aimtec
Your Power Partner

Series AMSRB-78-Z

Up to 7.5Watt | DC-DC Converter



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			VDC
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 / 127 455 / 238 469 / 291		mA
Startup Time		10		mS
Input Reflected Current		35 mA		Pk-pk
Absolute Max Stress Rating	For 100ms		0-30	Vdc

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
Transient Response Deviation		250		µs
Line voltage regulation		±0.5	±3	%
Load voltage regulation	10-100% load	±0.8		%
Temperature coefficient	-40°C to +85°C ambient	±0.02		%/°C
Ripple & Noise	20MHz Bandwidth	60		mV p-p

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	570		KHz
Operating temperature	With derating above 70 °C or 65 °C on 12V & 15V models	-40 to +85		°C
Storage temperature		-55 to +125		°C
Maximum case temperature			100	°C
Cooling	Free air convection			

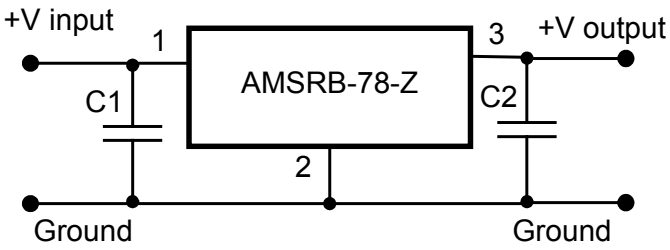
General Specifications (continued)

Parameters	Conditions	Typical	Maximum	Units
Humidity			95	%
Case material	Non-conductive black plastic (UL94V-0 rated)			
Weight	1.8			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, EN 55022, EN 55024	
Standards	Electrostatic Discharge Immunity	IEC 61000-4-2
	RF, Electromagnetic Field Immunity	IEC 61000-4-3
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4
	Surge Immunity	IEC 61000-4-5
	RF, Conducted Disturbance Immunity	IEC 61000-4-6
	Power frequency Magnetic Field Immunity	IEC 61000-4-8

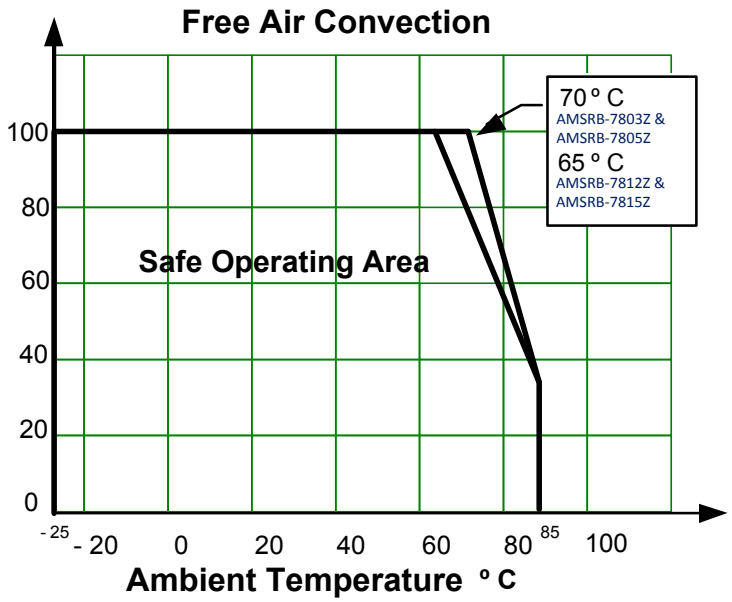
Standard Application Circuit



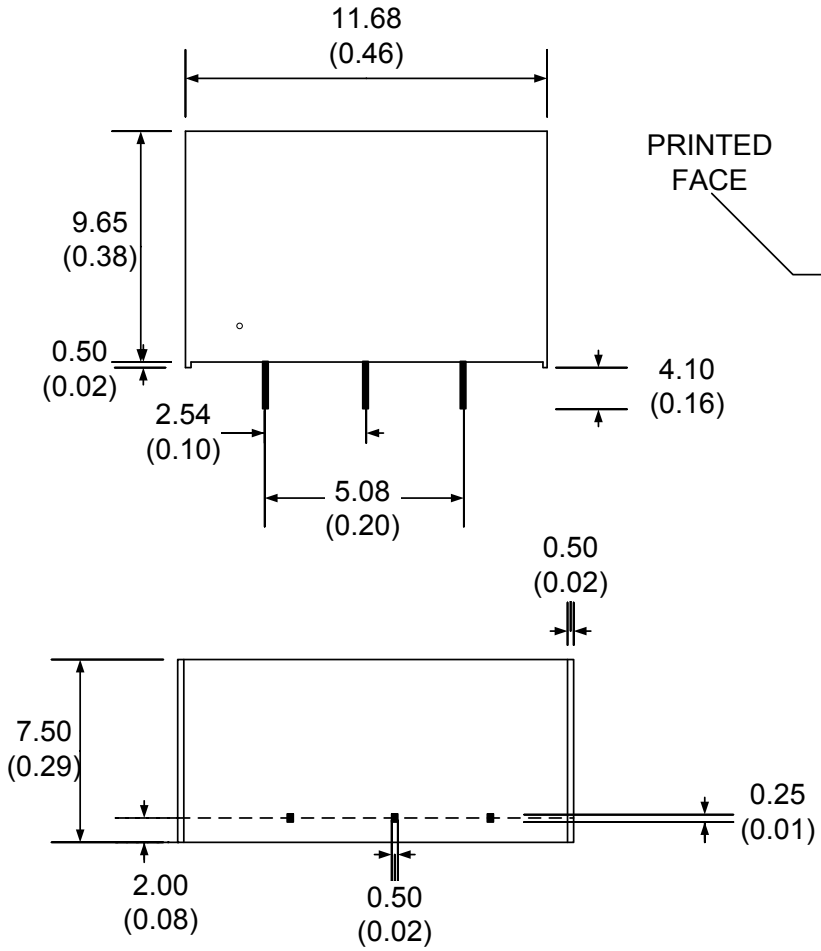
External Capacitor values

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

Derating



Dimensions

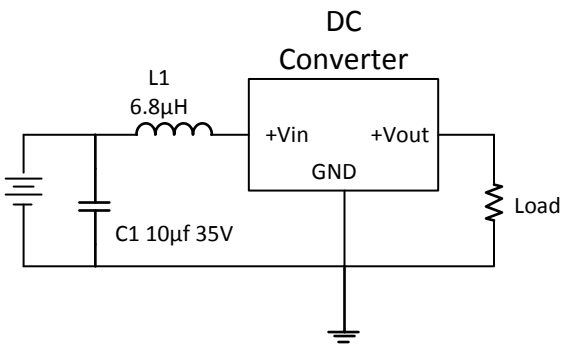


Notes: All dimensions are typical in millimeters (inches)
1. Pin diameter: 0.50.05 (0.020.002)
2. Pin pitch tolerance: 0.35 (0.014)
3. Case tolerance: 0.5(0.02)

Pin Out Specifications

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

EMI & EMS Class B Solution Circuit



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