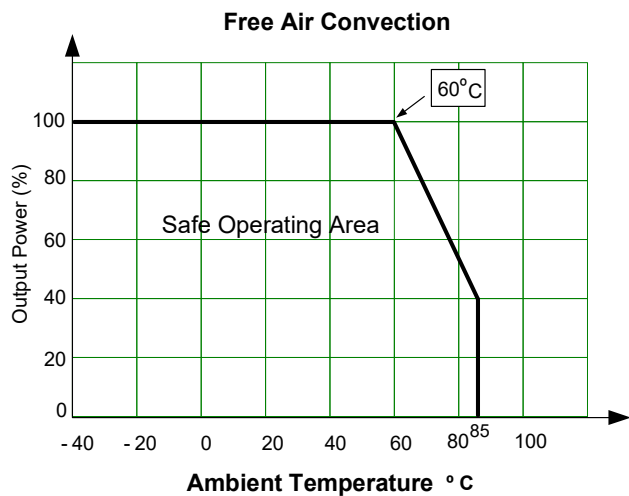
Recommended EMI filter circuit



EMC Recommended Circuit



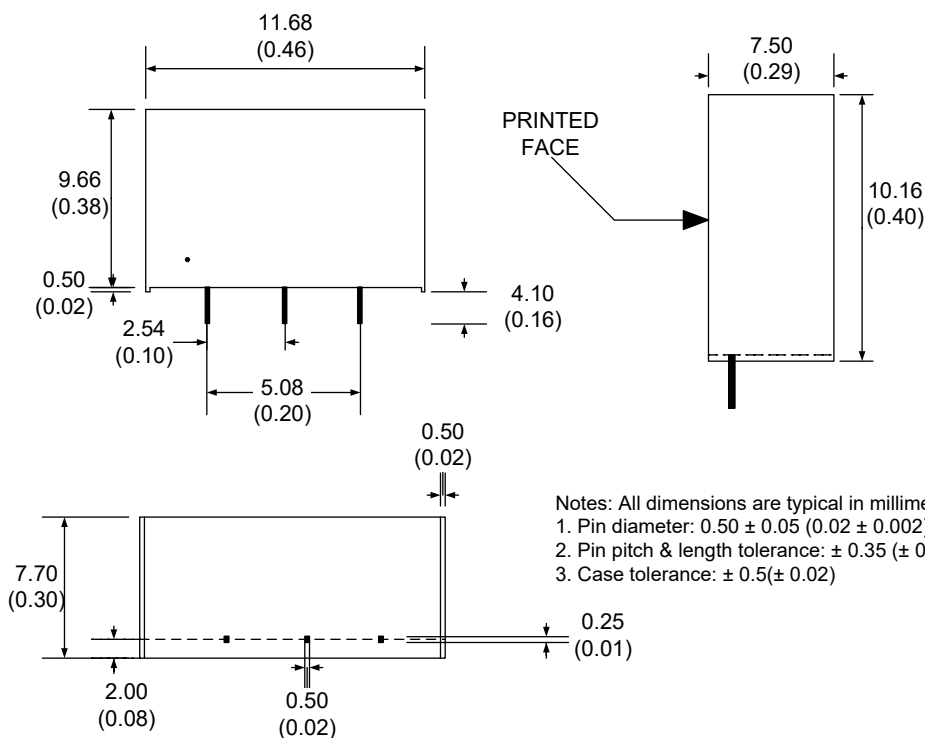
Derating



Pin Out Specifications

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

Dimensions



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 than the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.