

2E-XSR Series

Switching

Frequency

(KHz,Typ)

85

83

83

250

120

83

83

83

83

83

83

300

(%,Typ)

70

61

62

64

75 61

65

64

78

69

63

74

Output

Current(MA)

Voltage

(VDC)

FIXED INPUT, ISOLATED®ULATED Dual Output DC/DC Converter

Range

4.75-5.25

Input

Voltage(VDC)

SELECTION GUIDE

Nominal

Order code

2E0505XSR



FEATURES

◆RoHS	compliant	
* 1 (0) 10	Compilarit	

- ◆Efficiency up to 83%
- ◆SIP Package
- ◆Wide temperature performance at full 2 Watt

load,-40°C to 85°C

- ◆UL 94V-0 package material
- ◆No heatsink required
- ◆Low ripple and good EMC Features
- ◆Industry standard pinout
- ◆Power sharing on output
- ◆3KVDC isolation
- ◆Continuous Short Circuit Protection
- ◆Internal SMD construction
- ◆No external components required
- ◆Good dynamic feature

2E0509XSR	5	4.75-5.25	±9	±112	±11	L
2E0512XSR	5	4.75-5.25	±12	±83	±8	
2E0515XSR	5	4.75-5.25	±15	±67	±7	
2E1205XSR	12	11.4-12.6	±5	±200	±20	
2E1209XSR	12	11.4-12.6	±9	±112	±11	
2E1212XSR	12	11.4-12.6	±12	±83	±8	Г
2E1215XSR	12	11.4-12.6	±15	±67	±7	Г
2E2405XSR	24	22.8-25.2	±5	±200	±20	Г
2E2409XSR	24	22.8-25.2	±9	±112	±11	Г
2E2412XSR	24	22.8-25.2	±12	±83	±8	Г
2E2415XSR	24	22.8-25.2	±15	±67	±7	Г
NOTICE:add Suffix '	'P" for Continuo	ous Short Circuit	Protection, e.g. 28	0505XSP		_
	2E0512XSR 2E0515XSR 2E1205XSR 2E1209XSR 2E1212XSR 2E1215XSR 2E2405XSR 2E2409XSR 2E2412XSR 2E2412XSR	2E0512XSR 5 2E0515XSR 5 2E1205XSR 12 2E1205XSR 12 2E1212XSR 12 2E1215XSR 12 2E1215XSR 12 2E2405XSR 24 2E2405XSR 24 2E2412XSR 24 2E2415XSR 24	ZE0512XSR 5 4.75-5.25 2E0515XSR 5 4.75-5.25 2E1205XSR 12 11.4-12.6 2E1209XSR 12 11.4-12.6 2E1212XSR 12 11.4-12.6 2E1215XSR 12 11.4-12.6 2E2405XSR 24 22.8-25.2 2E2409XSR 24 22.8-25.2 2E2412XSR 24 22.8-25.2 2E2415XSR 24 22.8-25.2 2E2415XSR 24 22.8-25.2	ZE0512XSR 5 4.75-5.25 ±12 2E0515XSR 5 4.75-5.25 ±15 2E1205XSR 12 11.4-12.6 ±5 2E1209XSR 12 11.4-12.6 ±9 2E1212XSR 12 11.4-12.6 ±12 2E1215XSR 12 11.4-12.6 ±15 2E2405XSR 24 22.8-25.2 ±5 2E2409XSR 24 22.8-25.2 ±9 2E2412XSR 24 22.8-25.2 ±12 2E2415XSR 24 22.8-25.2 ±15	ZE0512XSR 5 4.75-5.25 ±12 ±83 2E0515XSR 5 4.75-5.25 ±15 ±67 2E1205XSR 12 11.4-12.6 ±5 ±200 2E1209XSR 12 11.4-12.6 ±9 ±112 2E1212XSR 12 11.4-12.6 ±12 ±83 2E1215XSR 12 11.4-12.6 ±15 ±67 2E2405XSR 24 22.8-25.2 ±5 ±200 2E2409XSR 24 22.8-25.2 ±9 ±112 2E2412XSR 24 22.8-25.2 ±9 ±112	ZE0512XSR 5 4.75-5.25 ±12 ±83 ±8 2E0515XSR 5 4.75-5.25 ±15 ±67 ±7 2E1205XSR 12 11.4-12.6 ±5 ±200 ±20 2E1209XSR 12 11.4-12.6 ±9 ±112 ±11 2E1212XSR 12 11.4-12.6 ±12 ±83 ±8 2E1215XSR 12 11.4-12.6 ±15 ±67 ±7 2E2405XSR 24 22.8-25.2 ±5 ±200 ±20 2E2409XSR 24 22.8-25.2 ±9 ±112 ±11 2E2412XSR 24 22.8-25.2 ±12 ±83 ±8 2E2415XSR 24 22.8-25.2 ±12 ±83 ±8 2E2415XSR 24 22.8-25.2 ±15 ±67 ±7

ISOLATION SPECIFICATIONS						
Parameter	Test conditions	Min.	Тур.	Max.	Units	
Isolation test voltage	Flash tested for 1 minute and 1mA max	3000			VDC	
Isolation resistance	Test at Viso=500VDC	1000			ΜΩ	

MODEL SELECTION 2E⁰05⁰05⁰X⁰S⁰R⁰

①Product Series 3 Output Voltage ⑤SIP10 Package ②Input Voltage

4 Fixed Input

©Regulated output

APPLICATIONS

The 2IE-XSR series are specially designed for applications where a group of polar power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) where the voltage of the input power supply is fixed (voltage variation ≤±5%);
- 2) where isolation is necessary between input and output (isolation voltage ≤3000VDC);
- 3) where the regulation of the output voltage and the output ripple noise are demanded.



OUTPUT SPECIFICATIONS					
Parameter	Test conditions	Min	Тур.	Max.	Units
Output power		0.2		2	W
Line regulation	For Vin change of ±5%			±0.5	%
Load regulation	10% to 100% full load			±1.5	%
Output voltage accuracy	100% full load			±3	%
Temperature drift	100% full load			0.03	%/°C
Output Ripple*	20MHz Bandwidth		20	30	MV p-p
Output Noise*	20MHz Bandwidth		50	150	MV p-p
Switching frequency	Full load,nominal input		100		Khz

^{*} Test ripple and noise by "parallel cable" method.

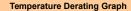
See detailed operation instructions at Testing of Power Converter section, application notes.

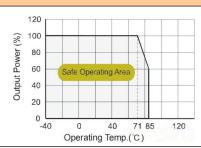


TEMPERATURE CHARACTERISTICS Conditions Min. Units Parameter Тур. Max. Storage humidity range 95 % 85 °C Operating temperature -40 -55 125 °C Storage temperature °C Lead temperature 1.5mm from case for 10 seconds 40 58 Temp.rise at full load 300 °C Cooling Free air convection Case material Plastic(UL94-V0)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

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

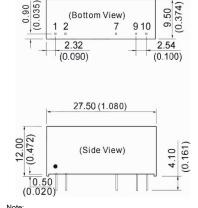
TYPICAL CHARACTERISTICS





OUTLINE DIMENSIONS & PIN CONNECTIONS

SIZE Graph



Unit:mm(inch)

Pin section: 0.50*0.3mm(0.020*0.012inch) Pin section tolerances: ± 0.10 mm(± 0.004 inch)

General tolerances: ± 0.25 mm(± 0.010 inch)

RECOMMENDED FOOTPRINT Top view,grid:2.54mm(0.1inch) diameter:1.00mm(0.039inch) 9 10 FOOTPRINT DETAILS Pin Function VIN 2 GND

9

10

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!

Industry Power Family

Microdc Professional Power Module, Inc. Tel:0086-20-86000646 E-mail:tech@microdc.cn Website:http://www.microdc.cn



+V0

-V0

0V

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.



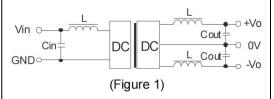
REACH COMPLIANT INFORMATION

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

2E-XSR Series

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).



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	Cin	Vout	Cout
(VDC)	(µ F)	(VDC)	(µ F)
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 ℃, 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.