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Jameco Part Number 175662



25W Single Output DC-DC Converter

SD-25 series



■ Features :

- 2:1 wide input range
- Protections: Short circuit/Over load/Over voltage
- 1500VDC I/O isolation
- Built-in EMI filter, low ripple noise
- 100% full load burn-in test
- Fixed switching frequency at 83KHz
- Low cost
- High reliability
- 1 year warranty

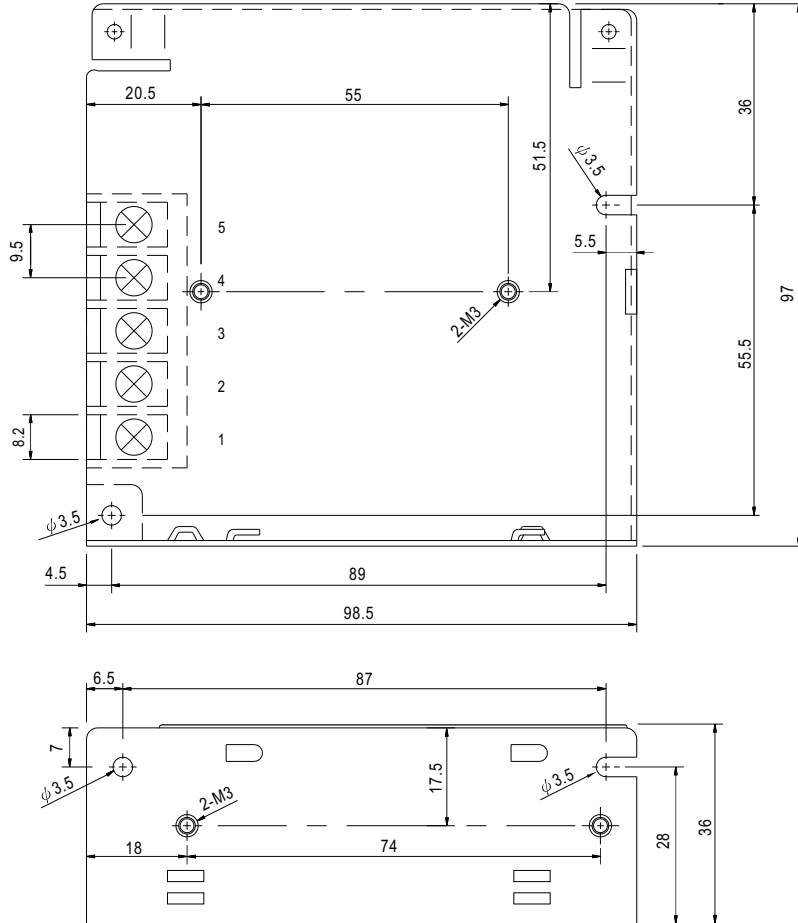


SPECIFICATION

MODEL	SD-25A-5	SD-25B-5	SD-25C-5	SD-25A-12	SD-25B-12	SD-25C-12	SD-25A-24	SD-25B-24	SD-25C-24	
OUTPUT	DC VOLTAGE	5V			12V			24V		
	RATED CURRENT	5A			2.1A			1.1A		
	CURRENT RANGE	0 ~ 5A			0 ~ 2.1A			0 ~ 1.1A		
	RATED POWER	25W			25.2W			26.4W		
	RIPPLE & NOISE (max.) Note.2	100mVp-p			120mVp-p			150mVp-p		
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5VDC			11 ~ 16VDC			23 ~ 30VDC		
	VOLTAGE TOLERANCE Note.3	±2.0%			±1.0%			±1.0%		
	LINE REGULATION	±0.5%			±0.3%			±0.2%		
	LOAD REGULATION	±0.5%			±0.3%			±0.2%		
SETUP, RISE, HOLD TIME	2.5s, 50ms, ----- at full load									
INPUT	VOLTAGE RANGE	A:9.2 ~ 18VDC B:19 ~ 36VDC C:36 ~ 72VDC								
	EFFICIENCY (Typ.)	71%	72%	74%	72%	75%	78%	75%	78%	81%
	DC CURRENT	3.2A/12V			1.6A/24V			0.8A/48V		
PROTECTION	OVER LOAD	105 ~ 150% rated output power Protection type : Fold back current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	5.75 ~ 6.75V/10% load			16.8 ~ 20V/10% load			31.5 ~ 37.5V/10% load		
ENVIRONMENT	WORKING TEMP.	-10 ~ +60°C (Refer to output load derating curve)								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85°C, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC (Note 4)	SAFETY STANDARDS	Design refer to LVD								
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC								
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B								
OTHERS	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,6,8; ENV50204, EN55024, heavy industry level, criteria A								
	MTBF	374.3K hrs min.(SD-25A)		365.9K hrs min.(SD-25B)		377.5K Hrs min.(SD-25C)		MIL-HDBK-217F (25°C)		
	DIMENSION	99*97*36mm (L*W*H)								
	PACKING	0.38Kg; 45pcs/17.8Kg/0.9CUFT								
NOTE	<ol style="list-style-type: none"> 1. All parameters NOT specially mentioned are measured at 12,24,48VDC input, rated load and 25°C of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 									

Mechanical Specification

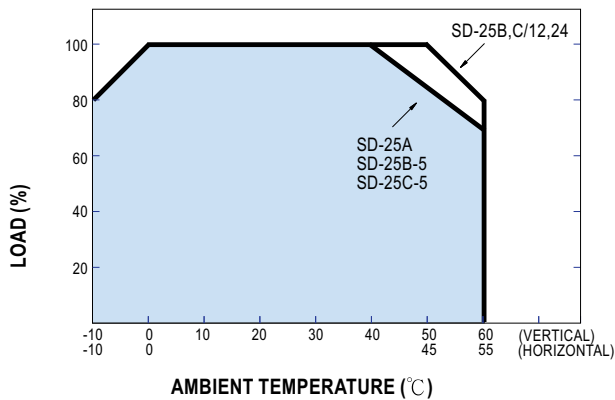
Case No. 905 Unit:mm



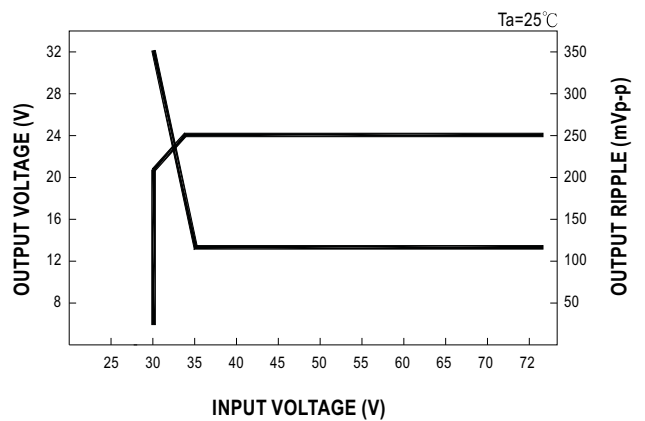
Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	DC INPUT V-	4	DC OUTPUT +V
2	DC INPUT V+	5	DC OUTPUT -V
3	FG \perp		

Derating Curve



Static Characteristics(SD-25C-24V)



Quality Engineering Test Report

SERIES: SD-25A 25W DC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A. SD-25A-5 5V / 5A
B. SD-25A-12 12V / 2.1A
C. SD-25A-24 24V / 1.1A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	DC INPUT VOLTAGE RANGE	I/P : TESTING SPEC : 9.2~18VDC O/P : FULL LOAD	A:8.4~18VDC	P
2	LINE REGULATION	I/P : 9.2~18VDC SPEC : A:±0.5% O/P : FULL LOAD B:±0.3% C:±0.2%	A: -0%~+0% B:-0.05%~+0% C:-0.03%~+0%	P
3	LOAD REGULATION	I/P : 12VDC SPEC : A:±0.5% O/P : MIN. TO FULL LOAD B:±0.3% C:±0.2%	A:-0.12%~+0% B: -0%~+0% C: -0%~+0%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P : 9.2~18VDC SPEC : A:±2% O/P : MIN. TO FULL LOAD B:±1% C:±1%	A:-0.12%~+0% B:-0.05%~+0% C:-0.03%~+0%	P
5	RIPPLE&NOISE	I/P : 12VDC SPEC : A:100mVp-p O/P : FULL LOAD B:120mVp-p C:150mVp-p	A:24mV B:12mV C:10mV	P
6	DC INPUT CURRENT	I/P : 12VDC SPEC : 3.2A O/P : FULL LOAD	A:2.77A	P
7	MAX. INRUSH CURRENT	I/P : 12VDC SPEC : NONE O/P : FULL LOAD	A:13.7A	P
8	O/P VOLTAGE ADJ. RANGE	I/P : 12VDC SPEC : A:4.5~5.5V O/P : MIN. LOAD B:11~16V C:23~30V	A:4.39~6.21V B:9.65~16.37V C:19.15~33.58V	P
9	SET UP TIME	I/P : 12VDC SPEC : 2.5S O/P : FULL LOAD	A:340.8mS	P
10	EFFICIENCY	I/P : 12VDC SPEC : A:71% O/P : FULL LOAD B:72% C:75%	A:72.0% B:73.3% C:75.0%	P
11	OVER LOAD PROTECTION	I/P : 12VDC SPEC : 105%~150% O/P : TESTING	A:107.0% B:107.4% C:118.6%	P
12	OVER VOLTAGE PROTECTION	I/P : 12VDC SPEC : A:5.75V~6.75V O/P : 10% LOAD B:16.8V~20V C:31.5V~37.5V	A:6.51V B:17.67V C:33.29V	P
13	INSULATION RESISTANCE	SPEC : I/P-O/P 500VDC/100M Ohms MIN. I/P-FG 500VDC/100M Ohms MIN. O/P-FG 500VDC/100M Ohms MIN.	A: I/P-O/P : >100M Ohms I/P-FG : >100M Ohms O/P-FG : >100M Ohms	P
14	DIELECTRIC / WITHSTAND VOLTAGE	SPEC : I/P- O/P : 1500VAC/ 1 min (10mA CUT-OFF) I/P- FG : 1500VAC/ 1 min (10mA CUT-OFF) O/P- FG : 500VAC/ 1 min (10mA CUT-OFF)	A: I/P-O/P : <1.65mA I/P-FG : <2.52mA O/P-FG : <0.88mA	P
15	BURN-IN TEST	I/P : 12VDC O/P:FULL LOAD TA : 25 °C BURN-IN DURATION : 4 hrs	NON BREAK	P
16	ENVIRONMENT TEST (SAMPLE A:)	HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P : 12VDC O/P : FULL LOAD AMBIENT TEMPERATURE : 42.0°C	AFTER 4 hrs NON BREAK	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT																												
17	TEMPERATURE RISE TEST T rise OF PARTS	<p>A: I/P : 12VDC AFTER 4 hr BURN-IN O/P : FULL LOAD TA : 25°C</p> <table border="1"> <thead> <tr> <th>POSITION</th> <th>P/N</th> <th>TEMP</th> <th>T rise</th> </tr> </thead> <tbody> <tr> <td>Q1</td> <td>MAIN TRANSISTOR</td> <td>83.8°C</td> <td>58.8°C</td> </tr> <tr> <td>T1</td> <td>MAIN TRANSFORMER</td> <td>67.5°C</td> <td>42.5°C</td> </tr> <tr> <td>D11</td> <td>O/P DIODE</td> <td>85.1°C</td> <td>60.1°C</td> </tr> <tr> <td>C33</td> <td>O/P FILTER CAPACITOR</td> <td>51.4°C</td> <td>26.4°C</td> </tr> <tr> <td>L1</td> <td>O/P CHOCK</td> <td>64.0°C</td> <td>39.0°C</td> </tr> <tr> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>73.2°C</td> <td>48.2°C</td> </tr> </tbody> </table>	POSITION	P/N	TEMP	T rise	Q1	MAIN TRANSISTOR	83.8°C	58.8°C	T1	MAIN TRANSFORMER	67.5°C	42.5°C	D11	O/P DIODE	85.1°C	60.1°C	C33	O/P FILTER CAPACITOR	51.4°C	26.4°C	L1	O/P CHOCK	64.0°C	39.0°C	C5	I/P FILTER CAPACITOR	73.2°C	48.2°C		P
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18	LIFE CYCLE	<p>A: SUPPOSE C33 IS THE MOST CRITICAL COMPONENT</p> <p>I/P : 12VDC O/P : FULL LOAD Ta : 25°C Tc33 : 51.4°C Life: 82139 hrs</p> <p>I/P : 12VDC O/P : FULL LOAD Ta : 42°C Tc33 : 62.2°C Life: 38854 hrs</p>		P																												
19	CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)	<p>A: FUSE : F 10A/250V G PH UL</p> <p>INPUT DIODE : 1N5401</p> <p>LINE FILTER : LF TF-345</p> <p>TRANSFOMER : MT TF-333-R1 EI-25</p> <p>POWER SWITCHER : 2SK2049 TO-220</p> <p>OUTPUT DIODE : CTB-24L TO-220</p> <p>OUTPUT CAPACITOR : 2200uF/16V(v) 105°C HL</p> <p>INPUT CAPACITOR : 220uF/100V(v) 105°C HL</p> <p>P.C.B : SD-25-R1 FR-4 2 OZ DS</p>																														
DATE	SAMPLE	TEST RESULT	TEST	APPROVAL																												
980423	SD-25A	PASS	H.C.LIOU	Max Lin																												