

SELECTION GUIDE

Order code	Input		Output			Efficiency (% Typ)	Switching Frequency (KHz Typ)
	Voltage(VDC)		Voltage (VDC)	Current(MA)			
	Nominal	Range		Max	Min		
2E0505XSR	5	4.75-5.25	±5	±200	±20	70	85
2E0509XSR	5	4.75-5.25	±9	±112	±11	61	83
2E0512XSR	5	4.75-5.25	±12	±83	±8	62	83
2E0515XSR	5	4.75-5.25	±15	±67	±7	64	250
2E1205XSR	12	11.4-12.6	±5	±200	±20	75	120
2E1209XSR	12	11.4-12.6	±9	±112	±11	61	83
2E1212XSR	12	11.4-12.6	±12	±83	±8	65	83
2E1215XSR	12	11.4-12.6	±15	±67	±7	64	83
2E2405XSR	24	22.8-25.2	±5	±200	±20	78	83
2E2409XSR	24	22.8-25.2	±9	±112	±11	69	83
2E2412XSR	24	22.8-25.2	±12	±83	±8	63	83
2E2415XSR	24	22.8-25.2	±15	±67	±7	74	300

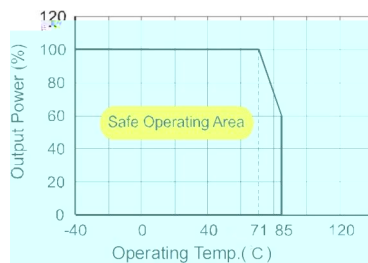
TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Storage humidity range				95	%
Operating temperature		-40		85	°C
Storage temperature		-55		125	°C
Lead temperature	1.5mm from case for 10 seconds		40	58	°C
Temp.rise at full load				300	°C
Cooling	Free air convection				
Case material	Plastic(UL94-V0)				
Short circuit protection	IE-XSP	Continuous			
MTBF		3500		1'	K hours
Weight			5.2		g

*Supply voltage must be discontinued at the end of short circuit duration.

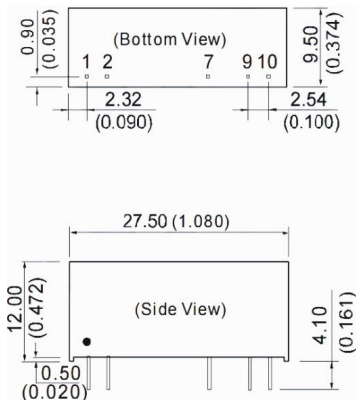
TYPICAL CHARACTERISTICS

Temperature Derating Graph

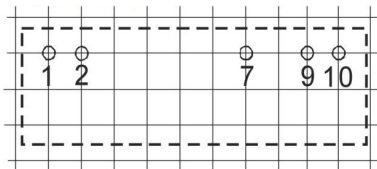


OUTLINE DIMENSIONS & PIN CONNECTIONS

SIZE Graph



RECOMMENDED FOOTPRINT
Top view,grid:2.54mm(0.1inch)
diameter:1.00mm(0.039inch)



FOOTPRINT DETAILS

Pin	Function
1	VIN
2	GND
7	+VO
9	-VO
10	0V

Note:
Unit:mm(inch)
Pin section:0.50*0.3mm(0.020*0.012inch)
Pin section tolerances:±0.10mm(±0.004inch)
General tolerances:±0.25mm(±0.010inch)

All specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified. Another 24V products, please inquire Our technical department!

Requirement on output load

To ensure this module can operate efficiently and reliably, a minimum load is specified for this kind of DC/DC converter in addition to a maximum load(namely full load).During operation, make sure the specified range of input voltage is not exceeded,the minimum output load is **not less than 10%** of the full load, and that this product should never be operated under no load!

Filtering

To get an extreme low ripple,an"LC"filtering network may be connected to the input and output ends of the DC/DC converter.Which may produce a more significant filtering effect.It should also be noted that the inductance and the frequency of the "LC"filtering network should be staggered with the DC/DC frequency to avoid mutual interference see (Figure 1).



(Figure 1)

In some circuits which are sensitive to noise and ripple,a filtering capacitor may be added to the DC/DC output end and input end to reduce the noise and ripple. However, the capacitance of the output filter capacitor must be proper. If the capacitance is too big, a startup problem might arise. For every channel of output, provided the safe and reliable operation is ensured, the greatest capacitance of its filter capacitor sees (Table 1).

EXTERNAL CAPACITOR TABLE (TABLE 1)

Vin (VDC)	Cin (μF)	Vout (VDC)	Cout (μF)
5	4.7	±5	4.7
12	2.2	±9	2.2
24	0.47	±12	1.0

It's not recommend to connect any external capacitor in the application field with less than 0.5 watt output.

Overload Protection

Under normal operating conditions , the output circuit of these products has no protection against over-current and short-circuits.The simplest method is to connect a self-recovery fuse in series at the input end or add a circuit breaker to the circuit.

When the environment temperature is higher than 71°C, the product output power should be less then 60% of the rated power.

No parallel connection or plug and play.

Use dual output simultaneously, forbid opening Output pin (0V) to use as single output.

RoHS COMPLIANT INFORMATION

This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300° C for 10 seconds.
The pin termination finish on the SIP package type is Tin Plate. Hot Dipped over Matte Tin with Nickel Preplate. The DIP types are Matte Tin over Nickel Preplate. Both types in this series are backward compatible with Sn/Pb soldering systems.

REACH COMPLIANT INFORMATION

This series has proven that this product does not contain harmful chemicals, it also has harmful chemical substances through the registration, inspection and approval.