

0.75W, Fixed input voltage, isolated & regulated single output



Continuous Short Circuit Protection



Patent Protection RoHS



## FEATURES

- Continuous short-circuit protection
- No-load input current as low as 5mA
- Operating temperature range: -40°C to +85°C
- High efficiency up to 74%
- Compact SMD package
- Isolation voltage: 1.5K VDC
- International standard pin-out
- Meets UL62368, EN62368 standards (Pending)

IB05\_XT-W75R3 series 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		Efficiency (%Min./Typ.) @ Full Load	Max. Capacitive Load (µF)
		Nominal (Range)	Output Voltage (VDC)	Output Current (mA) (Max./Min.)		
UL/CE (Pending)	IB0503XT-W75R3	5 (4.75-5.25)	3.3	200/20	64/68	2400
	IB0505XT-W75R3		5	150/15	68/72	2400
	IB0509XT-W75R3		9	83/9	68/72	1000
	IB0512XT-W75R3		12	62/7	69/73	560
	IB0515XT-W75R3		15	50/5	70/74	560

## Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Input Current (full load / no-load)	5VDC input	3.3VDC/5VDC output	--	221/5	234/10	mA
		9VDC/12VDC output	--	208/12	221/20	
		15VDC output	--	202/18	215/30	
Reflected Ripple Current*		--	15	--	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		--	--	±3	%
Line Regulation	Input voltage change: ±1%	--	--	±0.25	
Load Regulation	10%-100% load	3.3VDC output	--	3	
		Other output	--	2	
Ripple&Noise*	20MHz bandwidth	--	30	75	mVp-p
Temperature Coefficient	100% load	--	±0.02	--	%/°C
Short Circuit Protection		Continuous, self-recovery			

Note: \* Ripple and noise tested with "parallel cable" method, please see DC-DC Converter Application Notes for specific operation methods.

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Insulation Voltage	Input-output, with the test time of 1 minute and the leak current lower than 1mA	1500	--	--	VDC	
	Input-output, with the test time of 1 second and the leak current lower than 1mA	3000	--	--		
Insulation Resistance	Input-output, isolation Voltage 500VDC	1000	--	--	M $\Omega$	
Isolation Capacitance	Input-output, 100KHz/0.1V	--	20	--	pF	
Operating Temperature	Derating when operating temperature up to 71°C, (see Fig. 1)	-40	--	85	°C	
Storage Temperature		-55	--	125		
Casing Temperature Rise	Ta =25°C	3.3VDC output	--	30		--
		Other output	--	25		--
Pin Welding Resistance Temperature	Welding spot is 1.5mm away from the casing, 10 seconds	--	--	300		
Reflow Soldering Temperature*		Peak temp. ≤245°C, maximum duration time ≤60s at 217°C				
Storage Humidity	Non-condensing	--	--	95	%RH	
Switching Frequency	100% 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 and heat-resistant plastic(UL94 V-0)
Package Dimensions	13.20*11.40*7.25mm
Weight	1.4g(Typ.)
Cooling Method	Free air convection

EMC Specifications

EMI	CE	CISPR32/EN55032 CLASS B (see Fig. 3 for recommended circuit)
	RE	CISPR32/EN55032 CLASS B (see Fig. 3 for recommended circuit)
EMS	ESD	IEC/EN61000-4-2 Air ±8kV, Contact ±6kV perf. Criteria B

Product Characteristic Curve

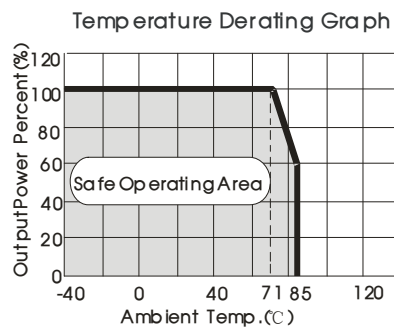
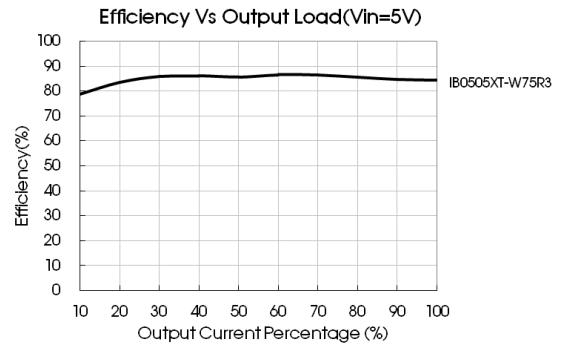
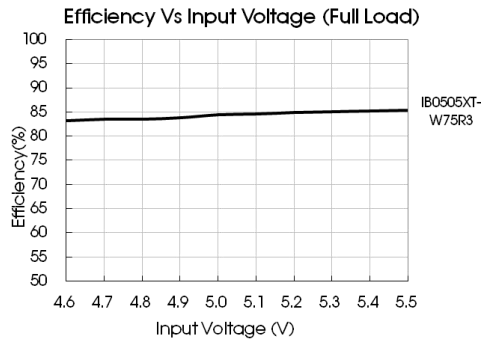


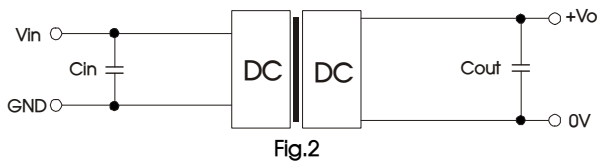
Fig. 1



Design Reference

1. Typical application

If it is required to further reduce input and output ripple, a filter capacitor can be connected to the input and output terminals, see Fig.2. Moreover, choosing suitable filter capacitor is very important, start-up problems may be caused by too large capacitance. To ensure the modules running well, the recommended capacitive load values as shown in Table 1.



Recommended capacitive load value table (Table 1)

Vin(VDC)	Cin(μF)	Vo (VDC)	Cout(μF)
5	4.7	3.3/5	10
		12	2.2
		15	1

2. EMC typical recommended circuit

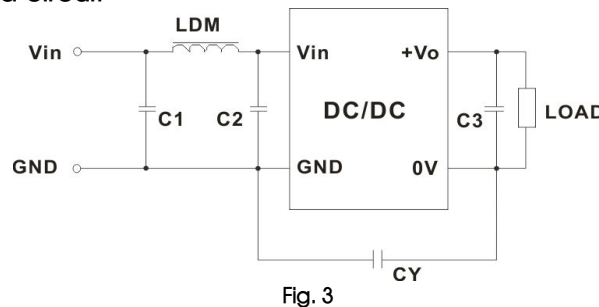


Fig. 3

EMC recommended circuit value table (Table 2)

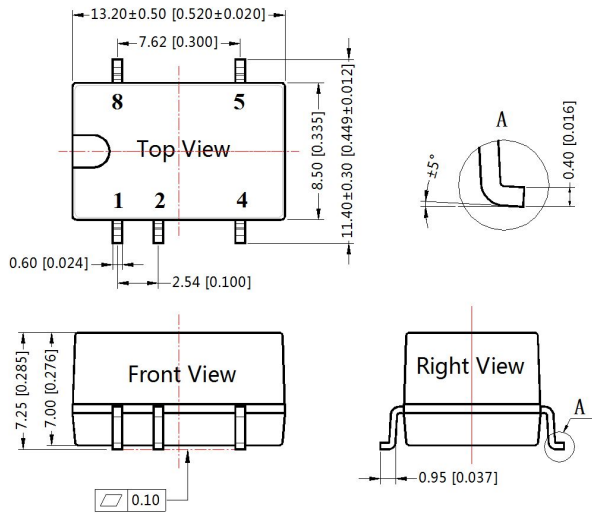
Input voltage 5VDC	EMI	Output voltage(VDC)	3.3/5/9	12/15
		C1/C2	4.7μF /25V	4.7μF /25V
	CY	--	1nF/2KVDC HEC C1206X102K202T JOHANSON 202R18W102KV4E	
	C3	Refer to the Cout in table 1		
	LDM	6.8μH	6.8μH	

Note: In the case of actual use, the requirements for EMI are high, it is subject to CY.

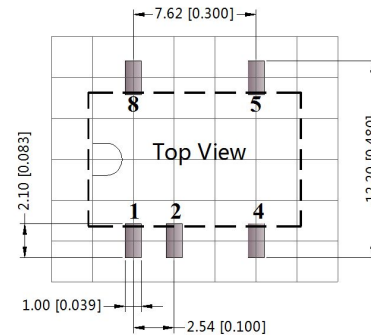
3. For more information please find DC-DC converter application notes on [www.mornsun-power.com](http://www.mornsun-power.com)

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

NC: Pin to be isolated from circuitry

Notes:

1. Packing information please refer to Product Packing Information which can be downloaded from [www.mornsun-power.com](http://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  $T_a=25^\circ\text{C}$ , 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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