

**FEATURES:**

- Short Circuit Protection
- Thermal Shutdown
- Non-Isolated
- Low ripple and noise
- Pin Compatible to LM78xx
- 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 Min (%)	Efficiency Vin Max (%)
AMSR-783.3-NZ ✘	4.75-28	3.3	500	91	81
AMSR-7805-NZ	6.5-32	5	500	94	86
AMSR-786.5-NZ ✘	8-32	6.5	500	94	87
AMSR-7809-NZ ✘	11-32	9	500	95	91
AMSR-7812-NZ	15-32	12	500	95	92
AMSR-7815-NZ ✘	18-32	15	500	96	93

**NOTE:**

- For models marked with ✘ will be discontinued (EOL) by December 30, 2020; for new designs, please refer to model AMSRL-786.5JZ or AMSRI-78-NZ series.

**Input Specifications**

Parameters	Conditions	Typical	Maximum	Units
Voltage range	See the table above			VDC
Filter	Capacitor			
Quiescent current	Vin=(LL-HL) at 0% load		7	mA

**Output Specifications**

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	100% load	±2		%
Short Circuit protection	Continuous			
Short circuit restart	Auto recovery			
Thermal shutdown	Internal IC junction	150		°C
Thermal Impedance		85		°C/W
Line voltage regulation	Vin=(LL-HL) at full load	±0.2		%
Load voltage regulation	10-100% load	±0.4		%
Temperature coefficient	-40°C to +85°C ambient	±0.02		%/°C
Dynamic Load Stability	Nominal Input, 25% load step change	55 - 250		mV
Dynamic Load Recovery		0.5 - 1		mSec
Ripple & Noise	20MHz Bandwidth	20		mV p-p
Maximum 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
Max Case temperature			100	°C
Cooling		Free air convection		
Humidity	Non condensing		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	11.60 x 7.50 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

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.

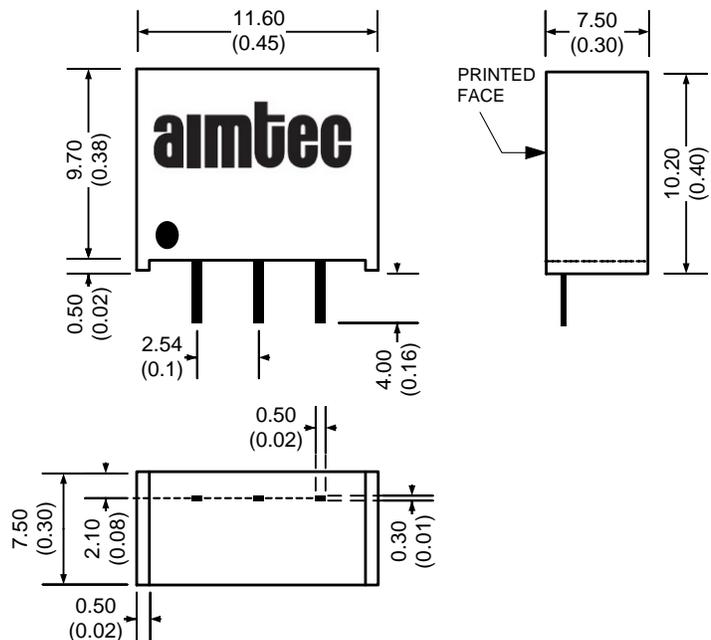
## Safety Specifications

Parameters	
Agency Approval	CE IEC 60950-1
Standards	EN55022: 2006 + A1:2007, Class B (with recommended circuit)
	IEC61000-4-2 (ESD): Contact ±4KV, Perf. Criteria B
	IEC61000-4-3 (Radiation Immunity): 10V/m, Perf. Criteria A
	IEC61000-4-4 (EFT): ±1KV, Perf. Criteria B (with recommended circuit)
	IEC61000-4-5 (Surge Immunity): ±1KV, Perf. Criteria B (with recommended circuit)
	IEC61000-4-6 (Conducted Disturbance Immunity): 3Vr.m.s, Perf. Criteria A
	IEC61000-4-29 (VDDSI): 0%-70%, Perf. Criteria A

## Pin Out Specifications

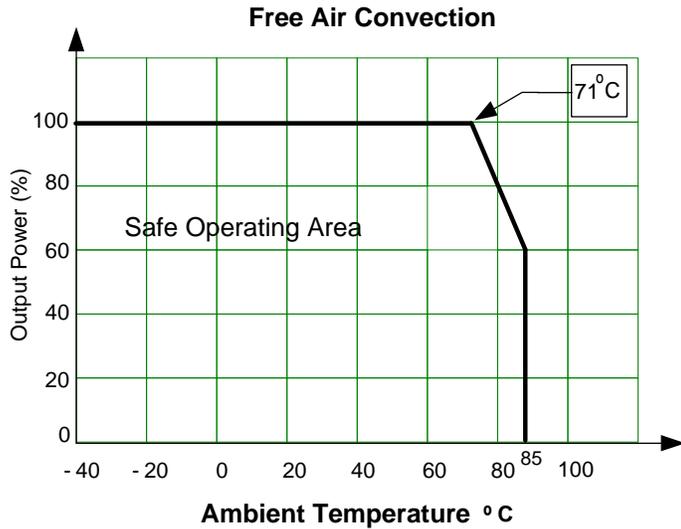
Pin	Single
1	+V Input
2	Ground
3	+V Output

## Dimensions

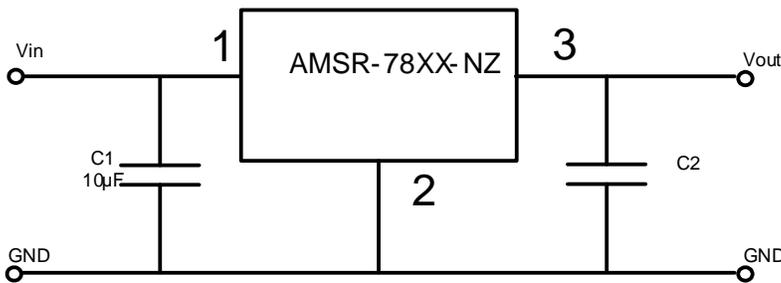


Dimensions are in mm (inch)  
Pin Tolerance: ±0.16 mm (0.004 inch)  
Case Tolerance: ±0.25 mm (0.01 inch)

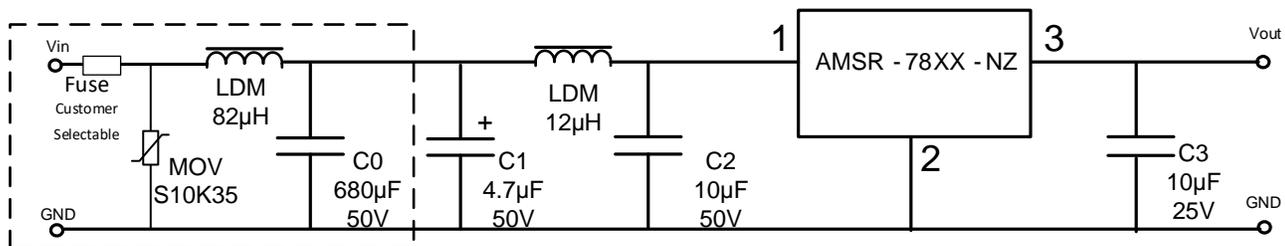
## Derating



## Standard Application Circuit



## Recommended EMC circuit



**NOTE: This part is not designed for parallel operation**

**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](http://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](http://www.aimtec.com).