0.75W isolated DC-DC converter
Fixed input voltage, regulated single output

RoHS Patent Protection

Continuous Short Circuit Protection

3 years Warranty

FEATURES

- Continuous short-circuit protection
- No-load input current as low as 5mA
- Operating ambient temperature range: -40℃ to +85℃
- High efficiency up to 72%
- Compact SMD package
- I/O isolation test voltage: 1.5k VDC
- Industry standard pin-out

IB0505XT-W75R3G is specially designed for applications where an isolated voltage is required in a distributed power supply system. They are 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.		
--	IB0505XT-W75R3G	5 (4.75-5.25)	5	150/15	68/72	2400

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Current (full load / no-load)	5VDC input	--	221/5	234/--	mA
Reflected Ripple Current*		--	15	--	
Input Filter		Capacitance filter			
Hot Plug		Unavailable			
Note: * Refer to DC-DC Converter Application Notes for detailed description of reflected ripple current test method.					

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Voltage Accuracy		--	--	±3	%
Linear Regulation	Input voltage change: ±1%	--	--	±0.25	
Load Regulation	10%-100% load	--	--	±2	%
Ripple & Noise*	20MHz bandwidth	--	30	75	mVp-p
Temperature Coefficient	Full load	--	±0.02	--	%/℃
Short-Circuit Protection		Continuous, self-recovery			
Note: * The "parallel cable" method is used for Ripple and Noise test, please refer to DC-DC Converter Application Notes for specific information.					

General Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Isolation	5VDC input	Input-output Electric Strength Test for 1 minute with a leakage current of 1mA max.	1500	--	--	VDC
		Input-output Electric Strength Test for 1 second with a leakage current of 1mA max.	3000	--	--	
Insulation Resistance	Input-output resistance at 500VDC		1000	--	--	MΩ
Isolation Capacitance	Input-output capacitance at 100kHz/0.1V		--	20	--	pF
Operating Temperature	Derating when operating temperature≥71℃, (see Fig. 1)		-40	--	85	℃

Storage Temperature		-55	--	125	℃
Case Temperature Rise	Ta=25℃	--	25	--	
Reflow Soldering Temperature*		Peak temp.≤245℃, maximum duration time ≤60s over 217℃			
Storage Humidity	Non-condensing	--	--	95	%RH
Switching Frequency	Full load, nominal input voltage	--	300	--	kHz
MTBF	MIL-HDBK-217F@25℃	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.					

Mechanical Specifications

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

Electromagnetic Compatibility

Emissions	CE	CISPR32/EN55032 CLASS B
	RE	CISPR32/EN55032 CLASS B
Immunity	ESD	IEC/EN61000-4-2 Air ±8kV, Contact ±6kV perf. Criteria B
Note: Refer to Fig.3 for recommended circuit test.		

Typical Performance Curves

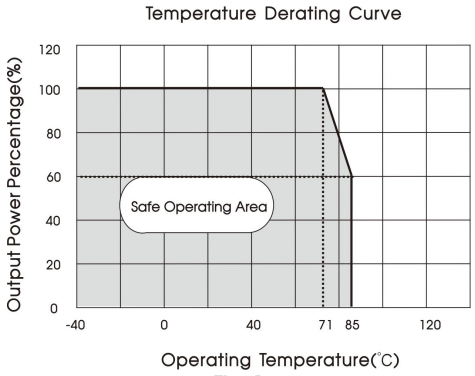


Fig. 1

Design Reference

1. Typical application

Input and/or output ripple can be further reduced, by connecting a filter capacitor from the input and/or output terminals to ground as shown in Fig. 2.

Choosing suitable filter capacitor values is very important for a smooth operation of the modules, particularly to avoid start-up problems caused by capacitor values that are too high. For recommended input and output capacitor values refer to Table 1.

Fig. 2

Table 1: Recommended input and output capacitor values

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

2. EMC (CLASS B) compliance circuit

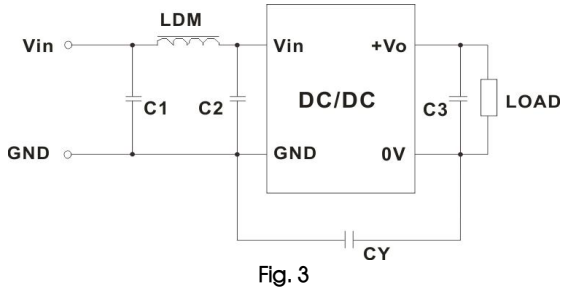


Fig. 3

Table3: Recommended EMC filter values

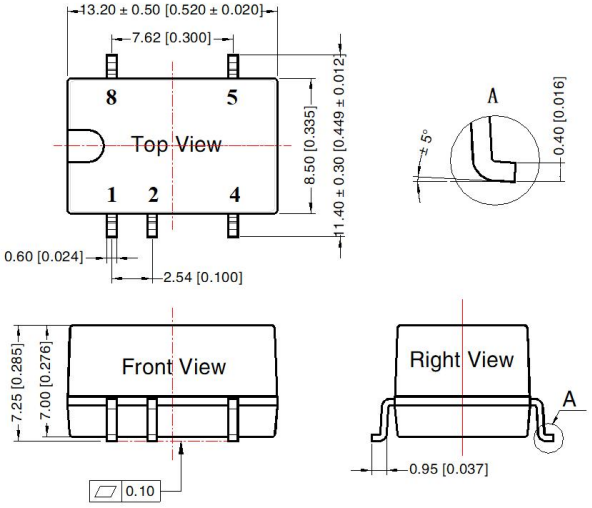
Output voltage		5VDC
EMI	C1/C2	4.7μF /25V
	CY	47pF/2kVDC
	C3	Refer to the Cout in table 1
	LDM	6.8μH

Note: We recommend the use of a Y-capacitor CY with a value of 1nF/4kV to help even further reduce emissions.

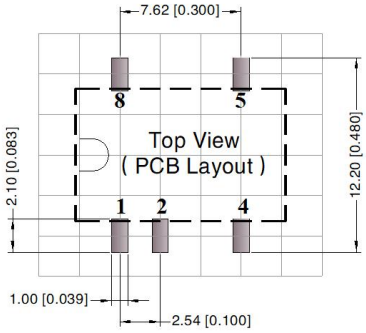
3. For additional information please refer to DC-DC converter application notes on www.mornsun-power.com

Dimensions and Recommended Layout

THIRD ANGLE PROJECTION



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

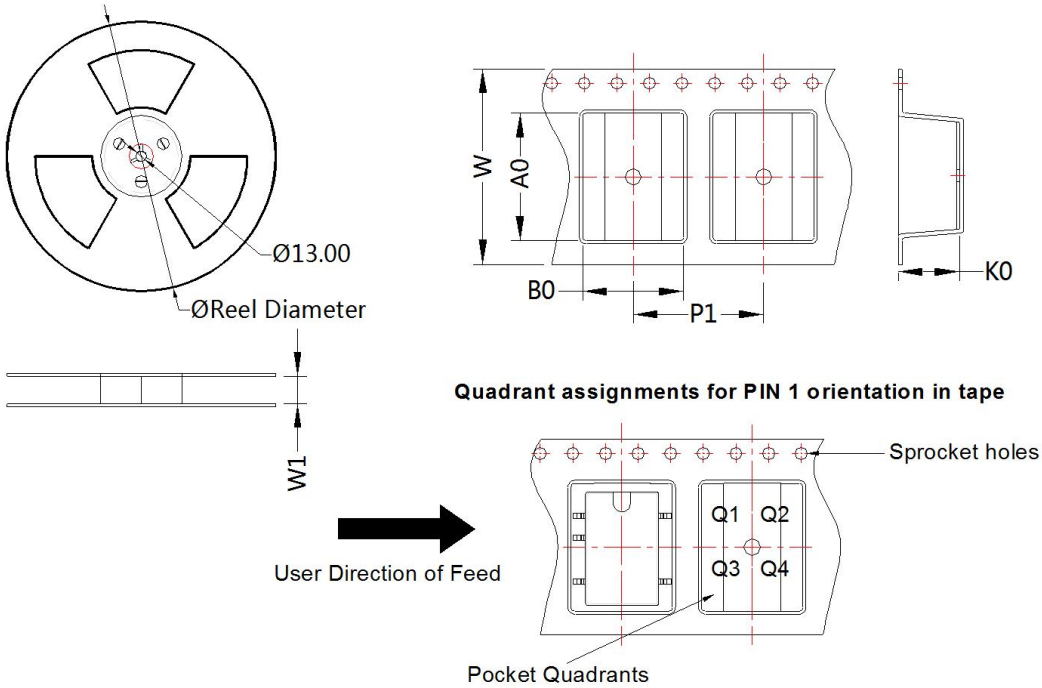


Note: Grid 2.54*2.54mm

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

NC: Pin to be isolated from circuitry

Tape and Reel Info



Device	Package Type	Pin	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
IB_XT-W75R3G	SMD	5	500	330.0	24.5	13.4	11.7	7.5	16.0	24.0	Q1

Notes:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Tube Packaging bag number: 58210024, Roll Packaging 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℃, humidity<75%RH with nominal input voltage and rated output load;
5. All index testing methods in this datasheet are based on our company 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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