AMSR2-78EZ

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SIP3 Package

The AMSR2-78EZ series are SIP3 DC/DC high efficiency switching regulators and ideal substitutes for LM78xx series three-terminal linear regulators. The switching regulators feature high efficiency, low loss, short circuit protection, and there is no need for a heat sink.

It also features excellent reliability and performance while offering a wide input voltage range of 4.75-36VDC as well as an output voltage of 1.8~15V. This compact SIP3 design will surely benefit your new system design.

This new series offers great operating temperatures, from -40 to 82°C with full power up to 65°C. Additionally, 1,630,000 hours MTBF comes standard.

The AMSR2-78EZ is suitable for instrumentation, industrial control and electric power.

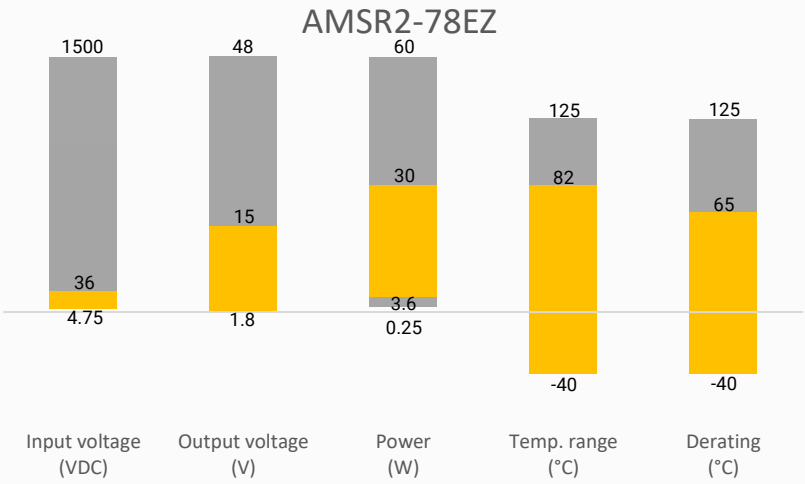
Features

- Pin-out compatible with LM78XX Linear
- Non isolated, heatsinks not required
- Efficiency up to 96%
- Operating Temp: -40 °C to +82 °C
- Short circuit protection: Hiccup, Auto recovery
- No-load input current: 20mA max.
- Regulated output
- Made in Taiwan

RoHS

3yr Warranty

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

IoT | Industrial | Telecom | Portable Equipment

Models & Specifications

Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current max (mA)	Efficiency Vin Min (%)	Efficiency Vin Max (%)
Straight Pins					
AMSR2-781.8EZ	4.75-36	1.8	2000	89	80
AMSR2-782.5EZ	4.75-36	2.5	2000	90	82
AMSR2-783.3EZ	4.75-36	3.3	2000	90	84
AMSR2-7805EZ	6.5-36	5	2000	93	89
AMSR2-786.5EZ	9-36	6.5	2000	93	91
AMSR2-7809EZ	12-36	9	2000	94	90
AMSR2-7812EZ	15-36	12	2000	95	93
AMSR2-7815EZ	18-36	15	2000	96	94
Right Angled Pins					
AMSR2-781.8LEZ	4.75-36	1.8	2000	89	80
AMSR2-782.5LEZ	4.75-36	2.5	2000	90	82
AMSR2-783.3LEZ	4.75-36	3.3	2000	90	84
AMSR2-7805LEZ	6.5-36	5	2000	93	89
AMSR2-786.5LEZ	9-36	6.5	2000	93	91
AMSR2-7809LEZ	12-36	9	2000	94	90
AMSR2-7812LEZ	15-36	12	2000	95	93
AMSR2-7815LEZ	18-36	15	2000	96	94
NOTE: The LEZ suffix indicate right angled pins and the EZ suffix indicates straight pins.					

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage range	See models table	24	36	VDC
No load input current		15	20	mA
Filter	Internal Capacitor 10µF			

Output Specification

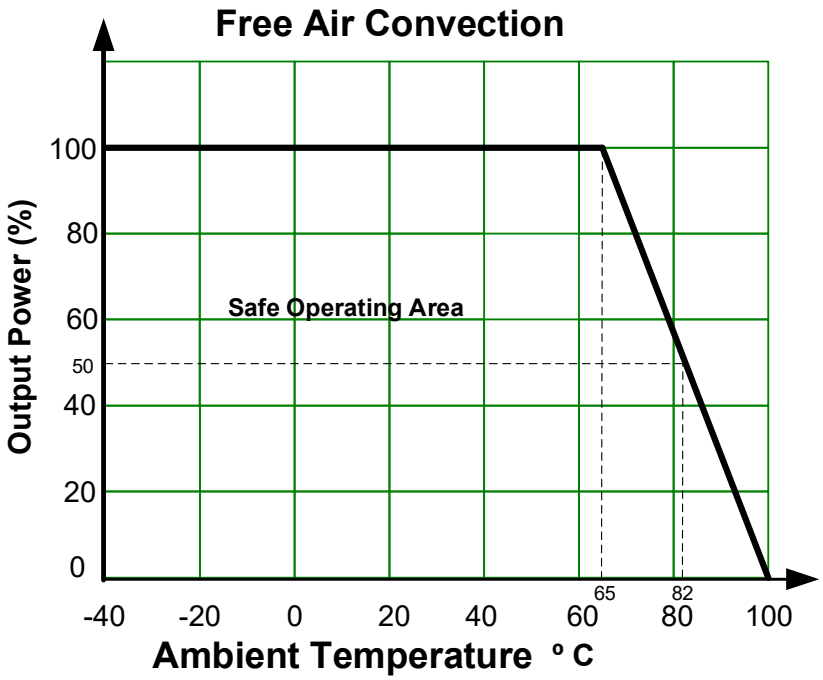
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy			±3	%
Line regulation	Vin min-max at full load	±0.5		%
Load regulation	10-100% load	±0.5		%
Ripple & Noise*	Without output capacitor		100	mV pk-pk
Transient response time	25% load step change	350		µS
Current limit	Duty = 40%	325		%
Capacitive load	ESR > 1mΩ		900	µF
* Ripple and Noise are measured at 20MHz bandwidth. Please refer to the application note for specific detail.				

General Specifications

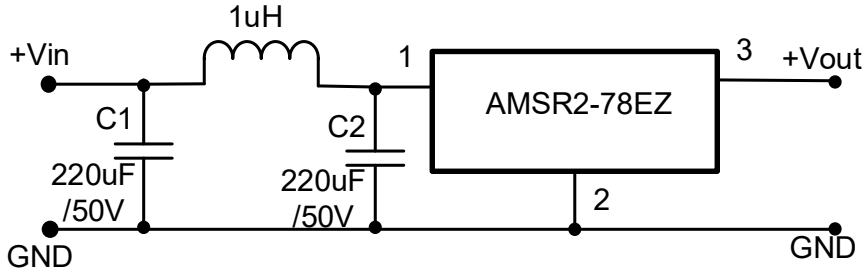
Parameters	Conditions	Typical	Maximum	Units
Switching frequency		500		KHz
Short circuit protection	Hiccup, auto recovery			
Operating temperature	With derating at 65°C	-40 to +82		°C
Storage temperature		-55 to +125		°C

Temperature coefficient		±0.03		%/°C
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
Case material	black plastic (UL94V-0 rated)			
Weight		4		g
Dimensions (L x W x H)	0.45 x 0.34 x 0.69 inches (11.50 x 8.50 x 17.50 mm)			
MTBF	1 630 000 hrs (MIL-HDBK -217F, t=+25ºC) / Full Load			
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.				

Derating

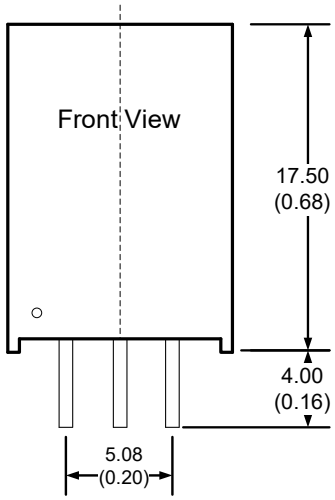


Typical application circuit

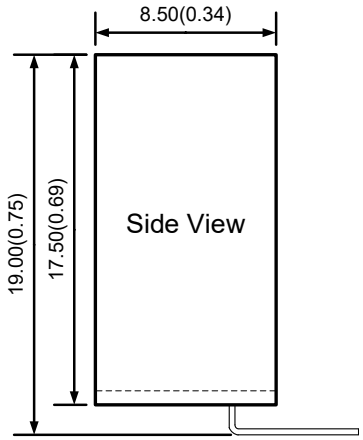


Dimensions

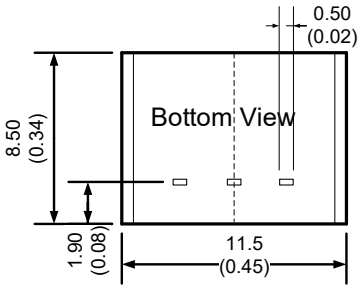
Straight pin models

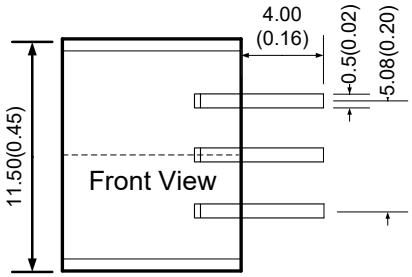


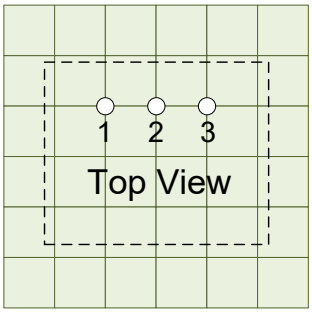
Right angled pin models



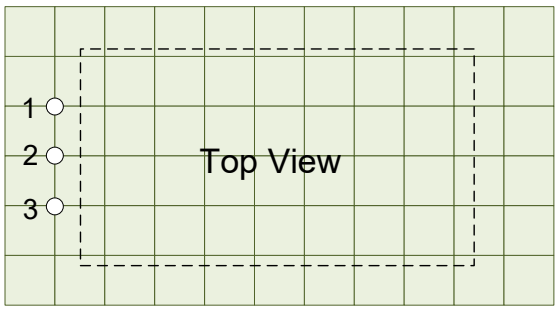
Pin Out Specifications	
Pin	Positive
1	+V Input
2	Ground
3	+V Output







Grid: 2.54 x 2.54mm
Unit:mm[inch]
General tolerances:±0.5mm [± 0.020inch]



Grid: 2.54 x 2.54mm
Unit:mm[inch]
General tolerances:±0.50mm [± 0.020inch]

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