

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

Certification	Part No.	Input Voltage (VDC)	Output		Full Load Efficiency (%) Min./Typ.	Capacitive Load(μF) Max.
		Nominal (Range)	Voltage (VDC)	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		Capacitance filter			
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 output regulation curve(Fig. 1)			
Linear 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 Electric Strength Test for 1 minute with a leakage current of 1mA max.	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 Soldering Resistance Temperature	Soldering spot is 1.5mm away from case for 10 seconds	--	--	300	°C
Reflow Soldering Temperature*		Peak temp. ≤245°C, maximum duration time ≤60s at 217°C.			
Storage Humidity	Non-condensing	--	--	95	%RH
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 1			

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 x 11.40 x 7.25 mm
Weight	1.4g(Typ.)
Cooling Method	Free air convection

EMC Specifications

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

Product Characteristic Curve

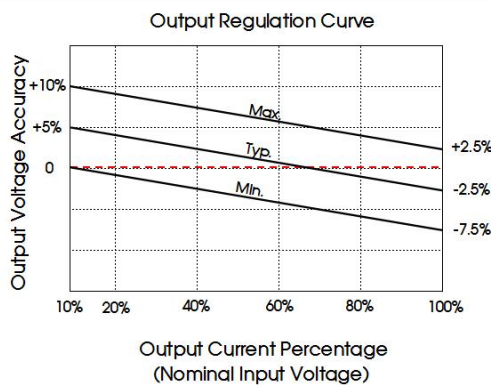


Fig. 1

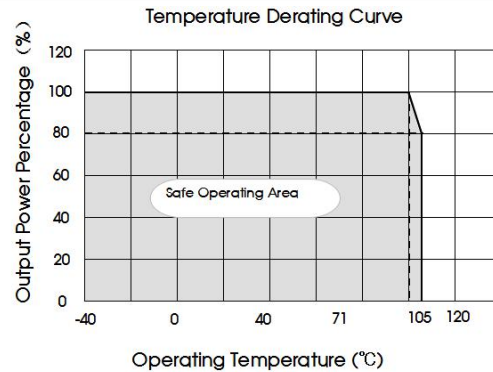


Fig. 2

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.



Fig.3

Recommended capacitive load value table (Table 1)

Vin	Cin	Vo	Cout
5VDC	4.7μF/16V	5VDC	10μF/16V

2. EMC solution-recommended circuit

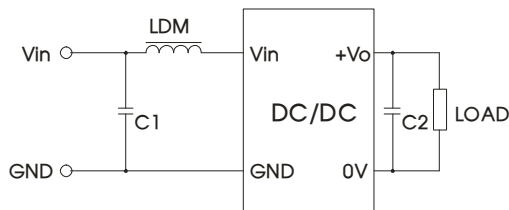


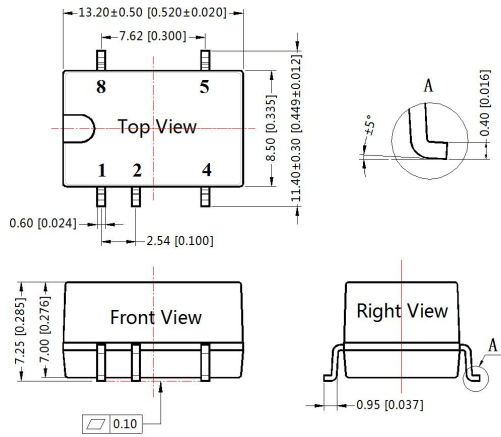
Fig. 4

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

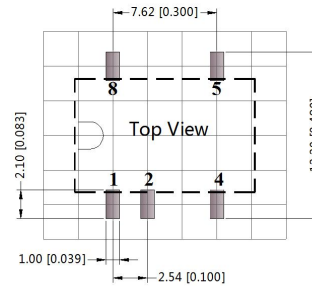
3. For additional information, please refer to DC-DC converter application notes on www.mornsun-power.com

Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 



Note:
Unit: mm[inch]
Pin section tolerances: $\pm 0.10[\pm 0.004]$
General tolerances: $\pm 0.25[\pm 0.010]$



Note: Grid 2.54*2.54mm

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

NC: Pin to be isolated from circuitry

Notes:

- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58210024, Roll Packing bag number: 58200054;
- 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;
- The maximum capacitive load offered were tested at input voltage range and full load;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a=25^{\circ}\text{C}$, humidity < 75%RH with nominal input voltage and rated output load;
- All index testing methods in this datasheet are based on our Company's corporate standards;
- We can provide product customization service, please contact our technicians directly for specific information;
- Products are related to laws and regulations: see "Features" and "EMC";
- 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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