



## LC78\_0.5 series

Wide Input Non-Isolated & Regulated, Single Output

### Switching Regulator

- ⊕ Cost effective switching regulator
- ⊕ Low profile (11.6x6.0x10.2mm)
- ⊕ Wide 4.75V up to 28V input range
- ⊕ Up to 95% efficiency
- ⊕ Compatible with LM78 pin-out
- ⊕ Short circuit protection (SCP)
- ⊕ No heat sink required
- ⊕ Low ripple and noise
- ⊕ Low no load input current

Introducing our new compact LC78\_0.5 series - a cost-effective, high-efficiency alternative to traditional linear regulators. With a wide input voltage range from 4.75 V to 28 V and efficiency levels of up to 95%, these low-profile converters (just 11.6 × 6.0 × 10.2 mm) are designed for space-constrained applications. Fully compatible with standard LM78 pin-out, they offer reliable short circuit protection, low ripple and noise, and minimal no-load input current — all without the need for a heat sink. Ideal for designers seeking modern power regulation in a drop-in replacement format.



Common specifications	
Short circuit protection:	Continuous, automatic recovery
Temperature rise at full load:	25°C MAX, 15°C TYP
Cooling:	Free air convection
Operation temperature range:	-40°C~+85°C
Storage temperature range:	-55°C ~+125°C
Lead temperature:	300°C MAX, 1.5mm from case for 10 sec
Operating case temperature:	100°C MAX
Temperature coefficient:	-40°C to +85°C ambient 0.025%/°C TYP
Storage humidity range:	< 95%
MTBF (using MIL-HDBK-217F):	+25°C 2578x10 <sup>3</sup> hours +75°C 1371x10 <sup>3</sup> hours
Packing quantities:	42pcs per Tube
Case material:	Non Conductive Black Plastic UL94-V0
Potting material:	Epoxy UL94-V0
Weight:	1.3g

Output specifications						
Item	Test conditions	Min	Typ	Max	Units	
Output voltage accuracy	Full load			±3	%	
Line regulation	Vin= min. to max. at full load			0.5	%	
Load regulation	0% to 100% load			0.6	%	
Ripple + Noise	Vo=5.0VDC at 20MHz Bandwidth			30	mVp-p	
Dynamic load stability	100%-50% load			±80	mV	
Switching frequency			330		KHz	
No load input current	Vin=24VDC at 0% load			6	mA	
Thermal shutdown	Internal IC junction		160		°C	
Max capacitance load				220	µF	

**Note:**

1. All specifications measured at TA = 25°C, humidity <75%, nominal input voltage and rated output load unless otherwise specified.
2. Only typical models listed. If you need other model, please confirm the power, input voltage and output voltage, and then call us please.

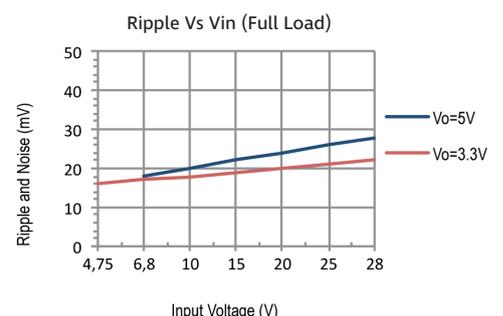
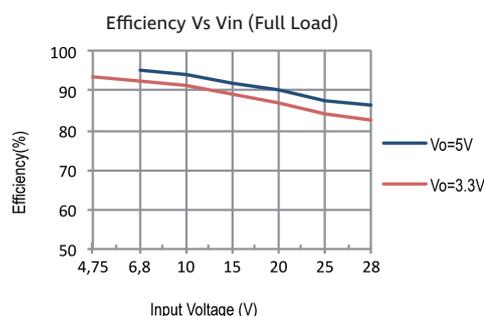
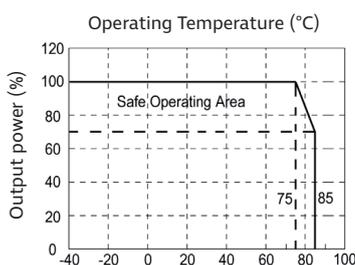
**Example:**  
**LC78\_05-0.5**  
 LC78 = Series; 05= 5Vout; 0.5 = 0.5A

## Product Selection Guide

Part Number	Input Voltage Range [VDC]	Output Voltage [VDC]	Output Current [A]	Efficiency [Vin. min]	Efficiency [Vin. max]	Package
LC78_03-0.5	4.75-28	3.3	0.5	93	84	SIP3
LC78_05-0.5	6.8-28	5.0	0.5	95	88	SIP3
LC78_12-0.5	15-28	12.0	0.5	95	93	SIP3

Add suffix "/L" for 90° bend pins, for example: LC78\_03-0.5/L

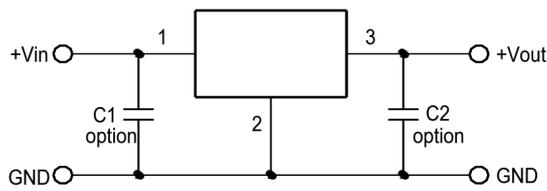
## Typical characteristics



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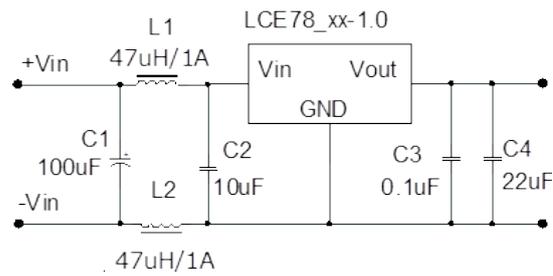
### Standard application circuit



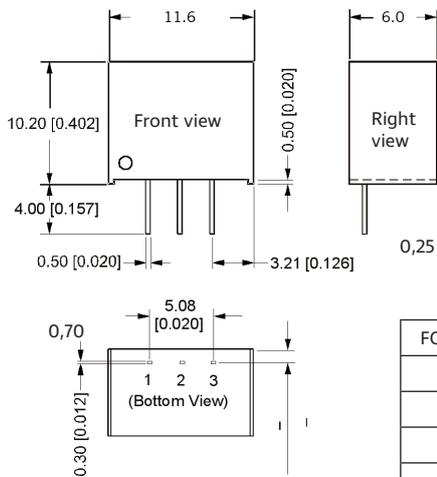
### External capacitor table

Part number	C1 (Ceramic Capacitor)	C2 (Ceramic Capacitor)
LC78_03-0.5	10µF/50V	22µF/6.3V
LC78_05-0.5	10µF/50V	22µF/10V

### Filtering circuit

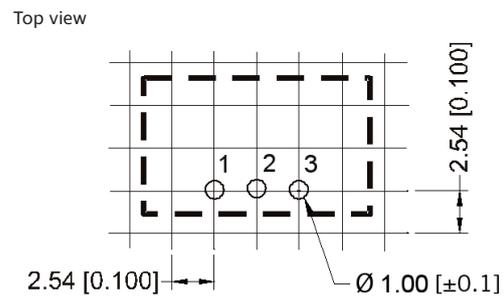


### Mechanical dimensions

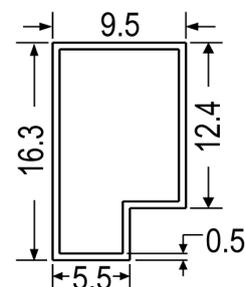


FOOTPRINT DETAILS	
Pin	Positive
1	+Vin
2	GND
3	+Vout

### Footprint details



### Tube outline dimensions



Note:  
L= 520 ± 2 mm  
Devices per tube  
quantity: 42 PCS

Bent pins

