

# Quality Engineering Test Report

**SERIES: DR-45      45W AC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY**

**SAMPLE:   A. DR-4505      5V /   5A**  
**B. DR-4512      12V / 3.5A**  
**C. DR-4515      15V / 2.8A**  
**D. DR-4524      24V /  2A**

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING                SPEC:85~264VAC O/P:FULL LOAD	B : 54.8VAC~264VAC	P
2	LINE REGULATION	I/P:85~264VAC            SPEC:   A: ±1% B: ±1% O/P:FULL LOAD            C: ±1% D: ±1%	A:    +0%   +0% B:   +0.0% +0.149% C:   +0.0% +0.12% D:  +0.074% +0.074%	P
3	LOAD REGULATION	I/P:230VAC                SPEC:   A: ±1% B: ±1% O/P:MIN. TO FULL LOAD C: ±1% D: ±1%	A:  -0.118% +0.237% B:  +0.099% -0.0497% C:  +0.12% +0.08% D:  -0.388% +0.024%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:85~264VAC            SPEC:   A: ±2% B: ±1% O/P:MIN TO FULL LOAD C: ±1% D: ±1%	A:  +0.118% +0.49% B:  -0.0497% +0.0497% C:  +0.0% -0.2% D:  +0.05% +1.03%	P
5	RIPPLE&NOISE	I/P:230VAC                SPEC:   A: 100mV B: 200mV O/P:FULL LOAD            C: 240mV D: 480mV	A:15mV B:15mV C:27mV D:24mV	P
6	AC INPUT CURRENT	I/P:230VAC                SPEC: 0.75A O/P:FULL LOAD	B :0.507A	P
7	MAX. INRUSH CURREN	I/P:230VAC                SPEC:56A O/P: FULL LOAD	B:: 36.062A	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC                SPEC:   A: -5%~+10% O/P:MIN. LOAD            B: ±10% C: ±10% D: ±10%	A:4.49V~6.3V B:10.256V~13.939V C:12.26V~17.28V D:20.3V~28.4V	P
9	SET UP TIME	I/P:230VAC                SPEC:800mS O/P:FULL LOAD	B: 139.68mS	P
10	HOLD UP TIME	I/P:230VAC                SPEC:50mS O/P:FULL LOAD	B: 98.839mS	P
11	EFFICIENCY	I/P:230VAC                SPEC:   A:72% B:77% O/P:FULL LOAD            C:77% D:80%	A:73.7% B:78.355% C:77.8% D:81%	P
12	OVER LOAD PROTECTION	I/P:230VAC                SPEC: 105%~150% O/P:TESTING	A:117% B:116.4% C:122% D:120%	P
13	GROUND LEAKAGE CURRENT	I/P:240VAC                SPEC:   L-FG--<1mA N-FG--<1mA	B: L-FG:0.21mA N-FG:0.21mA	P
14	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.	B: O/P-FG >100M Ohms I/P-O/P >100M Ohms I/P-FG >100M Ohms	P
15	DIELECTRIC / WITHSTAND VOLTAGE	SPEC:   I/P- O/P:   3KVAC/ 1 min. (10mA CUT-OFF) I/P - FG:   1.5KVAC/ 1 min. (10mA CUT-OFF) O/P -FG:   0.5KVAC/ 1 min. (10mA CUT-OFF)	B: I/P-O/P :3.33mA I/P-FG :2.172mA O/P-FG :3.56mA	P
16	BURN-IN TEST	I/P: 230VAC                O/P: FULL LOAD TA:26.8°C      BURN-IN DURATION : 2 hrs	A : NON BREAK	P

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17	ENVIRONMENT TEST	1.LOW TEMPERATURE TEST I/P:230 VAC O/P:100% LOAD AMBIENT TEMPERATURE:-9.9°C	D : AFTER 14 hrs POWER ON OK	P																															
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:50.1°C	D : AFTER 3 hrs NON BREAK																																
		3.HIGH HUMIDITY HIGH VOLTAGE ON/OFF TEST I/P:264VAC O/P:FULL LOAD AMBIENT TEMPERATURE : 25°C AMBIENT HUMIDITY : 95%	D : AFTER 18 hrs POWER ON/OFFNON BREAK																																
18	TEMPERATURE RISE TEST T rise OF PARTS	D: I/P :230VAC AFTER 2 hr BURN-IN O/P :FULL LOAD TA:26.8°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>BD1</td> <td>BRIDGE DIODE</td> <td>56.6°C</td> <td>29.8°C</td> </tr> <tr> <td>U1</td> <td>MAIN TRANSISTOR</td> <td>64.7°C</td> <td>37.9°C</td> </tr> <tr> <td>T1</td> <td>MAIN TRANSFORMER WIRE</td> <td>75.7°C</td> <td>48.9°C</td> </tr> <tr> <td>D20</td> <td>O/P DIODE</td> <td>78.9°C</td> <td>52.1°C</td> </tr> <tr> <td>C25</td> <td>O/P FILTER CAPACITOR</td> <td>74.8°C</td> <td>48.0°C</td> </tr> <tr> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>54.8°C</td> <td>28.0°C</td> </tr> <tr> <td>LF1</td> <td>LINE FILTER TRANSFORMER</td> <td>61.0°C</td> <td>34.2°C</td> </tr> </tbody> </table>	POSITION		P/N	TEMP	T rise	BD1	BRIDGE DIODE	56.6°C	29.8°C	U1	MAIN TRANSISTOR	64.7°C	37.9°C	T1	MAIN TRANSFORMER WIRE	75.7°C	48.9°C	D20	O/P DIODE	78.9°C	52.1°C	C25	O/P FILTER CAPACITOR	74.8°C	48.0°C	C5	I/P FILTER CAPACITOR	54.8°C	28.0°C	LF1	LINE FILTER TRANSFORMER	61.0°C	34.2°C
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19	LIFE CYCLE	D: SUPPOSE C25 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:25°C Tc25:74.8°C Life: 32615.3 hrs I/P:230VAC O/P:FULL LOAD Ta:45°C Tc45:92.2°C Life:12279.5 hrs		P																															
20	CRITICAL COMPONENT RECORD ( FOR QC INSPECTION REFERENCE ONLY )	D: FUSE : 3AL/250V BRIDGE DIODE : D3SB60 4A/800V LINE FILTER : TF-484 TRANSFOMER : TF659 POWER SWITCHER : TOP-227 OUTPUT DIODE : BYQ-28X-200 OUTPUT CAPACITOR : 330uF/35V(v) 105°C ELNA LXJ INPUT CAPACITOR : RUBYCON 100uF/400V 105°C P.C.B : DR-45-R2 CEM-3 20 OZ SS																																	
DATE	SAMPLE	TEST RESULT	TEST	APPROVAL																															
20000704	RD SAMPLE	PASS	VINCENT	MAX.LIN																															
20000822	PRODUCT SAMPLE A007C25 DR4505 DR4512 DR4515 DR4524	PASS	VINCENT	MAX.LIN																															

20001019	PRODUCT SAMPLE A0010A12 DR4505 DR4512 DR4515 DR4524	PASS	VINCENT	MAX.LIN
20001205	PRODUCT SAMPLE A011D19 DR4524	PASS	VINCENT	MAX.LIN
20010110	PRODUCT SAMPLE A101A09 DR4505	PASS	VINCENT	MAX.LIN
20010219	PRODUCT SAMPLE A102b17 DR4512	PASS	SAM	MAX.LIN