

# SD-8W Series

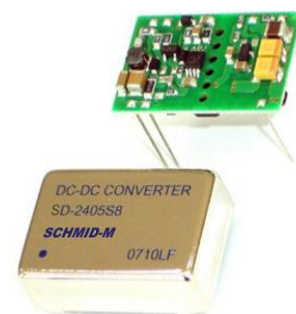
8W 2:1 Regulated Single & Dual output

## Features

- Wide 2:1 Input Range
- Full SMD Technology
- 1500 VDC Isolation
- Continuous Short Circuit Protection
- Efficiency up to 85%
- -40 ~ 85°C Operation Temperature Range
- High Power Density: 8W in DIL-24 Package



# SCHMID-M



The SD-8W series are a family of high performance 8W single & dual output DC/DC converters. These converters are consisted with nickel plated copper Dual in Line 24 pin package. The high performance features include: Synchronous Rectification, high efficiency and tight line/load regulation. Devices are encapsulated with high grade flameproof epoxy with UL94V-0 recognize. Input voltages of 12, 24 and 48 with output voltage of 3.3, 5, 12, 15,  $\pm 5$ ,  $\pm 12$ ,  $\pm 15$ . High performance features include high efficiency operation up to 85% and output voltage accuracy of  $\pm 1\%$  maximum.

All specifications typical at  $T_a=25^\circ\text{C}$ , nominal input voltage and full load unless otherwise specified

OUTPUT SPECIFICATIONS	
Voltage accuracy	$\pm 1\%$
Line Regulation	$\pm 0.5\%$
Load Regulation ( $I_o=10\%$ to 100%)	$\pm 0.5\%$
( $I_o=10\%$ to 100%, only 3.3V)	$\pm 0.7\%$
Cross Regulation (Dual Output) (1)	$\pm 5\%$
Over Current Protection	150% of FL, typ
Ripple & noise (20 MHz bandwidth)(2)	75mV pk-pk
Short circuit protection	Indefinite (Automatic Recovery)
Temperature coefficient	$\pm 0.02\%/^\circ\text{C}$
Capacitor load(3)	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(4)	35mA pk-pk

GENERAL SPECIFICATIONS	
Efficiency	See table, typ
I/O Isolation Voltage(3 sec)	
Input/Output	1500Vdc
Metal Case/Input & Output	1000Vdc
I/O Isolation Capacitance	1000 pF Typ.
I/O Isolation Resistance	1000M Ohm
Switching Frequency	Typical 330kHz
Humidity	95% rel H
Reliability Calculated MTBF(MIL-HDBK-217 F)	>0.91 Mhrs
Safety Standard : (designed to meet)	IEC 60950

EMC CHARACTERISTICS		
Radiated Emissions	EN55022	CLASS A
Conducted Emissions(7)	EN55022	CLASS A
ESD	EN61000-4-2	Perf. Criteria B
RS	EN61000-4-3	Perf. Criteria A
EFT(8)	EN61000-4-4	Perf. Criteria B
Surge (8)	EN61000-4-5	Perf. Criteria B
CS	EN61000-4-6	Perf. Criteria A
PFMF	EN61000-4-8	Perf. Criteria A

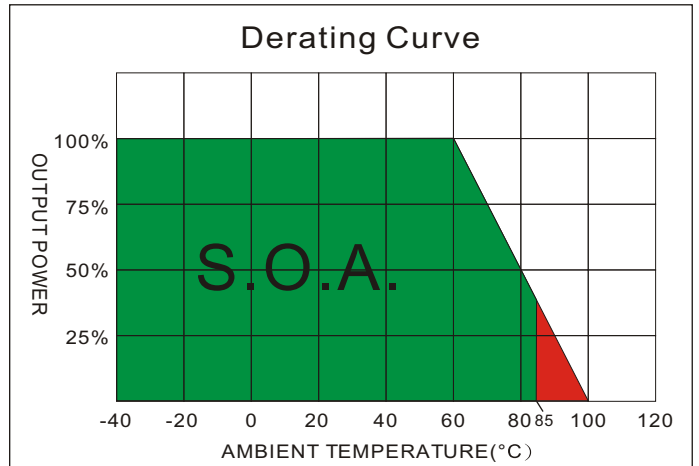
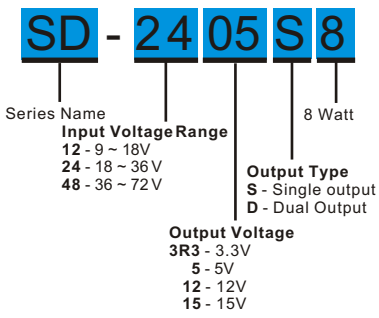
PHYSICAL SPECIFICATIONS	
Case Material	Nickel-coated Copper
Pin Material	$\varnothing 0.5\text{mm}$ Brass Solder-coated
Potting Material	Epoxy (UL94V-0 rated)
Weight	17.0g
Dimensions	1.25"x0.8"x0.4"

ENVIRONMENT SPECIFICATIONS	
Operating Temperature	-40°C~85°C (See Derating Curve)
	-40°C~60°C (For 100% load)
Maximum Case Temperature	100°C
Storage Temperature	-40°C~125°C
Cooling	Nature Convection

ABSOLUTE MAXIMUM RATINGS(9)	
These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.	
Input Voltage(100mS)	
12 Modes	-0.7~24 Vdc
24 Modes	-0.7~40 Vdc
48 Modes	-0.7~100 Vdc
Lead Soldering Temperature	260°C
(1.5mm from case 10sec.)	

# SD - 8W 2:1 Regulated Single & Dual output

## PARTNUMBER STRUCTURE

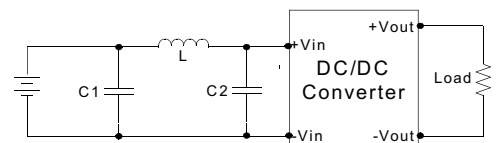


## MODEL SELECTION GUIDE

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current		EFFICIENCY @FL(%)	Capacitor Load(μF)
		No-Load (mA)	Full Load (mA)		Min. load (mA)	Full load (mA)		
SD-123R3S8	9-18	20	687	3.3	0	2000	80	3300
SD-1205S8	9-18	20	762	5	0	1500	82	2200
SD-1212S8	9-18	20	784	12	0	665	85	470
SD-1215S8	9-18	20	803	15	0	535	83	220
SD-1205D8	9-18	20	813	±5	0	±800	82	±1000
SD-1212D8	9-18	20	794	±12	0	±335	84	±220
SD-1215D8	9-18	20	794	±15	0	±265	84	±100
SD-243R3S8	18-36	15	344	3.3	0	2000	80	3300
SD-2405S8	18-36	15	381	5	0	1500	82	2200
SD-2412S8	18-36	15	392	12	0	665	85	470
SD-2415S8	18-36	15	397	15	0	535	84	220
SD-2405D8	18-36	15	407	±5	0	±800	82	±1000
SD-2412D8	18-36	15	402	±12	0	±335	83	±220
SD-2415D8	18-36	15	392	±15	0	±265	85	±100
SD-483R3S8	36-72	15	172	3.3	0	2000	80	3300
SD-4805S8	36-72	15	191	5	0	1500	82	2200
SD-4812S8	36-72	15	198	12	0	665	84	470
SD-4815S8	36-72	15	198	15	0	535	84	220
SD-4805D8	36-72	15	203	±5	0	±800	82	±1000
SD-4812D8	36-72	15	196	±12	0	±335	85	±220
SD-4815D8	36-72	15	196	±15	0	±265	85	±100

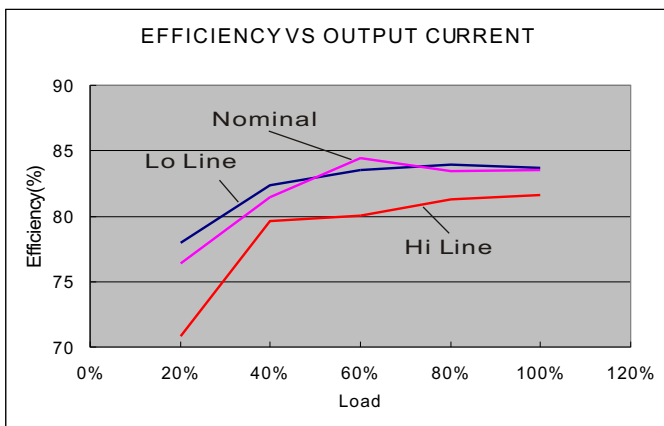
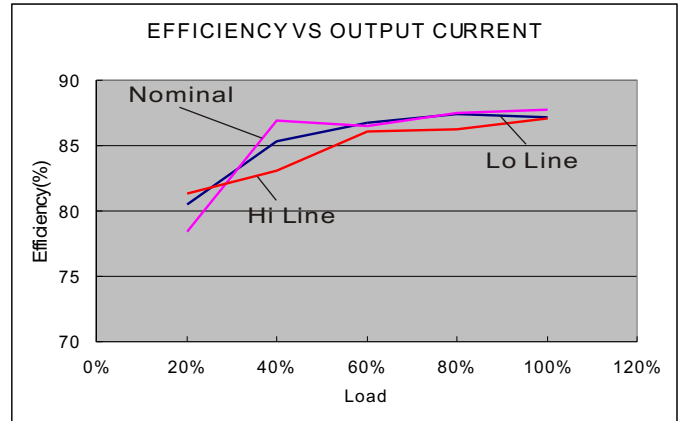
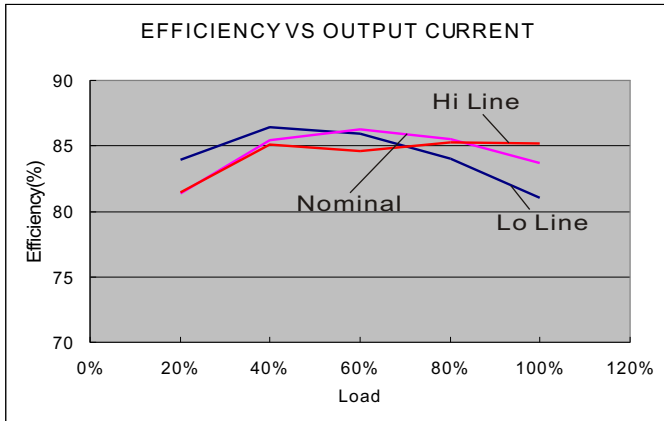
## NOTE

- One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
- Typical value at nominal input voltage and full load.
- Test by nominal input voltage and constant resistor load.
- Measured Input reflected ripple current with a simulated source inductance of 12μH.
- Operation under no-load and 10% conditions will not damage these devices, however they may not meet all listed specifications.
- It's necessary to add minimum capacitor in output for some models, please check single model datasheet for detail value.
- Input filter components (C1, C2, L) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.
- An external filter capacitor is required if the module has to meet EN61000-4-4 and EN61000-4-5. The filter capacitor SCHMID-M suggest: Nippon - chemi - con KY series, 220μF/100V.
- Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.

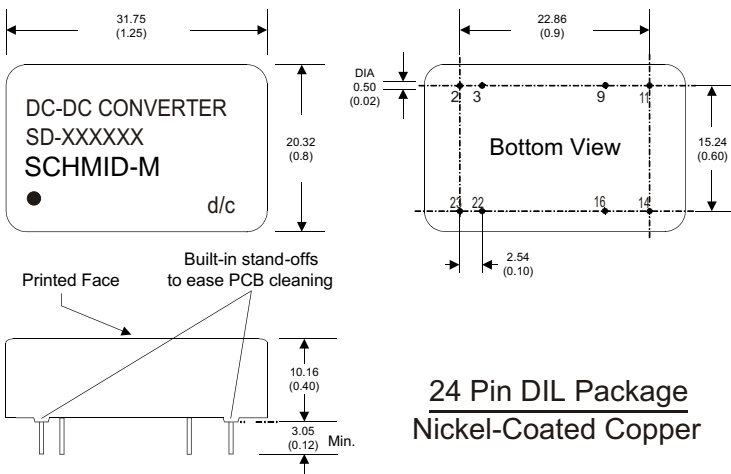


	C1	L	C2
SD-12XXXXX	100μF, 100V	12μH	N/A
SD-24XXXXX	100μF, 100V	12μH	N/A
SD-48XXXXX	100μF, 100V	12μH	N/A

## SD - 8W 2:1 Regulated Single & Dual output



## MECHANICAL SPECIFICATIONS



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

PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
2	-V Input	-V Input
3	-V Input	-V Input
9	N.P.	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input