

# SFD-0505S5



ISSUE DATE : 27.APR,2015

Rev.2

5.0 W 2:1 Wide Input Single Output Regulated DC/DC converter



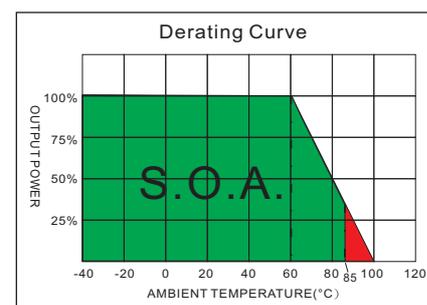
## Note: This data sheet only for reference.

ALL SPECIFICATIONS ARE TYPICAL AT 25°C, NOMINAL INPUT AND FULL LOAD UNLESS OTHERWISE NOTED.

OUTPUT SPECIFICATIONS		GENERAL SPECIFICATIONS	
Output Voltage	5Vdc, ±1%	Efficiency	75%, min.
Output Current ( Full Load )	1000mA, max.	Isolation Voltage (60sec)	
Line Regulation	±0.5%, max.	Input / Output	1500Vdc
Load Regulation( Io=0% to 100%)	±0.5%, max.	Case/Input & Output	1000Vdc
Ripple&Noise (20 Mhz bandwidth) (1)	60mVpk-pk, max.	Isolation Resistance	1000 MΩ, min.
Short Circuit Protection	Indefinite(hiccup) (Automatic Recovery)	I/O Isolation Capacitance	500 pF, typ.
Over Current protection(input:5V)	150% of FL,typ.	Switching frequency	266kHz, typ.
Temperature Coefficient	±0.02%/°C	Humidity	95% rel H
Capacitive Load ( For each output ) (2)	1000uF, max.	Reliability Calculated MTBF(MIL-HDBK-217F)	>1.121Mhrs
Transient Recovery Time(3)	250us,typ.	Safety Standard : (designed to meet)	IEC 60950-1
Transient Response Deviation(3)	±3%,max.		
INPUT SPECIFICATIONS		PHYSICAL SPECIFICATIONS	
Input Voltage Range	4.5V-9V, 5Vdc Nominal	Case Material	Nickel-coated Copper
Start Up Time (Nominal Vin and constant resistive load)	20mS, typ.	Pin Material	Φ0.5mm Brass Solder-coated
Input Filter	LC Type	Potting Material	Epoxy (UL94V-0 rated)
Input Current (No-Load)	25mA, max.	Weight	17.0g
Input Current (Full-Load)	1333mA, typ.	Dimensions	1.25"x0.8"x0.40"
Input Reflected Ripple Current (4)	35mApk-pk, typ.		
ABSOLUTE SPECIFICATIONS (5)		EMC CHARACTERISTICS	
These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.		Radiated Emissions	EN55022 CLASS A
Input Surge Voltage(100mS)	15Vdc ,max.	Conducted Emissions (6)	EN55022 CLASS A
Soldering Temperature (1.5mm from case 10 sec. max.)	260°C, max.	ESD	IEC 61000-4-2 Perf. Criteria A
		RS	IEC 61000-4-3 Perf. Criteria A
		EFT(6)	IEC 61000-4-4 Perf. Criteria A
		Surge(6)	IEC 61000-4-5 Perf. Criteria A
		CS	IEC 61000-4-6 Perf. Criteria A
		PFMF	IEC 61000-4-8 Perf. Criteria A
ENVIRONMENTAL SPECIFICATIONS (7)			
Operating Ambient 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		

### NOTE

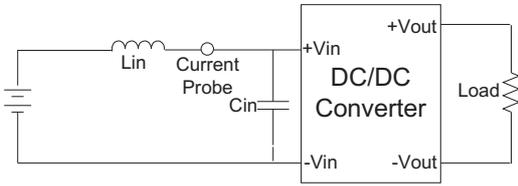
1. Measured with 20MHz bandwidth and 1.0uF ceramic capacitor.
2. Test by nominal input voltage and constant resistor load.
3. Tested by normal Vin and 25% load step change ( 75%-50%-25% of Io ).
4. Measured Input reflected ripple current with a simulated source inductance of 12uH and a source capacitor Cin(100uF, ESR<1.0Ω at 100KHz).
5. Exceeding the absolute ratings of the unit could cause damage.  
It is not allowed for continuous operating.
6. Input filter components are be required to help meet conducted emission class A, IEC61000-4-4 and IEC61000-4-5,  
which application refer to the EMI Filter of design & feature configuration.
- 7.



## TEST CONFIGURATIONS

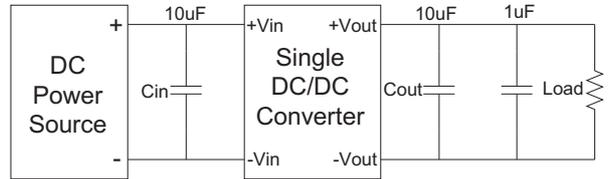
### Input Reflected Ripple Current Test Step

Input reflected ripple current is measured through a source inductor  $L_{in}$  (12uH) and a source capacitor  $C_{in}$  (100uF, ESR<1.0Ω at 100KHz) at nominal input and full load.



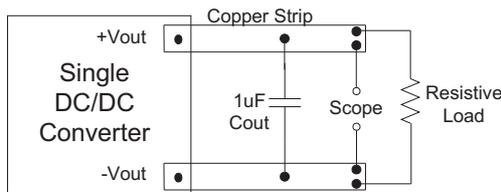
### Output Ripple & Noise Reduction

To reduce ripple and noise, it is recommended to use a 1uF ceramic disk capacitor and a 10uF electrolytic capacitor to at the output.



### Output Ripple & Noise Measurement Test

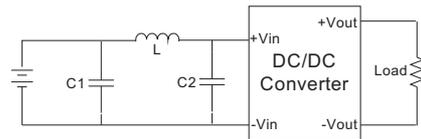
Use a capacitor  $C_{out}$  (1.0uF) measurement. The Scope measurement bandwidth is 0-20MHz.



### EMI Filter

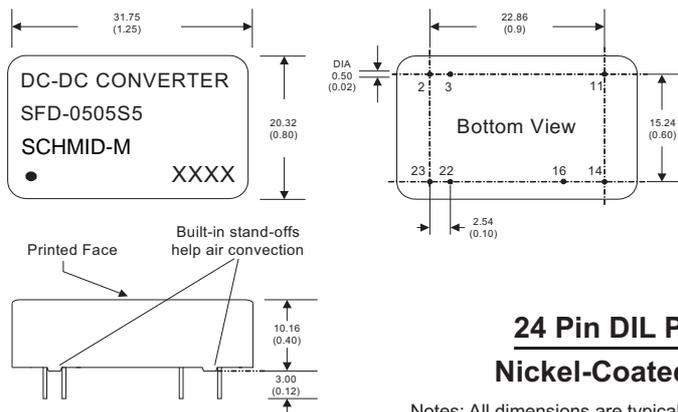
Input filter components ( $C_1$ ,  $C_2$ ,  $L$ ) are used to help meet conducted emissions, IEC61000-4-4 and IEC61000-4-5, requirement for the module.

These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.



C1	L	C2
330uF, 100V	1.8uH	470uF, 100V

## MECHANICAL DIMENSION



### 24 Pin DIL Package Nickel-Coated Copper

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

Pin #	STANDARD
2	Single
3	-V Input
11	N.C
14	+V Output
16	-V Output
22	+V Input
23	+V Input