

0.2W, Fixed input voltage, isolated & unregulated single output



Patent Protection RoHS



FEATURES

- Continuous short-circuit protection
- No-load input current as low as 5mA
- High efficiency up to 75%
- Operating temperature range: -40°C to +105°C
- Isolation voltage: 2K VAC
- Compact SMD package
- International standard pin-out
- Internal surface mounted design

F0505XT-W2R3 is specially designed for applications where an isolated voltage is required in a distributed power supply system. It is suitable for: pure digital circuits, low frequency analog circuits, relay-driven circuits and data switching circuits.

Selection Guide

Part No.	Input Voltage (VDC)	Output		Efficiency (%Min./Typ.) @ Full Load	Max. Capacitive Load (μF)
	Nominal (Range)	Output Voltage (VDC)	Output Current (mA)(Max./Min.)		
F0505XT-W2R3	5 (4.5-5.5)	5	40/4	71/75	220

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Current (full load / no-load)		--	54/5	57/10	mA
Surge Voltage (1sec. max.)		-0.7	--	9	VDC
Reflected Ripple Current*		--	30	--	mA
Input Filter		Filter capacitor			
Hot Plug		Unavailable			

Note: * Reflected ripple current testing method please see DC-DC Converter Application Notes for specific operation.

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy		See tolerance envelope curve(Fig. 1)			
Line Regulation	Input voltage change: ±1%	--	--	±1.2	%
Load Regulation	10%-100% load	--	5	15	
Ripple & Noise*	20MHz bandwidth	--	20	50	mVp-p
Temperature Coefficient	Full load	--	±0.02	--	%/°C
Short Circuit Protection		Continuous, self-recovery			

Note: * Ripple and noise are measured by "parallel cable" method, please see DC-DC Converter Application Notes for specific operation.

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Input-output, with the test time of 1 minute and the leak current lower than 1mA	2000	--	--	VAC
		3000	--	--	VDC
Isolation Resistance	Input-output, isolation voltage 500VDC	1000	--	--	MΩ
Isolation Capacitance	Input-output, 100KHz/0.1V	--	20	--	pF
Operating Temperature	Derating when operating temperature up to 100°C, (see Fig. 2)	-40	--	105	°C
Storage Temperature		-55	--	95	
Casing Temperature Rise	Ta=25°C, nominal input, full load output	--	15	--	

Pin Welding Resistance Temperature	Welding spot is 1.5mm away from the casing, 10 seconds	--	--	300	°C
Storage Humidity	Non-condensing	--	--	95	%RH
Reflow Soldering Temperature*		Peak temp. ≤245°C, maximum duration time ≤60s at 217°C.			
Switching Frequency	Full load, nominal input voltage	--	270	--	KHz
MTBF	MIL-HDBK-217F@25°C	3500	--	--	K hours
Moisture Sensitivity Level (MSL)	IPC/JEDEC J-STD-020D.1	Level 2			

Note: * For actual application, please refer to IPC/JEDEC J-STD-020D.1.

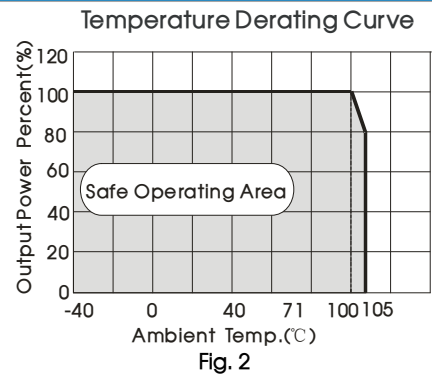
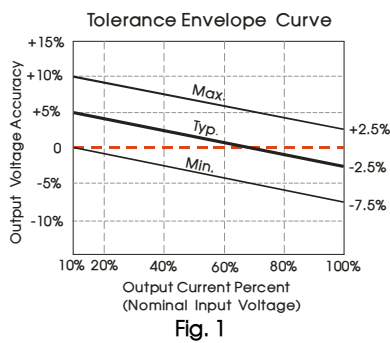
Physical Specifications

Casing Material	Black flame-retardant heat resistant plastic (UL94 V-0)
Dimensions	13.20*11.40*7.25 mm
Weight	1.4g(Typ.)
Cooling Method	Free air convection

EMC Specifications

EMI	CE	CISPR32/EN55032 CLASS B (see Fig. 5 for recommended circuit)
	RE	CISPR32/EN55032 CLASS B (see Fig. 5 for recommended circuit)
EMS	ESD	IEC/EN61000-4-2 Air ±8KV, Contact ±6KV perf. Criteria B

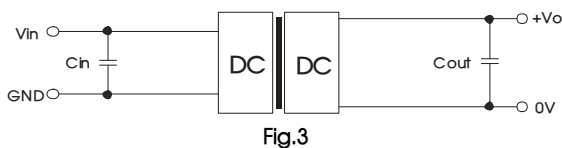
Product Characteristic Curve



Design Reference

1. Typical application circuit

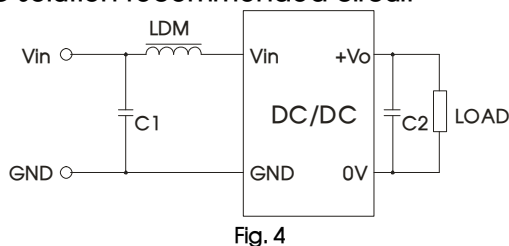
If it is required to further reduce input and output ripple, a filter capacitor may be connected to the input and output terminals, see Fig.3. Moreover, choosing a suitable filter capacitor is very important, start-up problems may be caused if the capacitance is too large. Under the condition of safe and reliable operation, the recommended capacitive load values are shown in Table 1.



Recommended capacitive load value table (Table 1)

Vin(VDC)	Cin(μF)	Vo (VDC)	Cout(μF)
5	4.7	5	10

2. EMC solution-recommended circuit

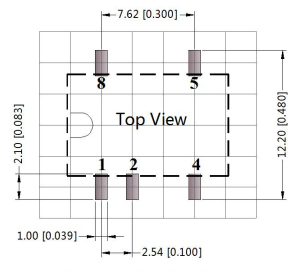
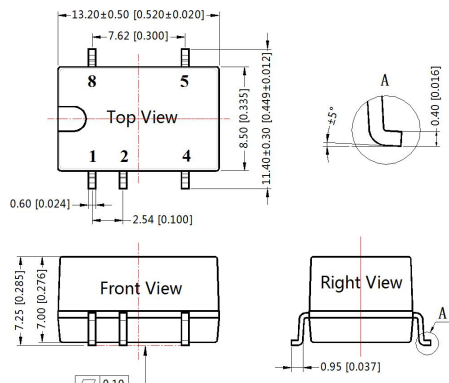


Input voltage (VDC)		5
EMI	C1	4.7μF /50V
	C2	Refer to the Cout in Fig.3
	LDM	6.8μH

3. For more information please find DC-DC converter application notes on www.mornsun-power.com

Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 



Note: Grid 2.54*2.54mm

Pin-Out	
Pin	Function
1	GND
2	Vin
4	0V
5	+Vo
8	NC

NC: Pin to be isolated from circuitry

Note:
Unit: mm[inch]
Pin section tolerances: ±0.10[±0.004]
General tolerances: ±0.25[±0.010]

Notes:

1. Packing information please refer to Product Packing Information which can be downloaded from www.mornsun-power.com. Tube Packing bag number: 58210024, Roll Packing bag number: 58200054;
2. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
3. The maximum capacitive load offered were tested at input voltage range and full load;
4. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75%RH with nominal input voltage and rated output load;
5. All index testing methods in this datasheet are based on our Company's corporate standards;
6. We can provide product customization service, please contact our technicians directly for specific information;
7. Products are related to laws and regulations: see "Features" and "EMC";
8. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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