

FEATURES

- ◆ Small Footprint
- ◆ SMD Package Style
- ◆ 1kVDC Isolation
- ◆ No Heatsink Required
- ◆ Continuous Short Circuit Protection
- ◆ Internal SMD Construction
- ◆ Temperature Range: -40°C ~ +85°C
- ◆ Industry Standard Pinout
- ◆ No External Component Require
- ◆ RoHS Compliance

MODEL SELECTION

IB^① 05^② 12^③ X^④ T^⑤ -1W^⑥

- ① Product Series
- ② Input Voltage
- ③ Output Voltage
- ④ Fixed input
- ⑤ SMD Package Style
- ⑥ Rated Power

MODEL SELECTION

IB^① 05^② 12^③ N^④ X^⑤ T^⑥ -1W^⑦

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- ② Input Voltage
- ③ Output Voltage
- ④ No Pin
- ⑤ Fixed input
- ⑥ SMD Package Style
- ⑦ Rated Power

APPLICATIONS

The IB-XT-1W&IB-NXT-1W series are specially designed for applications where a group of polar power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) Where the voltage of the input power supply is fixed (voltage variation $\leq \pm 5\%$);
- 2) Where isolation is necessary between input and output (isolation voltage $\leq 1000\text{VDC}$);
- 3) Where the regulation of the output voltage and the output ripple noise are not demanding.



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PRODUCT PROGRAM

Part Number	Input		Output			Efficiency (%Typ)
	Voltage(VDC)		Voltage (VDC)	Current(MA)		
	Nominal	Range		Max	Min.	
IB0505XT-W75	5	4.75-5.25	5	150	15	68
IB0512XT-1W	5	4.75-5.25	12	83	9	69
IB0515XT-1W	5	4.75-5.25	15	67	7	69
IB1205XT-W75	12	11.4-12.6	5	150	15	68
IB1212XT-1W	12	11.4-12.6	12	83	9	69
IB1215XT-1W	12	11.4-12.6	15	67	7	70
IB0505NXT-W75	5	4.75-5.25	5	150	15	68
IB0512NXT-1W	5	4.75-5.25	12	83	9	69
IB0515NXT-1W	5	4.75-5.25	15	67	7	69
IB1205NXT-W75	12	11.4-12.6	5	150	15	68
IB1212NXT-1W	12	11.4-12.6	12	83	9	69
IB1215NXT-1W	12	11.4-12.6	15	67	7	70

Note: 1. IB-NXT-1W series have no 3,6,8,9 pin, for example IB0505NXT-W75.

COMMON SPECIFICATIONS

Item	Test Conditions	Min.	Typ.	Max.	Units
Storage humidity				95	%
Operating temperature		-40		85	°C
Storage temperature		-55		125	°C
Temp. rise at full load			15	25	°C
Lead temperature	1.5mm from case for 10 seconds			260	°C
Cooling		Free air convection			
Short circuit protection		Continuous			
Package material		Epoxy Resin (UL94-V0)			
MTBF		3500			K hours
Weight			1.70		g

ISOLATION SPECIFICATIONS

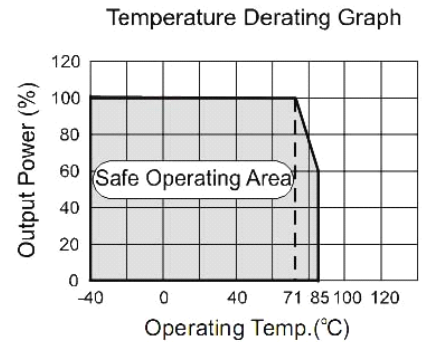
Item	Test Conditions	Min.	Typ.	Max.	Units
Isolation voltage	Tested for 1 minute and 1mA max	1000			VDC
Isolation resistance	Test at 500VDC	1000			MΩ
Isolation capacitance			40		pF

OUTPUT SPECIFICATIONS

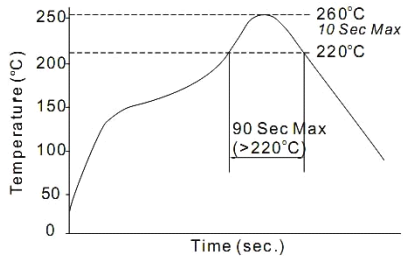
Item	Test Conditions	Min.	Typ.	Max.	Units
Output power		0.1		1	W
Line regulation	For Vin change of $\pm 5\%$			± 0.25	%
Load regulation	10% to 100% load			± 1	%
Output voltage accuracy	100% full load			± 3	%
Temperature drift	100% full load			± 0.03	%/°C
Ripple*	20MHz Bandwidth		10	20	mVp-p
Noise*	20MHz Bandwidth		50	100	mVp-p
Switching frequency	Full load, nominal input		100		KHz

*Test ripple and noise by "Parallel cable" method. See detailed operation instructions at Testing of Power Converter section, application notes.

TYPICAL CHARACTERISTICS



RECOMMENDED REFLOW SOLDERING PROFILE



APPLICATION NOTE

1) Requirement on output load

To ensure this module can operate efficiently and reliably, during operation, the minimum output load could not be less than 10% of the full load. If the actual output power is very small, please connect a resistor with proper resistance at the output end in parallel to increase the load.

2) Recommended testing circuit

If you want to further decrease the input/output ripple, an "LC" filtering network may be connected to the input and output ends of the DC/DC converter, see (Figure 1).

It should also be noted that the inductance and the frequency of the "LC" filtering network should be staggered with the DC/DC frequency to avoid mutual interference. However, the capacitance of the output filter capacitor must be proper. If the capacitance is too big, a startup problem might arise. For every channel of output, provided the safe and reliable operation is ensured, the greatest capacitance of its filter capacitor sees (Table 1).

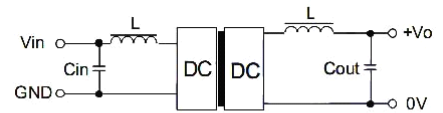
3) Overload Protection

Under normal operating conditions, the output circuit of these products has no protection against over-current. The simplest method is to connect a self-recovery fuse in series at the input end or add a circuit breaker to the circuit.

4) When the environment temperature is higher than 71°C, the product output power should be less than 60% of the rated power

5) No parallel connection or plug and play

RECOMMENDED CIRCUIT



(Figure 1)

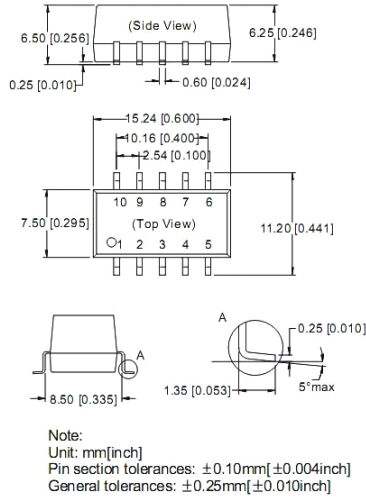
EXTERNAL CAPACITOR TABLE (TABLE 1)

Vin (VDC)	Cin (μF)	Vout (VDC)	Cout (μF)
5	4.7	5	4.7
12	2.2	12	1
-	-	15	1

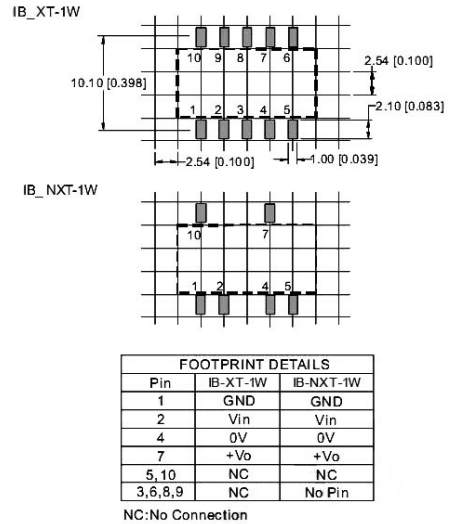
It's not recommended to connect any external capacitor in the application field with less than 0.5 watt output.

OUTLINE DIMENSIONS & FOOTPRINT DETAILS

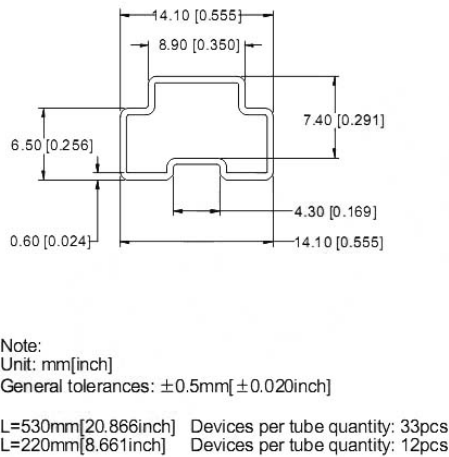
MECHANICAL DIMENSIONS



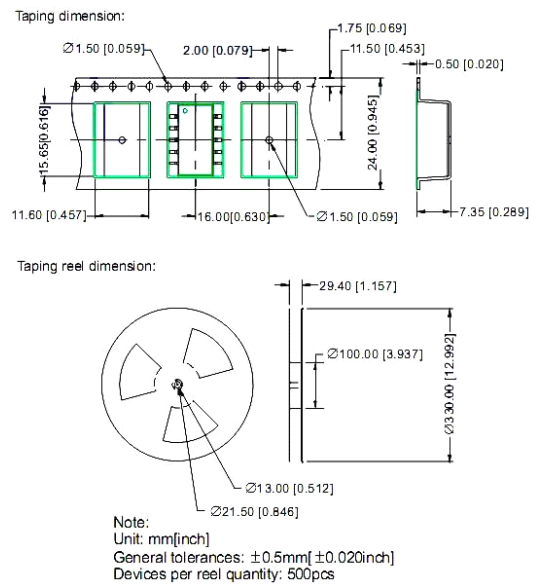
RECOMMENDED FOOTPRINT



TUBE OUTLINE DIMENSIONS



REEL PACKING OUTLINE DIMENSIONS



RoHS COMPLIANT INFORMATION

This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300° C for 10 seconds. The pin termination finish on the SIP package type is Tin Plate, Hot Dipped over Matte Tin with Nickel Preplate. The DIP types are Matte Tin over Nickel Preplate. Both types in this series are backward compatible with Sn/Pb soldering systems.

REACH COMPLIANT INFORMATION

This series has proven that this product does not contain harmful chemicals, it also has harmful chemical substances through the registration, inspection and approval.