SIB LS-1WR4

Product Feature

- Package Type：SIP7
- Operating temperature range：-40℃ - +85℃
- Isolation voltage：1500VDC
- High efficiency up to：75%
- Compliant with standard：International standard pin method
- Fields of application：power, industrial control,etc

Selection Guide

Part No.	Input Voltage (VDC)	Output			Full Load Efficiency % (Typ.)	Capacitive Load(μF) Max.
	Nominal (Range)	Voltage (VDC)	Current Min.(mA)	Current Max.(mA)		
SIB 0303 LS-1WR4	3.3(3.135-3.465)	3.3	0	250	67	2400
SIB 0305 LS-1WR4	3.3(3.135-3.465)	5	0	200	69	2400
SIB 0503 LS-1WR4	5 (4.75-5.25)	3.3	0	250	67	2400
SIB 0505 LS-1WR4	5 (4.75-5.25)	5	0	200	70	2400
SIB 0512 LS-1WR4	5 (4.75-5.25)	12	0	84	71	560
SIB 0515 LS-1WR4	5 (4.75-5.25)	15	0	67	72	560
SIB 0909 LS-1WR4	9 (8.55-9.45)	9	0	111	72	1000
SIB 1203 LS-1WR4	12 (11.4-12.6)	3.3	0	250	67	2400
SIB 1205 LS-1WR4	12 (11.4-12.6)	5	0	200	70	2400
SIB 1212 LS-1WR4	12 (11.4-12.6)	12	0	84	73	560
SIB 2403 LS-1WR4	24 (22.8-25.2)	3.3	0	250	67	2400
SIB 2405 LS-1WR4	24 (22.8-25.2)	5	0	200	72	2400
SIB 2412 LS-1WR4	24 (22.8-25.2)	12	0	83	73	560
SIB 2415 LS-1WR4	24 (22.8-25.2)	15	0	67	75	560

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Current(full load/no load)	3.3VDC Input	--	373/15	438/--	mA
	5VDC Input	--	286/15	305/--	
	9VDC Input	--	153/12	170/--	
	12VDC Input	--	115/8	121/--	
	24VDC Input	--	59/4	65/--	
Reflected Ripple Current		--	15	--	mA
Input Filter		Capacitance Filter			
Hot Plug		Unavailable			

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Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy			--	--	±3	%
Linear Regulation Rate	Input Voltage Variation ±1%		--	--	±0.25	%
Load Regulation Rate	10% - 100% load	3.3VDC output	--	--	±3	%
		Others output	--	--	±2	%
Ripple & Noise	20MHz Bandwidth(peak-peak)	15VDC output	--	50	120	mV
		Others output		30	100	
Temperature Drift Coefficient	100% load		--	±0.02	--	%/℃
Short-Circuit Protection			Continuous, Self-Recovery			

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Insulation Voltage	Input-output, test time 1 minute, leakage current less than 1mA	1500	--	--	VDC
Insulation Resistance	Input-output, insulated voltage 500VDC	1000	--	--	MΩ
Isolation Capacitance	Input-output, 100KHz/0.1V	--	20	--	pF
Operating Temperature	Derating when operating temperature≥85℃ (See Figure 1)	-40	--	85	℃
Storage Temperature		-55	--	125	℃
Case Temperature Rise	Ta=25℃, nominal input, output load	--	25	--	℃
Storage Humidity	Non-condensing	--	--	95	%RH
Pin welding can withstand the highest temperature	Non-condensing	--	--	300	℃
Switching Frequency	Full Load, Nominal Input Voltage	--	250	--	KHz
MTBF	MIL-HDBK-217F@25℃	>3500Kh			

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Mechanical Specification

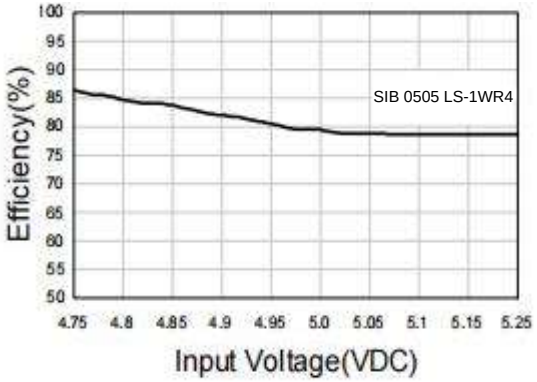
Case Material	Black plastic; flame-retardant and heat-resistant（UL94V-0 rated）
Package Dimensions	19.60 x 6.00 x 10.10 mm
Weight	2.1g(Typ.)
Cooling Method	Free air convection

EMC Specifications

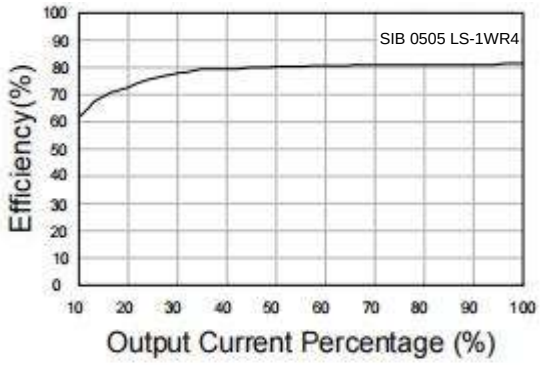
EMI	CE	CISPR32/EN55032 CLASS B（The recommended circuit is shown in Figure 3）	
	RE	CISPR32/EN55032 CLASS B（The recommended circuit is shown in Figure 3）	
EMS	ESD	IEC/EN61000-4-2 Contact ±6KV Air ±8KV	perf. Criteria B

Typical Characteristic Curves

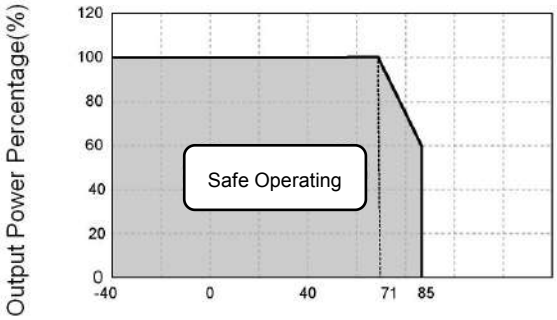
Efficiency VS Input Voltage Curve(full load)



Efficiency VS Output Load（Vin=5V）



Temperature Derating Curve（Figure 1）



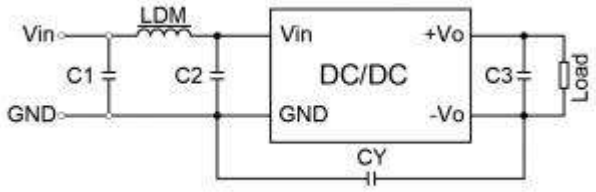
Typical Circuit Design and Application

Application circuit（Figure 2）

Recommended Capacitive Load Value Table

Vin	Cin	Vo	Cout(μF)
3.3/5VDC	4.7uF/16V	3.3/5VDC	10/16V
9/12/15VDC	2.2uF/25V	9VDC	4.7/16V
24VDC	1.0uF/50V	12VDC	2.2/25V
--	--	15VDC	1.0/25V

Application circuit（Figure 3）



EMI Recommended Parameter Table

EMI	C1	4.7μF /50V
	C2	4.7μF /50V
	C3	Refer to the Cout parameter in Figure 3
	CY	1000pF/2kV
	LDM	6.8μH

1.Typical applications

To further reduce input and output ripple, a capacitor filtering network can be connected at the input and output terminals.The application circuit is shown in Figure 2.However, care should be taken to select a suitable filter capacitor. If the capacitance is too large, it is likely to cause start-up problems. For each output, the recommended capacitive load values are shown in "Recommended Capacitive Load Value Table" for safe and reliable operation.

2.EMC typical recommended circuit

See Figure 3

3.Output load requirements

In order to ensure that the module can work efficiently and reliably, the minimum output load should not be less than 10% of the rated load when used. If the power required is really small, connect a resistor in parallel to the output end (the sum of the power consumed by the resistance and the power actually used is greater than or equal to 10% of the rated power).

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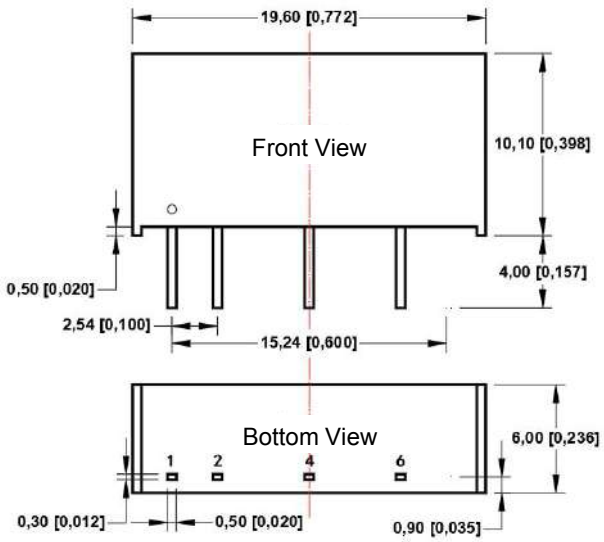
Dimensions and Recommended Layout

Dimensions	PCB Printing Layout & Pin Definition Table

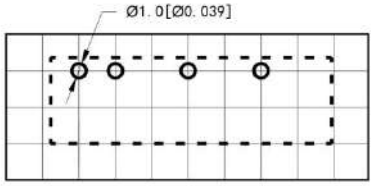


Note:

Unit : mm[inch]

Pin section tolerances : ±0.10[±0.004]

General tolerances : ±0.50[±0.020]



Note:The grid distance is 2.54*2.54 mm

Pin Definition Table	
Pin	Function
1	Vin
2	GND
4	-Vo
6	+Vo

Note :

- The input voltage should not exceed the specified range value, otherwise it may cause permanent and irreparable damage;
- It is recommended to use at a load of over 5%. If the load is below 5%, the ripple index of the product may exceed the specifications, but it does not affect the reliability of the product;
- The maximum capacitive load is tested within the input voltage range and under full load conditions;
- Unless otherwise specified, all indicators in this manual are measured at Ta=25 ℃, humidity<75% RH, nominal input voltage, and output rated load;
- All indicator testing methods in this manual are based on our company's corporate standards;
- Our company can provide product customization, and specific requirements can be directly contacted by our technical personnel;
- Product specifications are subject to change without prior notice.