SIB_LT-1W Series

1W, FIXED INPUT, ISOLATED & REGULATED, SINGLE OUTPUT, SMD, DC-DC CONVERTER

FEATURES

SMD Package
1KVDC Isolation
Temperature Range: -40°C to +85°C
Internal SMD Construction
Short Circuit Protection
No Heatsink Required
No External Component Required
Industry Standard Pinout
RoHS Compliance

APPLICATIONS

The SIB_LT-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 ≤ ±5%);
2) Where isolation is necessary between input and output (isolation voltage ≤1000VDC);
3) Where the regulation of the output voltage and the output ripple noise are not demanding.

MODEL SELECTION

SIB0 512LT-1W
- Rated Power
- Package Style
- Output Voltage
- Input Voltage
- Product Series

PRODUCT PROGRAM

Part Number	Input		Output			Efficiency (%, Typ)
	Voltage (VDC)		Voltage (VDC)	Current (mA)		
	Nominal	Range		Max	Min	
SIB0505LT-W75	5	4.75-5.25	5	150	15	69
SIB0509LT-1W*			9	111	12	70
SIB0512LT-1W			12	83	9	71
SIB0515LT-1W*			15	67	7	72
SIB1205LT-W75*	12	11.4-12.6	5	150	15	69
SIB1209LT-1W*			9	111	12	70
SIB1212LT-1W*			12	83	9	71
SIB1215LT-1W*			15	67	7	72
SIB1505LT-W75*	15	14.25~15.75	5	150	15	69
SIB1509LT-1W*			9	111	12	70
SIB1512LT-1W*			12	83	9	71
SIB1515LT-1W*			15	67	7	72
SIB2405LT-W75*	24	22.8-25.2	5	150	15	69
SIB2409LT-1W*			9	111	12	70
SIB2412LT-1W*			12	83	9	71
SIB2415LT-1W*			15	67	7	72
*Designing						

COMMON SPECIFICATION

Item	Test Conditions	Min	Typ	Max	Units
Storage humidity				95	%
Operating temperature		-40		85	°C
Storage temperature		-55		125	
Lead temperature			15	25	
Temp. rise at full load	1.5mm from case for 10 seconds			260	
Cooling	Free air convection				
Short circuit protection		continuous			
Package material		Epoxy Resin(UL94-V0)			
MTBF		3500			K Hours
Weigh			2.9		g

SOLATION 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

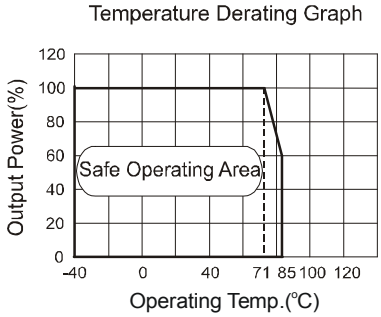
Note:
1.All specifications measured at TA=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2.See below recommended circuits for more details.

Output Specifications

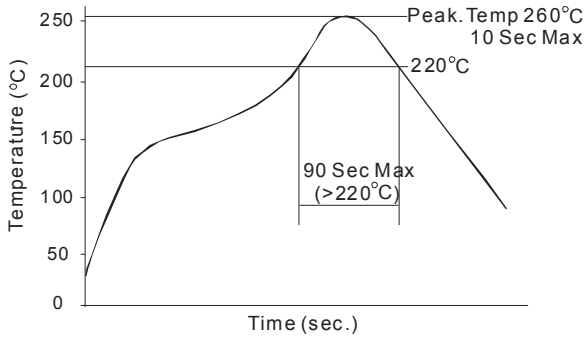
Item	Test Conditions	Min	Typ	Max	Units
Output power		0.1		1	W
Line regulation	For Vin change of ±5%			±0.3	%
Load regulation	10% to 100% load			±1	
Output voltage accuracy	100% load			±3	
Temperature drift	100% full load			0.03	%/°C
Ripple*	20MHz Bandwidth		10	20	mVp-p
Noise*	20MHz Bandwidth		50	100	
Switchingfrequency	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.

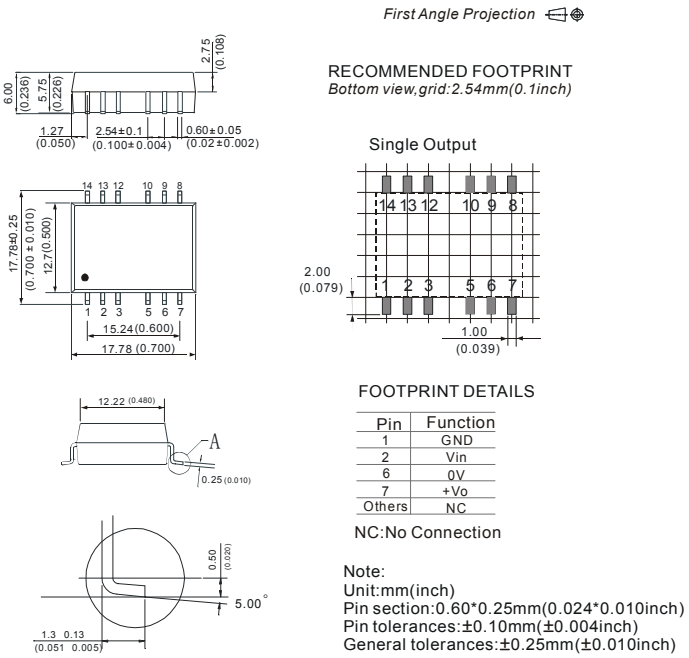
TYPICAL CHARACTERISTICS



RECOMMENDED REFLOW SOLDERING PROFILE



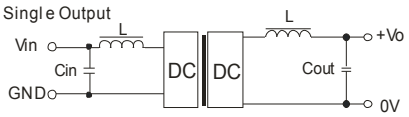
OUTLINE DIMENSIONS & PIN CONNECTIONS



APPLICATION NOTE

Recommended 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).



(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).

EXTERNAL CAPACITOR TABLE (Table 1)

Vin (VDC)	Cin (uF)	Single Vout (VDC)	Cout (uF)
5	4.7	5	4.7
12	2.2	9	2.2
15	1	12	2.2
24	1	15	1

Requirement on output load

To ensure this module can operate efficiently and reliably, During operation, the minimum output load is **not less than 10%** of the full load, and that **this product should never be operated under no 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.)

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

No parallel connection or plug and play.