MORNSUN®

Miniature All-rounder

3-10W Cost-effective AC/DC Converter

LSxx-13BxxR3



Less Layout Space

Controllable Cost

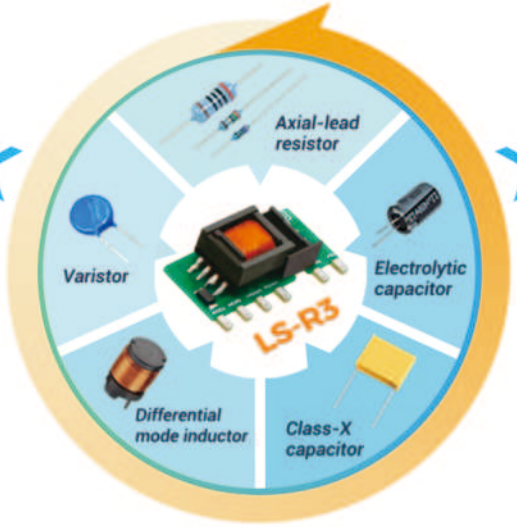
Reliable Performance

Flexible Peripheral Designs for a Wide Range of Applications

Simplify design with flexible peripheral circuits, provides with 4 selectable temperature levels and optional EMC levels for a wide range of applications working in diverse environmental conditions.

4 Temperature levels

Class I	-5 to 45℃
Class II	-25 to 55℃
Class III	-40 to 70℃
Class IV	-40 to 85℃



Optional EMC levels

EMS(EFT&SURGE)

EFT: ±2KV
Surge: line to line ±1KV

EFT: ±4KV
Surge: line to line ±2KV

EMI

Class A
Class B

A Wide Range of Applications

IoT | Electric power | Smart household appliances | Instrument | Intelligent building | Industrial control | And more...

Build Your Own Personalized Power Supply

Instrument



Smart meters

IoT



Intelligent switch

New energy

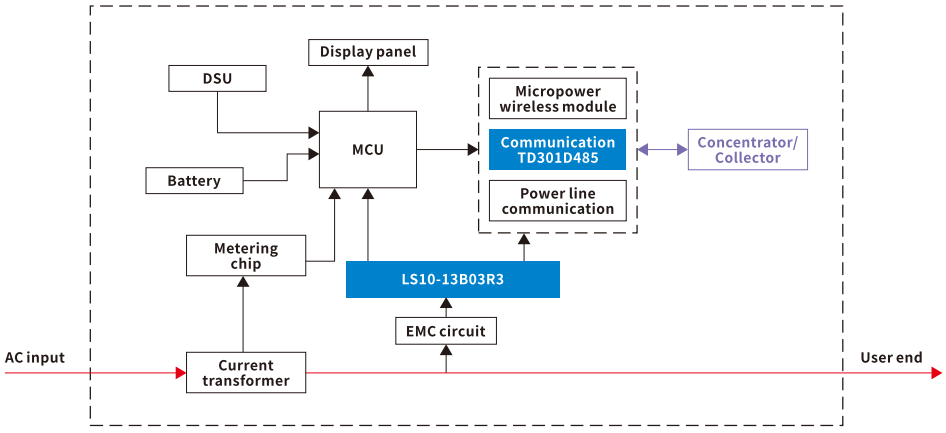


EV charging box

Instrument Application Solution



Smart meters



Peripheral Design Recommendation

(Applicable for LS05-13B12R3, for the other models it requires changes in the specification of the peripheral components accordingly)

IoT Application





EMI	Class B
EMS	EFT: ±2KV Surge: line to line ±1KV
Operating temperature	-25 to 55℃

◀ Typical application: Intelligent Switch

	Recommended value
Electrolytic capacitor	10μF/450V
Differential mode inductor	1.2mH/Max: 4.0Ω/Min: 0.2A
X capacitor	0.1μF/310VAC
Y capacitor	1nF/400VAC
Wirewound Resistor	12Ω/3W
Fuse	1A/300V，slow-blow

Smart Household Appliances



Note: Customer can DIY with double Y capacitors



EMI	Class B
EMS	EFT: ±2KV Surge: line to line ±1KV
Operating temperature	-25 to 55℃

◀ Typical application: smart coffee maker

	Recommended value
Electrolytic capacitor	10μF/450V
Differential mode inductor	1.2mH/Max: 4.0Ω/Min: 0.2A
X capacitor	0.1μF/310VAC
Y capacitor	1nF/400VAC
Wirewound Resistor	12Ω/3W
Fuse	1A/300V，slow-blow

3 Intelligent Building





EMI	Class B
EMS	EFT: ±2KV Surge: line to line ±1KV
Operating temperature	-25 to 55℃

◀ Typical application: panel switch

	Recommended value
Electrolytic capacitor	10μF/450V
Differential mode inductor	1.2mH/Max: 4.0Ω/Min: 0.2A
X capacitor	0.1μF/310VAC
Y capacitor	1nF/400VAC
Wirewound Resistor	12Ω/3W
Fuse	1A/300V, slow-blow

4 Security





EMI	Class A
EMS	EFT: ±4KV Surge: line to line ±2KV
Operating temperature	-25 to 55℃

◀ Typical application: fire alarm device

	Recommended value
Electrolytic capacitor	10μF/450V
Differential mode inductor	4.7mH/Max: 15Ω/Min: 0.2A
Varistor	14D561K
Y capacitor	1nF/400VAC
Wirewound Resistor	12Ω/2W
Fuse	2A/300V, slow-blow

5 New Energy





EMI	Class B
EMS	EFT: ±4KV Surge: line to line ±2KV
Operating temperature	-40 to 85℃

◀ Typical application: EV charging box

	Recommended value
Electrolytic capacitor	22μF/450V
Differential mode inductor	1.2mH/Max: 4.0Ω/Min: 0.2A
X capacitor	0.1μF/310VAC
Y capacitor	1nF/400VAC
Varistor	14D561K
Wirewound Resistor	12Ω/2W
Fuse	2A/300V, slow-blow

Technical Specifications (LSxx-13BxxR3)



Features

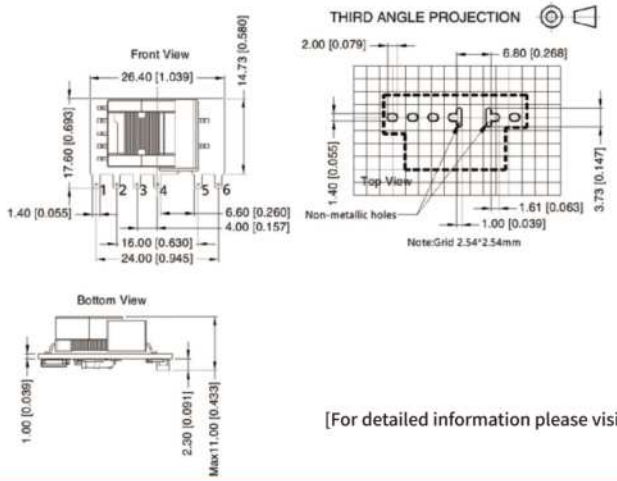
- Compact size: 26.4x14.73x11mm(5W)
- Wide input: 85-305VAC, accepting AC or DC input
- Operating temperature range: -40℃ to +85℃
- No-load power consumption as low as 0.1W
- Output short circuit, over-current protection
- IEC/EN/UL62368 approval

Selection Guide

Certification	Part No.	Output Power	Nominal Output Voltage and Current (Vo/Io)	Efficiency at 230VAC (%)Typ.	Capacitive Load (μF) Max.
CE/UL/CB	LS03-13B03R3	1.98W	3.3V/600mA	67	820
	LS03-13B05R3	3W	5V/600mA	72	680
	LS03-13B09R3		9V/333mA	76	470
	LS03-13B12R3		12V/250mA	77	470
	LS03-13B15R3		15V/200mA	78	330
	LS03-13B24R3		24V/125mA	80	200
CE/UL/CB	LS05-13B03R3	3.3W	3.3V/1000mA	69	2200
	LS05-13B05R3	5W	5V/1000mA	76	1500
	LS05-13B09R3		9V/560mA	77	680
	LS05-13B12R3		12V/420mA	79	470
	LS05-13B15R3		15V/340mA	79	330
	LS05-13B24R3		24V/210mA	81	100
CE/UL/CB	LS10-13B03R3	6.6W	3.3V/2000mA	73	1500
	LS10-13B05R3	10W	5V/2000mA	77	1500
	LS10-13B09R3		9V/1100mA	80	1000
	LS10-13B12R3		12V/830mA	82	680
	LS10-13B15R3		15V/670mA	82	470
	LS10-13B24R3		24V/420mA	83	330

Note: 1. The nominal output voltage refers to the voltage applied to the load terminal after adding external circuits.
2. If the product is used in a severe vibration application, it needs to be glued and fixed.

Dimensions (Below is for LS05-13BxxR3, for LS03/10-13BxxR3 please refer to the datasheet)



Pin-Out	
Pin	Function
1	AC(L)
2	AC(N)
3	+V(cap)
4	-V(cap)
5	-Vo
6	+Vo

Note:
Unit: mm[inch]
General tolerances: ±1.00[±0.039]
The layout of the device is for reference only, please refer to the actual product

[For detailed information please visit www.mornsun-power.com to download the product datasheet.]

MORNSUN®

MORNSUN Power
E-mail: info@mornsun.cn
www.mornsun-power.com

Website Facebook