



## LC78\_3.0 Cost effective Series

Wide Input, Non-Isolated & Regulated, Single Output

## Switching Regulator

- ⊕ High performance switching regulator
- ⊕ Low profile (L\*W\*H=11.6\*7.5\*10.2)
- ⊕ Wide 4.5V to 28V input voltage range
- ⊕ High efficiency up to 95%
- ⊕ Compatible with LM78 pin-out
- ⊕ Short circuit protection (SCP)
- ⊕ Low output ripple & noise

The LC78\_3.0 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; yy=Vout; pp=output current  
**Example:**  
**LC78\_05-3.0**  
 LC=Series; ##= 5Vout; pp=3.0A



RoHS

Common specifications	
Short circuit protection:	Continuous, automatic recovery
Temperature rise at full load:	40°C MAX
Cooling:	Free air convection
Operation temperature range:	-40°C~+85°C (with derating)
Storage temperature range:	-55°C ~+125°C
Lead temperature:	300°C MAX, 1.5mm from case for 10 sec
Operating case temperature:	110°C MAX
Case thermal impedance:	70°C/W
Temperature coefficient:	-40°C to +85°C ambient 0.02%/°C MAX
Storage humidity range:	< 95%
MTBF (using MIL-HDBK-217F):	+25°C 1680x10 <sup>3</sup> hours +60°C 786x10 <sup>3</sup> hours
Packing quantities:	42pcs per Tube
Case material:	Non Conductive Black Plastic UL94-V0
Potting material:	Epoxy UL94-V0
Soldering profile:	265°C/10sec. MAX
Weight:	2.3g

Output specifications						
Item	Test conditions	Min	Typ	Max	Units	
Output voltage accuracy	full load			±3	%	
Output current		0		3.0	A	
Output current limit			5.0		A	
Internal power dissipation			0.9		W	
Line regulation	Vin= min. to max. at full load		50		mV	
Load regulation	10% to 100% load		40		mV	
Ripple + Noise	20MHz Bandwidth			150	mVp-p	
Dynamic load stability	100%<->50% load (50mA/uS)		±50		mV	
Switching frequency		150			KHz	
No load input current				250	uA	
Thermal shutdown	Internal IC junction		150		°C	
Max capacitance load				220	uF	

### 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.

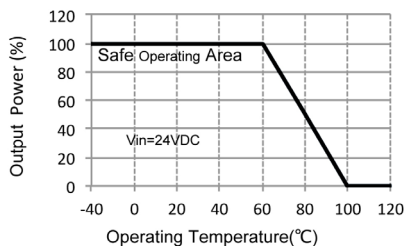
Part Number	Input Voltage Range [VDC]	Output Voltage [VDC]	Output Current [A]	Efficiency [Vin. min]	Efficiency [Vin. max]	Capacitive load [uF; max]
LC78_1.8-3.0	4.5-28	1.8	3.0	87	84	220
LC78_2.5-3.0	4.5-28	2.5	3.0	90	87	220
LC78_03-3.0	4.5-28	3.3	3.0	93	90	220
LC78_05-3.0	6.5-28	5	3.0	95	92	220

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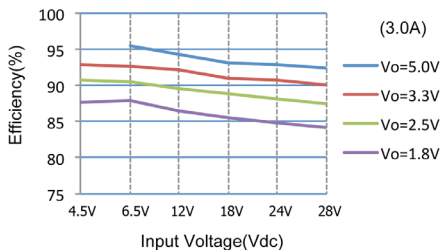
Wide Input Non-Isolated & Regulated, Single Output

## Typical characteristics

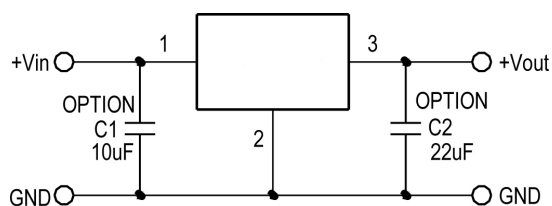
Derating Graph (Natural convection)



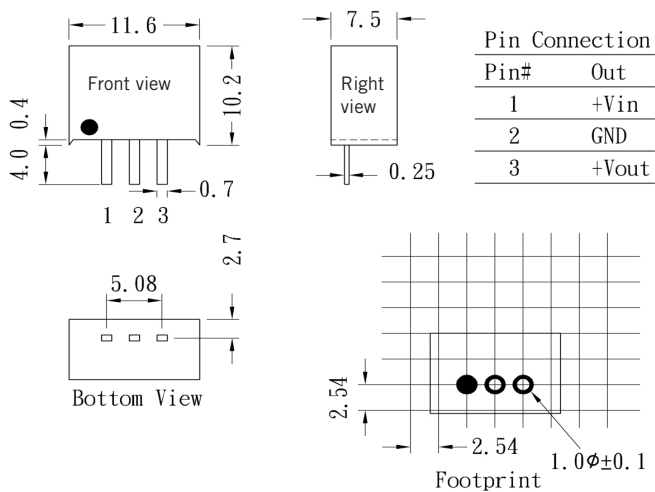
Efficiency Vs Vin (Full Load)



## Standard application circuit

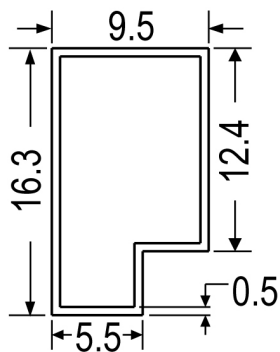


## Mechanical dimensions



Tolerance:  
 XX.X ± 0.25 mm  
 XX.XX ± 0.15 mm

## Tube outline dimensions



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