Typical Features

- ◆ Wide input voltage range (4:1),Output Power
- ◆ Transfer Efficiency up to 79%
- ◆ Continuous Short Circuit protection,
- ◆ On/off without overshoot
- ◆ Isolation Voltage 3000VDC
- ◆ Operating Temperature:：-40℃～+85℃
- ◆ Plastic housing, meet UL94-V0 requirements

Test conditions: Unless otherwise specified, all parameter tests are measured at nominal input voltage, purely resistive rated

Application Field

Widely used in instrumentation, communication, pure digital circuits, general low-frequency analog circuits, relay drive circuits, data exchange circuits, etc.

Typical Product List

Part no.	Input Voltage Range (VDC)		Output Voltage/Current(Vo/Io)		Input Current (mA) Nominal Voltage		Max. Capacitive Load	Ripple & Noise	Efficiency (%) output full load, I/P nominal voltage	
	Nominal	Range	Voltage (VDC)	Current(mA) MAX./Min.	Full load typ.	No Load typ.	uF	mVp-p	Min.	Typ.
KW6-05S05E2N3	5	4.5 - 9	5	1200/0	1510	2	3300	100	77	79

Input Specification

	Working Condition	Min.	Typ.	Max.	Unit
Maximum input impulse voltage(1s)	4.5-9V Input			20	VDC
Starting voltage	4.5-9V Input	---	---	4.5	VDC
Input undervoltage protection	4.5-9V Input	---	3.5	4	VDC
Standby power consumption	0.1W (Max.)				
input filter	Capacitive filtering				

Output Specification

Output Voltage Accuracy	full voltage full load	+Vo	≤±2.0%
Voltage regulation	Nominal load, full voltage range	Vo	≤±0.5%
Load Regulation	0 ~ 100% nominal load	Vo	≤±1%
Ripple & Noise	Nominal load, nominal voltage		≤100mVp-p (20MHz bandwidth)
Temperature Drift Coefficient	100％Full load		±0.03%/℃
Dynamic Response	25% nominal load step	△Vo/△t	≤±5.0%/0.5ms(Typ.)
Output short circuit protection	sustainable, self-healing		

Output overload protection	110% Iout~220% Iout
startup delay time	Typ:10ms
Output startup overshoot voltage	≤10%Vo
Note: Ripple & noise test adopts twisted pair method, see Design and Application Circuit Reference for details.	

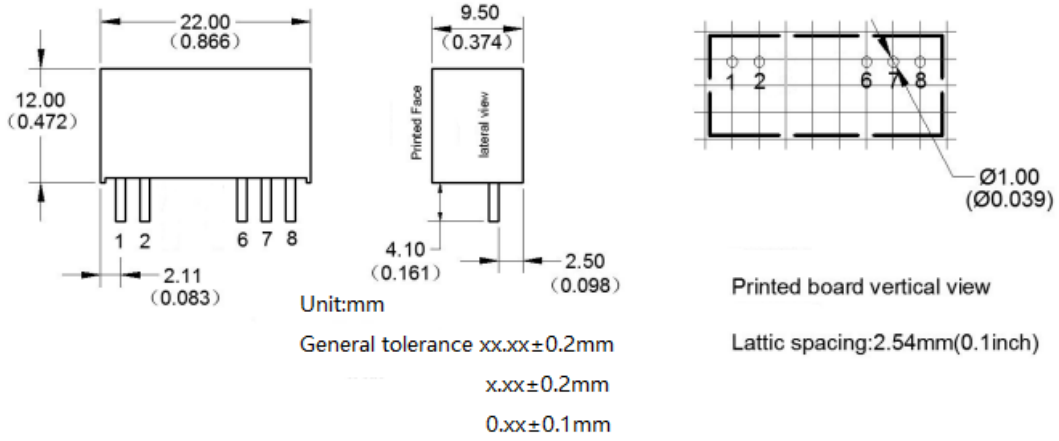
General characteristics

On-off frequency	Typical value	330KHz (Typ.)
Operating Temperature	Refer to Temperature Derating	-40℃ ~ +85℃
Storage Temperature		-55℃ ~ +125℃
Max Case Temperature	Within Operating Curve	+105℃
Relative Humidity	No condensing	5%~95%
Case Material		Black flame-retardant and heat-resistant plastic(UL94-V0)
Pin Soldering Temperature	Solder joint distance from shell 1.5mm,10 seconds	300℃ MAX
Isolation Voltage	Input to Output	1600Vdc ≤ 0.5mA / 1min
MTBF	MIL-HDBK-217F@25℃	2X10^{5}Hrs
Product Weight		10g(Typ.)

EMC Characteristics

Total Items		Sub Items	Test Standard	Class
EMC	EMI	CE	CISPR22/EN55032	CLASS B (see recommended circuit photo②)
		RE	CISPR22/EN55032	CLASS B (see recommended circuit photo②)
	EMS	RS	IEC/EN61000-4-3	10V/m Perf.Criteria B (see recommended circuit photo②)
		CS	IEC/EN61000-4-6	3Vr.m.s Perf.Criteria B (see recommended circuit photo②)
		ESD	IEC/EN61000-4-2	Contact ±4KV Perf.Criteria B
		Surge	IEC/EN61000-4-5	±2KV Perf.Criteria B (see recommended circuit photo①)
		EFT	IEC/EN61000-4-4	±2KV Perf.Criteria B (see recommended circuit photo①)
		Voltage dips, short interruptions	IEC/EN61000-4-11	0%~70% Perf.Criteria B

Packing Dimension



Unit:mm

General tolerance xx.xx±0.2mm

x.xx±0.2mm

0.xx±0.1mm

Printed board vertical view

Lattic spacing:2.54mm(0.1inch)

Packing Code	L x W x H	
E	22X9.5X12mm	0.866X0.374X0.472inch

Pin out Specifications

Single output (S)	1	2	3	4	5	6	7	8
	-Vin	+Vin	NP	NP	NP	+Vo	GND	NC

Note: If the definition of pin is not in accordance with the model selection manual, please refer to the label on actual item.

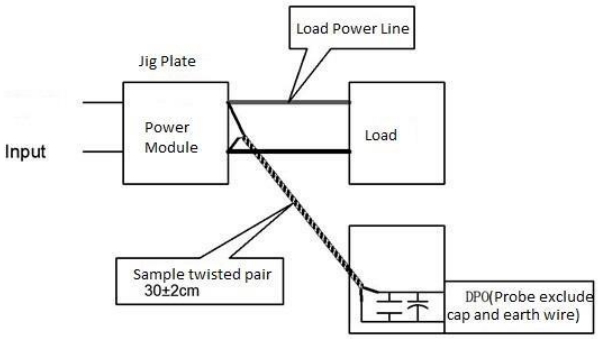
Ripple& Noise Test: (Twisted Pair Test Method 20MHz bandwidth)

testing method:

1. Ripple noise is connected by 12# twisted pair, and the oscilloscope. The bandwidth is set to 20MHz, 100M bandwidth probe, and A 0.1uF polypropylene capacitor and a 10uF high frequency are connected in parallel on the head end

Low-resistance electrolytic capacitors, oscilloscope sampling uses Sample sampling

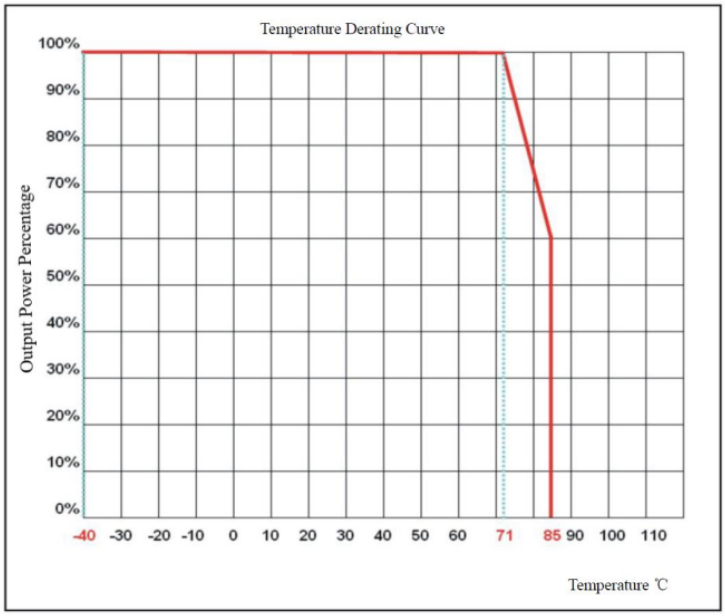
model.



2. Schematic diagram of output ripple noise test:

Connect the power input terminal to the input power supply, and the power output through. The jig board is connected to the electronic load, and the test uses 30cm ± 2 cm alone The sampling line is directly sampled from the power output port. power line according to the input The size of the outgoing current selects the wire with the insulation sheath of the corresponding wire diameter.

Product characteristic curve

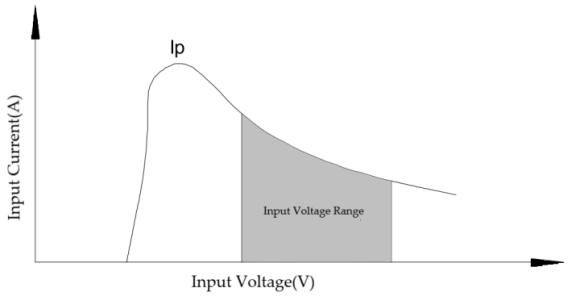


Design reference application

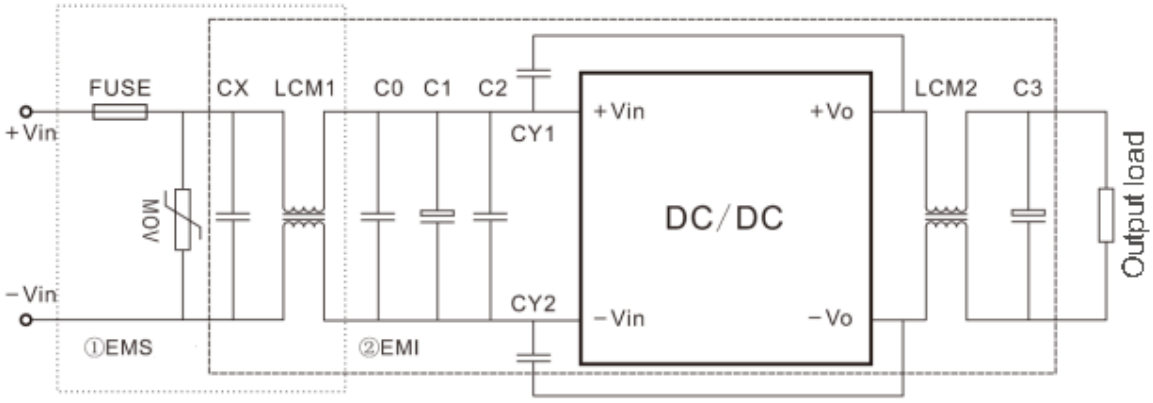
1. Input current

When using an unstable power supply, please ensure that the output voltage fluctuation range and ripple voltage of the power supply do not exceed the indicators of the module itself, and the output current of the input power supply must be sufficient to cope with the instantaneous start-up current Ip of the DC/DC module (see below). picture).

Normally： $Ip \leq 1.4 * Iin_{\max}$



2、EMC Peripheral recommended circuit



Recommended Spec:

Component	KW3-XXSXXE2N3
FUSE	Access the corresponding fuse according to customer needs
MOV	14D470K
CX	0.47uF
LCM1	5mH
C0	1uF/100V
C1	220uF/100V
C2	1uF/100V
LCM2	30uH
C3	47uF/50V
CY1,CY2	2.2nF/2000V

Note:

1. The product should be used within the specification range, otherwise it will cause permanent damage to the product;
2. If the product works below the minimum required load, the product performance cannot be guaranteed to meet all the performance indicators in this manual;
3. If the product works beyond the product load range, it cannot be guaranteed that the product performance meets all the performance indicators in this manual;
4. Unless otherwise specified, the above data are all measured at Ta=25℃, humidity <75%, input nominal voltage and output rated load (pure resistive load);
5. All the above index test methods are based on the company's standards;
6. The above are the performance indicators of the product models listed in this manual. Some indicators of non-standard models will exceed the above requirements. For details, please contact our technical staff directly;
7. Our company can provide product customization;
8. Product specifications are subject to change without notice. Please pay attention to the latest manual published on our official website.

