SIB_SLS-1W/ SIB_LD-1W Series

FIXED INPUT ISOLATED & REGULATED 1W OUTPUT SINGLE OUTPUT MINIATURE SIP/DIP PACKAGE

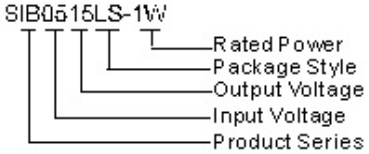
FEATURES

- Efficiency up to 78%
- Small Footprint
- SIP/DIP Package
- Single Output Voltage
- 1KVDC Isolation
- Fixed Input Voltage
- Regulated Output Voltage
- Temperature Range: -40°C ~+85°C
- Industry Standard Pinout
- UL94-V0 Package
- No Heat Sink Required
- No External Component Required
- PCB Mounting
- Fully Encapsulated
- RoHS Compliance

APPLICATIONS

The SIB_SLS(D)-1W Series are specially designed for applications where a single power supply is highly isolated from the input power supply in a distrSIButed 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 and noise are demanded.
These products don't apply to:
1) Where the input supply voltage is varied (variation≥±5%), otherwise our company's WRA series is recommended;
2) Where the isolation voltage between input and output is required to be>1000VDC, otherwise our company's IF_S(D) Series products are recommended;

MODEL SELECTION



PRODUCT PROGRAM

Part Number	Input Voltage (VDC) Nomi	Input Voltage (VDC) Range	Output Voltage (VDC)	Output Current (mA) Max	Output Current (mA) Min	Efficiency (%, Typ)	Package Style
SIB0505SLS/D-W75	5	4.75~5.25	5	150	15	69	SIP/DIP
SIB0509SLS/D-1W			9	111	12	70	SIP/DIP
SIB0512SLS/D-1W			12	83	9	75	SIP/DIP
SIB0515SLS/D-1W			15	67	7	75	SIP/DIP
SIB1205SLS/D-W75	12	11.4~12.6	5	150	15	69	SIP/DIP
SIB1209SLS/D-1W			9	111	12	74	SIP/DIP
SIB1212SLS/D-1W			12	83	9	75	SIP/DIP
SIB1215SLS/D-1W			15	67	7	78	SIP/DIP
SIB2405SLS/D-W75	24	22.8~25.2	5	150	15	69	SIP/DIP
SIB2409SLS/D-1W			9	111	12	72	SIP/DIP
SIB2412SLS/D-1W			12	83	9	74	SIP/DIP
SIB2415SLS/D-1W			15	67	7	77	SIP/DIP

Note: The SIB_SLS(D)-W2 series aSLSo are available in our company.

COMMON SPECIFICATION

Short circuit protection	1 second
Temperature rise at full load	25°C (MAX), 15°C (TYP)
Cooling	Free air convection
No-load power consumption	10% nominal power (typical)
Operating temperature range	-40°C ~+85°C
Storage temperature range	-55°C ~+125°C
Lead temperature*	300°C (1.5mm from case for 10 seconds)
Storage humidity range	≤ 95%
Case material	Plastic (UL94-V0)
MTBF	>3,500,000 hours

ISOLATION SPECIFICATIONS

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 minute	1000			VDC
Isolation resistance	Test at 500VDC	1000			MΩ

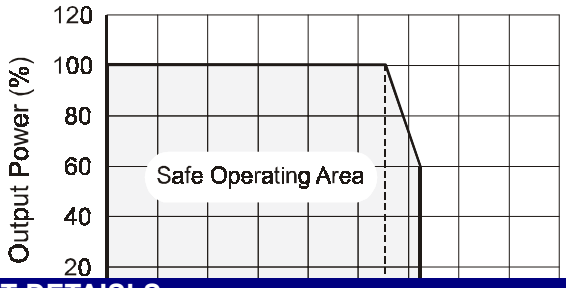
OUTPUT SPECIFICATIONS

Item	Test condition	Min	Typ	Max	Units
Output power		0.1		1	W
Line regulation	For Vin change of ±5%			0.25	%
Load regulation	10% to 100% full load			±0.5	%
Output voltage accuracy	100% full load			±3	%
Temperature drift	100% full load			0.03	%/°C
Output ripple	20MHz bandwidth		10	20	mVp-p
Output noise	20MHz bandwidth		50	100	
Switching frequency	Full load, nominal input voltage		100		KHz

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 detaiSLS.

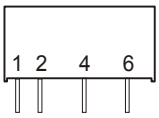
TYPICAL CHARECTERISTICS

Temperature Derating Graph

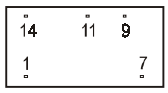


FOOTPRINT DETAISLS

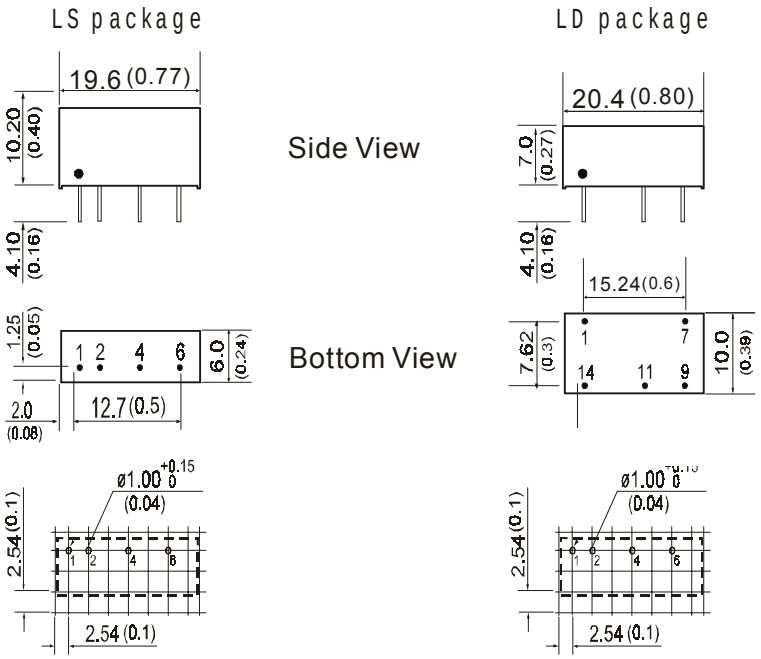
Pin	Function
1	Vin
2	GND
4	0V
6	+Vo



Pin	Function
1	GND
7	NC
9	+Vo
11	0V
14	Vin



OUTLINE DIMENSIONS& RECOMMENDED FOOTPRINT



Note: All Pins on a 2.54mm pitch; All Pin diameters are 0.50 mm; Unit: mm(inch)..

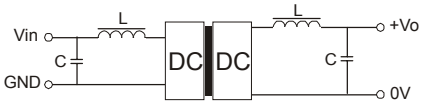
APPLICATION NOTE

Requirement On Output Load

To ensure this module can operate efficiently and reliably, a minimum load is specified for this kind of DC/DC converter in addition to a maximum load (namely full load). During operation, make sure the specified range of input voltage is not exceeded, 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, or use our company's products with a lower rated output power (SIB_SLS(D) –W2 Series).

Filtering

In some circuits which are sensitive to noise and ripple, a filtering capacitor may be added to the DC/DC output end and input end to reduce the noise and ripple. However, the capacitance of the output filter capacitor must proper. If the capacitance is too big, a startup problem might arise. For every channel of output, providing the safe and reliable operation is ensured, the greatest capacitance of its filter capacitor refer to the **EXTERNAL CAPACITOR TABLE**. To get an extreme low ripple, an "LC" filtering network may be connected to the input and output ends of the DC/DC converter, which may produce a more significant filtering effect. It should aSLSo 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 (see figure 1).



<Figure 1>

Overload Protection

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

When the environment temperature is higher than 70°C, the product output power should be less then 60% of the rated power.

EXTERNAL CAPACITOR TABLE

V_{in}	External capacitor	V_{out}	External capacitor
5VDC	4.7uF	5VDC	10uF
12VDC	2.2uF	9VDC	4.7uF
24VDC	1uF	12VDC	2.2uF
--	--	15VDC	1uF