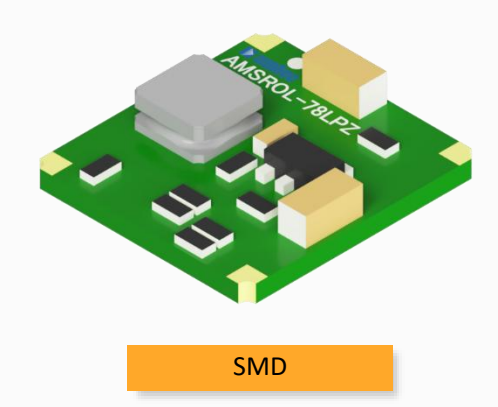


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samples

**AMSROL-78LPZ**



The AMSROL-78LPZ series is designed to offer an ultra-thin solution to customers with designs that have challenging height considerations. This series comes in an open frame SMD package, with a compact total height of just 0.14inches (3.5mm).

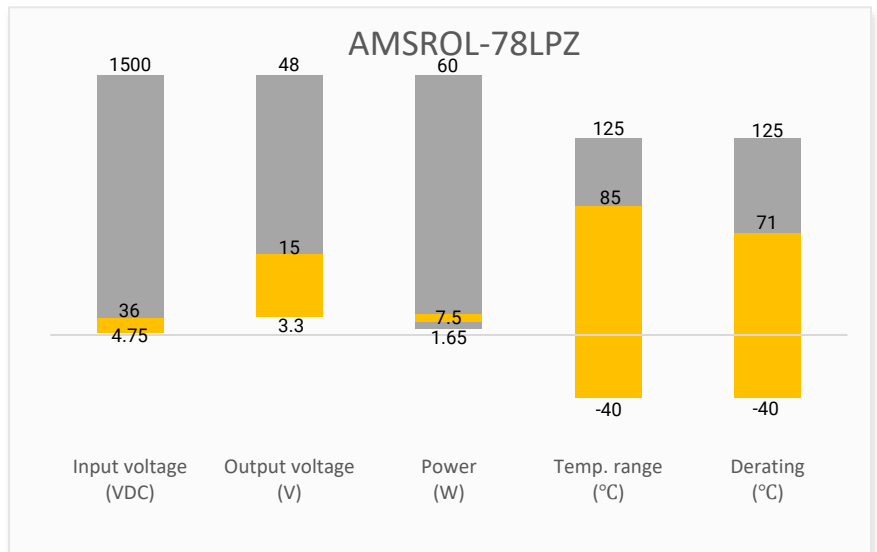
In addition, the AMSROL-78LPZ offers a non-isolated design and supports a wide input voltage range of 4.75-36VDC. Additionally, it includes short circuit protection, which enables the AMSROL-78LPZ series to be used in a variety of applications related to industrial control systems, MCU control and cost-efficient projects.

**Features**



- Input Range: 4.75VDC – 36VDC
- Operating Temp: -40 °C to +85 °C
- Low ripple & noise: 120mV(p-p) max.
- Efficiency up to 95%
- Low no load input current: 0.2mA typ.
- Output short circuit protection
- Open frame SMD package
- Regulated Output

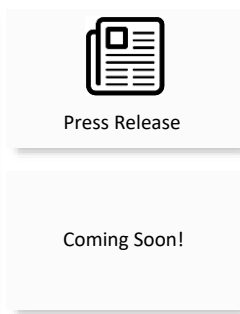
**Summary**



**Training**



Product Training Video  
(click to open)



Application Notes

**Applications**



Power Grid



Industrial



Telecom



Instrumentation

## Models & Specifications

Single Output						
Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current Max (mA)	Maximum Capacitive Load (μF)	Efficiency Typ. (%) Min. Vin	Efficiency Typ. (%) Max. Vin
AMSROL-783.3LPZTR	24 (4.75~36)	3.3	500	680	92	81
AMSROL-7805LPZTR	24 (6.5~36)	5	500	680	93	84
AMSROL-7809LPZTR	24 (12~36)	9	500	680	93	90
AMSROL-7812LPZTR	24 (15~36)	12	500	680	94	91
AMSROL-7815LPZTR	24 (19~36)	15	500	680	95	92

Note: Use suffix "TR" for tape & reel packing (ex. AMSROL-7805LPZTR).

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
No load input current	Vin = Min. to Max.	0.2	1.5	mA
Remote On/Off control	ON – open or logic high	>3.2	8	VDC
	OFF – grounded or logic low	>0	0.8	VDC
	Control pin current	0.03	0.1	mA
Input filter	Capacitor			

Output Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	100% load, 3.3Vout	± 2	± 4	%
	100% load, others	± 2	± 3	%
Line regulation	Vin = Min. to Max.	± 0.2	± 0.4	%
Load regulation	10~100% load, 3.3/ 5Vout	± 0.6		%
	10~100% load, others	± 0.3		%
Transient Recovery Time	25% load step	0.2	1	mS
Transient Response Deviation	25% load step	50	200	mV
Temperature coefficient	-40~85°C		0.03	%/°C
Ripple & Noise*	10~100% load	50	120	mV pk-pk
Short circuit protection	Continuous, Auto recovery			

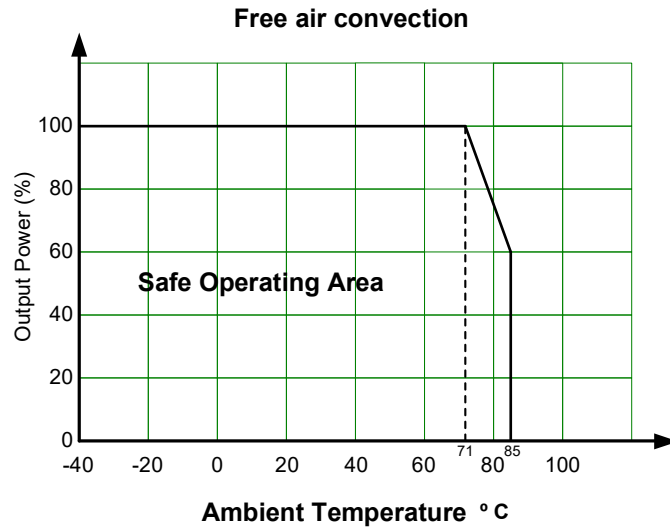
\* Ripple and Noise are measured at 20MHz bandwidth using a 12" twisted-pair wire terminated with a parallel combination of a 0.1μF and a 47μF capacitor.

General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	500		KHz
Operating temperature	See derating graph	-40 to +85		°C
Storage temperature		-55 to +125		°C
Storage humidity	Non-condensing	>5	95	% RH

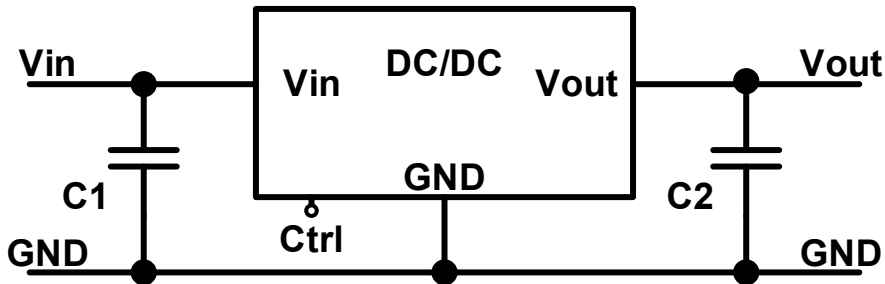
Reflow soldering temperature	Maximum duration 60s when over 217°C	245	°C
Cooling	Free air convection		
Moisture sensitivity level [MSL]	IPC/JEDEC J-STD-0200.1, Level 1		
Weight	0.9		g
Dimensions (L x W x H)	0.53 x 0.49 x 0.14 inches (13.50 x 12.50 x 3.50 mm)		
MTBF	2 000 000 hrs (MIL-HDBK -217F, t=+25°C) / 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.			

Safety Specifications		
Parameters		
Standards	Designed to meet UL/EN/IEC 62368-1	
	EMC - Conducted and radiated emission	CISPR32/EN55032, CLASS B with recommended EMC circuit
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2 Contact ± 4KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4 ± 1KV, Criteria B with recommended EMC circuit
	Surge Immunity	IEC/EN 61000-4-5 Line to Line ± 1KV, Criteria B with recommended EMC circuit
	RF, Conducted Disturbance Immunity	IEC/EN 61000-4-6 3Vr.m.s, Criteria A

**Derating**

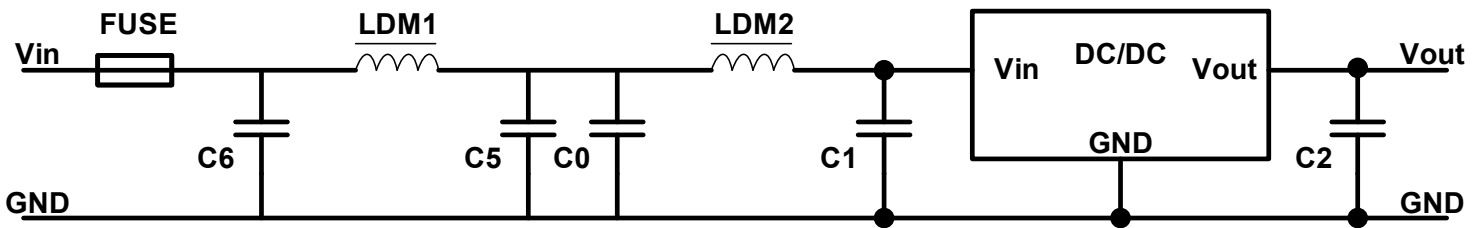
### Typical Application Circuit



Vout	C1	C2
3.3V	10uF, 50V	22uF, 10V
5V	10uF, 50V	22uF, 16V
9~15V	10uF, 50V	22uF, 25V

\* C1 and C2 are required for the operating, and to be connected as close to the converter as possible.

### Recommended EMC Circuit

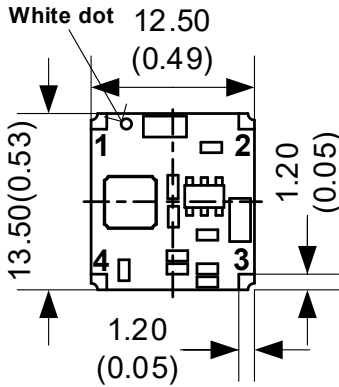


Component	LDM1	LDM2	C5, C6	C0, C1
SPEC	82uH	22uH	330uF, 50V	10uF, 50V
* C2 refer to Typical Application Circuit				

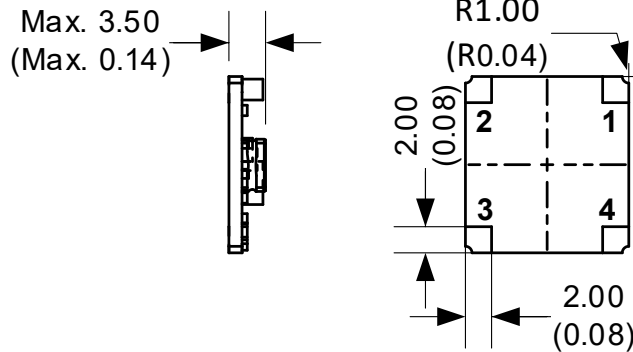
Dimensions



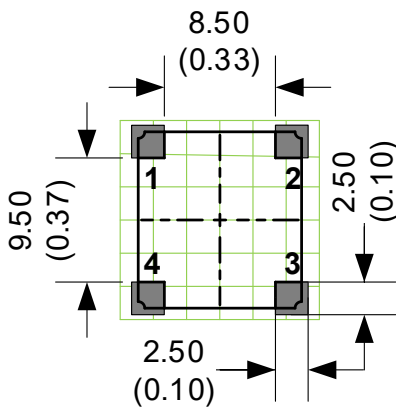
Top View



Bottom View



Pin Definition	
Pin	Single
1	+V Input
2	GND
3	+V Output
4	Ctrl



PCB Footprint

Unit: mm (inch)  
General tolerance:  $\pm 0.25$  ( $\pm 0.01$ )  
Footprint grid 2.54 x 2.54 mm

**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).