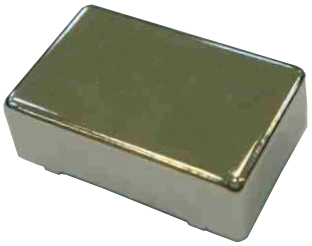
SCHMID-M

SJ-5W Series

5W 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 82%
- -40 ~ 85°C Operation Temperature Range
- Metal Case Standard, Optional Plastic Case

The SJ series is a family of cost effective 5W 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 82% 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

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)
Dimensions	1.25"x0.8"x0.4"

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 stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.

Input Surge Voltage(100mS)	
24 Models	40 Vdc max.
48 Models	80 Vdc max.
Soldering Temperature (1.5mm from case 10sec. max.)	260°C max.

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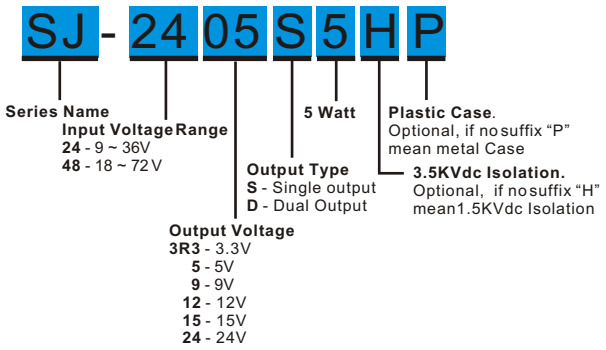
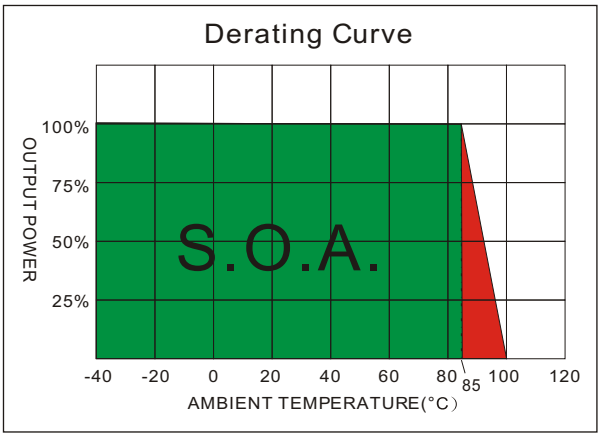
SJ - 5W 4:1 Regulated Single & Dual output

PART NUMBER STRUCTURE



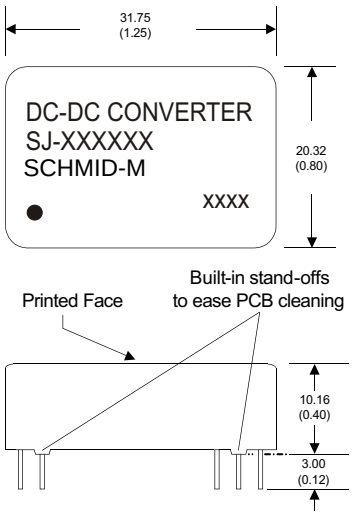


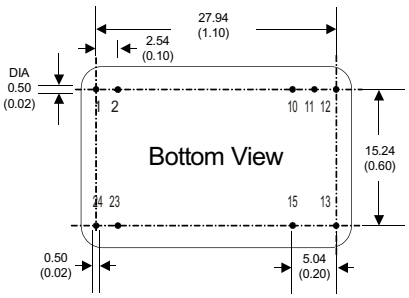
MODEL SELECTION GUIDE

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current No-Load (mA)	INPUT Current Full Load (mA)	OUTPUT Voltage (Vdc)	OUTPUT Current Min. load (mA)	OUTPUT Current Full load (mA)	EFFICIENCY @FL(%)	Capacitor Load(uF)
SJ-243R3S5	9-36	18	238.3	3.3	0	1300	75	1000
SJ-2405S5	9-36	18	260.4	5	0	1000	80	680
SJ-2409S5	9-36	18	257.2	9	0	555	81	220
SJ-2412S5	9-36	18	257.2	12	0	416	81	100
SJ-2415S5	9-36	18	254.1	15	0	333	82	100
SJ-2424S5	9-36	18	260.4	24	0	208	80	47
SJ-243R3D5	9-36	18	281.5	±3.3	0	±757	74	±470
SJ-2405D5	9-36	18	260.4	±5	0	±500	80	±330
SJ-2409D5	9-36	18	257.2	±9	0	±277	81	±68
SJ-2412D5	9-36	18	257.2	±12	0	±208	81	±47
SJ-2415D5	9-36	18	254.1	±15	0	±166	82	±47
SJ-2424D5	9-36	18	260.4	±24	0	±104	80	±22
SJ-483R3S5	18-72	15	119.2	3.3	0	1300	75	1000
SJ-4805S5	18-72	15	130.2	5	0	1000	80	680
SJ-4809S5	18-72	15	128.6	9	0	555	81	220
SJ-4812S5	18-72	15	128.6	12	0	416	81	100
SJ-4815S5	18-72	15	127	15	0	333	82	100
SJ-4824S5	18-72	15	130.2	24	0	208	80	47
SJ-483R3D5	18-72	15	140.7	±3.3	0	±757	74	±470
SJ-4805D5	18-72	15	130.2	±5	0	±500	80	±330
SJ-4809D5	18-72	15	128.6	±9	0	±277	81	±68
SJ-4812D5	18-72	15	128.6	±12	0	±208	81	±47
SJ-4815D5	18-72	15	127	±15	0	±166	82	±47
SJ-4824D5	18-72	15	130.2	±24	0	±104	80	±22

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

MECHANICAL SPECIFICATIONS





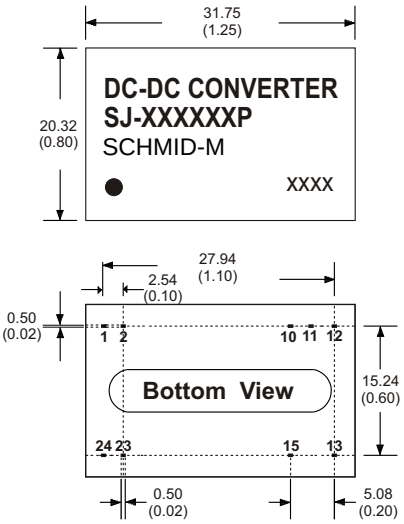
24 Pin DIL Package
Nickel-Coated Copper

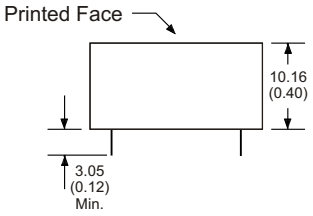
Notes: All dimensions are typical in millimeters (inches).
1. Pin diameter: 0.5 ±0.05 (0.02 ±0.002)
2. Pin pitch and length tolerance: ±0.35 (±0.014)
3. Case Tolerance: ±0.5 (±0.02)

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.)

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 and length 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.)

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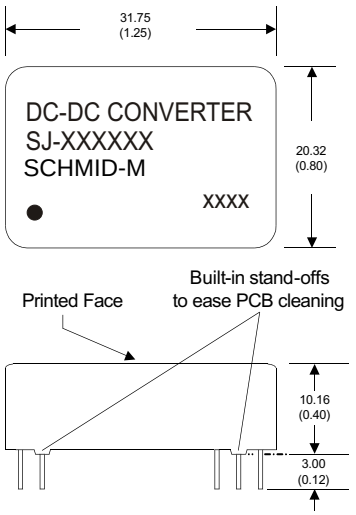
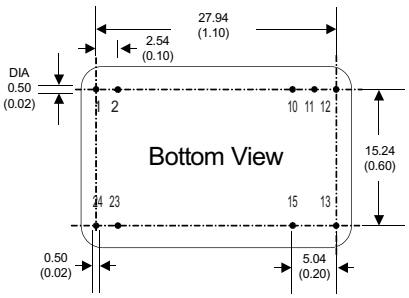
MECHANICAL SPECIFICATIONS





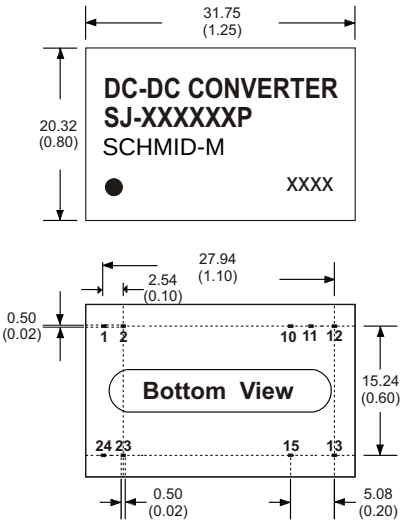
24 Pin DIL Package
Nickel-Coated Copper

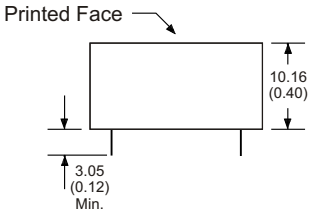
Notes: All dimensions are typical in millimeters (inches).
1. Pin diameter: 0.5 ±0.05 (0.02 ±0.002)
2. Pin pitch and length tolerance: ±0.35 (±0.014)
3. Case Tolerance: ±0.5 (±0.02)

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.)

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 and length 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.)

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