



## 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.

**Example:**  
**LC78\_05-3.0**  
 LC=Series; ##= 5Vout; pp=3.0A



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/μS)		±50		mV
Switching frequency			150		KHz
No load input current				250	μA
Thermal shutdown	Internal IC junction		150		°C
Max capacitance load				220	μF

**Note:**

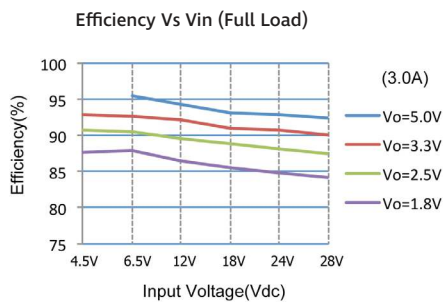
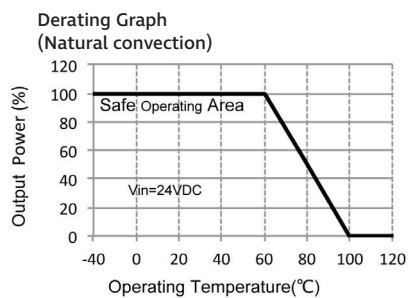
- All specifications measured at TA=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
- Only typical models listed. If you need other model, please confirm the power, input voltage and output voltage, and then phone us.

Part Number	Input Voltage Range [VDC]	Output Voltage [VDC]	Output Current [A]	Efficiency [Vin. min]	Efficiency [Vin. max]	Capacitive load [μF; 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

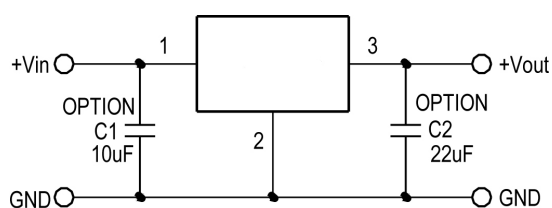
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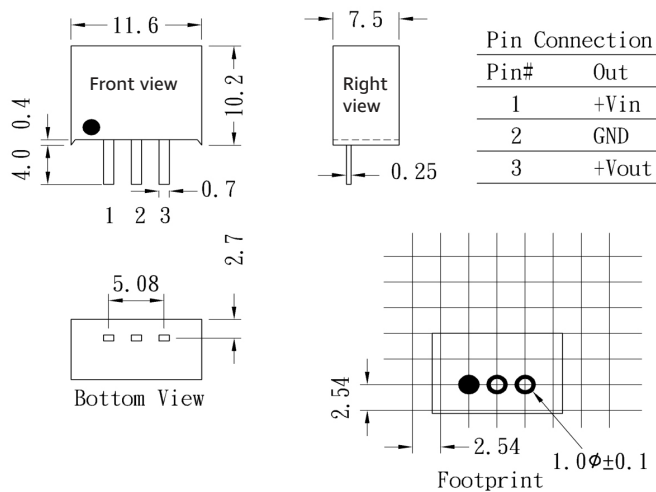
## Typical characteristics



## Standard application circuit



## Mechanical dimensions



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

## Tube outline dimensions

