

## Series AMSR1-78Z Up to 5 Watt | DC-DC Switching Regulator



# Models Single output

#### FEATURES:

- 3 Pin SIP package
- Non-isolated regulated output
- Short circuit protection
- Pin-out compatible with LM78XX Linear Regulators
- No heatsink required
- Operating temperature -40°C to +85°C
- High efficiency Up To 94%
- Low ripple and noise



Model	Input Voltage (V)	Output Voltage (∨)	Output Current max (mA)	Max Capacitive Load (uF)	Efficiency Vin Max (%)	Efficiency Vin Min (%)
AMSR1-781.5Z	4.75-18	1.5	1000	220	78	72
AMSR1-781.8Z	4.75-18	1.8	1000	220	82	76
AMSR1-782.5Z	4.75-18	2.5	1000	220	87	81
AMSR1-783.3Z	4.75-18	3.3	1000	220	90	85
AMSR1-7805Z	6.50-18	5	1000	220	94	89

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	Nominal	Typical	Maximum	Units
Voltage range	See the table above			VDC
Filter				
Absolute Maximum Rating	0.3~20			VDC

#### **Output Specifications**

Parameters	Conditions	Typical	Maximum	Units	
Voltage accuracy		±2		%	
Short Circuit protection		Continuous			
Short Circuit restart		Auto-Recovery			
Line voltage regulation	Vin=(LL-HL) at full load	±0.5		%	
Load voltage regulation	10-100% load	±0.6		%	
Temperature coefficient		±0.02		%/°C	
Ripple & Noise	20MHz Bandwidth	60		mV p-p	
Minimum Load Current		10			
Capacitive load			220	uF	

#### **General Specifications**

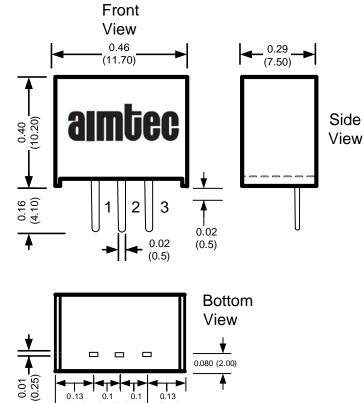
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	330		KHz
Operating temperature	With derating above +60	n derating above +60 -40 to +85		°C
Storage temperature		-40 to +125		°C
Maximum case temperature			100	°C
Cooling	Free Air Convection			
Humidity			95	% RH
Case material	Non	-conductive black p	lastic (UL94V-0 rated)	
Weight		2		g
Dimensions (L x W x H)	0.46 x 0.29 x 0.40 inches 11.70 x 7.40 x 10.20 mm			
MTBF	> 4300000 hrs (MIL-HDBK-217F, Ground Benign, t=+25 oC)			
Maximum soldering temperature	1.5 mm from case for 10sec		260	°C



#### **Pin Out Specifications**

Pin	Single
1	+Vin
2	GND
3	+Vout

#### **Dimensions**



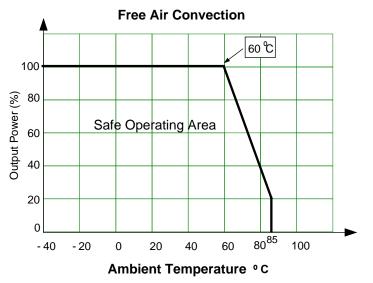
#### Derating

0.1

(3.30) (2.54) (2.54)

0.1

(3.30)



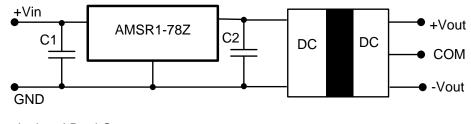


### **Application Circuits**

# Recommended soft start circuit

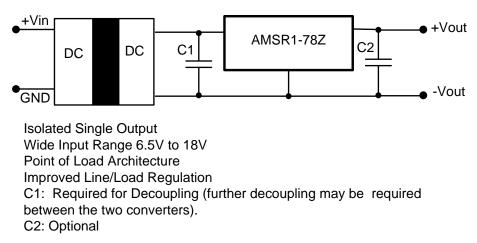
To protect converter during power up use "soft start" Vin and C1 = 47  $\mu$ F C2 = 10  $\mu$ F( optional )

#### Wide input isolated (up to 6000VDC) dual outputs with high efficiency



Isolated Dual Outputs Wide Input Range 6.5V to 18V C1: Optional C2: Required for Decoupling (further decoupling may be required between the two converters).

#### Isolated (up to 6000VDC) single and regulated output



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