

**FEATURES:**

- No heatsink required
- 3 Pin SIP package
- Non-isolated
- Low ripple and noise
- RoHS compliant
- Operating temperature -40°C to +85°C
- Very high efficiency up to 96%
- Pin compatible to multiple manufacturers
- Regulated outputs


Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Efficiency Vin Max (%)	Efficiency Vin Min (%)
AMSRB-783.3-NZ	4.5 ~ 30	3.3	500	77	90
AMSRB-7805-NZ	6.5 ~ 30	5	500	81	94
AMSRB-786.5-NZ	8 ~ 30	6.5	500	85	95
AMSRB-7809-NZ	11 ~ 30	9	500	89	95
AMSRB-7812-NZ	15 ~ 30	12	500	92	96
AMSRB-7815-NZ	18 ~ 30	15	500	93	96

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			
Quiescent current	Vin=(LL-HL) at 0% load		13	mA
Short circuit consumption		1.8		W

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	100% load	±3		%
Short circuit protection	Continuous			
Short circuit restart	Auto recovery			
Output current limit			2	A
Thermal shutdown	Internal IC junction	160		°C
Line voltage regulation	Vin=(LL-HL) at full load	±1		%
Load voltage regulation	10-100% load	±0.75		%
Temperature coefficient	-40°C to +85°C ambient	±0.02		%/°C
Ripple & Noise	20MHz Bandwidth	35		mV p-p
Max capacitive load			1000	uF

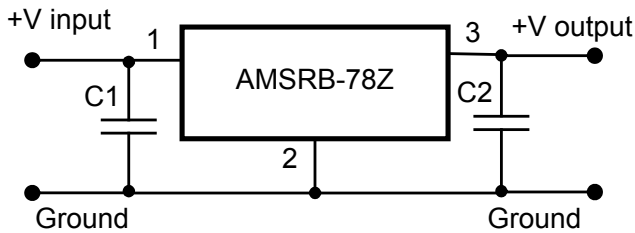
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	330		KHz
Operating temperature	With derating above 71 °C	-40 to +85		°C
Storage temperature		-55 to +125		°C
Maximum case temperature			100	°C
Cooling	Free air convection			
Humidity			95	%
Case material	Non-conductive black plastic (UL94V-0 rated)			
Weight		2		g
Dimensions (L x W x H)		0.45 x 0.30 x 0.40 inches	11.50 x 7.55 x 10.20 mm	
MTBF		> 2 000 000 hrs (MIL-HDBK-217F, Ground Benign, t=+25 °C)		
Soldering temperature	1.5 mm from case for 10 sec		300	°C

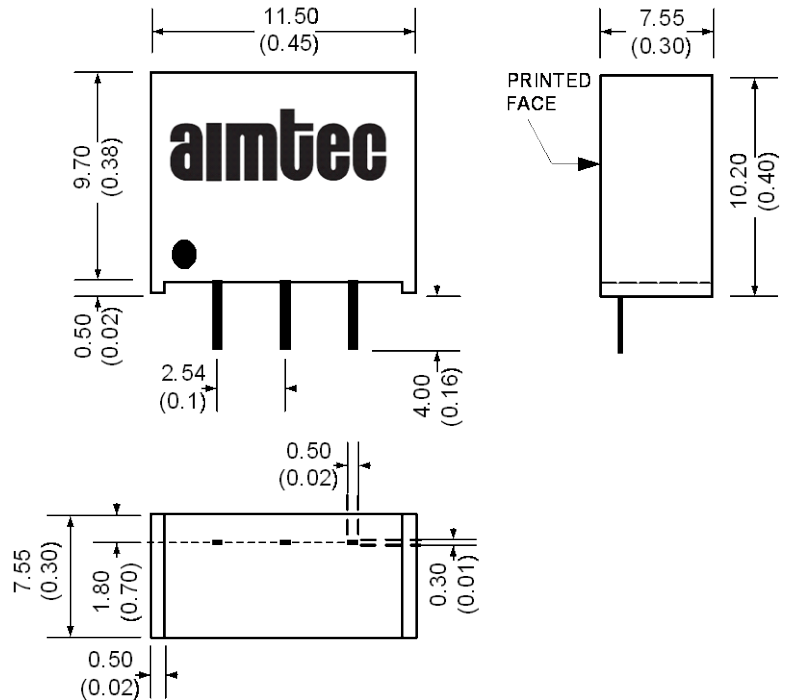
Pin Out Specifications

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

Standard Application Circuit



Dimensions

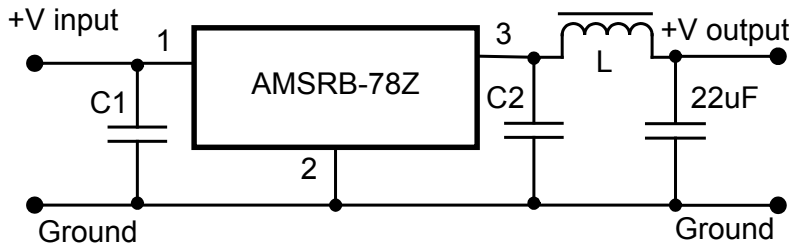


Dimensions are in mm (inch)
Pin Tolerance: $\pm 0.16\text{mm}$ (0.004 inch)
Case Tolerance: $\pm 0.25\text{mm}$ (0.01 inch)

External Capacitor values

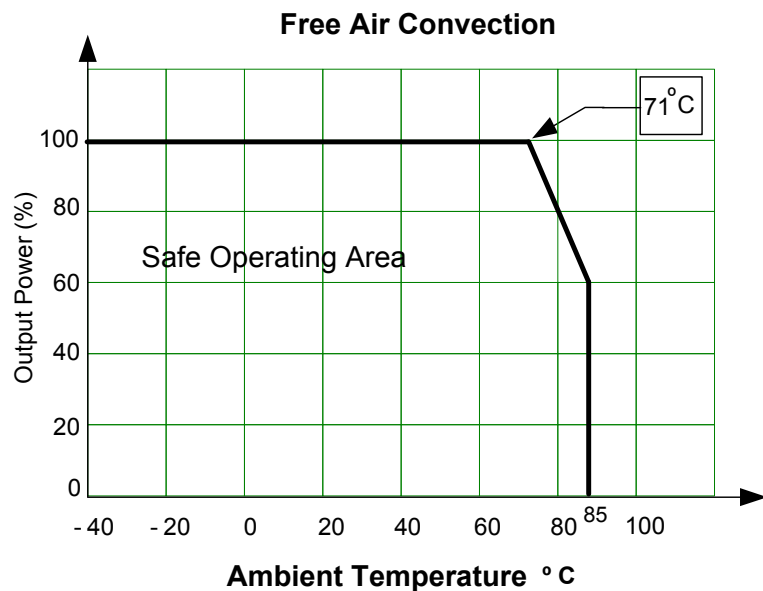
Model Number	C1 (ceramic capacitor)	C2 (ceramic capacitor)
AMSRB-783.3-NZ	10uF/50V	22uF/16V
AMSRB-7805-NZ	10uF/50V	22uF/16V
AMSRB-786.5-NZ	10uF/50V	10uF/16V
AMSRB-7809-NZ	10uF/50V	10uF/16V
AMSRB-7812-NZ	10uF/50V	10uF/25V
AMSRB-7815-NZ	10uF/50V	10uF/25V

Ripple and Noise Reduction



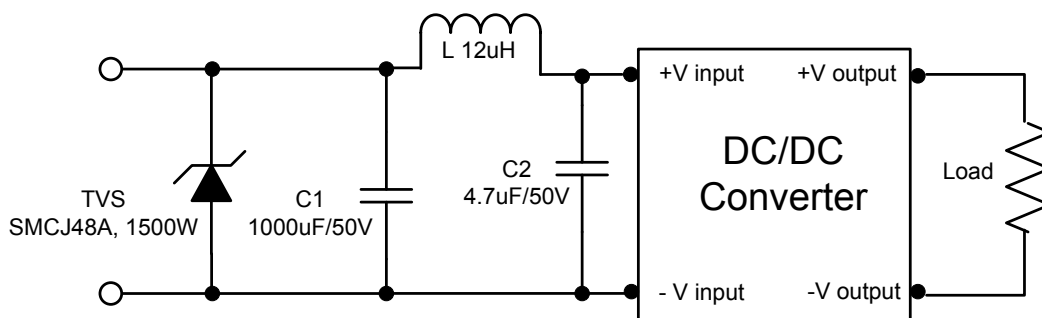
Recommended value of inductor L is between 10uH to 47uH

Derating



Recommended Circuits

Conducted and Radiated Emissions



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.