

## Features

- ★ Small Footprint
- ★ In-Out Isolation Voltage 3000 VDC
- ★ 7 PIN SIP Package
- ★ Temperature Range:-40°C to +85°C
- ★ UL94V-0 Inflamming retarding package
- ★ MTBF>1million hours(25°C)



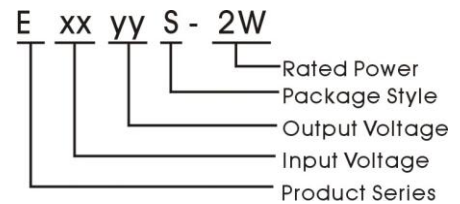
## Applications

The E\_S-2W Series are designed for application where isolated output is required from a distributed power system.

These products apply to where:

- 1) 3000 VDC input and output isolation;
- 2) Input voltage variation  $\leq \pm 10\%$ ;
- 3) Regulated and low ripple noise is not required.

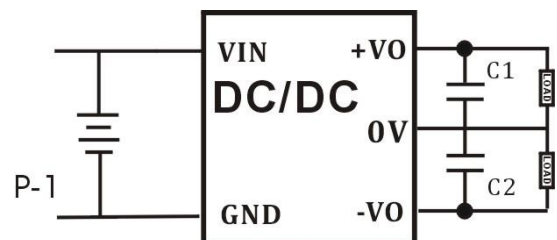
Such as: digital circuits, and IGBT power device driving circuits.



## Model Detail List Specification

Model Number	Input Voltage range (nominal voltage)	Output Voltage	Output Current (mA)		Input Current Full load.(mA)		Efficiency	Max. Capacitive Load( $\mu$ F)
			Min.	Max.	Max.	Min.		
E0505S-2W	4.5~5.5VDC (5VDC)	$\pm 5.0V$	$\pm 20$	$\pm 200$	246	26	81%	200
E0509S-2W		$\pm 9.0V$	$\pm 11$	$\pm 111$	240		83%	
E0512S-2W		$\pm 12.0V$	$\pm 8$	$\pm 83$	237		84%	
E0515S-2W		$\pm 15.0V$	$\pm 6$	$\pm 67$	236		85%	
E1205S-2W	10.8~13.2VDC (12VDC)	$\pm 5.0V$	$\pm 20$	$\pm 200$	101	22	82%	
E1209S-2W		$\pm 9.0V$	$\pm 11$	$\pm 111$	100		83%	
E1212S-2W		$\pm 12.0V$	$\pm 8$	$\pm 83$	98		84%	
E1215S-2W		$\pm 15.0V$	$\pm 6$	$\pm 67$	98		85%	
E2405S-2W	21.6~26.4VDC (24VDC)	$\pm 5.0V$	$\pm 20$	$\pm 200$	50	18	82%	
E2409S-2W		$\pm 9.0V$	$\pm 11$	$\pm 111$	49		84%	
E2412S-2W		$\pm 12.0V$	$\pm 8$	$\pm 83$	48		85%	
E2415S-2W		$\pm 15.0V$	$\pm 6$	$\pm 67$	48		86%	

## Model test Circuit



## Output Specifications

Item	Test Conditions	Min.	Typ.	Max.	Unit
Output Power		0.2		2	W
Line Voltage Regulation	For Vin change of ±1%			±1.5	%
Load regulation	10% to 100% load	5V output	10	15	
		12V output	8	15	
		15V output	6	15	
		24V output	6	15	
Ripple	20MHz Bandwidth		50		mVp-p
Noise			75		
Temperature Drift	100% full load			±0.03	%/°C
Input Filter		C Filter			

## Environmental Specifications

Item	Test Conditions	Min.	Typ.	Max.	Unit
Storage Humidity	Non condensing			95	%
Temp. rise at full load			25		°C
Operating Temperature	Power derating (above 85°C)	-40		+85	
Storage Temperature		-55		+125	
Soldering Temperature	1.5mm from case for 10 seconds			300	
Cooling		Free air convection			

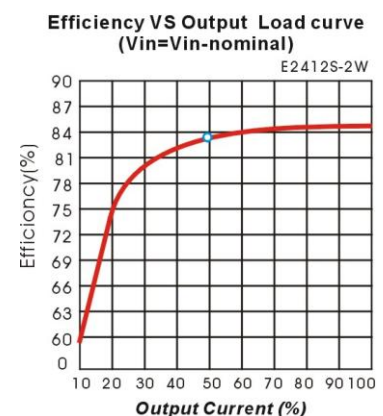
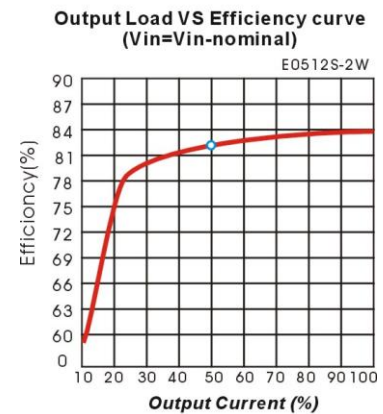
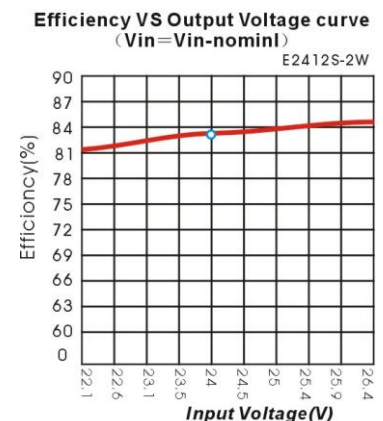
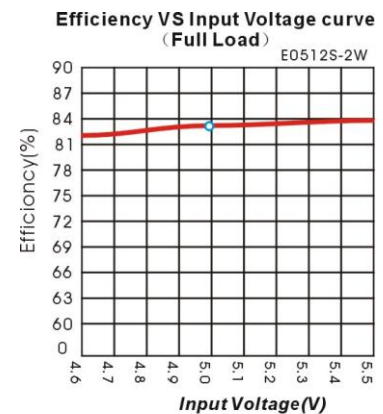
## Common Specifications

Item	Test Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Tested for 1 minute and leakage current less than 1 mA	3000			VDC
Switching Frequency	Full load, nominal input		100		KHz
MTBF	MIL-HDBK-217F@25°C	1000			K hours
Isolation Resistance	Test at 500VDC	1000			MΩ
Weight			2.5		g

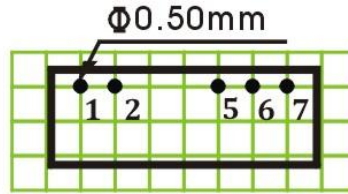
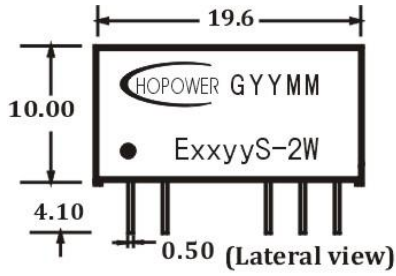
## Input Specifications

Item	Test Conditions	Min.	Typ.	Max.	Unit
Input Max. voltage	5 VDC Input (4.5~5.5V)			6	VDC
	12 VDC Input (10.8~13.2V)			14.4	
	24 VDC Input (21.6~26.4V)			28.8	
Input surge voltage (1 sec. Max.)	5 VDC Input (4.5~5.5V)	-0.8		10	VDC
	12 VDC Input (10.8~13.2V)	-0.8		20	
	24 VDC Input (21.6~26.4V)	-0.8		32	

## Product typical Curve



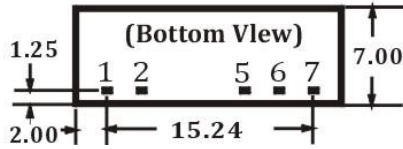
## Mechanical Dimensions & Recommended Footprint



Note: grid 2.54\*2.54mm.

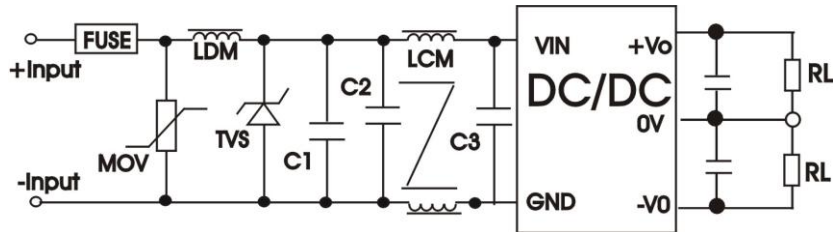
Unit: mm

General tolerances : 0.20mm

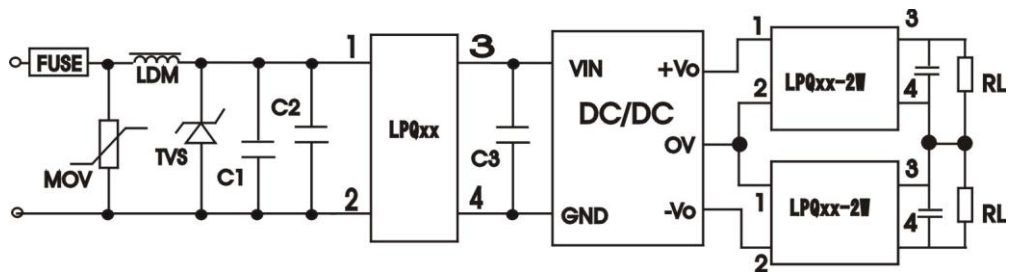


Package	Vin	GND	-Vo	OV	+Vo	NC
ES	1	2	5	6	7	-

## EMC Recommended Circuit



## EMC Module Application Circuit



## Tolerance Envelope Curve & Temperature Derating Graph

