

# Quality Engineering Test Report

**SERIES: S-150 150W AC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY**

**SAMPLE: A.S-150-5 5V / 30A D.S-150-12 12V / 2.5A G.S-150-24 24V / 6.5A**

**B.S-150-7.5 7.5V / 20A E.S-150-13.5 13.5V / 11.2A H.S-150-27 27V / 5.6A**

**C.S-150-9 9V / 6.7A F.S-150-15 15V / 10A D.S-150-48 48V / 3.2A**

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:176~264VAC O/P:FULL LOAD	E:128VAC~267VAC	P
2	LINE REGULATION	I/P:176~264VAC SPEC: O/P:FULL LOAD A: ±0.5% B: ±0.5% C: ±0.3% D: ±0.3% E: ±0.3% F: ±0.3% G: ±0.3% H: ±0.2% I: ±0.2%	A: 0% ~ 0.12% B: 0% ~ 0.08% C: -0.07% ~ 0% D: -0.05% ~ 0% E: -0.044% ~ 0.044% F: -0.04% ~ 0% G: -0.05% ~ 0% H: -0.044% ~ 0.044% I: -0.064% ~ 0.025%	P
3	LOAD REGULATION	I/P:230VAC SPEC: O/P:MIN. TO FULL LOAD A: ±0.5% B: ±0.5% C: ±0.3% D: ±0.3% E: ±0.3% F: ±0.3% G: ±0.3% H: ±0.2% I: ±0.2%	A: -0.12% ~ +0.12% B: -0.16% ~ +0.08% C: -0.07% ~ +0.07% D: -0.05% ~ +0.05% E: -0.044% ~ 0.044% F: -0.04% ~ +0.04% G: -0.02% ~ 0% H: -0.022% ~ 0% I: -0.013% ~ 0.013%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:176~264VAC SPEC: O/P:0% TO FULL LOAD A: ±2% B: ±1% C: ±1% D: ±1% E: ±1% F: ±1% G: ±1% H: ±1% I: ±1%	A: -0.12% ~ +0.26% B: -0.25% ~ 0% C: -0.14% ~ +0.07% D: -0.1% ~ +0.05% E: -0.044% ~ 0.044% F: -0.09% ~ +0.04% G: -0.10% ~ +0.03% H: -0.07% ~ 0.022% I: -0.079% ~ 0.0125%	P
5	RIPPLE & NOISE	I/P:230VAC SPEC: O/P:FULL LOAD A: 150mV B: 150mV C: 180mV D: 180mV E: 180mV F: 180mV G: 240mV H: 240mV I: 240mV	A: 92mV B: 120mV C: 127mV D: 114mV E: 83mV F: 95mV G: 127mV H: 110mV I: 136mV	P
6	AC INPUT CURRENT	I/P:230VAC SPEC:1.6A O/P:FULL LOAD	E:1.515A	P
7	MAX. INRUSH CURREN	I/P:230VAC SPEC:35A O/P: FULL LOAD	E:34A	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: O/P:MIN. LOAD A: 4.5~5.5V B: 6~8.3V C: 8~10.4V D: 10.6~13.2V E: 12~15V F: 13.5~16.5V G: 21~28V H: 24~30V I: 43~53V	A: 4.43V~5.88V B: 5.64V~8.82V C: 7.78V~11.4V D: 9.56V~14.04V E: 10.69V~15.65V F: 12.17V~17.70V G: 19.17V~28.86V H: 22.98V~31.84V I: 40.51V~54.76V	P
9	SET UP TIME	I/P:230VAC SPEC:100mS O/P:FULL LOAD	E: 34mS	P
10	HOLD UP TIME	I/P:230VAC SPEC:20mS O/P:FULL LOAD	E: 31.3mS	P

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11	EFFICIENCY	I/P:230VAC O/P:FULL LOAD SPEC: A:78% B:80% C:80% D:82% E:83% F:84% G:85% H:86% I:87%	A:79.58% B:82.71% C:83.17% D:83% E:82.97% F:84.35% G:85.76% H:85.997% I:86.222%	P	
12	OVER LOAD PROTECTION	I/P:230VAC O/P:TESTING SPEC: 105%~150%	A:129% B:125% C:120% D:129% E:125% F:125% G:130% H:130% I:142%	P	
13	OVER VOLTAGE PROTECTION	I/P:230VAC O/P:TESTING S-150-24 SPEC: 115%~135% 125%~145%	A:121% B:134% C:133% D:127% E:125% F:124% G:134% H:129% I:119%	P	
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<3.5mA N-FG--<3.5mA	E: L-FG:0.75mA N-FG:0.75mA	P	
15	INSULATION RESISTANCE	SPEC: I/P-O/P: 500VDC/100MOhms MIN. I/P-FG: 500VDC/100MOhms MIN. O/P-FG: 500VDC/100MOhms MIN.	E: O/P-FG >100MOhms I/P-O/P >100MOhms I/P-FG >100MOhms	P	
16	DIELECTRIC / WITHSTAND VOLTAGE	SPEC: I/P- O/P: 4.3KVDC/ 1 min. (10mA CUT-OFF) I/P - FG: 2.2KVDC/ 1 min. (10mA CUT-OFF) O/P -FG: 0.75KVDC/ 1 min. (10mA CUT-OFF)	E: I/P-O/P :5.16mA I/P-FG :4.8mA O/P-FG :3.361mA	P	
17	EMS TEST	EFT TEST: EN50082-1 IEC1000-4-4	F: CRITERIA A OK	P	
		SURGE TEST: EN50082-1 IEC1000-4-5	F: CRITERIA A OK	P	
18	BURN-IN TEST	I/P: 230VAC O/P: FULL LOAD TA:26.2°C BURN-IN DURATION : 2 hrs	A:NON BREAK	P	
19	ENVIRONMENT TEST	HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:53.7°C	A: AFTER 22.5 hrs NON BREAK	P	
20	TEMPERATURE RISE TEST Trise OF PARTS	A: I/P :230VAC AFTER 2 hr BURN-IN WITH COOLING FAN (23CFM) O/P :FULL LOAD TA:26.2°C			
		POSITION	P/N	TEMP	Trise
		BD1	BRIDGE DIODE	63.4°C	37.2°C
		Q2	MAIN TRANSISTOR	50.8°C	24.6°C
		T1	MAIN TRANSFORMER WIRE	66.8°C	40.6°C
		D13	O/P DIODE	76°C	49.8°C
		C34	O/P FILTER CAPACITOR	33.5°C	7.3°C
		L1	O/P CHOCK	54.3°C	28.1°C
		C6	I/P FILTER CAPACITOR	53.6°C	27.4°C
LF1	I/P FILTER TRANSFORMER	42.1°C	15.9°C		

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21	LIFE CYCLE	A: SUPPOSE C34 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:25°C Tc34:32.3°C Life: 898844hrs I/P:230VAC O/P:FULL LOAD Ta:50°C Tc34:56.6°C Life: 166794hrs		P
22	CRITICAL COMPONENT RECORD ( FOR QC INSPECTION REFERENCE ONLY )	A: FUSE :4A/250V BRIDGE DIODE :PUB606 LINE FILTER :TF096-R1 EE-25 TRANSFORMER TF133A-R2 ETD-34 POWER SWITCHER :2SC2625 TO-3P OUTPUT DIODE :CTB34M TO-3P OUTPUT CAPACITOR :ELNA 3300uF/10V 105°C RJH INPUT CAPACITOR :NITSUKO 330uF/200V 85°C P.C.B :S-150N-R5 CEM-3 2 OZ SS		

DATE	SAMPLE	TEST RESULT	TEST	APPROVAL
19980515	S-150	PASS	H.C.LIOU	MAX LIN
19990510	S-150-24	PASS	H.C.LIOU	MAX LIN
20010226	S-150-13.5,27,48	PASS	SAM	MAX LIN