



## LC78\_0.5 Cost effective Series

Wide Input Non-Isolated & Regulated, Single Output

## Switching Regulator

- ⊕ Cost Effective Switching Regulator
- ⊕ Low Profile (L\*W\*H=11.6\*6.0\*10.2)
- ⊕ Wide 4.75V to 28V Operating Input Range
- ⊕ Efficiency up to 95%
- ⊕ Compatible With LM78 Pin-Out
- ⊕ Short Circuit Protection (SCP)
- ⊕ No Heat Sink Required
- ⊕ Low Ripple and Noise
- ⊕ Low No Load Input Current

The LC78\_0.5 series cost effective high efficiency switching regulators are ideally suited to replace LM78xx linear regulators and are pin compatible.

**Model selection:**  
**LC78\_yy-pp**  
 LC=Series; ##=Vout; pp=output current  
**Example:**  
**LC78\_05-0.5**  
 LC=Series; ##= 5Vout; pp=0.5A



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	

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\_03-0.5L

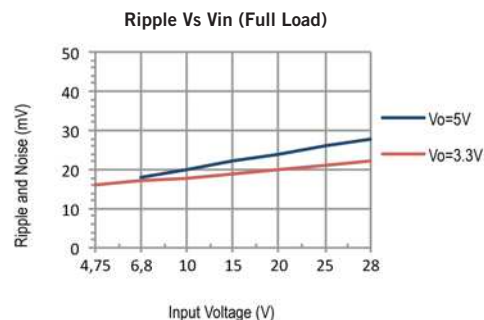
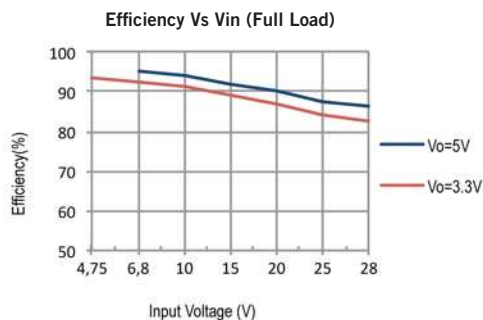
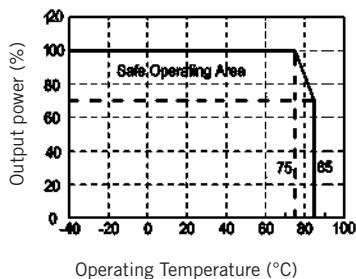
### Note:

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

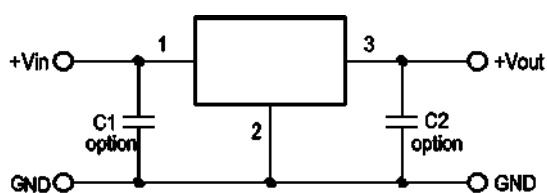
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## Typical characteristics



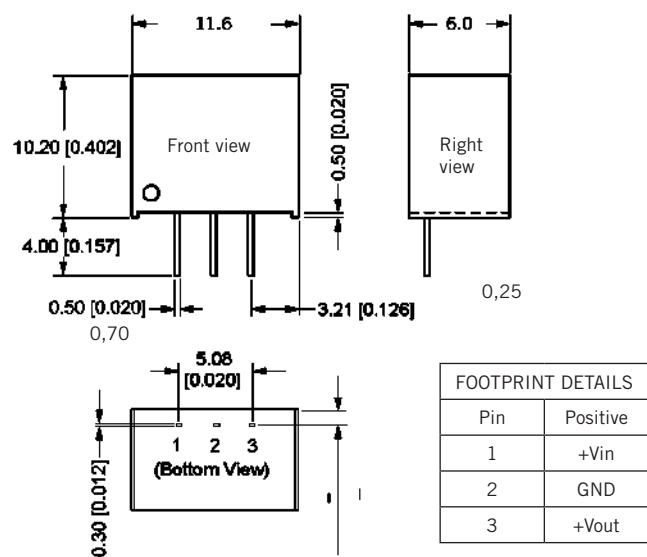
## Standard application circuit



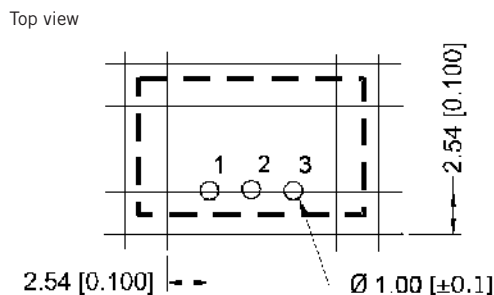
## External capacitor table

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

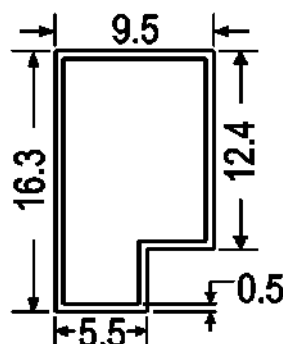
## Mechanical dimensions



## Footprint details



## Tube outline dimensions



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

Bended pins

