

# Quality Engineering Test Report

**SERIES: S-40**

**40W AC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY**

**SAMPLE: A.S-40-5 5V / 8A**  
**B.S-40-12 12V / 3.5A**  
**C.S-40-15 15V / 2.8A**  
**D.S-40-24 24V / 1.8A**

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P : TESTING SPEC : 85~264VAC O/P : FULL LOAD	A:62VAC~267VAC	P
2	LINE REGULATION	I/P : 85~264VAC SPEC : O/P : FULL LOAD A: ±0.5% B: ±0.5% C: ±0.5% D: ±0.5%	A: 0% ~ 0% B: 0% ~ 0% C: -0.04% ~ 0.04% D: -0.02% ~ 0%	P
3	LOAD REGULATION	I/P : 230VAC SPEC : O/P : MIN. TO FULL LOAD A: ±1% B: ±0.5% C: ±0.5% D: ±0.5%	A: -0.18% ~ +0.18% B: -0.05% ~ +0.05% C: -0.04% ~ +0% D: -0.02% ~ +0%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P : 85~264VAC SPEC : O/P : 0% TO FULL LOAD A: ±2% B: ±1% C: ±1% D: ±1%	A: -0.14% ~ +0% B: -0.05% ~ +0% C: -0.08% ~ -0.16% D: -0.10% ~ +0.05%	P
5	RIPPLE&NOISE	I/P : 230VAC SPEC : O/P : FULL LOAD A: 75mV B: 100mV C: 100mV D: 100mV	A: 4mV B: 3mV C: 3mV D: 3mV	P
6	AC INPUT CURRENT	I/P : 230VAC SPEC : 0.6A O/P : FULL LOAD	A:0.54A	P
7	MAX. INRUSH CURREN	I/P : 230VAC SPEC : 60A O/P : FULL LOAD	A:35A	P
8	O/P VOLTAGE ADJ.RANGE	I/P : 230VAC SPEC : O/P : MIN. LOAD A: -5%~+10% B: -10%~+10% C: -10%~+10% D: -10%~+10%	A: 4.49V~5.80V B: 10.03V~14.63V C: 12.43V~17.42V D: 12.43V~17.42V	P
9	SET UP TIME	I/P : 230VAC SPEC : 300mS O/P : FULL LOAD	A: 241mS	P
10	HOLD UP TIME	I/P : 230VAC SPEC : 60mS O/P : FULL LOAD	A: 87mS	P
11	EFFICIENCY	I/P : 115VAC SPEC : O/P : FULL LOAD A:72% B:76% C:76% D:78%	A:72.84% B:76.63% C:76.21% D:78.64%	P
12	OVER LOAD PROTECTION	I/P : 115VAC SPEC : 105%~150% O/P : TESTING	A:142.5% B:145% C:140.7% D:138.3%	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT																																										
13	OVER VOLTAGE PROTECTION	I/P : 230VAC SPEC : 115%~135% O/P : FULL LOAD	A : 121% B : 122% C : 123% D : 115%	P																																										
14	GROUND LEAKAGE CURRENT	I/P : 240VAC SPEC : L-FG--<1mA N-FG--<1mA	A: L-FG : 0.87mA N-FG : 0.88mA	P																																										
15	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: O/P-FG >100M Ohms I/P-O/P >100M Ohms I/P-FG >100M Ohms	P																																										
16	DIELECTRIC / WITHSTAND VOLTAGE	SPEC : I/P- O/P : 3KVDC/ 1 min. (10mA CUT-OFF) I/P - FG : 1.5KVDC/ 1 min. (10mA CUT-OFF) O/P - FG : 0.5KVDC/ 1 min. (10mA CUT-OFF)	A: I/P-O/P : 4.18mA I/P-FG : 6.54mA O/P-FG : 2.50mA	P																																										
17	EMS TEST	EFT TEST: EN50082-1 IEC1000-4-4	D: CRITERIA A OK	P																																										
		SURGE TEST: EN50082-1 IEC1000-4-5	D: CRITERIA A OK	P																																										
18	BURN-IN TEST	I/P: 230VAC O/P: FULL LOAD TA:23.3°C BURN-IN DURATION : 1.5 hrs	A:NON BREAK	P																																										
19	ENVIRONMENT TEST ( SAMPLE A:)	HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P : 230VAC O/P : FULL LOAD AMBIENT TEMPERATURE : 41.5°C	AFTER 18.5 hrs NON BREAK	P																																										
20	TEMPERATURE RISE TEST T rise OF PARTS	A: I/P : 230VAC AFTER 1.5 hr BURN-IN O/P : FULL LOAD TA : 23.3°C			*NOTE1																																									
		<table border="1"> <thead> <tr> <th></th> <th>POSITION</th> <th>P/N</th> <th>TEMP</th> <th>T rise</th> </tr> </thead> <tbody> <tr> <td></td> <td>BD1</td> <td>BRIDGE DIODE</td> <td>76°C</td> <td>52.7°C</td> </tr> <tr> <td></td> <td>Q1</td> <td>MAIN TRANSISTOR</td> <td>69.4°C</td> <td>46.1°C</td> </tr> <tr> <td></td> <td>T1</td> <td>MAIN TRANSFORMER</td> <td>85.1°C</td> <td>61.8°C</td> </tr> <tr> <td></td> <td>D3</td> <td>O/P DIODE</td> <td>60.3°C</td> <td>37°C</td> </tr> <tr> <td></td> <td>C21</td> <td>O/P FILTER CAPACITOR</td> <td>61.6°C</td> <td>38.3°C</td> </tr> <tr> <td></td> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>71.8°C</td> <td>48.5°C</td> </tr> <tr> <td></td> <td>LF1</td> <td>I/P FILTER TRANSFORMER</td> <td>48.4°C</td> <td>25.1°C</td> </tr> <tr> <td>*</td> <td>D1</td> <td>FLY DIODE</td> <td>93°C</td> <td>69.7°C</td> </tr> </tbody> </table>		POSITION		P/N	TEMP	T rise		BD1	BRIDGE DIODE	76°C	52.7°C		Q1	MAIN TRANSISTOR	69.4°C	46.1°C		T1	MAIN TRANSFORMER	85.1°C	61.8°C		D3	O/P DIODE	60.3°C	37°C		C21	O/P FILTER CAPACITOR	61.6°C	38.3°C		C5	I/P FILTER CAPACITOR	71.8°C	48.5°C		LF1	I/P FILTER TRANSFORMER	48.4°C	25.1°C	*	D1	FLY DIODE
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21	LIFE CYCLE	A: SUPPOSE C21 IS THE MOST CRITICAL COMPONENT I/P : 230VAC O/P : FULL LOAD Ta : 25°C Tc21 : 63.3°C Life: 85979hrs I/P : 230VAC O/P : FULL LOAD Ta : 45°C Tc21 : 77.3°C Life: 32580hrs			P																																									
221	CRITICAL COMPONENT RECORD ( FOR QC INSPECTION REFERENCE ONLY )	A: FUSE : 3A/250V BRIDGE DIODE : D3SB60 LINE FILTER : TF096C1 EE-25 TRANSFORMER : TF147-1-R1 EER-28L POWER SWITCHER : 2SK727 TO-3P OUTPUT DIODE : CTB-34 TO-3P OUTPUT CAPACITOR : ELNA 2200uF/10V RJH 105°C INPUT CAPACITOR : JAMICON 100uF/400V LP 85°C P.C.B : S-40N-R4 CEM-1 2 OZ SS																																												
DATE	SAMPLE	TEST RESULT	TEST	APPROVAL																																										
980427	S-40	NOTE1:Working temperature > = 45°C output should derating	H.C.LIOU	Max Lin																																										
990507	S-40-24	PASS	H.C.LIOU	Max Lin																																										