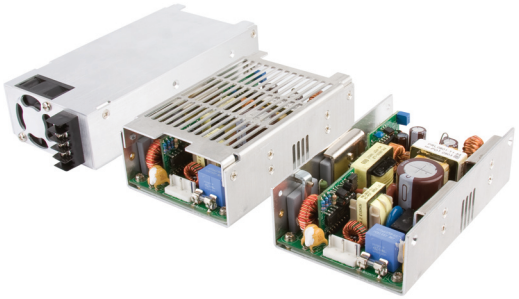
300 Watts
SDF Series



- 3.2”x 5” Footprint
- Fits 1U Applications
- High Efficiency
- Up to 600 W Peak Power
- Single & Dual Outputs
- Output Voltages from 5 V to 54 V
- 3 Year Warranty

Specification

Input

Input Voltage	• 90-264 VAC
Input Frequency	• 47-63 Hz
Input Current	• 5.0 A at 90 VAC, 2 A at 230 VAC
Inrush Current	• Max 70 A at 230 VAC, 35 A at 115 VAC, cold start 25 °C
Power Factor	• >0.9
Earth Leakage Current	• <1 mA at 264 VAC
Input Protection	• F5 A / 350 V internal in line fuse

Output

Output Voltage	• See table
Output Voltage Trim	• ±5% on V1 (V2 of dual output models will track by same % of adjustment)
Initial Set Accuracy	• ±1%
Minimum Load	• 1% on single output models, 10% on both outputs of dual output models
Start Up Delay	• 1.5 s max at 120 VAC
Start Up Rise Time	• 100 ms typical
Hold Up Time	• 16 ms min at 80% of full load, 120 VAC
Line Regulation	• ±0.5%
Load Regulation	• ±1% 1-100% load for single outputs ±3% V1, ±7% V2 for dual output models (except 0512, ±10% on V2)
Over/Undershoot	• 5% max
Transient Response	• 5% max deviation, recovery to within 1% in 2.5 ms for a 50% load change
Ripple & Noise	• 1% pk-pk (see note 1)
Overvoltage Protection	• 105-130% Vnom on output V1, recycle input to reset
Overtemperature Protection	• Measured internally with auto recovery
Overload Protection	• 110-140%
Short Circuit Protection	• Trip & restart (hiccup mode), auto recovery
Remote On/Off	• Requires a low signal to inhibit output
Fan Supply	• 12 VDC, 300 mA, not available on ‘-F’, ‘-E’ or ‘-K’ versions with built-in fan

General

Efficiency	• Single output models: typically 87% Dual output models: typically 82%
Isolation	• 3000 VAC Input to Output 1500 VAC Input to Ground 250 VDC Output to Ground
Switching Frequency	• 40-66 kHz PFC variable, 55 kHz - 75 kHz PWM fixed
Power Density	• 12.5 W/in^3
Signals	• Power Good goes Hi 100-500 ms after output is in regulation and goes Low at least 1 ms before loss of regulation
MTBF	• 110 kHrs to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	• 0 °C to +70 °C, derate at 2.5%/ °C from +50 °C to +70 °C
Storage Temperature	• -20 °C to +85 °C
Operating Humidity	• 5-90%, non-condensing
Storage Humidity	• 5-95%, non-condensing
Cooling	• ‘-F’, ‘-E’ & ‘-K’ versions have built-in fan, others require 15 CFM to meet forced air ratings
Operating Altitude	• 3000 m
Vibration	• 5-50 Hz, acceleration 7.35 m/s^2 on X, Y and Z axis

EMC & Safety

Emissions	• EN55032 Level B conducted & radiated
Harmonic Currents	• EN61000-3-2 class A EN61000-3-2 class C for loads ≥20%
Voltage Flicker	• EN61000-4-2, level 3 Perf Criteria A
ESD Immunity	• EN61000-3-3
Radiated Immunity	• EN61000-4-3, 3 V/m Perf Criteria A
EFT/Burst	• EN61000-4-4, level 2 Perf Criteria A
Surge	• EN61000-4-5, installation class 3, Perf Criteria A
Conducted Immunity	• EN61000-4-6, 3V Perf Criteria A
Dips & Interruptions	• EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms, Perf Criteria A, B, B
Safety Approvals	• UL62368-1, CSA62368-1 via cUL, EN62368-1, CE & UKCA meets all applicable directives & legislation.

Models and Ratings

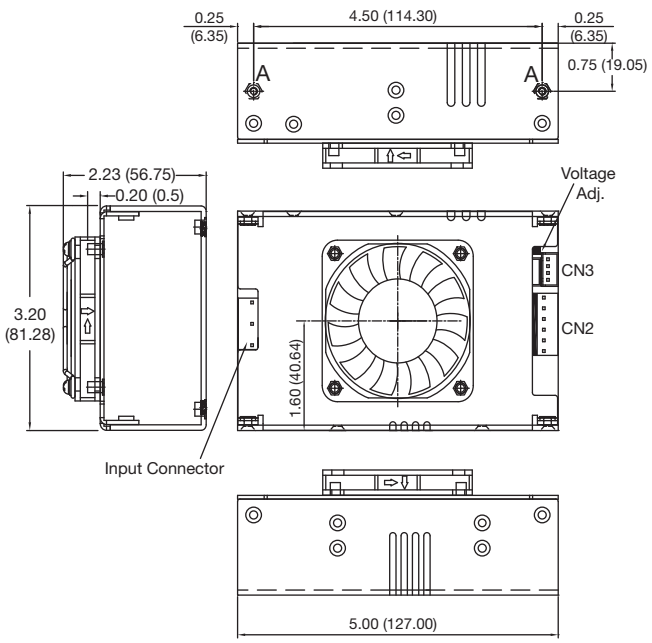
Output Voltage	Output Power	Output Current		Model Number[3,4,5,6]
		Nominal	Peak[2]	
5 V	210 W	42.00 A	120.00 A	SDF300PS05[7]
9 V	245 W	27.27 A	66.67 A	SDF300PS09[7]
12 V	300 W	25.00 A	50.00 A	SDF300PS12
15 V	300 W	20.00 A	40.00 A	SDF300PS15
18 V	300 W	16.67 A	33.30 A	SDF300PS18[7]
24 V	300 W	12.50 A	25.00 A	SDF300PS24
28 V	300 W	10.70 A	21.43 A	SDF300PS28[7]
36 V	300 W	8.33 A	16.67 A	SDF300PS36[7]
48 V	300 W	6.25 A	12.50 A	SDF300PS48
54 V	300 W	5.56 A	11.10 A	SDF300PS54[7]
V1: +5.00 V V2: +12.0 V	240 W	24.00 A 13.33 A	28.80 A 16.00 A	SDF300PD0512[7]
V1: +5.00 V V2: +24.0 V	240 W	24.00 A 6.67 A	28.80 A 8.00 A	SDF300PD0524[7]
V1: +5.00 V V2: +48.0 V	240 W	24.00 A 3.33 A	28.80 A 4.00 A	SDF300PD0548[7]
V1: +12.0 V V2: +24.0 V	240 W	13.33 A 6.67 A	16.00 A 8.00 A	SDF300PD1224[7]

Notes

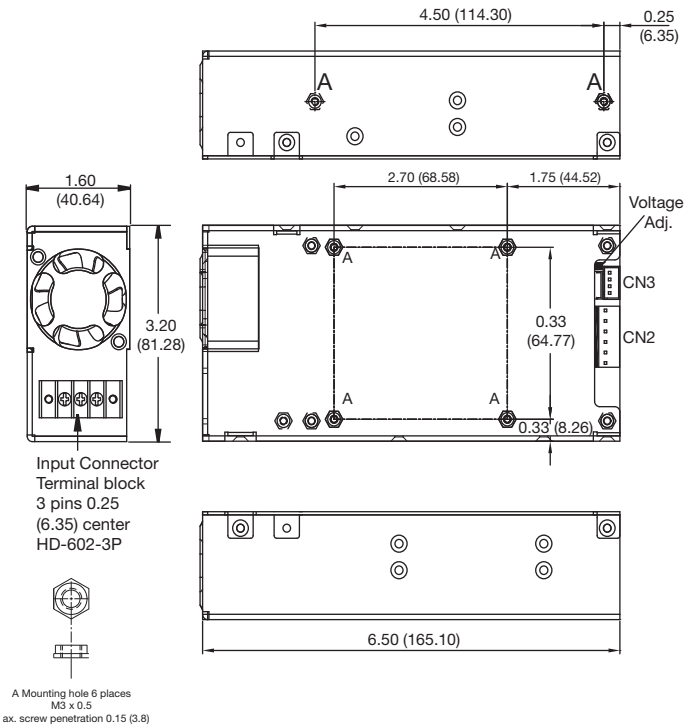
1. *Ripple & noise is measured using a 0.1 µF ceramic capacitor in parallel with 22 µF electrolytic and 20 MHz bandwidth*
2. *Peak load can be taken for 500 µs. Average power not to exceed max power.*
3. *Add suffix '-F' for top fan cover option e.g. SDF300PS24-F*
   Add suffix '-E' for end fan cover with screw terminal option e.g. SDF300PS24-E
   Add suffix '-K' for end fan cover with IEC inlet option e.g. SDF300PS24-K
4. *Add suffix 'D' for optional output terminal block on single output models except the 5 V, 9 V and 12 V output models which are only available with output terminal blocks eg. SDF300PS24D-F.[7]*
5. *Add suffix 'G' for optional input terminal blocks eg. SDF300PS24DG-F, except for enclosed with end fan (option '-E') which has input terminal blocks as standard.[7]*
6. *Add suffix 'H' for optional molex output terminal on dual output models used in convection applications.[7]*
7. *Available for OEM quantities, contact Sales.*

Mechanical Details

Enclosed with top fan (Option -F)



Enclosed with end fan (Option -E)



Notes

1. All dimensions are in inches (mm
2. Tolerance: ±0.012 (±0.3)
3. Weight: Enclosed with top fan (option '-F'): 1.23 lbs (560 g)
   Enclosed with end fan (option '-E' &'-K'): 1.32 lbs (600 g)
4. Mounting holes and mating half connectors common to all models.

Models and Ratings

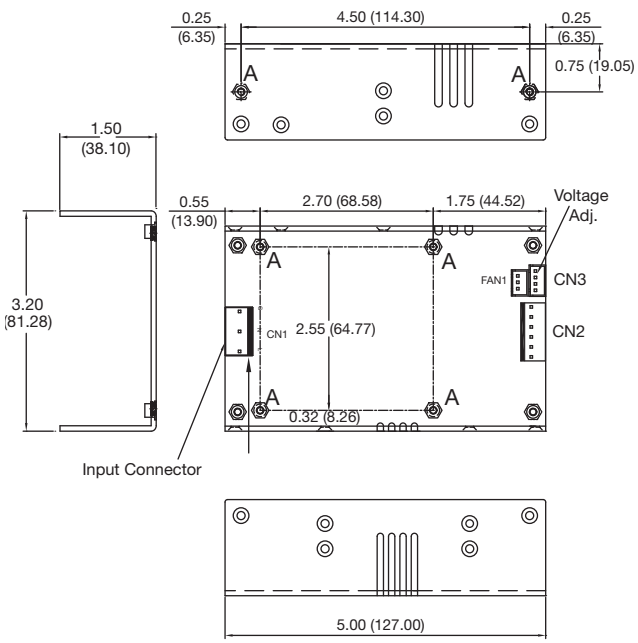
Output Voltage	Output Power		Output Current			Model Number[3,4,5,6]
	Forced Cooled	Convection Cooled	Forced Cooled	Convection Cooled	Peak[2]	
5 V	210 W	100 W	42.00 A	20.00 A	120.00 A	SDF300PS05[7]
9 V	245 W	120 W	27.27 A	13.36 A	66.67 A	SDF300PS09[7]
12 V	300 W	150 W	25.00 A	12.50 A	50.00 A	SDF300PS12
15 V	300 W	150 W	20.00 A	10.00 A	40.00 A	SDF300PS15
18 V	300 W	150 W	16.67 A	8.33 A	33.30 A	SDF300PS18[7]
24 V	300 W	150 W	12.50 A	6.25 A	25.00 A	SDF300PS24
28 V	300 W	150 W	10.70 A	5.35 A	21.43 A	SDF300PS28[7]
36 V	300 W	150 W	8.33 A	4.17 A	16.67 A	SDF300PS36[7]
48 V	300 W	150 W	6.25 A	3.12 A	12.50 A	SDF300PS48
54 V	300 W	150 W	5.56 A	2.78 A	11.10 A	SDF300PS54[7]
V1: +5.00 V V2: +12.0 V	240 W	120 W	24.00 A 13.33 A	12.00 A 6.67 A	28.80 A 16.00 A	SDF300PD0512[7]
V1: +5.00 V V2: +24.0 V	240 W	120 W	24.00 A 6.67 A	12.00 A 3.33 A	28.80 A 8.00 A	SDF300PD0524[7]
V1: +5.00 V V2: +48.0 V	240 W	120 W	24.00 A 3.33 A	12.00 A 1.67 A	28.80 A 4.00 A	SDF300PD0548[7]
V1: +12.0 V V2: +24.0 V	240 W	120 W	13.33 A 6.67 A	6.67 A 3.33 A	16.00 A 8.00 A	SDF300PD1224[7]

Notes

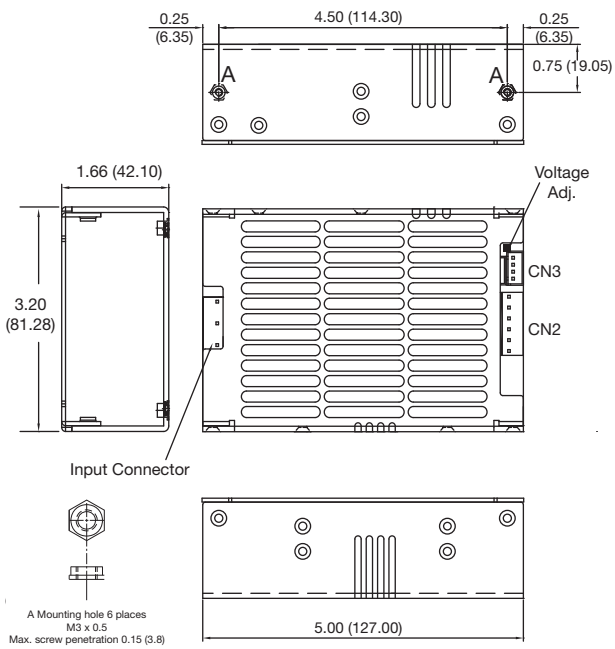
1. *Ripple & noise is measured using a 0.1 µF ceramic capacitor in parallel with 22 µF electrolytic and 20 MHz bandwidth*
2. *Peak load can be taken for 500 µs. Average power not to exceed max power.*
3. *Add suffix '-C' for vented cover option e.g. SDF300PS24-C*
4. *Add suffix 'D' for optional output terminal block on single output models except the 5 V, 9 V and 12 V output models which are only available with output terminal blocks eg. SDF300PS24D-F.[7]*
5. *Add suffix 'G' for optional input terminal blocks eg. SDF300PS24DG-F, except for enclosed with end fan (option '-E') which has input terminal blocks as standard.[7]*
6. *Add suffix 'H' for optional molex output terminal on dual output models used in convection applications.[7]*
7. *Available for OEM quantities, contact Sales.*

Mechanical Details

U-Channel



U-Channel with cover (Option 'C')

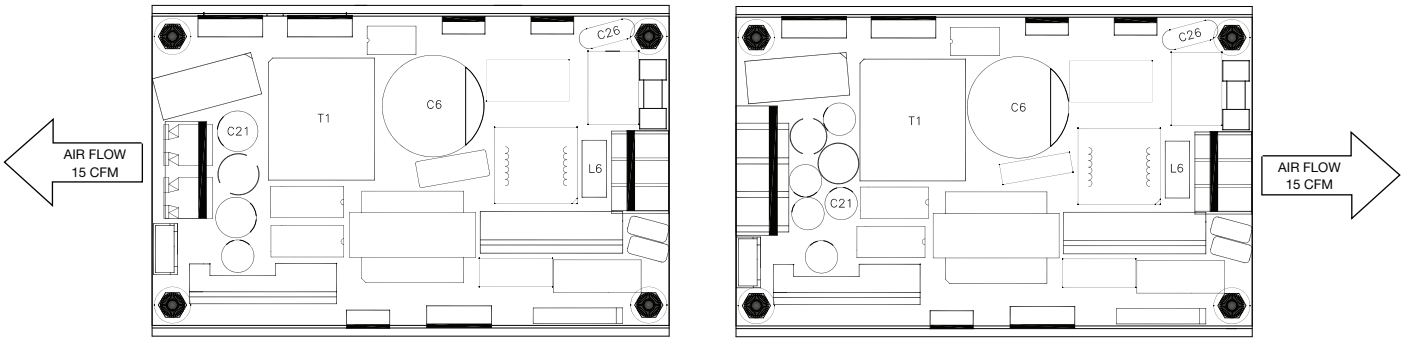


Notes

1. All dimensions are in inches (mm
2. Tolerance: ±0.012 (±0.3)
3. Weight: U-Channel: 1.08 lbs (490 g)
   U-Channel with cover (option '-C'): 1.12 lbs (510 g)
4. Mounting holes and mating half connectors common to all models.

Application Notes

Thermal Considerations – U Channel



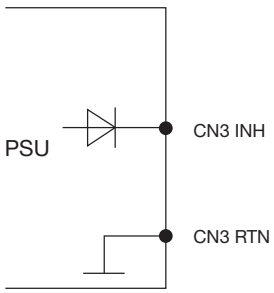
Single Output Models

Dual Output Models

In order to ensure safe operation of the PSU in the end-use equipment, the temperature of the components listed in the table (right) must not be exceeded. See drawing above for component locations. The temperature should be monitored using K type thermocouples placed on the hottest part of the component (out of any direct airflow).

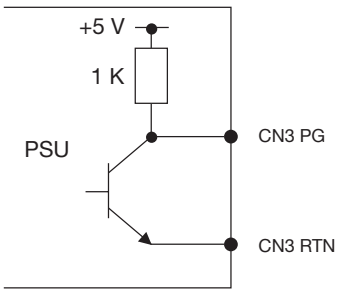
Temperature Measurement	
Component	Max Continuous Temp ℃
C26	85
C6	105
C21	105
L6	120
T1 Coil	120

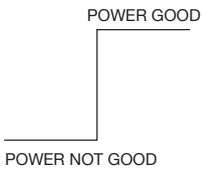
Remote On/Off (INH)



Note:
1. Applying <0.3 V or short between pins INH and RTN turns the output OFF.
2. Applying >4.5 V or open circuit between pins INH and RTN turns output ON.

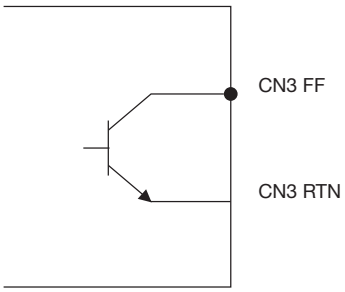
Power Good (PG)

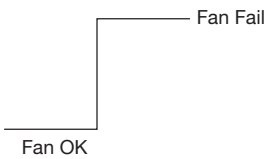




Note:
Sink current = 6 mA, Source current = 1 mA
Power is good 100-500 ms after output is in regulation.
Power not good at least 1 ms before loss of regulation.

Fan Fail (FF)





Note:
1. Open collector signal: 28 V maximum voltage and 5 mA (maximum sink current)

Connectors

INPUT CONNECTORS

Standard

FG
NEUTRAL
LINE

CN1

Mating JST part no.
VHR-5N or equivalent
(5 pin, 3 used)

Crimp contacts for JST
VHR Series:
SVH-21T-P1.1 - 22~18awg
SVH-41T-P1.1 - 20~16awg

Option 'G'

Terminal block
3 pins 0.25
(6.35) center
HD-601-3P

OUTPUT CONNECTORS

Standard

CN2 V1 RTN

Mating JST part no.
VHR-6N or equivalent

CN2 V1 RTN V2

Dual Output models
Terminal block M3 screws
0.33 (8.25) 3 pins

SIGNALS & FAN CONNECTORS

FAN1
+
-
FF

Mating JST Part No
XHP-3 with
SXH-002T-P0.6 Pins

CN3
P.G
RTN
FF
INH

Mating JST Part No
XHP-4 Housing
SXH-002T-P0.6 Pins

OPTIONAL OUTPUT CONNECTORS(1)

Option 'D' (Standard on 5-12 V models)

CN2 V1 RTN

Dinkle PCB terminals P-830 N
2 pins M5 screws

Option 'H' (only on dual output models in convection-cooled applications)

CN2 V1 RTN V2

Dual Output models
Mating JST part no.
VHR-8N or equivalent

(1) Available for OEM quantities, contact Sales.