

Product Feature

- Package Type: SIP8
- Operating Temperature Range: -40°C - +85°C
- Isolation Voltage: 1500VDC
- 4:1 Wide Input Voltage Range
- High efficiency up to 88%
- With the input undervoltage protection,output short circuit protection and output overcurrent protection mechanism
- Fields of application: industry, industrial control, instrumentation, communication, rail transit, etc



Selection Guide

Part No.	Input Voltage (VDC)		Output		Full Load Efficiency% (Min./Typ.)	Capacitive Load Max. (μF)
	Nominal (Range)	Maximum	Voltage (VDC)	Current Max.(mA)		
SURB 2403 S-10WR4	24 (9-36)	40	3.3	2400/0	83/85	2200
SURB 2405 S-10WR4			5	2000/0	86/88	2200
SURB 2406 S-10WR4			6	1667/0	86/88	1500
SURB 2409 S-10WR4			9	1111/0	86/88	680
SURB 2410 S-10WR4			10	1000/0	86/88	680
SURB 2412 S-10WR4			12	833/0	86/88	470
SURB 2415 S-10WR4			15	667/0	86/88	330
SURB 2424 S-10WR4			24	417/0	86/88	220
SURA 2415 S-10WR4			±15	±330/0	86/88	#100
SURB 4805 S-10WR4	48 (18-75)	80	5	2000/0	85/87	2200

each output

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Current (full load/no load)	24VDC nominal input series, nominal input voltage	3.3VDC Output	--	389/25	398/45	mA
		5VDC Output	--	474/25	485/45	
		Other Output	--	474/9	485/18	
Reflected Ripple Current			--	50	--	
Impulse Voltage	24VDC Nominal Input Series		-0.7	--	50	VDC
Starting Voltage	24VDC Nominal Input Series		--	--	9	
Input Undervoltage Protection	24VDC Nominal Input Series		5.5	6.5	--	
Input Filter			Capacitance Filter			
Hot Plug			Unavailable			
CTRL	Module off		0-1.2V turn off			
	Module on		No connect or 3.5-12V on			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	5% - 100% Load		--	±1.5	±2.0	%
Linear Regulation	Full load, Input voltage from low limit to high limit		--	±0.25	±0.5	
Load Regulation	5% - 100% Load		--	±0.5	±1.0	
Transient Recovery Time	25% load step change		--	0.3	0.5	ms
Transient Response Deviation		3.3VDC、5VDC	--	±5	±8	%
		Other Output	--	±3	±5	
Temperature Coefficient	Full Load		--	--	±0.03	%/℃
Ripple & Noise	20MHZ Bandwidth,5% - 100% Load		--	75	150	mVp-p
Overcurrent Protection	Input Voltage Range		110	160	230	%Io
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	--	1000	--	pF
Operating Temperature	See Figure 1	-40	--	+85	°C
Storage Temperature		-55	--	+125	
Storage Humidity	Non-condensing	5	--	95	%RH
Pin welding can withstand the highest temperature	Soldering spot is 1.5mm away from case for 10 seconds	--	--	+300	°C
Switching Frequency	Full Load, Nominal Input Voltage	250	300	400	KHz
MTBF	MIL-HDBK-217F@25°C	>1000Kh			

Mechanical Specifications

Case Material	Black plastic; flame-retardant and heat-resistant (UL 94V-0 rated)
Package Dimensions	22.00 * 12.00 * 9.50 mm
Weight	4.8g (Typ.)
Cooling Method	Free air convection

EMC Specifications

EMI	CE	CISPR32/EN55032 CLASS B (The recommended circuit is shown in Figure 3-②)
	RE	CISPR32/EN55032 CLASS B (The recommended circuit is shown in Figure 3-②)
EMS	ESD	IEC/EN61000-4-2 Contact±4KV perf.Criteria B
	RS	IEC/EN61000-4-3 10V/m Perf.Criteria A
	EFT	IEC/EN61000-4-4 ±2KV (The recommended circuit is shown in Figure 3-①) Perf.Criteria B
	Surge	IEC/EN61000-4-5 line to line±2KV (The recommended circuit is shown in Figure 3-①) Perf.Criteria B
	Cs	IEC/EN61000-4-6 3 Vr.m.s Perf.Criteria A

Typical Characteristic Curves

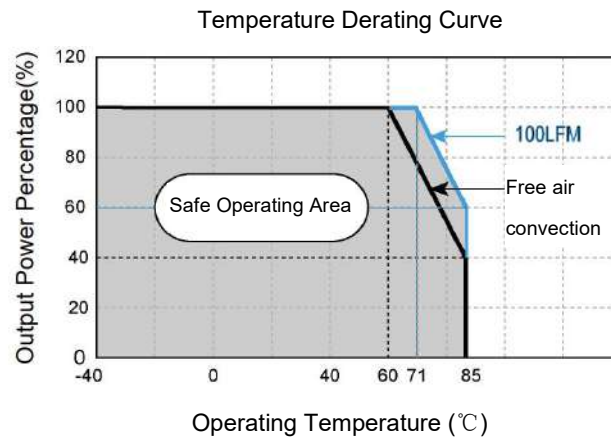
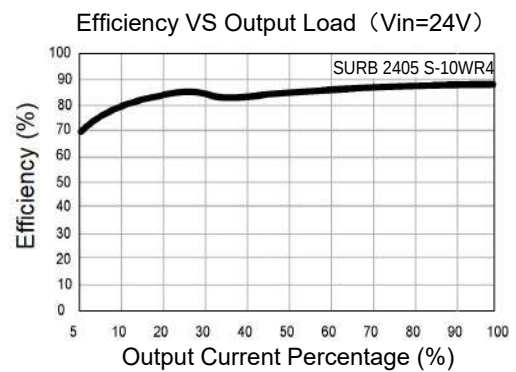
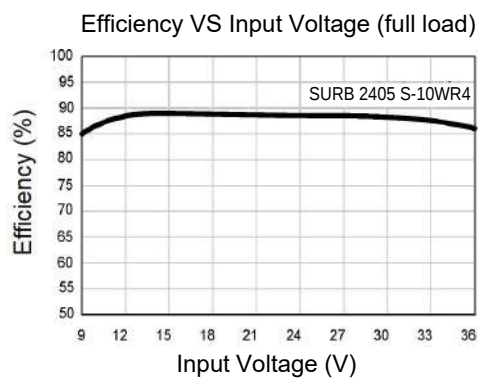
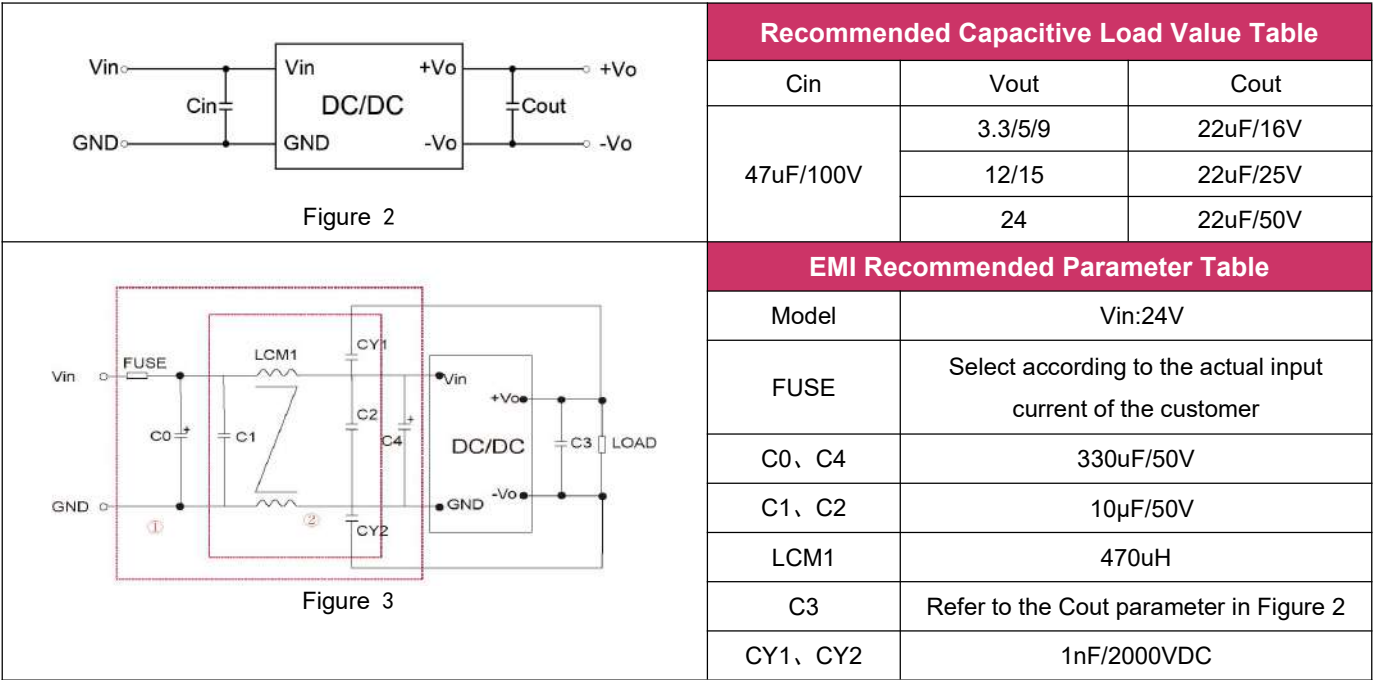


Figure 1



Circuit Design and Application



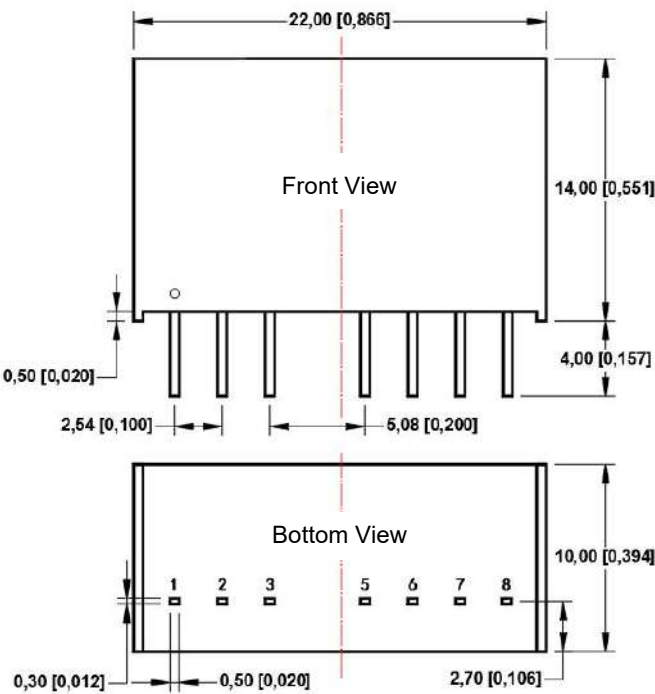
Note: Part 1 in Figure 3 is for EMC testing; The second part is used for EMI filtering, which can be selected according to the demand

- Note:**
- 1.The input voltage cannot exceed the specified range value, otherwise permanent and irreparable damage may be caused ;
 - 2. Unless otherwise specified,the parameters in this datasheet were measured at 25℃ , humidity 40%~75%, input nominal voltage and output pure resistance mode under full load;
 - 3. All index test methods are based on our company's enterprise standards.

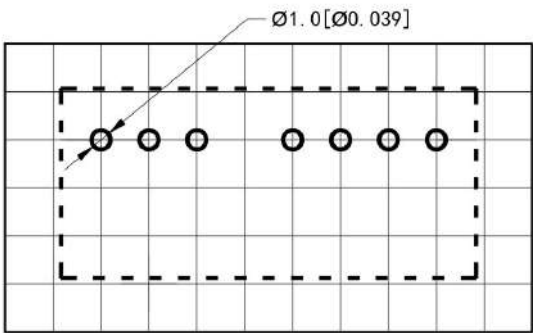
Dimensions and Recommended Layout

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 2.54mm*2.54mm

Pin	Function (single)	Function (double)
1	GND	GND
2	Vin	Vin
3	CTRL	CTRL
5	NC	NC
6	+Vo	+Vo
7	-Vo	COM
8	NC	-Vo

NC: Pin to be isolated from circuitry