LCW78_1.0 series

Wide Input Non-Isolated & Regulated, Single Output

Switching Regulator

- 500uA low quiescent current at no load
- 100V surge withstand
- Ultra wide 14:1 input voltage range 5-72 VDC
- Compatible with LM78 Pin-Out
- Short circuit protection
- Low output ripple & noise
- High efficiency up to 96%

The LCW78_1.0 series is a non-isolated POL converter with an ultra wide 14:1 high input voltage range 5-72 VDC switching regulator with standard SIP3 package, covering most of the battery ranges and the standard power bus. This series offers high efficiency and very low quiescent current (500uA) for the battery system applications.

Common specifications

Item	Test conditions	Min	Typ	Max	Units
Short circut protection:	Continuous, auto-recovery				
Cooling:	Free air convection				
Operating Temperature Range	up to 50°C without derating	-40		+100	°C
Operating Case Temperature	Vo = 5.0VDC at 20MHz Bandwidth			110	°C
Storage Temperature Range	100%-50% load	-55		+125	°C
Case Thermal Impendance				70	°C/ W
Thermal shutdown	Internal IC junction		150		°C
Case Material	UL94-V0	Non conductive black plastic			
Potting Material	UL94-V0	Epoxy			
Soldering Profile	10sec			265	°C
Package Weight				4	g
Packing Quantities	Standard Pinned (pcs per Tube)			40	pcs
MTBF	MIL-HDBK 217F; 25 °C 50 °C	 1256K hours 865K hours			
Case	12.1*9.0*17.5 mm				

Input specifications

Item	Test conditions	Min	Typ	Max	Units
Input Voltage Range	see selection guide	5		72	VDC
Intput Surge Voltage	100mS			100	VDC

Output specifications

Item	Test conditions	Min	Typ	Max	Units
Output Voltage Accuracy	Full load			±3	%
Output Shorted Current Limit	Vout = 0 VDC		3.5		A
Internal Power Dissipation				1	W
Line Voltage Regulation	Vin = min. to max. at full load		1		%
Load Regulation	10 to 100% load		1		%
Ripple + Noise	20MHz Bandwidth			50	mVp-p
Temperature Coefficient	-40°C to +85°C ambient		3.5		%/°C
Dynamic load stability	100%<->50% load		±50		mV
Switching frequency				400	KHz
Thermal shutdown	Internal IC junction		150		°C

Example:
LCW78_05-1.0
LC = Series; W = Wide input range; 05 = 5Vout; 1.0 = 1.0A output current

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.

Part Number	Input Voltage Range [VDC]	Output Voltage [VDC]	Output Current [A]	Efficiency typ. 48VDC Nominal [%]	Max Capacitive Load
LCW78_03-1.0	5-72	3.3	1.0	81	3,300uF
LCW78_05-1.0	8-72	5	1.0	86	3,300uF
LCW78_09-1.0	12-72	9	1.0	91	2,200uF
LCW78_12-1.0	15-72	12	1.0	92	1,000uF
LCW78_24-0.7	27-72	24	0.7	96	470uF

Add suffix "L" for 90° bend pins, for example: LCW78_03-1.0L

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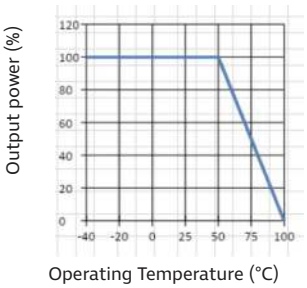
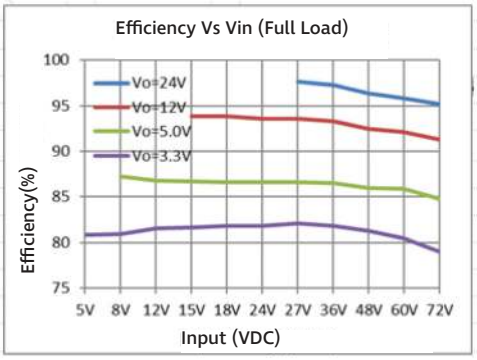
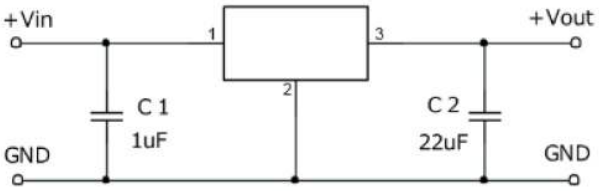
Typical characteristics

Derating Graph

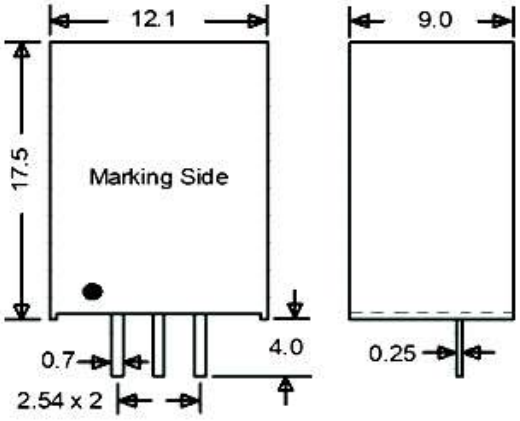


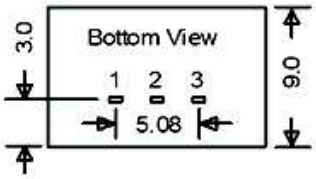


Standard application circuit



Mechanical dimensions





Pin Conections	
1	+Vin
2	GND
3	+Vout

XX.X ± 0.5 mm

XX.XX ± 0.25 mm