



## LCW78\_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 36V operating input range
- ⊕ Efficiency up to 94%
- ⊕ Compatible with LM78 pin-out
- ⊕ Short circuit protection (SCP)
- ⊕ Low output ripple & noise

The LCW78\_2.0 series cost effective high efficiency switching regulators are ideally suited to replace LM78xx linear regulators and are pin compatible.

**Example:**  
 LCW78\_05-2.0  
 LCW= Series; 05= 5Vout; pp=2.0A



Common specifications	
Short circuit protection:	Continuous, automatic recovery
Cooling:	Free air convection
Operation temperature range:	-40°C~+100°C
Storage temperature range:	-55°C ~+125°C
Operating case temperature:	105°C MAX
Temperature coefficient:	0.02%/°C MAX
Storage humidity range:	< 95%
Soldering profile:	265°C/10sec. max
MTBF (using MIL-HDBK-217F):	+25°C: 1380x10 <sup>3</sup> hours +60°C: 655x10 <sup>3</sup> hours
Packing quantities:	42pcs per Tube
Case material:	Non Conductive Black Plastic UL94-V0
Potting material:	Epoxy UL94-V0
Weight:	2.3g

Output specifications						
Item	Test conditions	Min	Typ	Max	Units	
Output voltage accuracy	Full load		±3		%	
Output current		0		2	A	
Internal power dissipation			0.9		W	
Line regulation	Vin= min. to max. at full load		50		mV	
Load regulation	10% to 100% load		50		mV	
Output shorted current limit	Vout= 0VDC		1		A	
Ripple + Noise	20MHz Bandwidth			50	mVp-p	
Dynamic load stability	100% <-> 50% load (50mA/μs)		±100		mV	
Switching frequency			380		KHz	
Case Thermal Impedance			70		°C/W	
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.

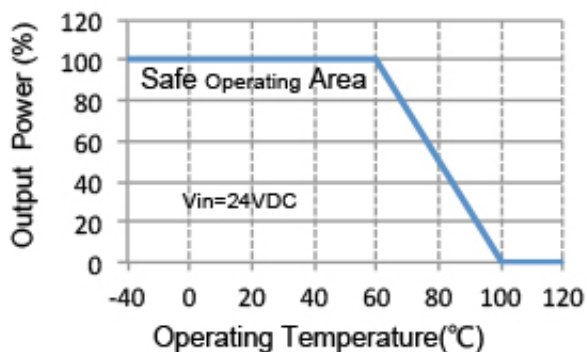
Part Number	Input Voltage Range [VDC]	Output Voltage [VDC]	Output Current [A]	Efficiency [Vin. min]	Efficiency [Vin. max]	Max. capacitive load [μF]
LCW78_01-2.0	4.5-36	1.8	2.0	87	78	220
LCW78_02-2.0	4.5-36	2.5	2.0	89	82	220
LCW78_03-2.0	4.5-36	3.3	2.0	93	87	220
LCW78_05-2.0	6.5 - 36	5	2.0	94	90	220

# LCW78\_2.0 Cost effective Series

Wide Input Non-Isolated & Regulated, Single Output

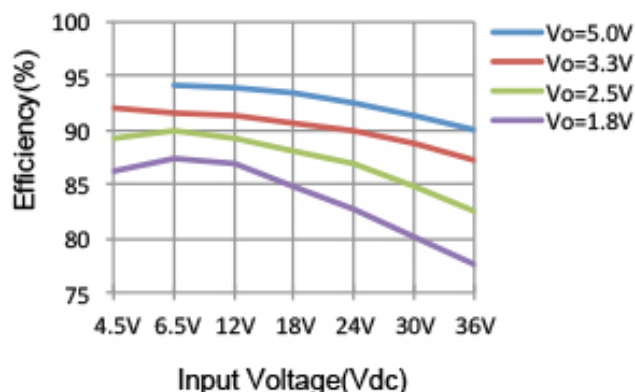
## Typical characteristics

Derating graph (natural convection)

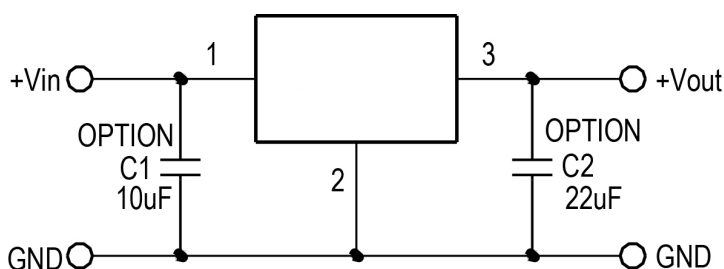


## Efficiency

Vin vs Efficiency (full load)



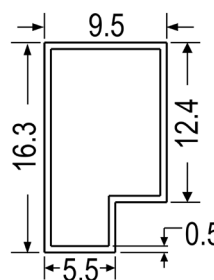
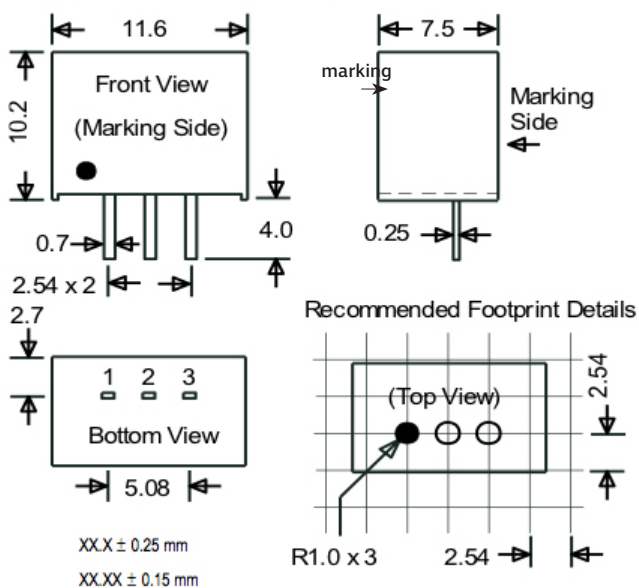
## Standard application circuit



## Mechanical dimensions and footprint

## Tube outline dimensions

Package Style and Pinning (mm)



Note:  
L=520 ± 0.5 mm  
Devices per tub quantity: 42 PCS

Pin connections	
1	+Vin
2	GND
3	+Vout