



## SIBXX05LS/LD-1W&SIBXX24LS/LD-1W SERIES 1W FIXED INPUT ISOLATED & REGULATED SINGLE OUTPUT

### FEATURES

Small Footprint  
SIP/DIP Package  
1KVDC Isolation  
Regulated Output Voltage  
Temperature Range: -40°C ~+85°C  
Industry Standard Pinout  
No Heat Sink Required  
No External Component Required  
Fully Encapsulated  
RoHS Compliance

### APPLICATIONS

SIBXX05LS/LD-1W&SIBXX24LS/LD-1W Series are specially designed for applications where a single power supply is highly 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 and noise are demanded.

### PRODUCT PROGRAM

Part Number	Input		Output			Efficiency (% Typ)	Package style
	Voltage (VDC)		Voltage (VDC)	Current (mA)			
	Nominal	Range		Max	Nominal		
SIB0505LS-1W	5	4.75-5.25	5	200	20	67	SIP
SIB0524LS-1W			24	42	5	68	SIP
SIB1205LS-1W	12	11.4-12.6	5	200	20	67	SIP
SIB2424LS-1W			24	42	5	68	SIP
*SIB1505LS-1W	15	14.25-15.75	5	200	20	67	SIP
*SIB1524LS-1W			24	42	5	68	SIP
SIB2405LS-1W	24	22.8-26.25	5	200	20	68	SIP
SIB2424LS-1W			24	42	5	68	SIP
SIB0505LD-1W	5	4.75-5.25	5	200	20	67	DIP
*SIB0524LD-1W			24	42	5	68	DIP
SIB1205LD-1W	12	11.4-12.6	5	200	20	67	DIP
*SIB1224LD-1W			24	42	5	68	DIP
*SIB1505LD-1W	15	14.25-15.75	5	200	20	67	DIP
SIB1524LD-1W			24	42	5	68	DIP
SIB2405LD-1W	24	22.8-26.25	5	200	20	68	DIP
SIB2424LD-1W			24	42	5	68	DIP

\* Designing

### OUTPUT SPECIFICATIONS

Item	Test condition	Min	Typ	Max	Units
Output power		0.1		1	W
Line regulation	For $V_{in}$ change of $\pm 5\%$			$\pm 0.25$	%
Load regulation	10% to 100% full load			$\pm 1$	
Output voltage accuracy	100% full load			$\pm 3$	
Temperature drift	100% full load			0.03	%/□
Output ripple*	20MHz bandwidth		10	20	mVp-p
Output noise*	20MHz bandwidth		50	100	
Switching frequency	Full load, nominal input voltage		100		KHz

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

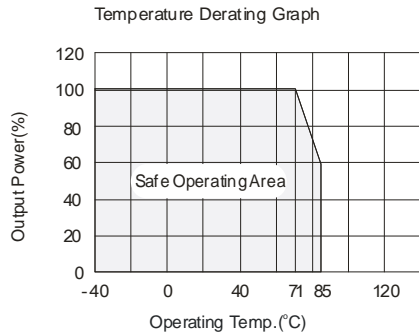
### COMMON SPECIFICATION

Item	Test condition	Min	Typ	Max	Units
Storage humidity range				95	%
Operating temperature		-40		85	□
Storage temperature		-55		125	
Lead temperature			15	25	
Temp. rise at full load	1.5mm from case for 10 seconds		300		
Cooling	Free air convection				
Isolation voltage	Tested for 1 minute and 1mA max		1000		VDC
Isolation resistance	Test at 500VDC		1000		MΩ
Short circuit protection	Short circuit protection		1 second(Max)		
Case material			Plastic(UL94-V0)		
MTBF		3500			K Hours
Weigh			2.1		g

Note: 1.All specifications measured at  $T_A=25^\circ\text{C}$ , humidity<75%, nominal input voltage and rated output load unless otherwise specified.

2. See below recommended circuits for more details.

## TYPICAL CHARACTERISTICS



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)	Vout (VDC)	Cou (uF)
5	4.7	5	10
12	2.2	24	1
15	1	-	-
24	0.47	-	-

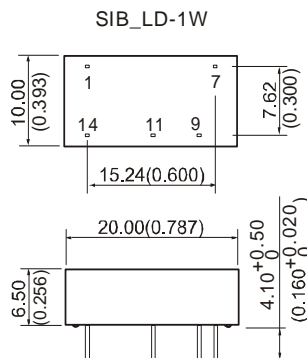
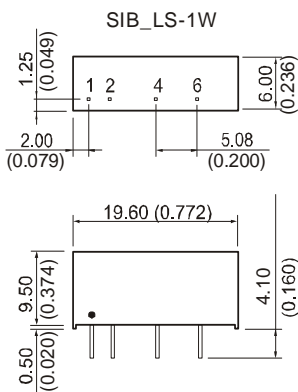
It's not recommend to connect any external capacitor in the application field with less than 0.5 watt output.

**No parallel connection or plug and play.**

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

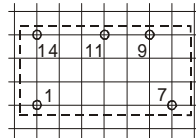
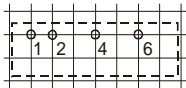
## RECOMMENDED REFLOW SOLDERING PROFILE

First Angle Projection



### RECOMMENDED FOOTPRINT

Top view, grid: 2.54mm (0.1inch), diameter: 1.00mm



### FOOTPRINT DETAILS

Pin	SIP	Pin	DIP
1	Vin	1	GND
2	GND	7	NC
4	0V	9	+Vo
6	+Vo	11	0V
		14	Vin

NC: No Connection

Note:

Unit: mm (inch)

Pin section: 0.50\*0.30mm (0.020\*0.012inch)

Pin tolerances: ±0.10mm (±0.004inch)

General tolerances: ±0.25mm (±0.010inch)

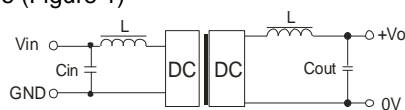
## APPLICATION NOTE

### 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, or use our company's products with a lower rated output power (SIB\_LD -W25/SIB\_LS-W25 series).

### Recommended testing and application 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)