



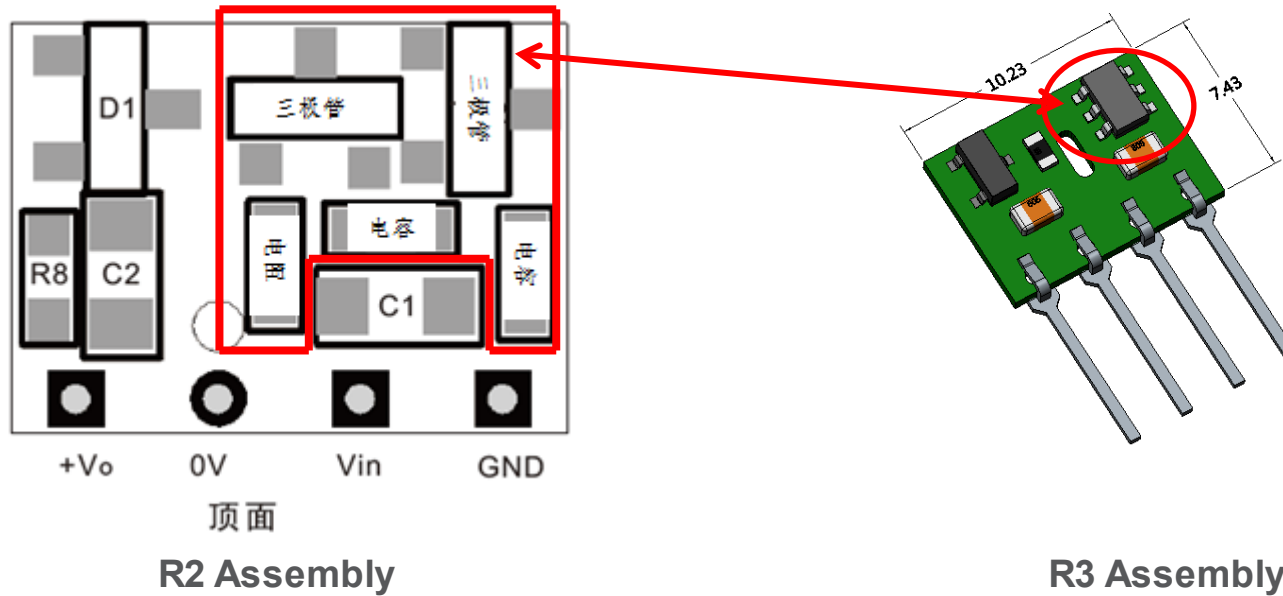
TOTAL SOLUTIONS



Mornsun R3

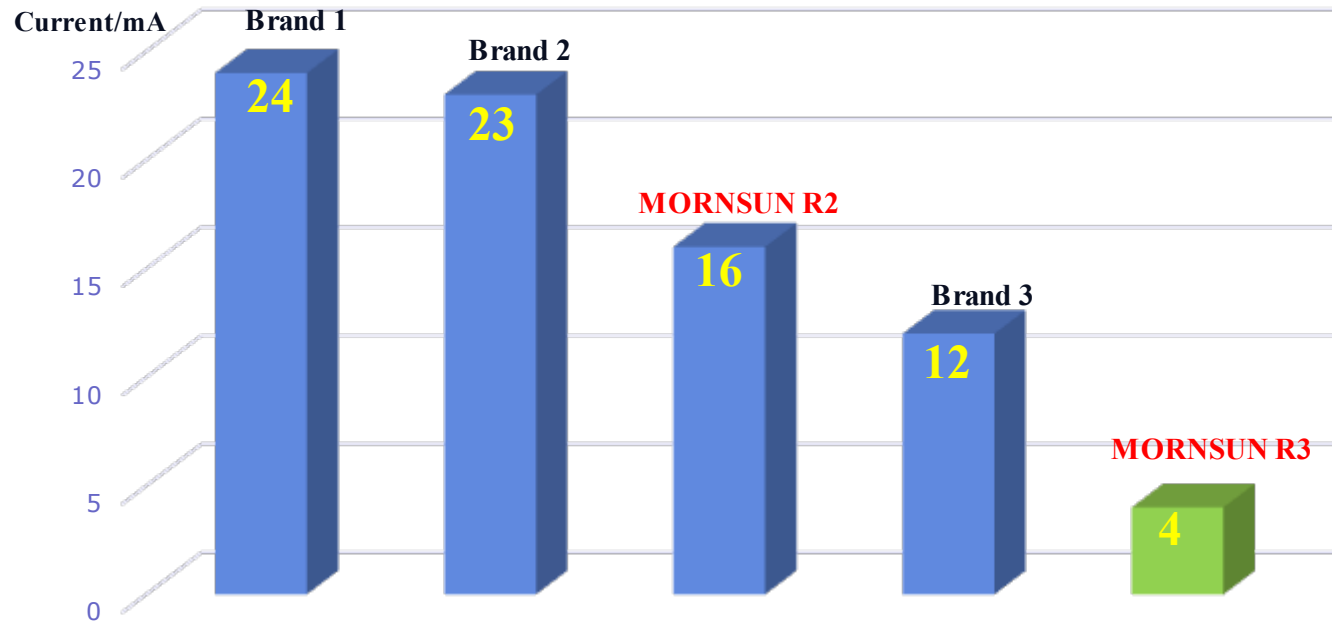
Fixed Input Series

Higher Integrated



The integration of internal components is **40% higher**

Strength 1 Lower no-load power consumption



No-load current comparison chart

The common no-load current in the market is about 15mA, which is not good for the design powered from battery. MORNSUN R3 now is making this value under 5mA.

Remark: examples between 5v input and 5V output for 1W

Strength 1 Lower no-load power consumption

Suppose that a 5V/1Ah power bank that powers for a 1W converter. Naturally, we ignore the power consumption of the chip itself.

Formula: $t=1Ah/$ on-power consumption

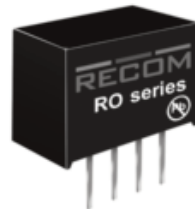
1W product from common manufacturer



for 50hours



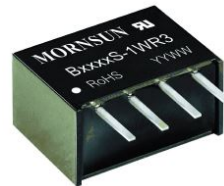
1W product from international mainstream brand



for 100hours



1W product from MORNSUN R3 series



for 200hours

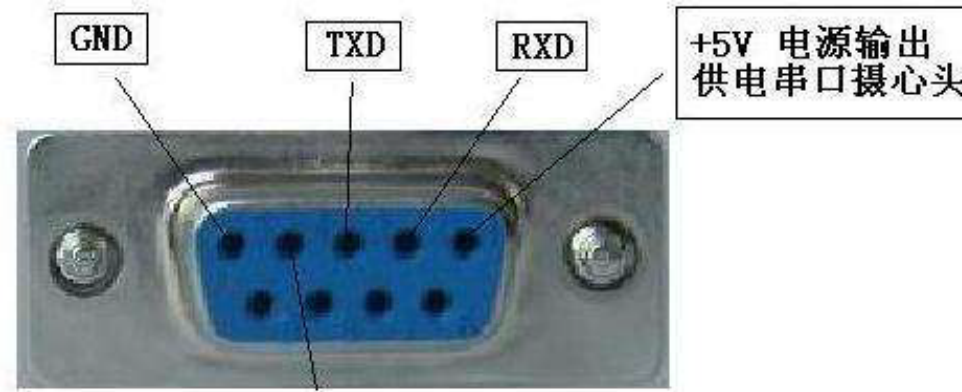


R3 Series performance: **4** times of common brand, **2** times of international mainstream brand.

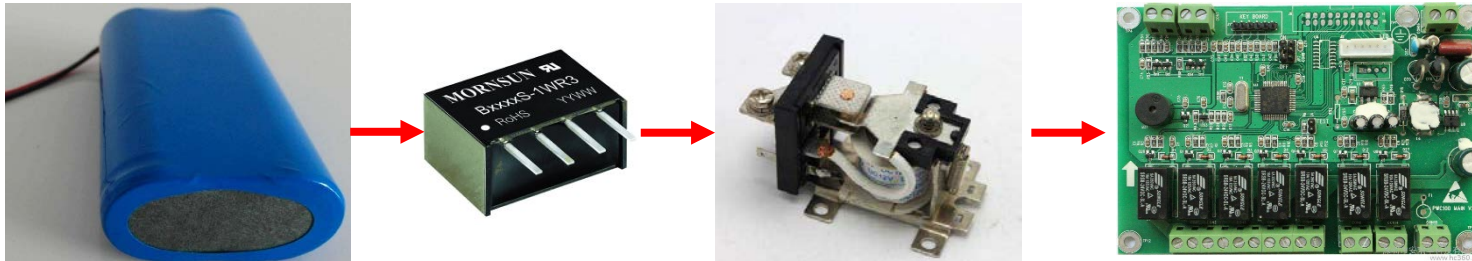
Strength 1 Lower no-load power consumption



Waiting for charge



External power supply pin

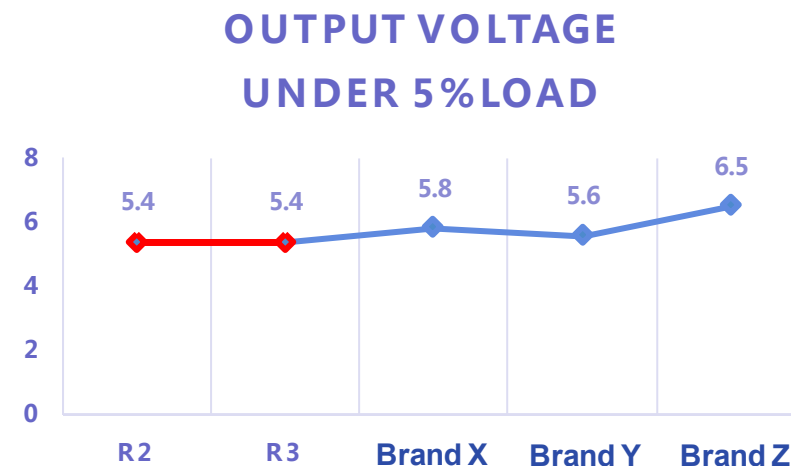
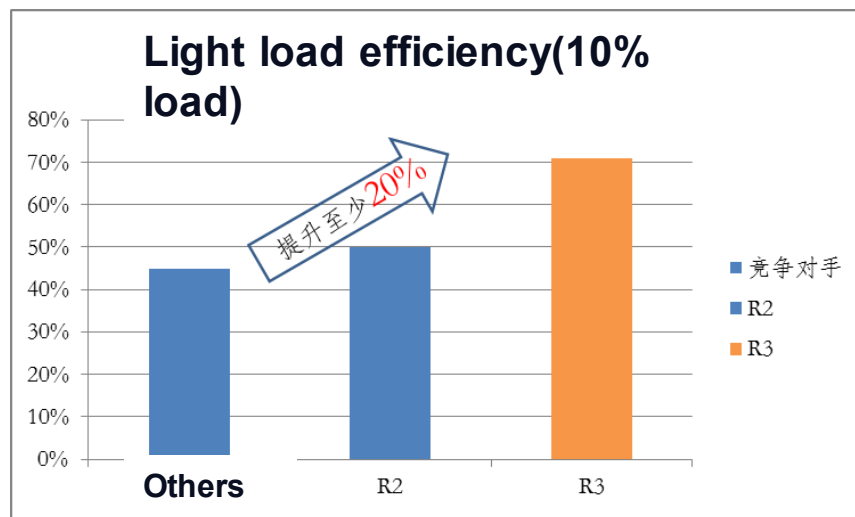


Battery power supply

No-load consumption is becoming more and more important factor when customer select a power supply.

Higher light load efficiency

Compare to MORNSUN advanced R2 series, the light load efficiency of R3 series is 20% higher.



Fixed input products is mainly used in the communication port of 485 or CAN, usually, the power consumption of communication chip is about 0.05W to 0.2W, which means a light load status. MORNSUN fixed R3 series output voltage is controlled within 10%, which contributes to damaged communication chip results from higher voltage.

Remark: examples between 5v input and 5V output for 1W

Higher light load efficiency

Higher efficiency means less temperature rise, then, the problem of high temperature rise due to light load is solved perfectly.

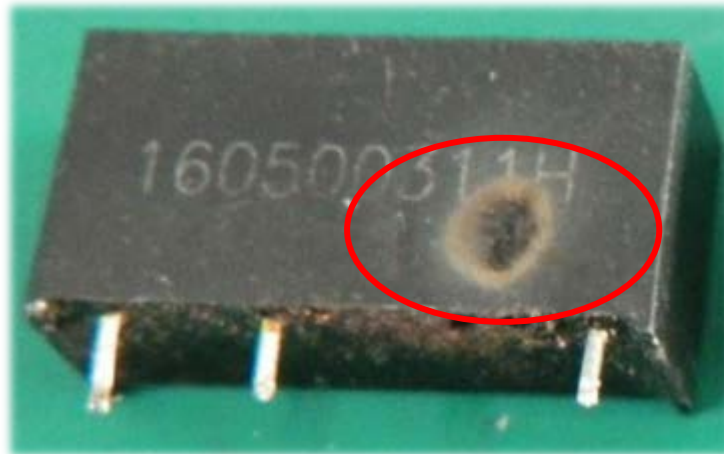
Temp. rise	Full load	Light load
Brand X	55°	36.7°
Brand Y	49.6°	35°
R2	60.7°	39.6°
R3	42.7°	31.2°



Remark: the environment temperature is 25 °C

Full range of short circuit

At present, most of fixed input micro power supply is without continuous short circuit protection. Neither of MORNSUN R2 series.



Output short circuit product

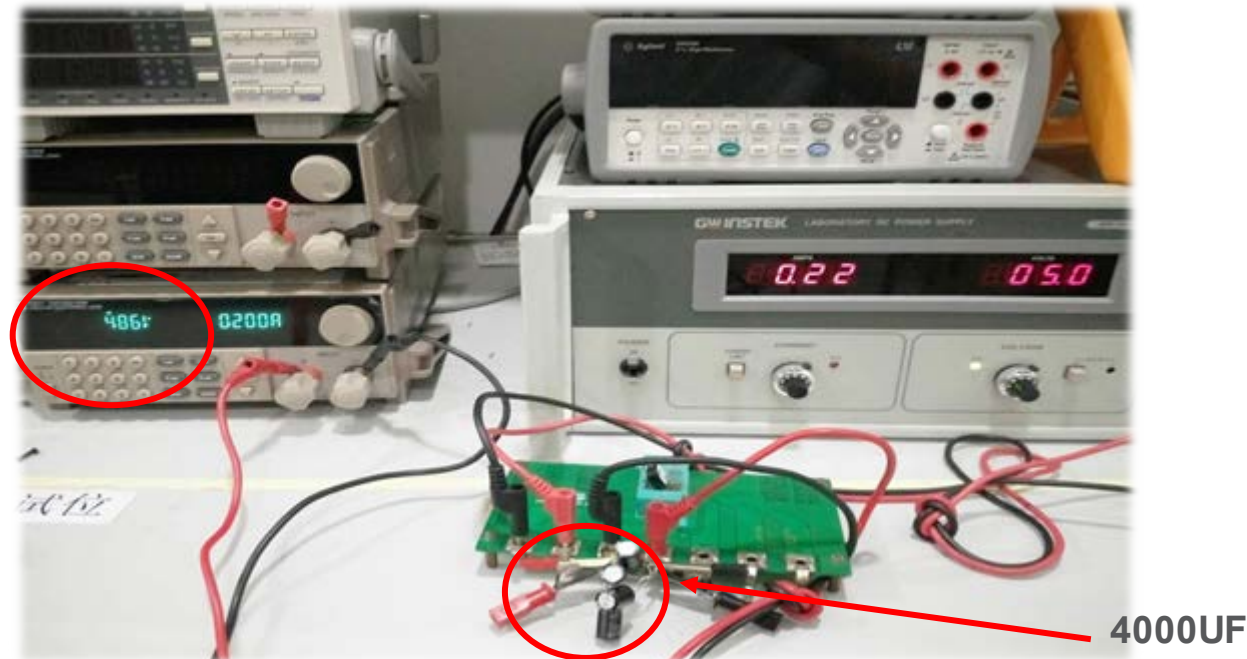


Short circuit current

However, MORNSUN fixed R3 series is full ranged of short circuit protection with continuous, recovery and less than 5mA short circuit current.

Better capacitive load

R3 series supports start-up with C-C mode, which settle the problem of existence of continuous short circuit and good capacitive load at the same time



Start up with electronic load

With advanced capacitive load, R3 series easily meets the requirement of C-C mode start up, Which helps customers a lot in selecting load in test and supporting big capacitor in filtering

Remark: examples between 5v input and 5V output for 1W

Better capacitive load

Part No.	Max capacitive load(μF)		Part No.	Max. capacitive load(uF)
B0503S-1WR3	2400	VS	B0503S-1WR2	220
B0505S-1WR3	2400		B0505S-1WR2	220
B0509S-1WR3	1000		B0509S-1WR2	220
B0512S-1WR3	560		B0512S-1WR2	220
B0515S-1WR3	560		B0515S-1WR2	220
B0524S-1WR3	220		B0524S-1WR2	220

B0505S-1WR3 capacitive load is far over 2400uF in field test.

“B0505S-1W” from brand X

Part Number SIP 4	(2kv)	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)	Max. Capacitive Load ⁽¹⁾	Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency typ. (%)	max. Capacitive Load ⁽¹⁾ (μF)
RO-xx3.3S	(H)	3.3, 5, 12, 15, 24	3.3	303	75	2200μF	ROE-3.305S	3.3	5	200	79	470
RO-xx05S	(H)	3.3, 5, 12, 15, 24	5	200	78-80	1000μF	ROE-0505S	5	5	200	79	470
RO-xx09S	(H)	3.3, 5, 12, 15, 24	9	111	78-80	1000μF	ROE-0512S	5	12	84	80	220
RO-xx12S	(H)	3.3, 5, 12, 15, 24	12	83	80-84	470μF	ROE-0515S	5	15	66	80	220
RO-xx15S	(H)	3.3, 5, 12, 15, 24	15	66	80-84	470μF	ROE-1205S	12	5	200	80	470
RO-xx24S	(H)	3.3, 5, 12, 15, 24	24	42	78-85	220μF	ROE-1505S	15	5	200	79	470
							ROE-2405S	24	5	200	80	470

xx = Input Voltage (other input and output voltage combinations available on request)

Highly cost effective

In order to help customer change to R3, the pin of R3 are all compatible with R1 and R2, Customers don't need to change their PCB.

