

Quality Engineering Test Report

SERIES: S-350 350W AC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A.S-350-5 5V / 50A D.S-350-13.5 13.5V /25.8A G.S-350-48 48V / 7.3A
B.S-350-7.5 7.5V /40A E.S-350-15 15V / 23.2A
C.S-350-12 12V /29A F.S-350-24 24V /14.6A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:180~264VAC O/P:FULL LOAD	F:138VAC~267VAC	P
2	LINE REGULATION	I/P:176~264VAC SPEC: O/P:FULL LOAD A: ±0.5% B: ±0.5% C: ±0.5% D: ±0.5% E: ±0.5% F: ±0.5% G: ±0.5% ±0.5%	A: +0.00% ~ +0.11% B: +0.00% ~ +0.00% C: +0.00% ~ +0.00% D: -0.04% ~ +0.04% E: +0.00% ~ +0.00% F: -0.024% ~ +0.00% G: -0.02% ~ +0.00%	P
3	LOAD REGULATION	I/P:230VAC SPEC: O/P:MIN. TO FULL LOAD A: ±1% B: ±1% C: ±0.5% D: ±0.5% E: ±0.5% F: ±0.5% G: ±0.5% ±0.5%	A: -0.70% ~ +0.60% B: -0.41% ~ +0.41% C: -0.14% ~ +0.14% D: -0.27% ~ +0.23% E: -0.16% ~ +0.11% F: +0.07% ~ +0.12% G: -0.04% ~ +0.04%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:180~264VAC SPEC: O/P:0% TO FULL LOAD A: ±2% B: ±2% C: ±1% D: ±1% E: ±1% F: ±1% G: ±1% ±1%	A: +0.00% ~ -1.30% B: +0.00% ~ +1.08% C: -0.3% ~ 0.05% D: +0.08% ~ 0.64% E: -0.28% ~ +0.04% F: +0.02% ~ -0.153% G: +0.10% ~ +0.22%	P
5	RIPPLE&NOISE	I/P:230VAC SPEC: O/P:FULL LOAD A: 150mV B: 150mV C: 150mV D: 150mV E: 150mV F: 150mV G: 240mV	A: 48mV B: 52mV C: 60mV D: 40mV E: 51mV F: 58mV G: 86mV	P
6	AC INPUT CURRENT	I/P:230VAC SPEC:4A O/P:FULL LOAD	A:3.3A	P
7	MAX. INRUSH CURREN	I/P:230VAC SPEC:50A O/P: FULL LOAD	A:33.90A	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: A: 4.5~5.6V O/P:MIN. LOAD B: 6~9V C: 10~13.2V D: 12~15V E: 13.5~18V F:20~26.4V G: 41~56V	A: 4.21V~5.77V B: 9.32V~5.47V C: 8.97V~13.55V D: 11.05V~15.84VV E: 12.12V~18.58V F: 17.83V~26.7V G: 38.6V~57.9V	P
9	SET UP TIME	I/P:230VAC SPEC:200mS O/P:FULL LOAD	A: 17.51mS	P
10	HOLD UP TIME	I/P:230VAC SPEC:20mS O/P:FULL LOAD	A: 27.54mS	P
11	EFFICIENCY	I/P:230VAC SPEC: A:73% O/P:FULL LOAD B:76% C:74% D:79% E:78% F:81% G:83%	A:75.13% B:80.4% C:74.45% D:81.6% E:81.7% F:84.367% G:85.17%	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
12	OVER LOAD PROTECTION	I/P:230VAC O/P:TESTING SPEC: 105%~135%	A:121% B:125.1% C:116% D:122% E:118% F:116% G:117%	P
13	OVER VOLTAGE PROTECTION	I/P:230VAC O/P:TESTING SPEC: A:5.75V~6.75V B:9.4V~10.9V C:13.8V~16.2V D:15.5V~18.2V E:18V~21V F:27.6V~32.4V G:57.6V~67.2V	A:6.21V B:10.18V C:14.87V D:16.62V E:19.03V F:29.2V G:61.8V	P
14	OVER TEMPERATURE PROTECTION & FAN ON/OFF TEST	I/P:230VAC O/P:FULL LOAD SPEC: RTH3: (5V~7.5V) OTP > = 80°C FAN ON > = 55°C FAN OFF < = 45°C RTH3: (12V~15V) OTP > = 80°C FAN ON > = 65°C FAN OFF < = 55°C RTH3: (24V~48V) OTP > = 85°C FAN ON > = 70°C FAN OFF < = 60°C	F: OTP: 98°C FAN ON : 75°C FAN OFF: 62.5°C	P
15	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<3.5mA N-FG--<3.5mA	F: L-FG:0.54mA N-FG:0.54mA	P
16	GROUNDING CONTINUITY	SPEC: FG-CHASSIS<0.1 Ohms/2 MIN.	F: 44 mOhms	P
17	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.	F: O/P-FG >100M Ohms I/P-O/P >100M Ohms I/P-FG >100M Ohms	P
18	HARMONICS	SPEC:100VAC. O/P:FULL LOAD EN 61000-3,2 CLASS A	-----	N
19	DIELECTRIC / WITHSTAND VOLTAGE	SPEC: I/P- O/P: 1.5KVAC/ 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)	F: I/P-O/P :3.95mA I/P-FG :4.77mA O/P-FG :4.06mA	P
20	EMS TEST	EFT TEST: EN50082-1 IEC1000-4-4	G: CRITERIA A OK	P
		SURGE TEST: EN50082-1 IEC1000-4-5	G: CRITERIA A OK	P
21	ESD TEST	ESD TEST: EN50082-2 IEC1400-4-2	G: CRITERIA A OK	P
22	BURN-IN TEST	I/P: 230VAC O/P: FULL LOAD TA:48.8°C BURN-IN DURATION : 86 hrs	F:NON BREAK	P
23	ENVIRONMENT TEST	A:1.LOW TEMPERATURE TEST I/P:230 VAC O/P:80% LOAD AMBIENT TEMPERATURE:-9.9°C	F:AFTER 6 hrs POWER ON OK	P
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230 VAC O/P:FULL LOAD AMBIENT TEMPERATURE:48.8°C	F:AFTER 86hrs NON BREAK	
		3.HIGH HUMIDITY HIGH VOLTAGE ON/OFF TEST I/P:272 VAC O/P:FULL LOAD AMBIENT TEMPERATURE:25°C AMBIENT HUMIDITY:95%	A:AFTER 64 hrs POWER ON/OFF OK	

24	TEMPERATURE RISE TESTT rise OF PARTS	F: I/P :230VAC AFTER 1 hr BURN-IN O/P :FULL LOAD TA:25.5°C				P
		POSITION	P/N	TEMP	T rise	
		BD1	BRIDGE DIODE	57.1°C	31.6°C	
		Q2	MAIN TRANSISTOR	64.5°C	39°C	
		T1	MAIN TRANSFORMER COIL	83°C	57.5°C	
		D13	O/P DIODE	54.2°C	28.7°C	
		C34	O/P FILTER CAPACITOR	38.4°C	12.9°C	
		L1	O/P CHOCK	87.1°C	61.6°C	
		C5	I/P FILTER CAPACITOR	54.9°C	29.4°C	
		RTH3	THERMISTOR	62.9°C	37.4°C	
		T2	TRANSFORMER COIL	54.9°C	29.4°C	
		RG1	REGULATOR	41.7°C	16.6°C	
		LF1	I/P FILTER TRANSFORMER	53.3°C	27.8°C	
		R3	RESISTANCE	49.3°C	23.8°C	
R53	RESISTANCE	54.5°C	29°C			

25	LIFE CYCLE	F: SUPPOSE C34 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:25°C Tc34:37.9°C Life:256000hrs I/P:230VAC O/P:FULL LOAD Ta:50°C Tc34:54°C Life:83865hrs	P
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26	CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)	A: FUSE : 8AL/250V BRIDGE DIODE : D10XB60 10A/600V LINE FILTER : TF-306 EE-35 TRANSFORMER : TF-619 ETD-39 POWER SWITCHER : 2SK3306 10A/400V TO-3P OUTPUT DIODE : ESAD83004 30A/40V TO-3P OUTPUT CAPACITOR :(V) 3300uF/16V 105°C L INPUT CAPACITOR : HITACHI 680uF/200V 85°C HP3 P.C.B : S-350 CEM-1 2OZ SS
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DATE	SAMPLE	TEST RESULT	TEST	APPROVAL
19990615	RD SAMPLE S-350 5,13.5V	PASS	H.C.LIOU	MAX LIN
19990716	PRDUCTION SAMPLE S-350 5,7.5,12,15, 24,48V	PASS	H.C.LIOU	MAX LIN
19991106	PRDUCTION SAMPLE 9911A31 5,12,15,24V	PASS	C.C.CHEN	MAX LIN
20000328	PRDUCTION SAMPLE A003C25A 24V	PASS	VINCENT	MAX LIN