

SJ-3W Series

3W 4:1 Regulated Single & Dual output

Features

- Wide 4:1 Input Range
- Full SMD Technology
- 1500 VDC Isolation, Up to 3500 VDC
- Continuous Short Circuit Protection
- Efficiency up to 80%
- -40 ~ 85°C Operation Temperature Range
- Metal Case Standard, Optional Plastic Case



The SJ series is a family of cost effective 3W single & dual output DC-DC converters. These converters are consisted with Nickle-coated copper in a 24-pin DIL package with high performance features such as 1500 VDC ~ 3500VDC input/output isolation voltage, continuous short circuit protection with automatic restart and tight line / load regulation. Devices are encapsulated using flame retardant resin. Input voltages of 24 and 48 with output voltage of 3.3, 5, 9, 12, 15, 24, ±3.3, ±5, ±9, ±12, ±15 and ±24 Vdc. High performance features include high efficiency operation up to 80% and output voltage accuracy of ±1% maximum.

All specifications typical at Ta=25°C, nominal input voltage and full load unless otherwise specified

OUTPUT SPECIFICATIONS	
Voltage accuracy	±1%
Line regulation	±0.5%
Load regulation	±0.5%
	(Output 3.3V / ±3.3V Model) ±1.5%
Ripple & noise (20 MHz bandwidth)(1)	60mV pk-pk
Short circuit protection	Indefinite(Automatic Recovery)
Temperature coefficient	±0.02%/°C
Capacitor load(2)	See table
INPUT SPECIFICATIONS	
Voltage Range	See table
Max. Input Current	See table
No-Load Input Current	See table
Input Filter	PI Type
Input Reflected Ripple Current(3)	35mA pk-pk
GENERAL SPECIFICATIONS	
Efficiency	See table, typ
I/O Isolation Voltage(3 sec)	
Input/Output	1500~3500Vdc
Metal Case/Input & Output	1000Vdc
I/O Isolation Capacitance	470 pF Typ.
I/O Isolation Resistance	1000M Ohm
Switching Frequency	Typical 266kHz
Humidity	95% rel H
Reliability Calculated MTBF(MIL-HDBK-217 F)	>1.121 Mhrs
Safety Standard : (designed to meet)	IEC 60950-1:2001

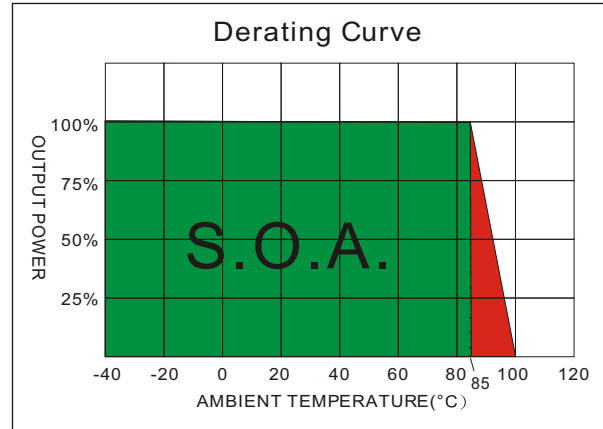
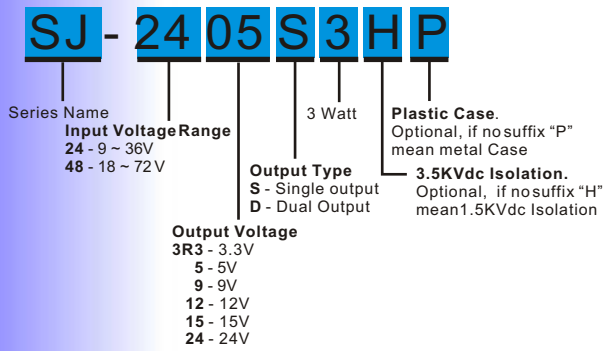
PHYSICAL SPECIFICATIONS	
Case Material	Nickel-coated Copper
	Non-conductive Black Plastic(UL94V-0 rated)
Base Material	Non-conductive Black Plastic(UL94V-0 rated)
Pin Material	Ø0.5mm Brass Solder-coated
Potting Material	Epoxy (UL94V-0 rated)
Weight	17.0g(Metal Case)/13.5g(Plastic Case)

ENVIRONMENT SPECIFICATIONS	
Operating Temperature	-40°C~85°C(See Derating Curve)
Maximum Case Temperature	100°C
Storage Temperature	-40°C~125°C
Cooling	Nature Convection

ABSOLUTE MAXIMUM RATINGS(4)	
These are stressratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.	
Input Voltage(100mS)	
24 Modes	-0.7~40 Vdc
48 Modes	-0.7~80 Vdc
Lead Soldering Temperature	260°C
(1.5mm from case 10sec.)	

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PART NUMBER STRUCTURE



MODEL SELECTION GUIDE

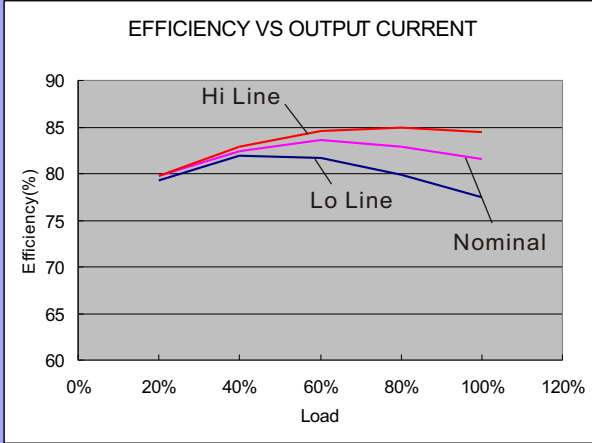
MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current		EFFICIENCY @FL(%)	Capacitor Load(uF)
		No-Load (mA)	Full Load (mA)		Min. load (mA)	Full load (mA)		
SJ-243R3S3	9-36	16	165	3.3	0	900	75	680
SJ-2405S3	9-36	16	160.3	5	0	600	78	470
SJ-2409S3	9-36	16	156.3	9	0	333	80	100
SJ-2412S3	9-36	16	156.3	12	0	250	80	68
SJ-2415S3	9-36	16	156.3	15	0	200	80	47
SJ-2424S3	9-36	16	156.3	24	0	125	80	22
SJ-243R3D3	9-36	16	165	±3.3	0	±454	75	±330
SJ-2405D3	9-36	16	160.3	±5	0	±300	78	±220
SJ-2409D3	9-36	16	156.3	±9	0	±166	80	±47
SJ-2412D3	9-36	16	156.3	±12	0	±125	80	±33
SJ-2415D3	9-36	16	156.3	±15	0	±100	80	±22
SJ-2424D3	9-36	16	156.3	±24	0	±63	80	±10
SJ-483R3S3	18-72	14	82.5	3.3	0	900	75	680
SJ-4805S3	18-72	14	80.1	5	0	600	78	470
SJ-4809S3	18-72	14	78.1	9	0	333	80	100
SJ-4812S3	18-72	14	78.1	12	0	250	80	68
SJ-4815S3	18-72	14	78.1	15	0	200	80	47
SJ-4824S3	18-72	14	78.1	24	0	125	80	22
SJ-483R3D3	18-72	14	83.3	±3.3	0	±454	75	±330
SJ-4805D3	18-72	14	80.1	±5	0	±300	78	±220
SJ-4809D3	18-72	14	78.1	±9	0	±166	80	±47
SJ-4812D3	18-72	14	78.1	±12	0	±125	80	±33
SJ-4815D3	18-72	14	78.1	±15	0	±100	80	±22
SJ-4824D3	18-72	14	78.1	±24	0	±63	80	±10

Suffix "H" means 3.5KVdc isolation
 Suffix "P" means Plastic case instead of standard Metal Case

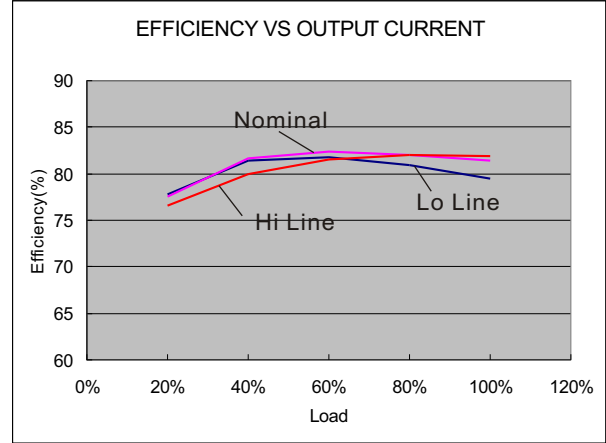
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NOTE

1. Typical value at nominal input voltage and full load.
2. Test by nominal input voltage and constant resistor load.
3. Measured Input reflected ripple current with a simulated source inductance of 12uH.
4. Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.

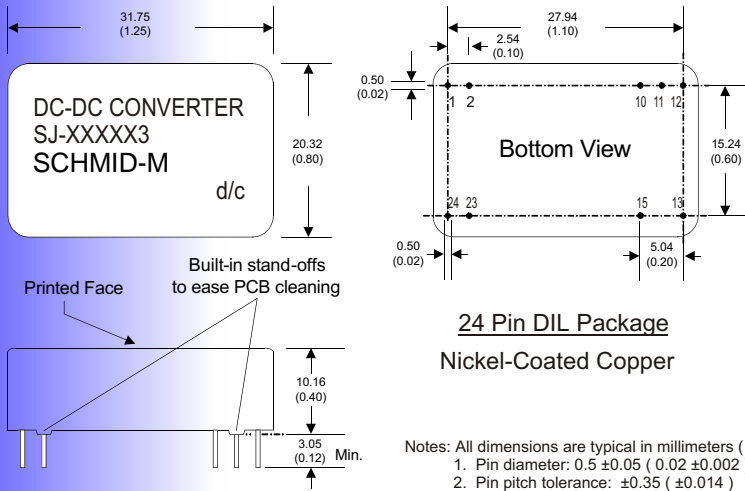


24 Models



48 Models

MECHANICAL SPECIFICATIONS

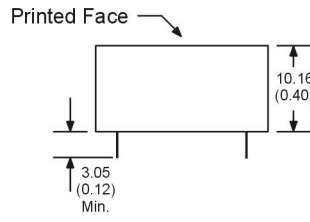
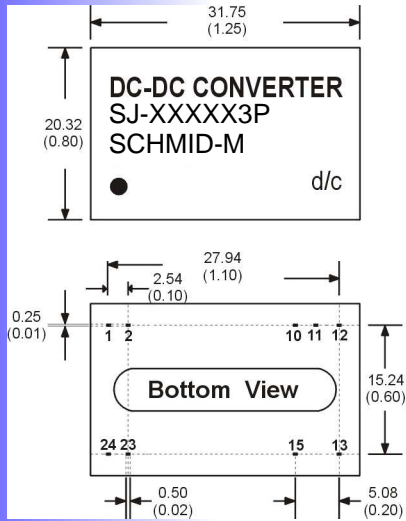


PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
1	+V Input	+V Input
2	+V Input	+V Input
10	N.C.	Common
11	N.C.	Common
12	-V Output	N.C.
13	+V Output	-V Output
15	N.C.	+V Output
23	-V Input	-V Input
24	-V Input	-V Input

(The Pin Connection of high isolation one is the same with normal one.)

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MECHANICAL SPECIFICATIONS



For "P" Case

24 Pin DIL Package
Non-Conductive Plastic

- Notes: All dimensions are typical in millimeters (inches).
1. Pin diameter: 0.5 ± 0.05 (0.02 ± 0.002)
 2. Pin pitch tolerance: ± 0.35 (± 0.014)
 3. Case Tolerance: ± 0.5 (± 0.02)

PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
1	+V Input	+V Input
2	+V Input	+V Input
10	N.C.	Common
11	N.C.	Common
12	-V Output	N.C.
13	+V Output	-V Output
15	N.C.	+V Output
23	-V Input	-V Input
24	-V Input	-V Input

(The Pin Connection of high isolation one is the same with normal one.)