

MORNSUN®

Miniature All-rounder

3-10W Cost-effective AC/DC Converter

LSxx-13BxxR3



Less Layout
Space



Controllable
Cost



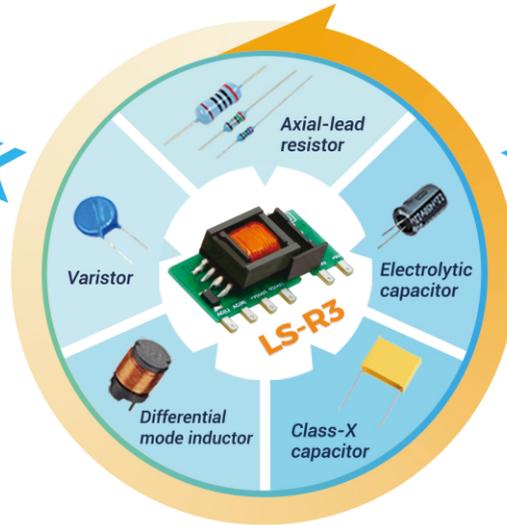
Reliable
Performance

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°C
Class II	-25 to 55°C
Class III	-40 to 70°C
Class IV	-40 to 85°C



Optional EMC levels

EMS(EFT&SURGE)

EFT: $\pm 2\text{KV}$
Surge: line to line $\pm 1\text{KV}$
EFT: $\pm 4\text{KV}$
Surge: line to line $\pm 2\text{KV}$

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

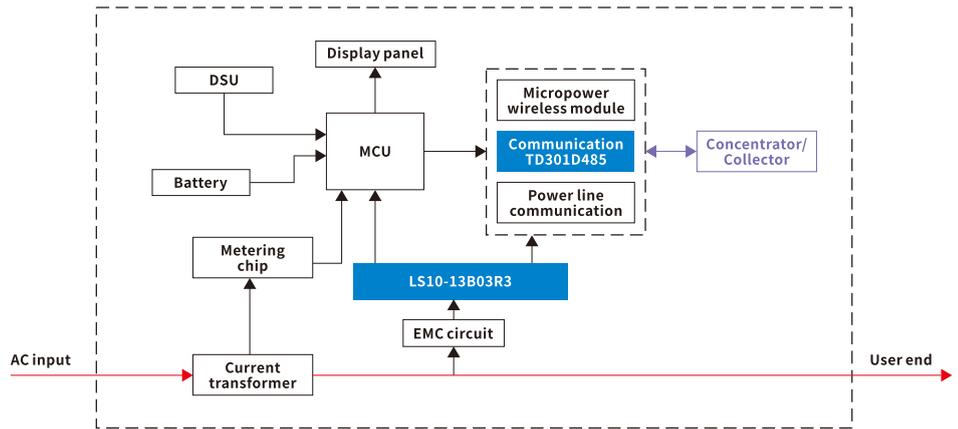


EV charging box

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

◀ Typical application: Intelligent Switch



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

	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



◀ Typical application: smart coffee maker

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

	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



◀ Typical application: panel switch

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

	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



◀ Typical application: fire alarm device

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

	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

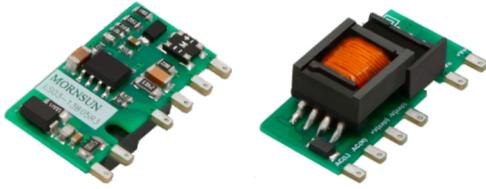


◀ Typical application: EV charging box

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

	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

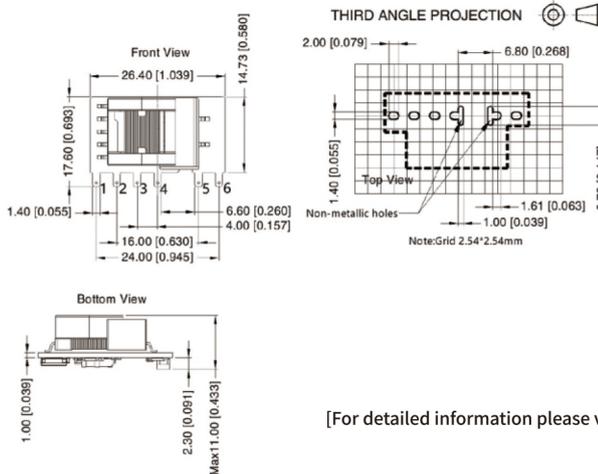
- Compact size: 26.4x14.73x11mm(5W)
- Wide input: 85-305VAC, accepting AC or DC input
- Operating temperature range: -40°C to +85°C
- No-load power consumption as low as 0.1W
- Output short circuit, over-current protection
- IEC/EN/UL62368 approval

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	3W	3.3V/600mA	67	820
	LS03-13B05R3		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	5W	3.3V/1000mA	69	2200
	LS05-13B05R3		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	10W	3.3V/2000mA	73	1500
	LS10-13B05R3		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.]

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