

# Quality Engineering Test Report

**SERIES: ADD-155 155W AC-DC SINGLE OUTPUT WITH CHARGER**

<b>SAMPLE: A.ADD-55A</b>	<b>+V1: 13.8V / 9.5A</b>	<b>B.ADD-55B</b>	<b>+V1:27.6V /4.5A</b>
	<b>+V2:5V / 3A</b>		<b>+V2:5V / 3A</b>
	<b>+V3:13.3V / 0.5A</b>		<b>+V3:27.1V/0.5A</b>
<b>C.ADD-55B</b>	<b>+V1:54V /2.3A</b>		
	<b>+V2:5V / 3A</b>		
	<b>+V3:53.5V/0.2A</b>		

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:88~264VAC O/P:FULL LOAD	A:58.431VAC~264VAC	P
2	LINE REGULATION	I/P:88V~264VAC SPEC: O/P:FULL LOAD A :+V1 :±1% +V2 :±0.5% +V3:----- B :+V1 :±1% +V2 :±0.5% +V3:----- C :+V1 :±1% +V2 :±0.5% +V3:-----	A: +V1: 0%~0% +V2: 0%~+0.12% +V3: ----- B: +V1: -0.02%~0% +V2: -0.12%~0% +V3: ----- C: +V1: -0.011%~-0.011% +V2: 0%~0% +V3: -----	P
3	LOAD REGULATION	I/P:230VAC SPEC: O/P:MIN. TO FULL LOAD A :+V1 : ±1% +V2 : ±0.5% +V3:----- B :+V1 : ±1% +V2 : ±0.5% +V3:----- C :+V1 : ±1% +V2 : ±0.5% +V3:-----	A: +V1: -0.04%~+0.04% +V2: -0.5%~1.36% +V3: ----- B: +V1: -0.043%~0.09% +V2: -0.36%~1.123% +V3: ----- C: +V1: 0%~0.333% +V2: -0.63%~0.75% +V3: -----	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:88~264VAC SPEC: O/P:MIN. TO FULL LOAD A :+V1 : ±1% +V2 : ±3% +V3:----- B :+V1 : ±1% +V2 : ±3% +V3:----- C :+V1 : ±1% +V2 : ±3% +V3:-----	A: +V1: -0.094%~+0.043% +V2: -4.4%~+0.368% B: +V1: -0.134%~0.022% +V2: -0.258%~1.49% C: +V1: 0.022%~0.068% +V2: -1.005%~2.01%	P
5	RIPPLE&NOISE	I/P:230VAC SPEC: O/P:FULL LOAD A :+V1 :150mV +V2 :100mV +V3:----- B :+V1 :150mV +V2 :100mV +V3:----- C :+V1 :240mV +V2 :100mV +V3:-----	A: +V1: 13mV +V2: 49mV +V3: ---mV B: +V1: 19mV +V2: 51mV +V3: ---mV C: +V1: 24mV +V2: 59mV +V3: ---mV	P
6	AC INPUT CURRENT	I/P:230VAC SPEC:1.5A O/P:FULL LOAD	A:0.888A	P
7	MAX. INRUSH CURREN	I/P:230VAC SPEC:40A O/P: FULL LOAD	A:36.046A	P

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8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC O/P:MIN. LOAD SPEC: A: V1:12V~14.5V B: V1:24V~29V C: V1:48V~58V	A: 11.463V~16.443V B: 22.72V~30.55V C: 44.8V~59.9V	P																																								
9	SET UP TIME	I/P:230VAC O/P:FULL LOAD SPEC:900mS	A: 676.289mS	P																																								
10	HOLD UP TIME	I/P:230VAC O/P:FULL LOAD SPEC:20mS	A: 29.558mS	P																																								
11	EFFICIENCY	I/P:230VAC O/P:FULL LOAD SPEC: A:79% B:81% C:81%	A:80.205% B:82.985% C:83.568%	P																																								
12	OVER LOAD PROTECTION	I/P:230VAC O/P:TESTING SPEC:105%~135%(CH1,CH2) 0.51A~0.9A(CH3)	A:130%(CH1,CH2) 0.78A(CH3) B:117% 0.66A C:121.8% 0.692A	P																																								
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<1mA N-FG--<1mA	A: L-FG:0.32mA N-FG:0.34mA	P																																								
15	INSULATION RESISTANCE	SPEC: O/P-FG 500VDC/100M Ohms MIN. I/P-O/P 500VDC/100M Ohms MIN. I/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: 3000VAC/ 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: 3.82mA I/P-FG: 2.896mA O/P-FG: 3.54mA	P																																								
17	BATTERY LOW PROTECTION	I/P:230VAC O/P FULL LOAD SPEC: A:9.5~10.5V B:19~20V C:38.5~39.5V	A: 9.67V B: 19.5V C: 38.6V	P																																								
18	BURN-IN TEST	I/P: 230VAC O/P:100% LOAD with 17.8CFM FAN TA:26.4°C BURN-IN DURATION : 1.5 hrs	A: NON BREAK	P																																								
19	ENVIRONMENT TEST	1.LOW TEMPERATURE TEST I/P:230 VAC O/P:100% LOAD AMBIENT TEMPERATURE:-9.2°C	A :AFTER 2 hrs POWER ON OK	P																																								
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:51.7°C with 17.8CFM FAN	A :AFTER 5 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%	A : AFTER50 hrs POWER ON/OFF NON BREAK																																									
20	TEMPERATURE RISE TEST Trise OF PARTS	A: I/P :230VAC O/P :100%LOAD AFTER 2 hr BURN-IN TA26.4°C with 17.8CFM FAN	<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>59.8°C</td> <td>33.4°C</td> </tr> <tr> <td></td> <td>Q1</td> <td>MAIN TRANSISTOR</td> <td>39.4°C</td> <td>13°C</td> </tr> <tr> <td></td> <td>T1</td> <td>MAIN TRANSFORMER</td> <td>53.8°C</td> <td>17.4°C</td> </tr> <tr> <td></td> <td>D40</td> <td>O/P DIODE</td> <td>94.8°C</td> <td>68.4°C</td> </tr> <tr> <td></td> <td>C44</td> <td>O/P FILTER CAPACITOR</td> <td>69.6°C</td> <td>43.2°C</td> </tr> <tr> <td></td> <td>L2</td> <td>O/P CHOKE</td> <td>73.3°C</td> <td>46.9°C</td> </tr> <tr> <td></td> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>39.6°C</td> <td>13.2°C</td> </tr> </tbody> </table>		POSITION	P/N	TEMP	T rise		BD1	BRIDGE DIODE	59.8°C	33.4°C		Q1	MAIN TRANSISTOR	39.4°C	13°C		T1	MAIN TRANSFORMER	53.8°C	17.4°C		D40	O/P DIODE	94.8°C	68.4°C		C44	O/P FILTER CAPACITOR	69.6°C	43.2°C		L2	O/P CHOKE	73.3°C	46.9°C		C5	I/P FILTER CAPACITOR	39.6°C	13.2°C	P
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21	LIFE CYCLE	A: SUPPOSE C44 IS THE MOST CRITICAL COMPONENT with 17.8CFM FAN I/P:230VAC O/P:100% LOAD Ta:26.4°C Tc44:69.6°C Life:94150.1hrs I/P:230VAC O/P:100% LOAD Ta:51.7°C Tc97.0°C Life:14394.2hrs		P																																								

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22	CRITICAL COMPONENT RECORD ( FOR QC INSPECTION REFERENCE ONLY )	A: FUSE : F 3A/250V CHARGER 15A/250V BRIDGE DIODE : KBJ608G LINE FILTER : LF201 TRANSFOMER : TF-695 POWER SWITCHER : 2SK2039 OUTPUT DIODE : D9202 OUTPUT CAPACITOR : RUBYCON 1000uF/25V YXG 105°C INPUT CAPACITOR : HITACHI 150uF/400V HP3 85°C P.C.B : ADD-155		

DATE	SAMPLE	TEST RESULT	TEST	APPROVAL
20001229	RD SAMPLE	PASS	VINCENT	Max Lin
20010130	PRDUCTION SAMPLE A101B30 ADD155A ADD155B ADD155C	PASS	SAM	Max Lin