



## LC78\_3.0 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.



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:**

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 phone us.

**Example:**

**LC78\_05-3.0**  
LC78 = Series; 05 = 5Vout; 3.0 = 3.0A output current

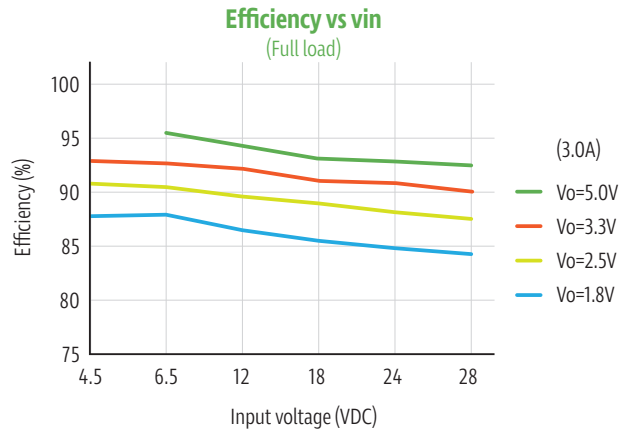
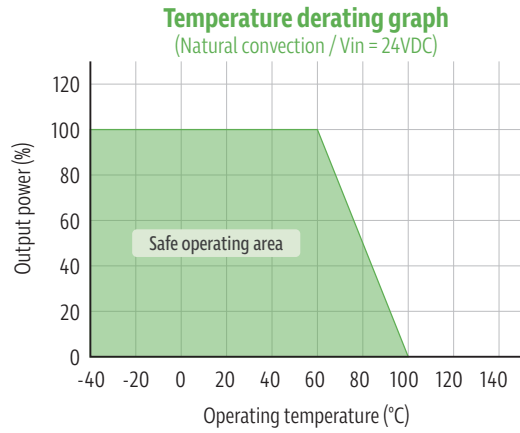
## Product Selection Guide

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

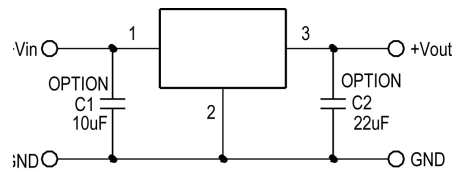
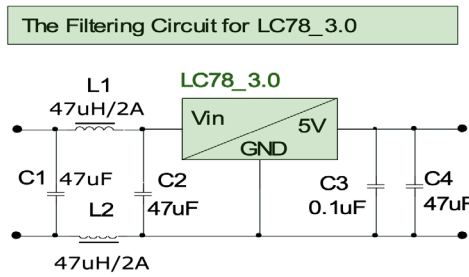
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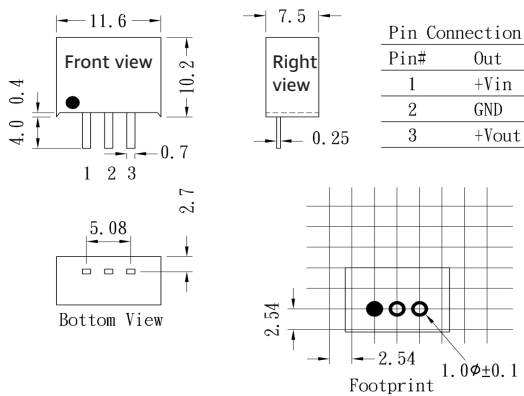
## Typical characteristics



## Filtering Circuit      Standard application circuit



## Mechanical dimensions



Top view

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

## Tube outline dimensions

