FD-2W Series

Features

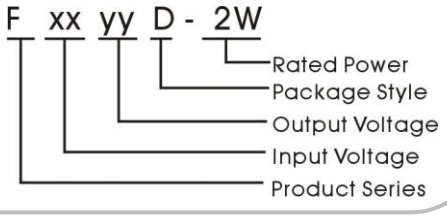
- ★ Small Footprint
- ★ In-Out Isolation Voltage 3000 VDC
- ★ 14 PIN DIP Package
- ★ Temperature Range:-40℃ to +85℃
- ★ UL94V-0 Inflaming retarding package
- ★ MTBF>1million hours(25℃)

Applications

The F_D-2W Series are specially designed for application 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 where:

1) Input voltage variation ≤ ±10%;
2) 3000 VDC input and output isolation;
3) Regulated and low ripple noise is not demanding.



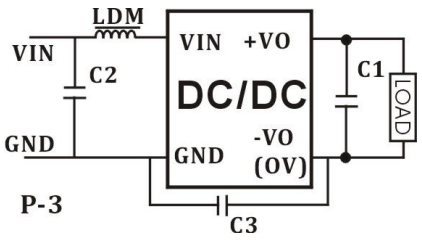
Model Detail List Specification

Model Number	Input Voltage range (nominal voltage)	Output Voltage	Output Current (mA)		Input Current Full load.(mA)		Efficiency	Max. Capacitive Load(μF)
			Min.	Max.	Max.	No.		
F0505D-2W	4.5~5.5VDC (5 VDC)	5.0V	40	400	493	40	81%	400
F0509D-2W		9.0V	22	222	481		83%	
F0512D-2W		12.0V	16	167	477		84%	
F0515D-2W		15.0V	13	133	469		85%	
F1205D-2W	10.8~13.2VDC (12 VDC)	5.0V	40	400	203	36	82%	
F1209D-2W		9.0V	22	222	200		83%	
F1212D-2W		12.0V	16	167	198		84%	
F1215D-2W		15.0V	13	133	195		85%	
F2405D-2W	21.6~26.4VDC (24 VDC)	5.0V	40	400	101	24	82%	
F2409D-2W		9.0V	22	222	99		84%	
F2412D-2W		12.0V	16	167	98		85%	
F2415D-2W		15.0V	13	133	96		86%	

1. Output Voltage Regulation and Over-voltage Protection Circuit

The simplest device for output voltage regulation, over-voltage and over-current protection is a linear voltage regulator with overheat protection that is connected to the input or output end in series.

Model test Circuit



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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	20MHz Bandwidth			75		mVp-p
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		℃
Operating Temperature		-40		+85	℃
Storage Temperature	Power derating (above 85℃)	-55		+125	℃
Soldering Temperature	1.5mm from case for 10 seconds			300	℃
Cooling		Free air convection			

Common Specifications

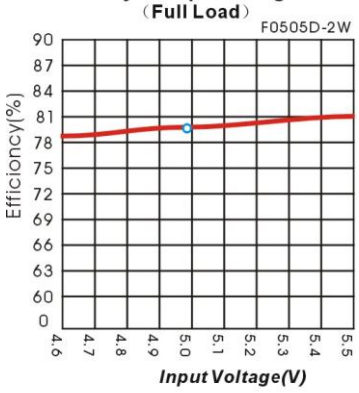
Item	Test Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Tested for 1 minute and leakage current less than 1 mA	3000			VDC
Switching Frequency	Full load, nominal input		100	300	KHz
MTBF	MIL-HDBK-217F@25℃	1000			K hours
Isolation Resistance	Test at 500VDC	1000			MΩ
Weight			2.5		g

Input Specifications

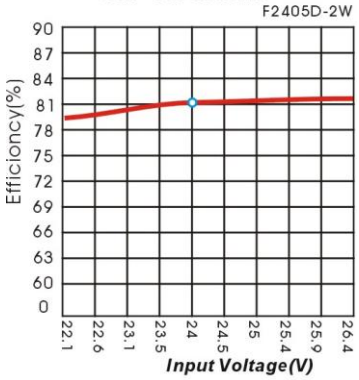
Item	Test Conditions	Min.	Typ.	Max.	Unit
Input Max. voltage	5 VDC Input (4.5~5.5V)			6	VDC
	12 VDC Input (10.8~13.2V)			14.4	VDC
	24 VDC Input (21.6~26.4V)			28.8	VDC
Input surge voltage (1 sec. Max.)	5 VDC Input (4.5~5.5V)	-0.8		10	VDC
	12 VDC Input (10.8~13.2V)	-0.8		20	VDC
	24 VDC Input (21.6~26.4V)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

Product typical Curve

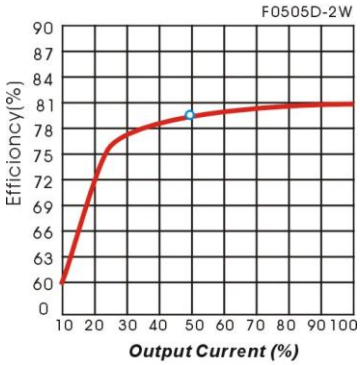
Efficiency VS Input Voltage curve
(Full Load)



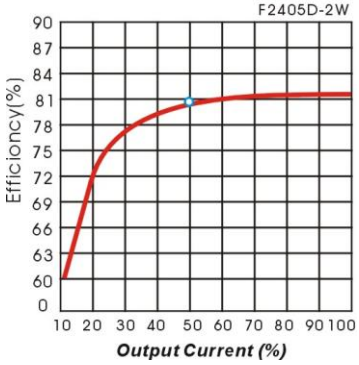
Efficiency VS Output Voltage curve
(Vin=Vin-nominl)



Output Load VS Efficiency curve
(Vin=Vin-nominal)



Efficiency VS Output Load curve
(Vin=Vin-nominal)



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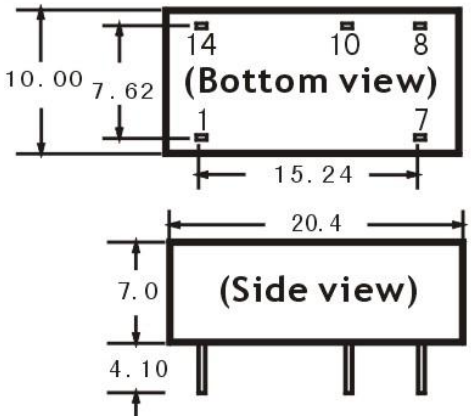
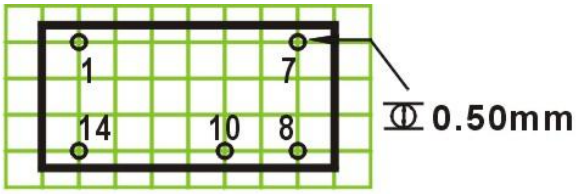
Mechanical Dimensions & Recommended Footprint

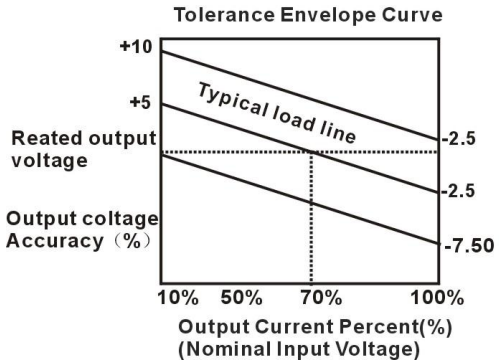


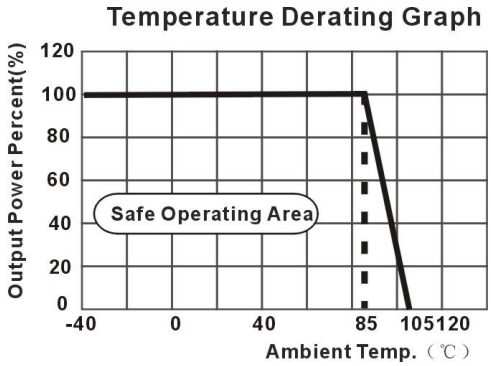


Note:Grid 2.54*2.54mm.
Unit: mm
General tolerances : 0.20mm

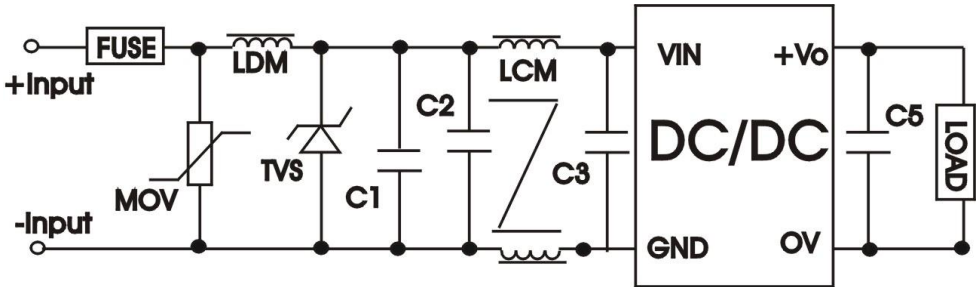
Package	Vin	GND	OV	+Vo	NC
FD	14	1	10	8	7

Tolerance Envelope Curve & Temperature Derating Graph





EMC Recommended Circuit



EMC Module Application Circuit