

LC78_2.0 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 30V operating input voltage range
- ⊕ High efficiency up to 97%
- ⊕ Compatible with LM78 pin-out
- ⊕ Short circuit protection (SCP)
- ⊕ No Heat Sink Required
- ⊕ Low Quiescent Current

The LC78_1.5 & LC78_2.0 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_05-2.0
LC=Series; ##= 5Vout; pp=2.0A



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 2068x10 ³ hours +60°C 975x10 ³ 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:	1.5g

Output specifications						
Item	Test conditions	Min	Typ	Max	Units	
Output voltage accuracy	full load			±3	%	
Output current						
Output shorted current limit	Vout= 0VDC		3.0		A	
Internal power dissipation			0.7		W	
Line regulation	Vin= min. to max. at full load		0.4		%	
Load regulation	10% to 100% load		40		mV	
Ripple + Noise	Vo=5.0VDC at 20MHz Bandwidth			100	mVp-p	
Dynamic load stability	100%<->50% load		±150		mV	
Switching frequency				600	KHz	
No load input current				10	mA	
Thermal shutdown	Internal IC junction			150	°C	
Max capacitance load				100	µF	

Note:

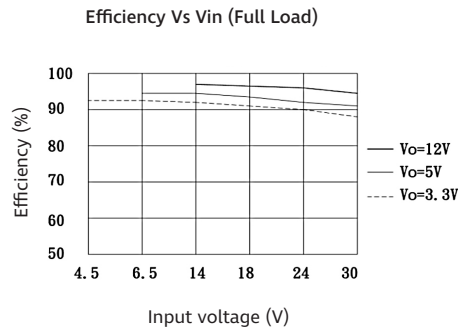
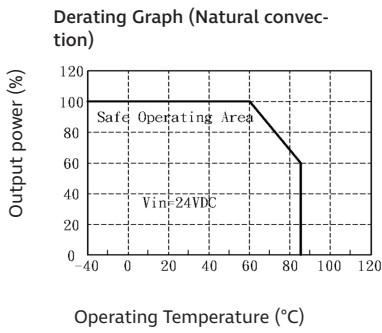
- All specifications measured at TA=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
- Only typical models listed. If you need other model, please confirm the power, input voltage and output voltage, and then phone us.

Part Number	Input Voltage Range [VDC]	Output Voltage [VDC]	Output Current [A]	Efficiency [Vin. min]	Efficiency [Vin. max]	Capacitive load [µF; max]
LC78_1.8-2.0	4.5-30	1.8	2.0	89	81	1000
LC78_2.5-2.0	4.5-30	2.5	2.0	91	84	1000
LC78_03-2.0	4.5-30	3.3	2.0	92	88	1000
LC78_05-2.0	6.5-30	5	2.0	94	91	1000
LC78_12-1.5	15-30	12	1.5	97	94	470

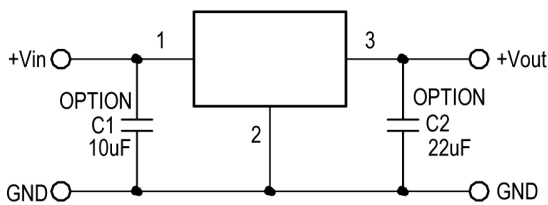
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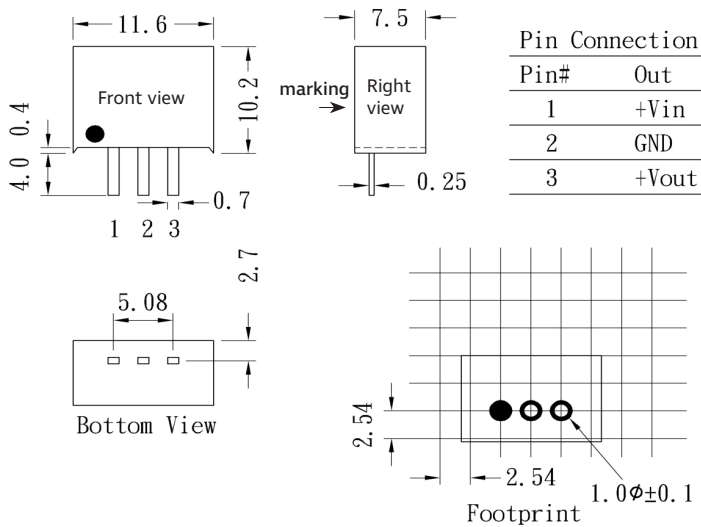
Typical characteristics



Standard application circuit



Mechanical dimensions



Tube outline dimensions

