

VRF Series VRFxxxxS-xW 3KVA isolation 1W-2W Fixed voltage input single output with short-circuit protection SIP 7-pin package

**Input Voltage:**

3.3V/5V/9V/12V/15V/24V DC

**Output Voltage:**

3.3V/5V/9V/12V/15V/24V DC

For other specifications, please consult Shunyuan Technology Co., Ltd.


**Electrical characteristics**

Unless otherwise specified, the following data is measured at TA=25°C, nominal input voltage, and rated output current.

**Input characteristics:**

Voltage range

+/- 5 %

Filter

Ceramic capacitors

**Isolation characteristics**

Rated voltage

Different electrical circuit isolation withstand voltage 3 KVAC

Leakage current

1 m A

resistance

10<sup>9</sup> Ohm

capacitance

60 p TYP.

**Output characteristics**

Voltage accuracy

+/- 5 %, max.

(20 MHz BW) Ripple and noise

100 mV p-p, TYP

**Sustainable short-circuit time**

With self-recovery short-circuit protection function

Linear voltage calibration

+/- 1.2 % /1.0 % of VIN

Load voltage calibration

+/- 4.34 %TYP., (25% load to full load)

Temperature Coefficient

+/- 0,02 % / °C

**General characteristics**

efficient

68% to 75 %

operating frequency

60 KHz, type.

**Environmental characteristics**

Working temperature (environment)

- 40° C to + 85° C

storage temperature

- 55 °C to + 125 °C

Decrease the quota value

See the temperature characteristic graph

humidity

≤ 90 %, Uncompressed

cooling method

Natural air cooling

**Volume characteristics**

SIP Package size

1W: 19.60 x 6,00 x 10,00 mm

2W: 19.60 x 7,00 x 10,00 mm

**Weight**

2 g~3.5 g

**Shell material**

Non-conductive flame-retardant black plastic

**Product test data and model examples**

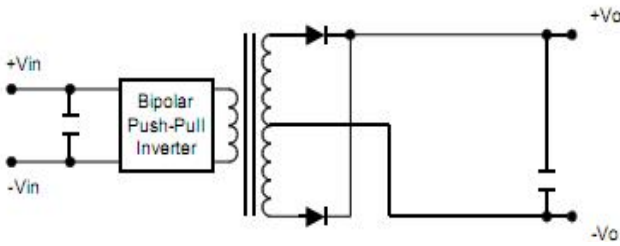
(The following data is the reference value of the product after 8 hours of

continuous full load aging)

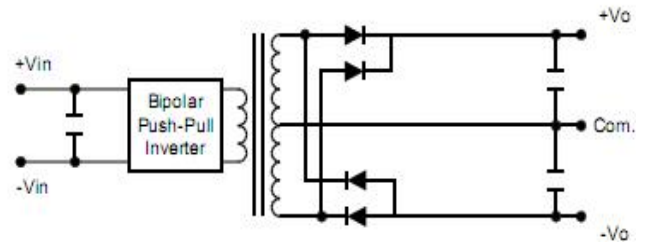
Product number	Input voltage Vin(VDC)	Input current no load(mA)	Input current full load(mA)	output voltageVout(VDC)	Output current (max.mA)	Full load efficiency(%T YPE)
VRF0505S-1W	5	30	280	5	200	68
VRF0512S-1W	5	25	254	12	84	71
VRF1205S-1W	12	12	119	5	200	69
VRF1212S-1W	12	13	104	12	84	73
VRF0505S-2W	5	45	547	5	400	73
VRF0512S-2W	5	46	541	12	167	74
VRF1212S-2W	12	22	208	12	167	80
VRF2412S-2W	24	12	83	12	167	83

Working principle diagram:

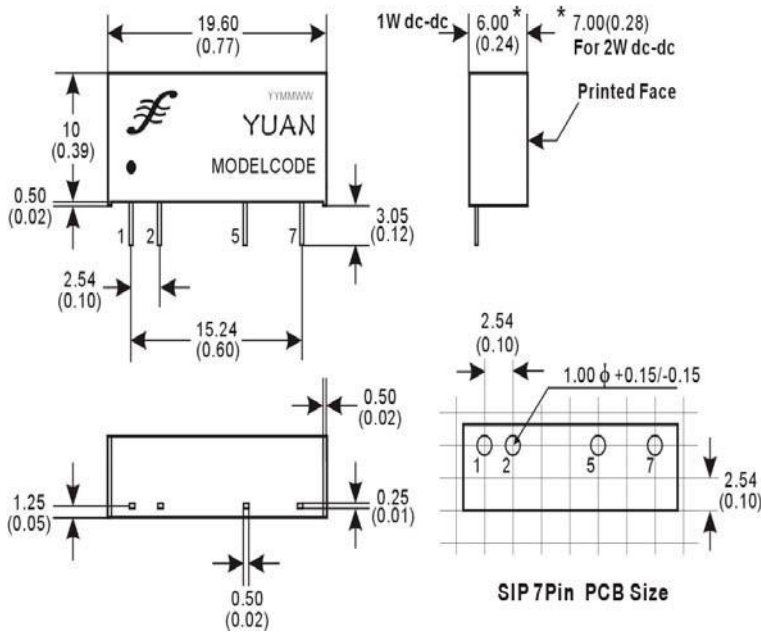
**Single Output**



**Dual Output**

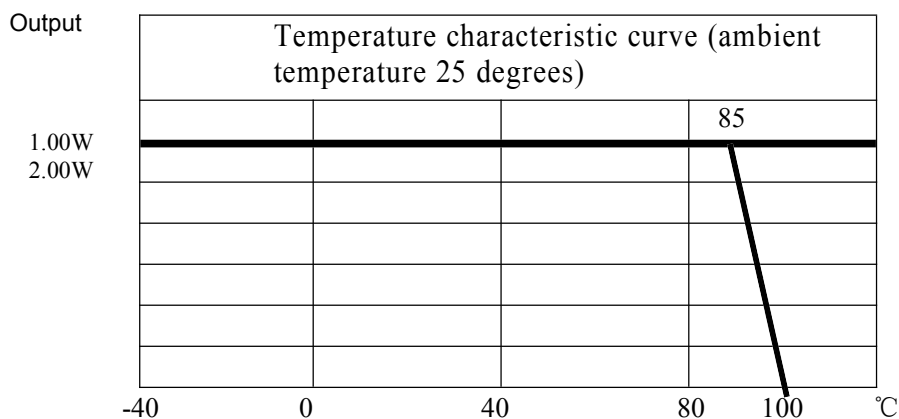


Outline and PCF layout reference size



Pin	Pin function description		
1	+	Vin	Input positive
2	-	Vin	Input negative
3			Empty feet
4			Empty feet
5	-	Vout	Output negative
6			Empty feet
7	+	Vout	Positive output

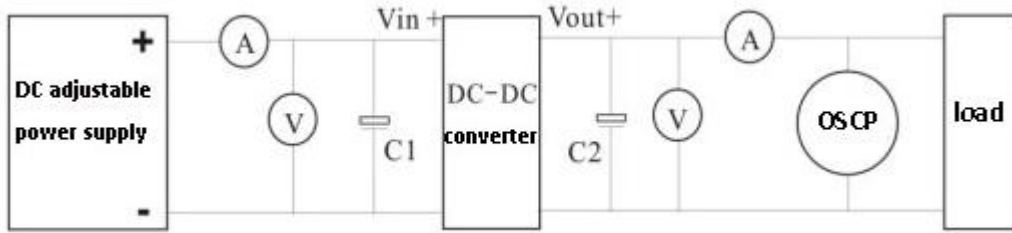
Temperature characteristic curve (Product design and specifications are subject to change without notice)



一. The main parameter detection method of DC-DC module power supply products

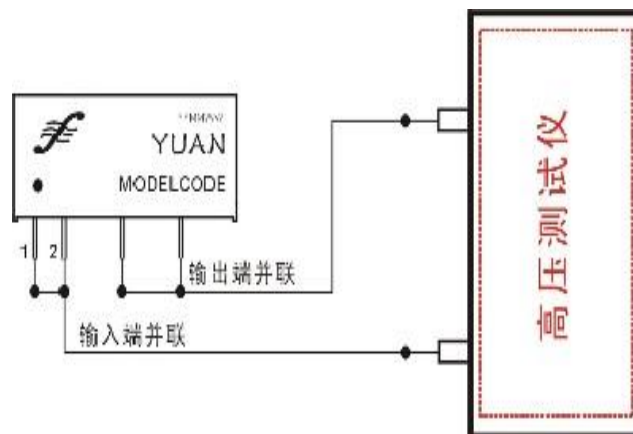
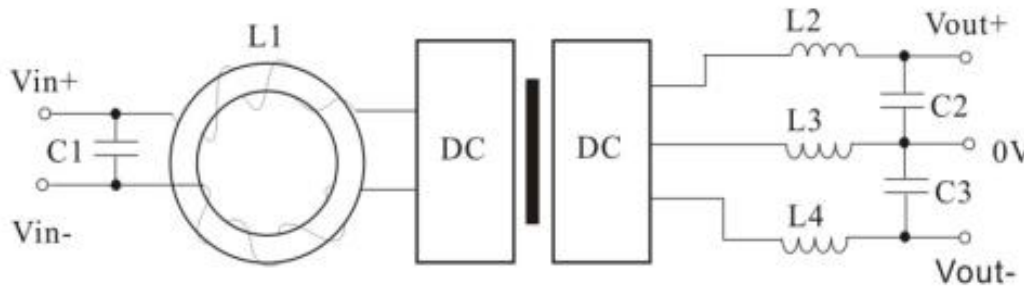
Adopt standard Kelvin four-terminal input and rated load test (as picture)

Test conditions: room temperature  $T_A = 25$  degrees Celsius, temperature: less than 75% of nominal input and rated load.



二. Reference method for reducing noise common mode interference in the use of DC-DC module converter.

The module power supply will generate common mode and differential mode noise at the switching frequency. The way to reduce the text wave and noise is to add a passive LC or RC (large loss) filter network at the input and output ends. The self-resonant frequency of L is much higher than the switching frequency of the module. The current value allowed to pass is preferably selected to be more than twice the maximum input current of the module. The internal resistance should be small to reduce DC loss.



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