Product Feature

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

RoHS CE 3 years Warranty

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)		
ATB2403S-10WR3	24 (9-36)	40	3.3	2400/0	83/85	2200
ATB2405S-10WR3			5	2000/0	86/88	2200
ATB2406S-10WR3			6	1667/0	86/88	1500
ATB2409S-10WR3			9	1111/0	86/88	680
ATB2410S-10WR3			10	1000/0	86/88	680
ATB2412S-10WR3			12	833/0	86/88	470
ATB2415S-10WR3			15	667/0	86/88	330
ATB2424S-10WR3			24	417/0	86/88	220
ATA2415S-10WR3			±15	±330/0	86/88	#100
ATB4805S-10WR3	48 (18-75)	80	5	2000/0	85/87	2200

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 Coeffcient	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	℃
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	℃
Switching Frequency	Full Load, Nominal Input Voltage	250	300	400	KHz
MTBF	MIL-HDBK-217F@25℃	>1000Kh			

Mechanical Specifications

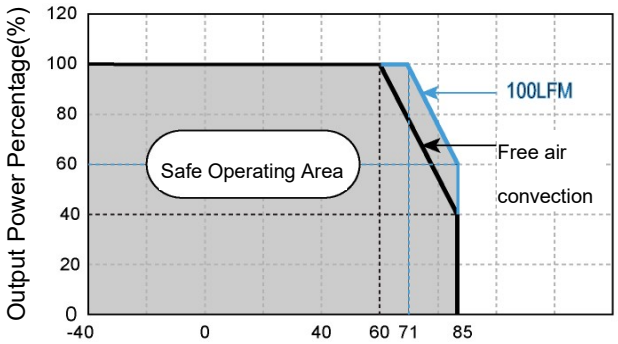
Case Material	Black plastic; flame-retardant and heat-resistant（UL 94V-0 rated）
Package Dimensions	22.00 * 12.00 * 9.50 mm
Weight	4.8g (Typ.)
Cooling Method	Free air convection

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

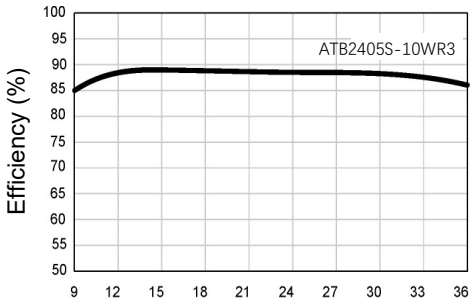
Temperature Derating Curve



Operating Temperature (℃)

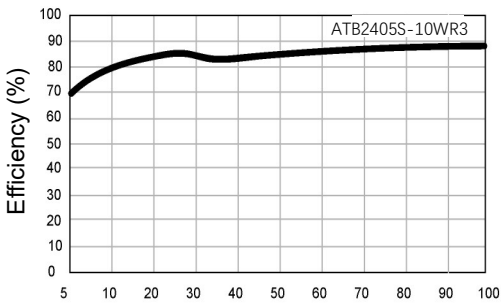
Figure 1

Efficiency VS Input Voltage (full load)



Input Voltage (V)

Efficiency VS Output Load



Output Current Percentage (%)

Circuit Design and Application

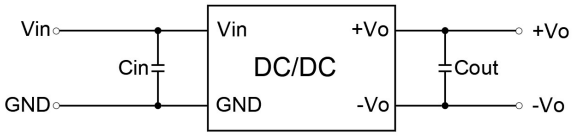


Figure 2

Recommended Capacitive Load Value Table		
Cin	Vout	Cout
47uF/100V	3.3/5/9	22uF/16V
	12/15	22uF/25V
	24	22uF/50V

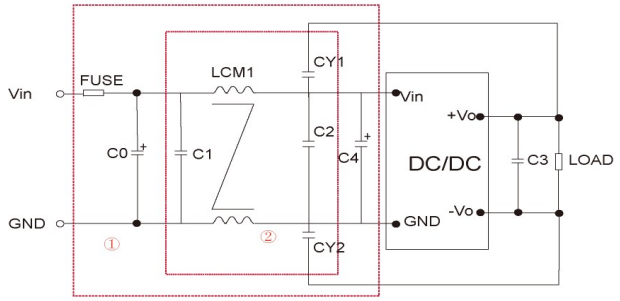


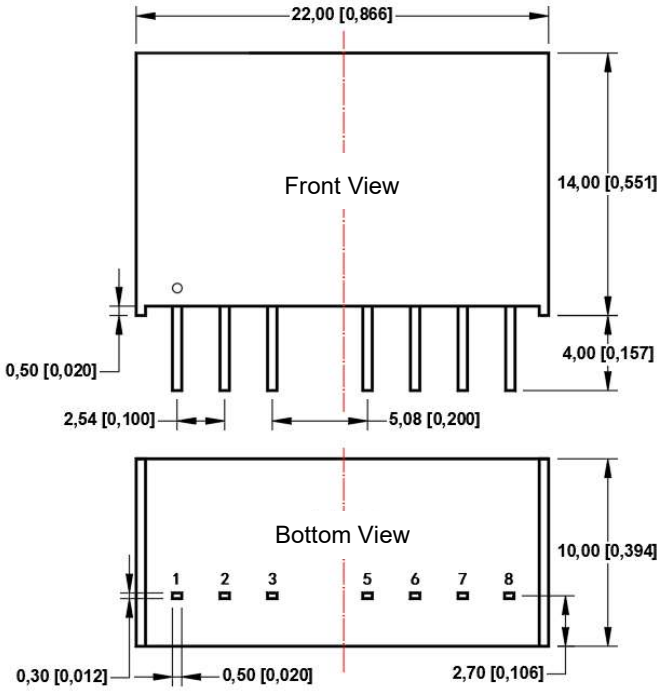
Figure 3

EMI Recommended Parameter Table	
Model	Vin:24V
FUSE	Select according to the actual input current of the customer
C0、C4	330uF/50V
C1、C2	10μF/50V
LCM1	470uH
C3	Refer to the Cout parameter in Figure 2
CY1、CY2	1nF/2000VDC

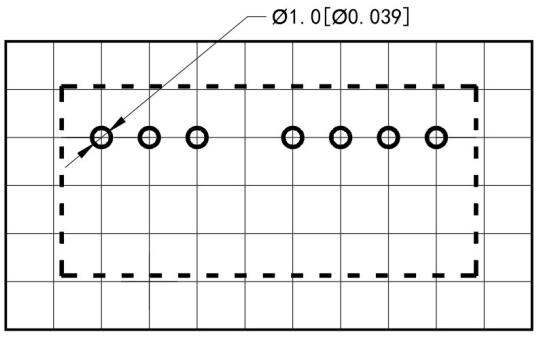
Note: Part 1 in Figure 3 is for EMC testing; The second part is used for EMI filtering, which can be selected according to the demand

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 circuity

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.