



DESCRIPTION: Wide Input Non-Isolated, Regulated Single Output ,non-isolated DC/DC converters

TP78LUXx-0.5 series has high efficiency, short circuit protection, Thermal shutdown, no heat sink required, Industry standard pinout.ideal for redialing 78xx linear regulates and are pin compatible.

FEATURES

ROHS Compliant	Wide input non-isolated, regulated single output	Efficiency up to 93%
Short circuit protection, Thermal shutdown	Temperature range: -40°C ~ +85°C	Low ripple noise
SIP package, UL94-V0 Compliant	No heat sink required	Industry standard pinout

SELECTION GUIDE

Part Number	Input Voltage (VDC)		Input Voltage (VDC)			Efficiency (%) (Typ.)	
	Nominal	Nominal	Voltage (VDC)	Current (mA) (Min)	Current (mA) (Max)	Vin (Min)	Vin(Max)
TP78LU3.3-0.5	48	9.0~72.0	3.3	10	500	82	75
TP78LU5.0-0.5	48	9.0~72.0	5.0	10	500	87	81
TP78LU6.5-0.5	48	9.0~72.0	6.5	10	500	91	84
TP78LU9.0-0.5	48	14.0~72.0	9.0	10	500	92	86
TP78LU12-0.5	48	17.0~72.0	12	10	500	93	89
TP78LU15-0.5	48	20.0~72.0	15	10	500	94	90
TP78LU24-0.5	48	36.0~72.0	24	6	300	95	91

The above part number with "L" suffix are 90° bent pins power converters, for example TP78LU5.0-0.5L

OUTPUT CHARACTERISTICS

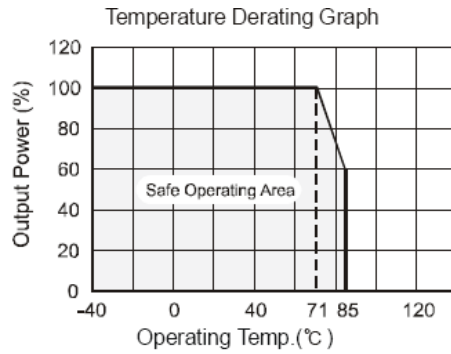
Parameter	Conditions	Min	Typ.	Max.	Units
Output voltage accuracy	100% full load, input voltage range		±2	±3	
Line regulation	Vin=min. to max, at full load		±0.4	±1.0	%
Load regulation	10% to 100% load		±0.3	±0.6	
Ripple & Noise	20MHz bandwidth, 10% to 100% load		20	60	mvp-p
Short circuit input power consumption	Nominal input voltage		0.72	1.2	W
Short circuit protection		Continuous, auto-recovery			
Overheating protection			160		°C
Output current limit	Nominal input voltage		700	1200	mA
Switching frequency	Full load, input voltage range	120		800	KHZ
Quiescent current	Vin from min to max and at min. load		1	5	mA
Dynamic load	10% to 100% load			±100	mA
			1.0	1.5	ms
Temperature coefficient				±0.015	%/°C
Max capacitance load				100	µF

All specifications typical at TA=25°C, The GND pin should not be floating while operating, or the module will be damaged.

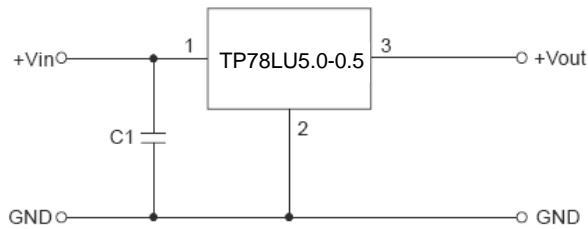
GENERAL CHARACTERISTICS

Parameter	Conditions	Min	Typ.	Max.	Units
Storage humidity range				95	
Operating temp. range	Power derating (above 71°C)	-40		85	°C
Storage temp. range		-55		125	
Case temp. while Operating			65	100	
Lead soldering temperature	Solder joints from the shell edge 1.5mm,10seconds			300	
Cooling		Free air convection			
Case material		Flame retardant heat-resistant plastic (UL94-V0)			
MTBF	25°C (MIL-HDBK-217F)	3500			k hours
	71°C (MIL-HDBK-217F)	1500			
Weight			4		g

TEMPERATURE DERATING GRAPHS

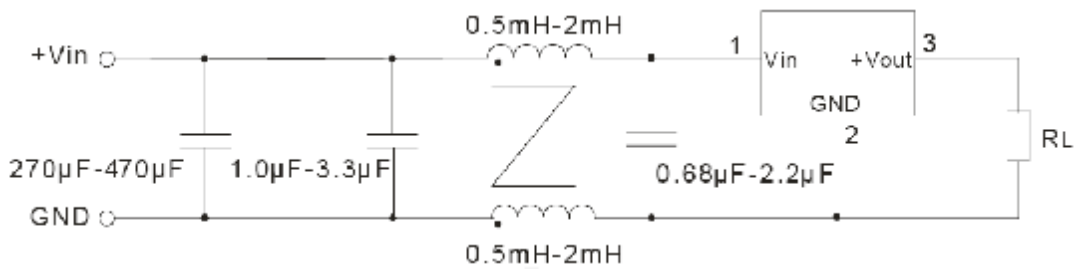


STANDARD APPLICATION CIRCUIT(EXTERNAL CAPACITOR TABLE)



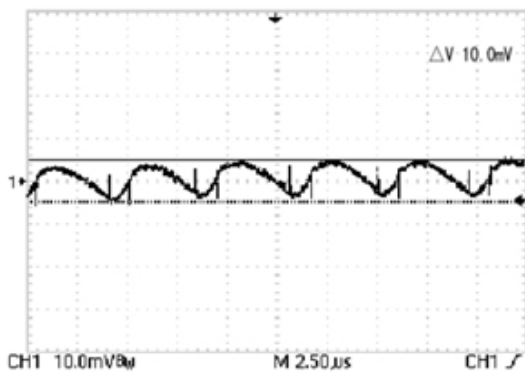
- Note:
1. Recommended soft-start to establish input voltage, does not support hot-swappable.
and the mutation of the input voltage from low voltage to high voltage may damage the modules.
 2. If the product is used in high-voltage applications, a C1 ($\leq 47 \mu F / 100V$) input must be added to prevent the voltage spikes from damaging the module.
 3. No parallel connection .

EMC RECOMMENDED CIRCUIT

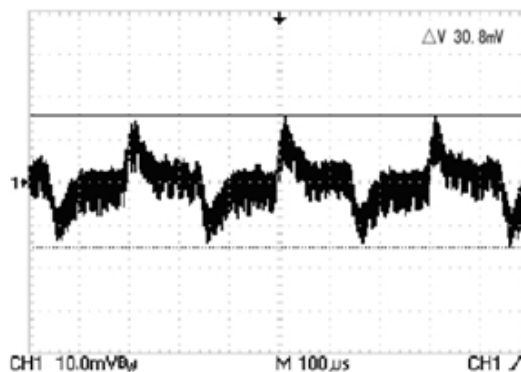


TEST CONFIGURATIONS (TA=25°C)

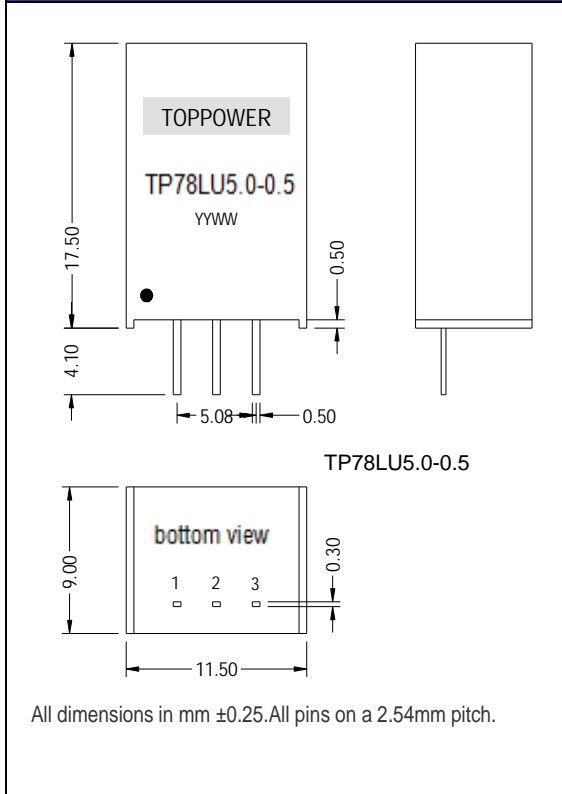
1 Ripple&noise measurement diagram while full load



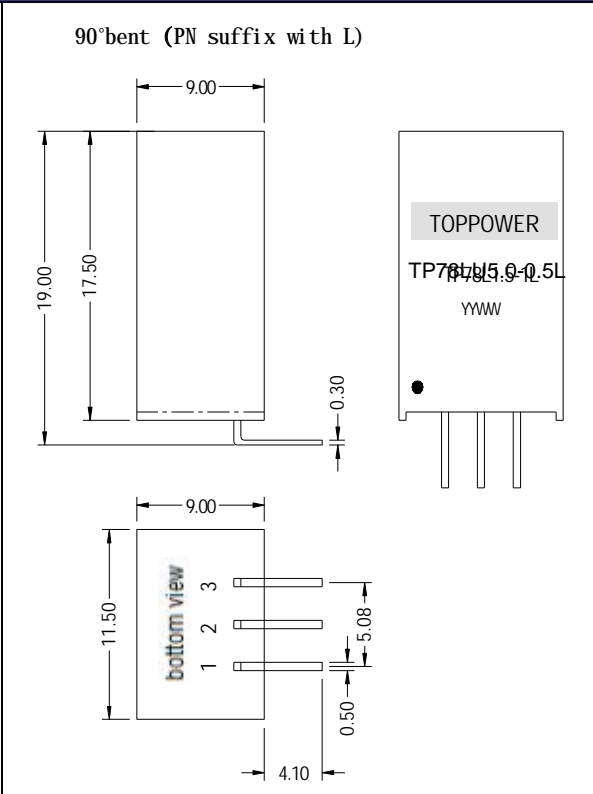
2. Load transient response waveform



MECHANICAL DIMENSIONS **PIN DESIGN**

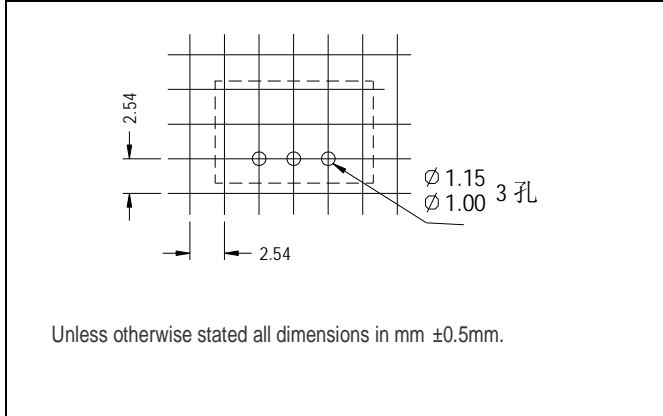


All dimensions in mm ± 0.25 . All pins on a 2.54mm pitch.

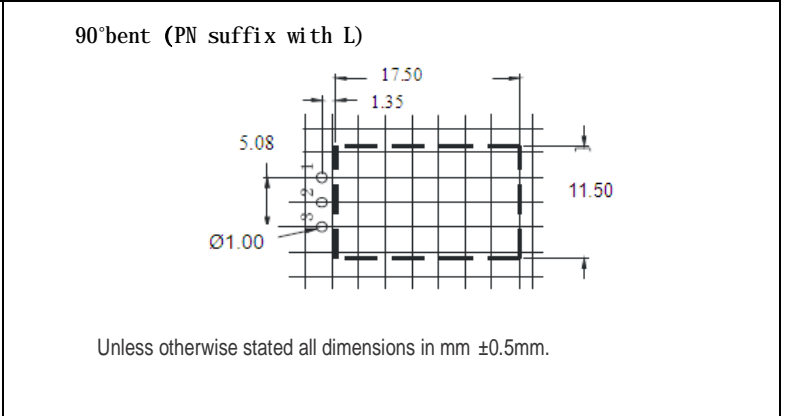


PIN	FUNCTION
1	+Vin
2	GND
3	+Vout

RECOMMENDED FOOTPRINT DETAILS



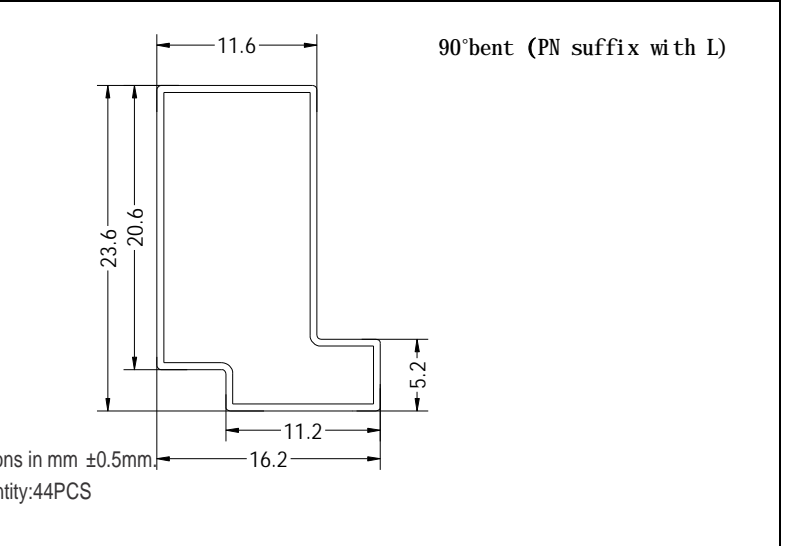
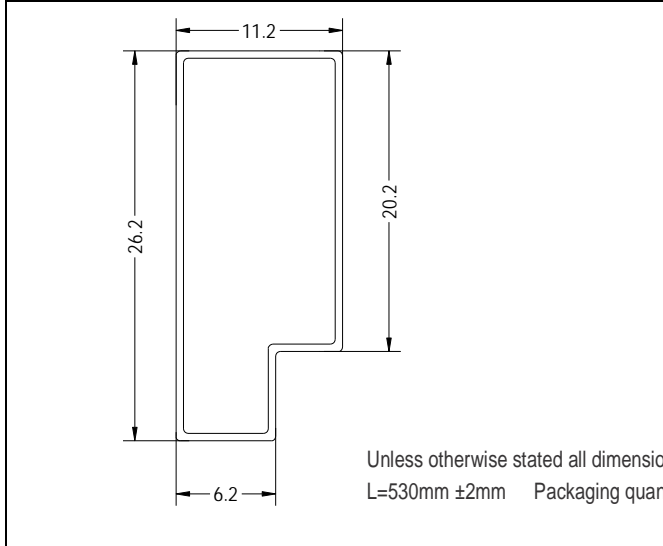
Unless otherwise stated all dimensions in mm ± 0.5 mm.



Unless otherwise stated all dimensions in mm ± 0.5 mm.

TUBE OUTLINE DIMENSIONS

TUBE OUTLINE DIMENSIONS



Unless otherwise stated all dimensions in mm ± 0.5 mm.
L=530mm ± 2 mm Packaging quantity:44PCS