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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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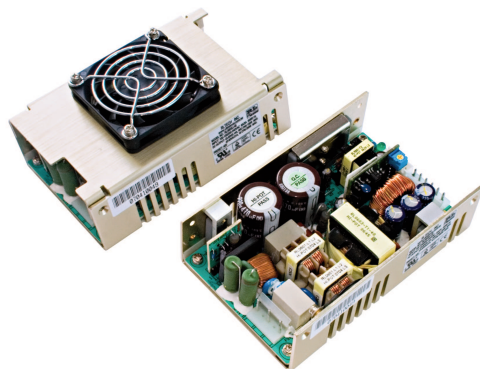
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# 250 Watts

## SDR Series



- 3.2"x 5" Footprint
- Fits 1U Applications
- Low Leakage Current
- Up to 600 W Peak Power
- Single & Dual Outputs
- Top Fan & Convection-cooled Versions
- 3 Year Warranty

## Specification

### Input

Input Voltage	• 90-132 VAC/180-264 VAC, auto ranging
Input Frequency	• 47-63 Hz
Input Current	• 6 A at 115 VAC, 3 A at 230 VAC
Inrush Current	• Max 70 A at 230 VAC, 35 A at 115 VAC, cold start at 25 °C
Power Factor	• EN61000-3-2, class A
Earth Leakage Current	• <500 $\mu$ A at 264 VAC/50 Hz
Input Protection	• Internal T8A/250V fuse in line

### Output

Output Voltage	• See tables
Output Voltage Trim	• $\pm$ 5% on V1 (V2 of dual output models will track by same % of adjustment)
Initial Set Accuracy	• $\pm$ 1%
Minimum Load	• 1% on single output models, 10% on both outputs for dual models
Start Up Delay	• 1.5 s max at 120 VAC
Start Up Rise Time	• 50 ms typical
Hold Up Time	• 20 ms min at 80% of full load
Line Regulation	• $\pm$ 0.5%
Load Regulation	• $\pm$ 1% 1-100% load for single outputs $\pm$ 3% V1, $\pm$ 7% V2 for dual outputs (except 0312 & 0512 models, $\pm$ 10% regulation on V2)
Over/Undershoot	• 5% max
Transient Response	• 5% max deviation, recovery to within 1% in 500 $\mu$ s for a 50% load change
Ripple & Noise	• 1% pk-pk (see note 3)
Overvoltage Protection	• <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 (hiccup mode)
Fan Supply	• 12 VDC, 300 mA, not available on '-F' version with built-in fan

### General

Efficiency	• Single output models: 3.3 V & 5 V models 70%, 12 V models 80%, all other models >83% at 230 V & full load. Dual output models: >70% at 230 V & full load
Isolation	• 3000 VAC Input to Output 1500 VAC Input to Ground 100 VDC Output to Ground
Switching Frequency	• 29 kHz typical
Power Density	• 10.4 W/in <sup>3</sup>
Signals	• Power Good TTL HIGH within 100-500 ms and LOW $\leq$ 1 ms before loss of regulation
MTBF	• 150 kHrs typical 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 for single output & forced air cooled dual output models. For convection cooled dual output models, (see note 7)
Storage Temperature	• -20 °C to +85 °C
Operating Humidity	• 5-90%, non-condensing
Storage Humidity	• 5-90%, non-condensing
Cooling	• '-F' version has built-in fan, others require 16 CFM to meet forced air ratings
Operating Altitude	• 3000 m
Vibration	• 5-50 Hz, acceleration 7.35 m/s <sup>2</sup> on X, Y and Z axis

### EMC & Safety

Emissions	• EN55022 level B conducted & radiated
Harmonic Currents	• EN61000-3-2, class A
Voltage Flicker	• EN61000-3-3
ESD Immunity	• EN61000-4-2, level 3 Perf Criteria A
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	• UL60950-1, CSA C22.2 No. 950, EN60950-1

**Models and Ratings**

Output Voltage	Output Power	Output Current		Ripple & Noise PK-PK <sup>(2)</sup>	Model Number <sup>(3,4)</sup>
		Nominal	Peak <sup>(1)</sup>		
5 V	200 W	40.00 A	120.00 A	50 mV	SDR250AS05-F <sup>(6)</sup>
9 V	225 W	25.00 A	66.67 A	90 mV	SDR250AS09-F <sup>(6)</sup>
12 V	250 W	20.83 A	50.00 A	120 mV	SDR250AS12-F
15 V	250 W	16.70 A	40.00 A	150 mV	SDR250AS15-F
18 V	250 W	13.89 A	33.30 A	180 mV	SDR250AS18-F <sup>(6)</sup>
24 V	250 W	10.42 A	25.00 A	240 mV	SDR250AS24-F
28 V	250 W	8.93 A	21.43 A	280 mV	SDR250AS28-F <sup>(6)</sup>
36 V	250 W	6.94 A	16.67 A	360 mV	SDR250AS36-F
48 V	250 W	5.21 A	12.50 A	480 mV	SDR250AS48-F <sup>(6)</sup>
54 V	250 W	4.63 A	11.10 A	540 mV	SDR250AS54-F <sup>(6)</sup>
60 V	250 W	4.17 A	10.00 A	600 mV	SDR250AS60-F <sup>(6)</sup>

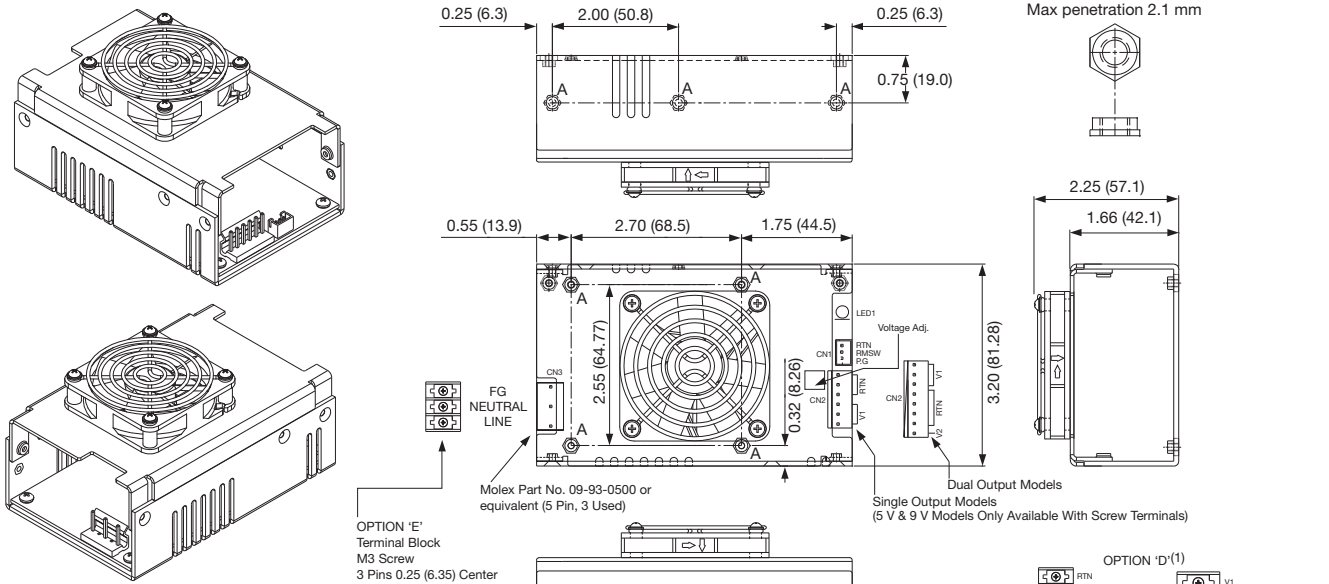
Output Voltage	Output Power	Output Current		Ripple & Noise PK-PK <sup>(2)</sup>	Model Number <sup>(3,4)</sup>
		Nominal	Peak <sup>(1)</sup>		
V1 : +3.3V	200 W	24.0 A	28.8 A	50 mV	SDR250AD0312-F <sup>(6)</sup>
V2 : +12.0V		12.0 A	14.4 A	120 mV	
V1 : +3.3V	200 W	24.0 A	28.8 A	50 mV	SDR250AD0324-F <sup>(6)</sup>
V2 : +24.0V		6.0 A	7.2 A	240 mV	
V1 : +5.0V	200 W	24.0 A	28.8 A	50 mV	SDR250AD0512-F <sup>(6)</sup>
V2 : +12.0V		12.0 A	14.4 A	120 mV	
V1 : +5.0V	200 W	24.0 A	28.8 A	50 mV	SDR250AD0524-F <sup>(6)</sup>
V2 : +24.0V		6.0 A	7.2 A	240 mV	
V1 : +5.0V	200 W	24.0 A	28.8 A	50 mV	SDR250AD0548-F <sup>(6)</sup>
V2 : +48.0V		3.0 A	3.6 A	480 mV	
V1 : +12.0V	250 W	12.0 A	14.4 A	120 mV	SDR250AD1224-F
V2 : +24.0V		6.0 A	7.2 A	240 mV	

**Notes**

1. Peak load can be taken for 500  $\mu$ s. Average power not to exceed max power.
2. Ripple & noise is measured using a 0.1  $\mu$ F ceramic capacitor in parallel with 22  $\mu$ F electrolytic and 20 MHz bandwidth.
3. Add suffix 'D' for optional output terminal block except the 5 V and 9 V output models which are only available with output terminal blocks.<sup>(6)</sup>
4. Add suffix 'E' for optional input terminal block.<sup>(6)</sup>
5. Available for OEM quantities, contact Sales.

**Mechanical Details**

Enclosed with top fan (option -F)



**Notes**

1. All dimensions are in inches (mm). Tolerance:  $\pm 0.012$  ( $\pm 0.3$ )
2. Weight: 0.95 lbs (430 g)
3. Signal connector CN1 mates with JST XHP-3 or equivalent & crimp terminals SXH-002T-P0.6.
4. Input: Molex No. 09-93-0500, crimp terminals Molex series 6838.
5. Output: Molex No. 09-93-0600 for 12 V to 60 V single output models, 09-93-0800 for dual output models, crimp terminals Molex series 6838.
6. Terminal block for 5 V to 9 V single output models.



Mechanical Details

Output Voltage	Forced-cooled		Convection-cooled		Peak Current <sup>(2)</sup>	Ripple & Noise Pk-Pk <sup>(3)</sup>	Model Number <sup>(1,4,5,6)</sup>
	Output Power	Output Current	Output Power	Output Current			
5 V	200 W	40.00 A	100 W	20.00 A	120.00 A	50 mV	SDR250AS05 <sup>(6)</sup>
9 V	225 W	25.00 A	121 W	13.50 A	66.67 A	90 mV	SDR250AS09 <sup>(6)</sup>
12 V	250 W	20.83 A	135 W	11.23 A	50.00 A	120 mV	SDR250AS12
15 V	250 W	16.70 A	135 W	9.00 A	40.00 A	150 mV	SDR250AS15
18 V	250 W	13.89 A	135 W	7.50 A	33.30 A	180 mV	SDR250AS18 <sup>(6)</sup>
24 V	250 W	10.42 A	135 W	5.63 A	25.00 A	240 mV	SDR250AS24
28 V	250 W	8.93 A	135 W	4.82 A	21.43 A	330 mV	SDR250AS28 <sup>(6)</sup>
36 V	250 W	6.94 A	135 W	3.75 A	16.67 A	360 mV	SDR250AS36
48 V	250 W	5.21 A	135 W	2.81 A	12.30 A	480 mV	SDR250AS48 <sup>(6)</sup>
54 V	250 W	4.63 A	135 W	2.50 A	11.10 A	540 mV	SDR250AS54 <sup>(6)</sup>
60 V	250 W	4.17 A	135 W	2.25 A	10.00 A	600 mV	SDR250AS60 <sup>(6)</sup>

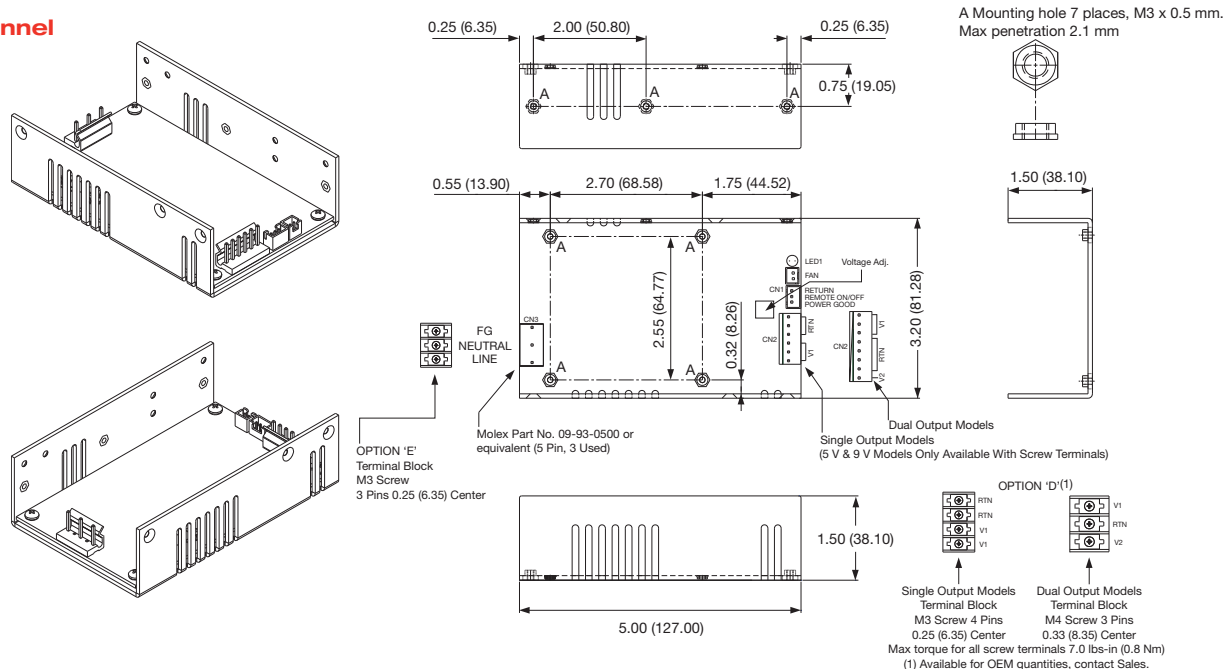
Output Voltage	Forced-cooled		Convection-cooled		Peak Current <sup>(2)</sup>	Ripple & Noise Pk-Pk <sup>(3)</sup>	Model Number <sup>(1,4,5,6,7)</sup>
	Output Power	Output Current	Output Power	Output Current			
V1 : +3.3 V	200 W	24.0 A	100 W	12.0 A	28.8 A	50 mV	SDR250AD0312 <sup>(6)</sup>
V2 : +12.0 V		12.0 A		7.0 A	14.4 A	120 mV	
V1 : +3.3 V	200 W	24.0 A	100 W	12.0 A	28.8 A	50 mV	SDR250AD0324 <sup>(6)</sup>
V2 : +24.0 V		6.0 A		4.0 A	7.2 A	240 mV	
V1 : +5.0 V	200 W	24.0 A	100 W	12.0 A	28.8 A	50 mV	SDR250AD0512 <sup>(6)</sup>
V2 : +12.0 V		12.0 A		7.0 A	14.4 A	120 mV	
V1 : +5.0 V	200 W	24.0 A	100 W	12.0 A	28.8 A	50 mV	SDR250AD0524 <sup>(6)</sup>
V2 : +24.0 V		6.0 A		4.0 A	7.2 A	240 mV	
V1 : +5.0 V	200 W	24.0 A	100 W	12.0 A	28.8 A	50 mV	SDR250AD0548 <sup>(6)</sup>
V2 : +48.0 V		3.0 A		2.0 A	3.6 A	480 mV	
V1 : +12.0 V	250 W	12.0 A	135 W	7.0 A	14.4 A	120 mV	SDR250AD1224
V2 : +24.0 V		6.0 A		4.0 A	7.2 A	240 mV	

Notes

1. Add suffix 'L' to model number for optional 500  $\mu$ A leakage current.<sup>(8)</sup>
2. Peak load can be taken for 500  $\mu$ s. Average power not to exceed max power.
3. Ripple & noise is measured using a 0.1  $\mu$ F ceramic capacitor in parallel with 22  $\mu$ F electrolytic and 20 MHz bandwidth.
4. For optional vented cover add suffix '-C' to model number.
5. Add suffix '-D' for optional output terminal block except the 5 V and 9 V output models which are only available with output terminal blocks.<sup>(6)</sup>
6. Add suffix '-E' for optional input terminal block.<sup>(8)</sup>
7. Operating temperature - 0  $^{\circ}$ C to +60  $^{\circ}$ C, derate at 5%/  $^{\circ}$ C from 50  $^{\circ}$ C to 60  $^{\circ}$ C for convection cooled dual output models.
8. Available for OEM quantities, contact Sales.

Mechanical Details

U-Channel

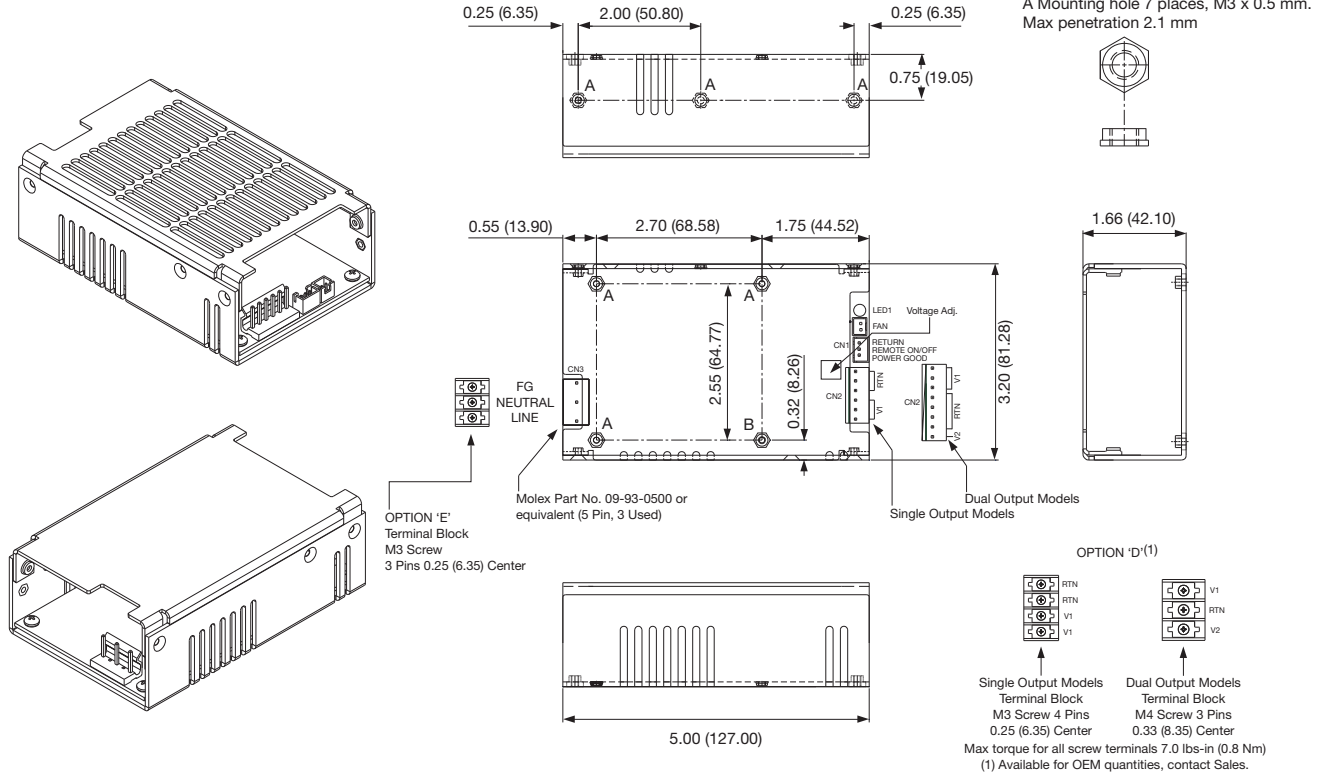


Notes

1. All dimensions are in inches (mm). Tolerance:  $\pm 0.012$  ( $\pm 0.3$ )
2. Weight: 0.88 lbs (400 g)
3. Signal connector CN1 mates with JST XHP-3 or equivalent & crimp terminals SXH-002T-P0.6.
4. Fan connector mates with JST XHP-2 or equivalent & crimp terminals.
5. Input: Molex No. 09-93-0500, crimp terminals Molex series 6838.
6. Output: Molex No. 09-93-0600 for 12 V to 60 V single output models, 09-93-0800 for dual output models, crimp terminals Molex series 6838.
7. Terminal block for 5 V to 9 V single output models.

**Mechanical Details**

**U-Channel with cover (Option 4C)**

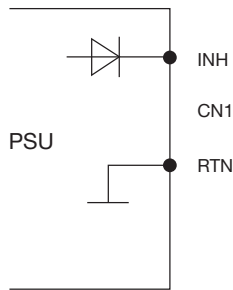


**Notes**

1. All dimensions are in inches (mm). Tolerance:  $\pm 0.012$  ( $\pm 0.3$ )
2. Weight: 0.93 lbs (420 g)
3. Signal connector CN1 mates with JST XHP-3 or equivalent & crimp terminals SXH-002T-P0.6.
4. Fan connector mates with JST XHP-2 or equivalent & crimp terminals.
5. Input: Molex No. 09-93-0500, crimp terminals Molex series 6838.
6. Output: Molex No. 09-93-0600 for 12 V to 60 V single output models, 09-93-0800 for dual output models, crimp terminals Molex series 6838.
7. Terminal block for 5 V to 9 V single output models

**Application Notes**

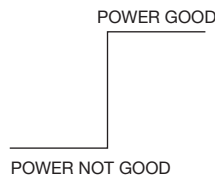
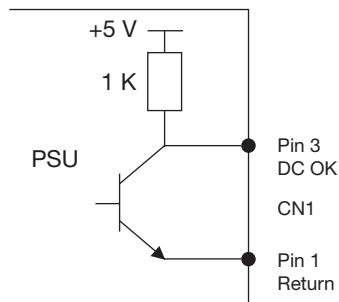
**Remote On/Off**



**Note:**

1. Applying  $< 0.3$  V or short between pins 2 and 1 turns the output OFF.
2. Applying  $> 4.5$  V or open circuit between pins 2 and 1 turns output ON.
3. The output will enter hiccup mode. Recommended maximum time is 3 minutes.

**Power Good**



Sink current = 6 mA  
Source current = 1 mA