

**FEATURES:**

- No heatsink required
- 3 Pin SIP package
- Non-isolated
- Low ripple and noise
- Extra low no load current
- RoHS compliant
- Operating temperature -40°C to +85°C
- Very high efficiency up to 94%
- Pin compatible to multiple manufacturers
- Highly Regulated Outputs
- Very high switching frequency



Models

Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Efficiency Vin Max (%)	Efficiency Vin Min (%)	Max Capacitive Load
AMSRB-783.3Z	4.5 ~ 28	3.3	500	75	89	100μF
AMSRB-7805Z	7 ~ 28	5	500	80	92	100μF
AMSRB-7812Z	14 ~ 28	12	500	90	94	100μF
AMSRB-7815Z	17 ~ 28	15	500	92	94	47μF

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			
Filter	Capacitor			
Input Current (No Load)	Maximum		(3.3V) 1.0 (5V) 1.0 (12V) 1.5 (15V) 2.0	mA
Input Current	Vin 4.5 / 28 Vdc Full Load Vin 7 / 28 Vdc Full Load Vin 14 / 28 Vdc Full Load Vin 17 / 28 Vdc Full Load	411 / 78 388 / 111 455 / 238 469 / 291		mA
Startup Time		10		mS
Input Reflected Current *		35		mA pk-pk
Absolute Max Stress Rating	For 100ms		0-30	Vdc

* The input reflected ripple current should be measured with a 12μH inductor and a 47μF capacitor.

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	100% load	±3		%
Short circuit protection	Continuous			
Short circuit restart	Auto recovery			
Output current limit			500	mA
Minimum load current			5	mA
Transient Response Deviation		250		μs
Line voltage regulation		±0.5		%
Load voltage regulation	10-100% load	±0.8		%
Temperature coefficient	-40°C to +85°C ambient	±0.02		%/°C
Ripple & Noise	20MHz Bandwidth, 10-100% load	60		mV p-p

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	570		KHz
Operating temperature	See derating graph	-40 to +85		°C
Storage temperature		-55 to +125		°C
Maximum case temperature			100	°C
Cooling	Free air convection			

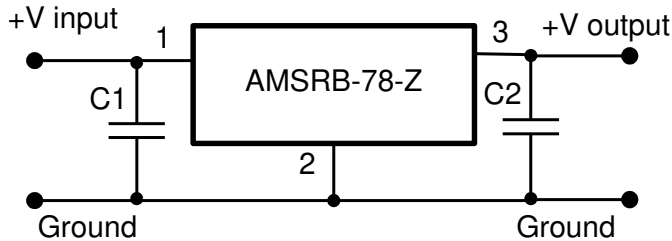
General Specifications (continued)

Parameters	Conditions	Typical	Maximum	Units
Humidity			95	%
Case material	Non-conductive black plastic (UL94V-0 rated)			
Weight		2		g
Dimensions (L x W x H)	0.46 x 0.29 x 0.40 inches	11.68 x 7.50 x 10.15 mm		
MTBF	> 4 000 000 hrs (MIL-HDBK-217F, Ground Benign, t=+25 °C)			
Soldering temperature	1.5 mm from case for 10 sec		260	°C

Safety Specifications

Parameters		
Agency approvals	CE	
Standards	EN 55032, class B with the recommended circuit	
	Electrostatic Discharge Immunity	IEC 61000-4-2, Criteria A with the recommended circuit
	RF, Electromagnetic Field Immunity	IEC 61000-4-3, Criteria A with the recommended circuit
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4, Criteria A with the recommended circuit
	Surge Immunity	IEC 61000-4-5, Criteria A with the recommended circuit
	RF, Conducted Disturbance Immunity	IEC 61000-4-6, Criteria A with the recommended circuit
	Power frequency Magnetic Field Immunity	IEC 61000-4-8, Criteria A with the recommended circuit

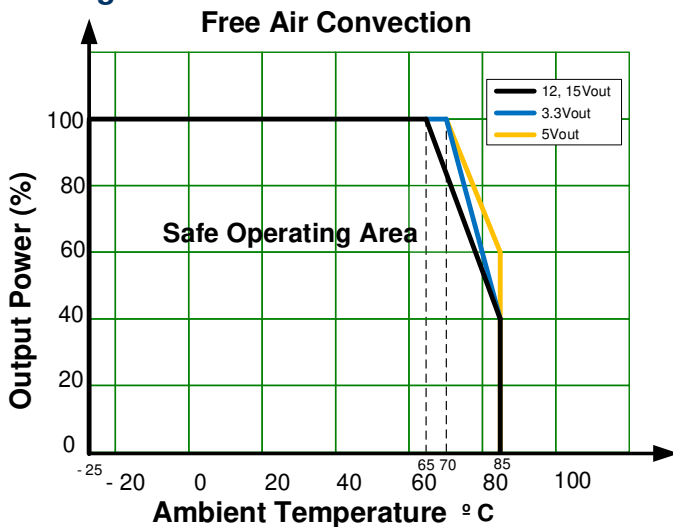
Standard Application Circuit



External Capacitor values

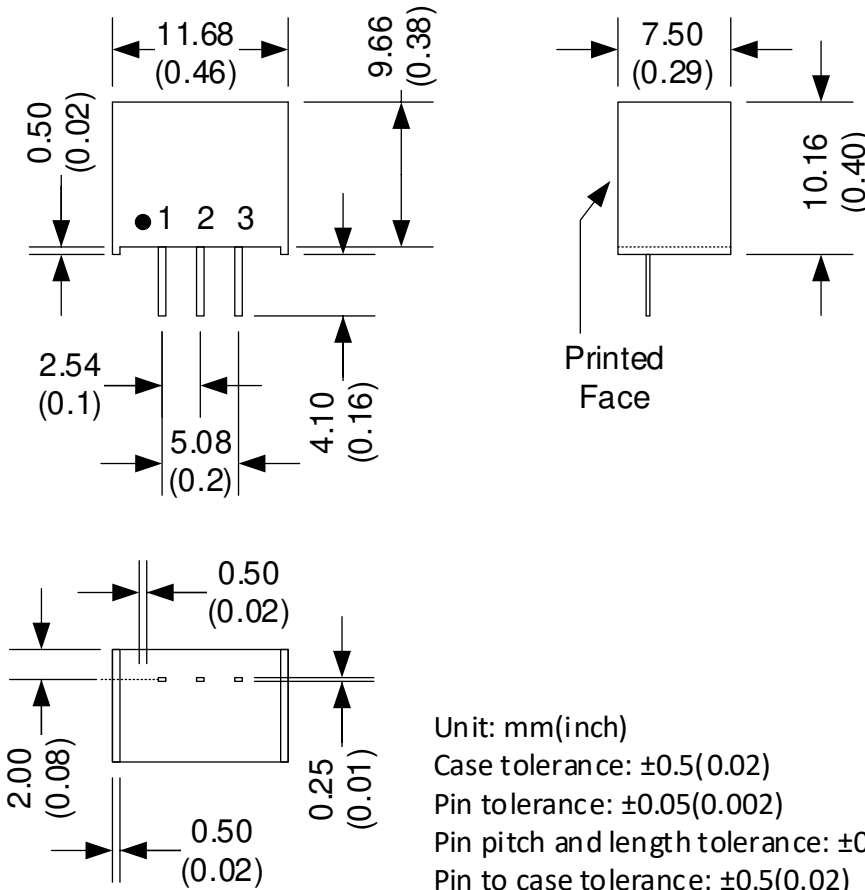
Model Number	C1 (ceramic capacitor)	C2 (ceramic capacitor)
AMSRB-7805Z	22uF/50V	47uF/16V

Derating

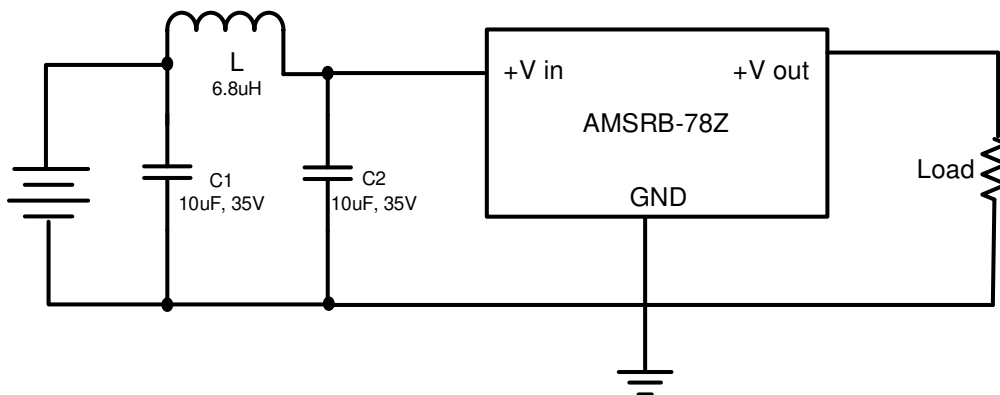


Pin Out Specifications Dimensions

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



EMI & EMS Class B Solution Circuit



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