

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℃)

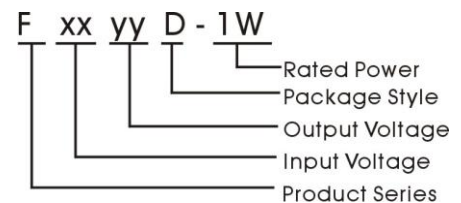


Applications

The F_D-1W 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.



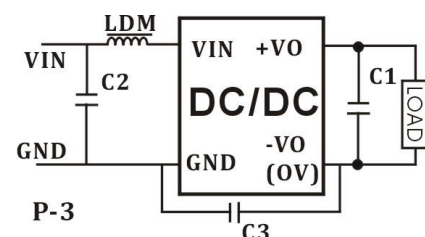
Model Detail List Specification

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-1W	4.5~5.5VDC (5 VDC)	5.0V	20	200	256	30	78%	200
F0509D-1W		9.0V	11	111	249		80%	
F0512D-1W		12.0V	8	84	258		78%	
F0515D-1W		15.0V	6	67	257		78%	
F1205D-1W	10.8~13.2VDC (12 VDC)	5.0V	20	200	111	26	75%	
F1209D-1W		9.0V	11	111	111		75%	
F1212D-1W		12.0V	8	84	106		79%	
F1215D-1W		15.0V	6	67	106		79%	
F2405D-1W	21.6~26.4VDC (24 VDC)	5.0V	20	200	57	22	73%	
F2409D-1W		9.0V	11	111	55		75%	
F2412D-1W		12.0V	8	84	53		78%	
F2415D-1W		15.0V	6	67	53		78%	

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.

Model test Circuit



FD-1W Series



Output Specifications

Item	Test Conditions	Min.	Typ.	Max.	Unit
Output Power		0.1		1	W
Line Voltage Regulation	For Vin change of $\pm 1\%$			± 1.5	%
Load regulation	10% to 100% load		5V output	10	
			12V output	8	
			15V output	6	
			24V output	6	
Ripple	20MHz Bandwidth		50		mVp-p
Noise			75		
Temperature Drift	100% full load			± 0.03	%/ $^{\circ}\text{C}$
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			

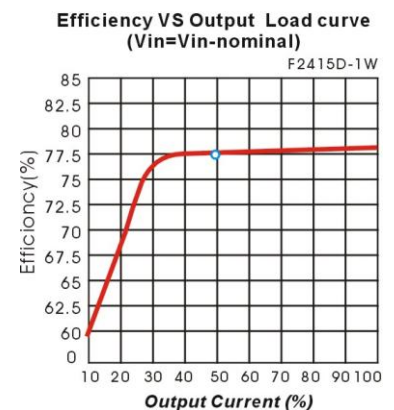
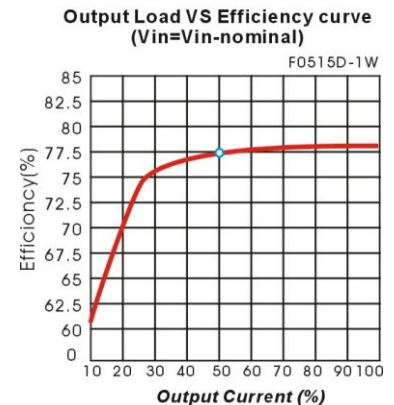
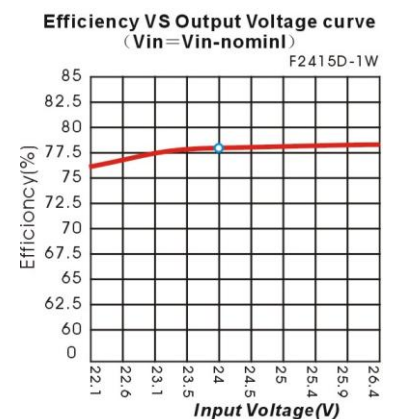
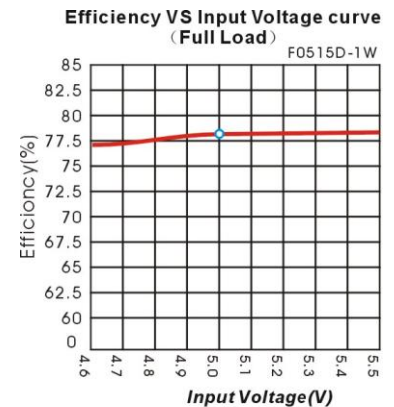
Common Specifications

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°C	1000			K hours
Isolation Resistance	Test at 500VDC	1000			M Ω
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	
	12 VDC Input (10.8~13.2V)	-0.8		20	
	24 VDC Input (21.6~26.4V)	-0.8		32	

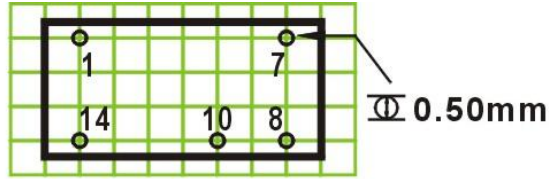
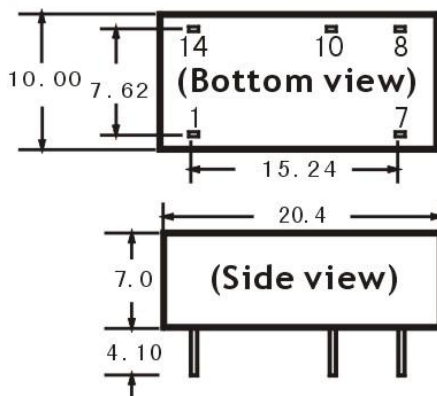
Product typical Curve



FD-1W Series

HOPOWER

Mechanical Dimensions & Recommended Footprint



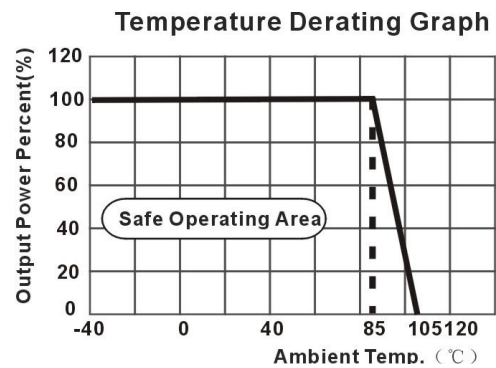
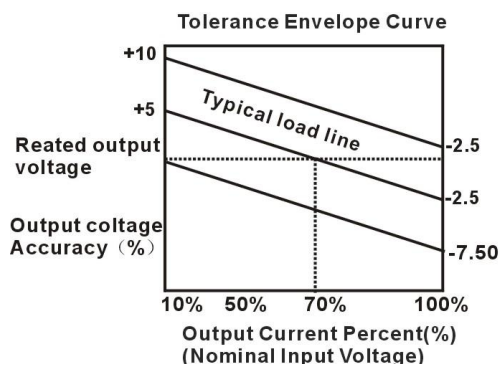
Note: Grid 2.54*2.54mm.

Unit: mm

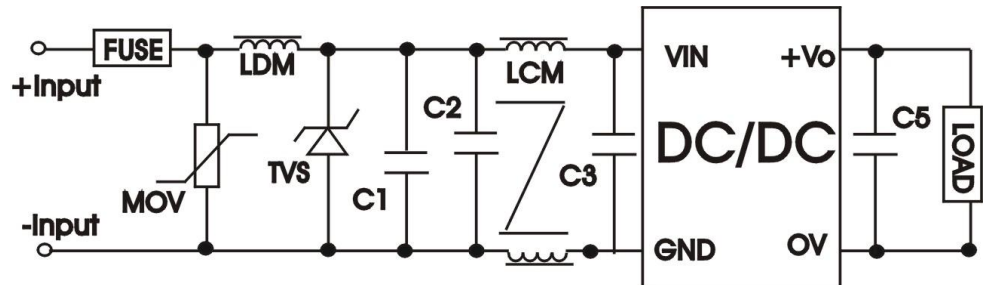
General tolerances : 0.20mm

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

