Quality Engineering Test Report

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

SAMPLE: **A.ADD-55A** **+V1: 13.8V / 9.5A** **+V2:5V / 3A** **+V3:13.3V / 0.5A**

B.ADD-55B **+V1:27.6V /4.5A** **+V2:5V / 3A** **+V3:27.1V/0.5A**

C.ADD-55B **+V1:54V /2.3A** **+V2:5V / 3A** **+V3:53.5V/0.2A**

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

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>TEST CONDITION / SPECIFICATION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>8</td><td>O/P VOLTAGE ADJ.RANGE</td><td>I/P:230VAC SPEC:
O/P:MIN. LOAD A: V1:12V~14.5V
B: V1:24V~29V
C: V1:48V~58V</td><td>A: 11.463V~16.443V
B: 22.72V~30.55V
C: 44.8V~59.9V</td><td>P</td></tr>
<tr><td>9</td><td>SET UP TIME</td><td>I/P:230VAC SPEC:900mS
O/P:FULL LOAD</td><td>A: 676.289mS</td><td>P</td></tr>
<tr><td>10</td><td>HOLD UP TIME</td><td>I/P:230VAC SPEC:20mS
O/P:FULL LOAD</td><td>A: 29.558mS</td><td>P</td></tr>
<tr><td>11</td><td>EFFICIENCY</td><td>I/P:230VAC SPEC: A:79%
O/P:FULL LOAD B:81%
C:81%</td><td>A:80.205%
B:82.985%
C:83.568%</td><td>P</td></tr>
<tr><td>12</td><td>OVER LOAD PROTECTION</td><td>I/P:230VAC SPEC:105%~135%(CH1,CH2)
O/P:TESTING 0.51A~0.9A(CH3)</td><td>A:130%(CH1,CH2) 0.78A(CH3)
B:117% 0.66A
C:121.8% 0.692A</td><td>P</td></tr>
<tr><td>14</td><td>GROUND LEAKAGE CURRENT</td><td>I/P:240VAC SPEC:
L-FG--<1mA
N-FG--<1mA</td><td>A: L-FG:0.32mA
N-FG:0.34mA</td><td>P</td></tr>
<tr><td>15</td><td>INSULATION RESISTANCE</td><td>SPEC: O/P-FG 500VDC/100M Ohms MIN.
I/P-O/P 500VDC/100M Ohms MIN.
I/P-FG 500VDC/100M Ohms MIN.</td><td>A: O/P-FG >100M Ohms
I/P-O/P >100M Ohms
I/P-FG >100M Ohms</td><td>P</td></tr>
<tr><td>16</td><td>DIELECTRIC / WITHSTAND VOLTAGE</td><td>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)</td><td>A: I/P-O/P: 3.82mA
I/P-FG: 2.896mA
O/P-FG: 3.54mA</td><td>P</td></tr>
<tr><td>17</td><td>BATTERY LOW PROTECTION</td><td>I/P:230VAC SPEC:
A:9.5~10.5V
O/P FULL LOAD B:19~20V
C:38.5~39.5V</td><td>A: 9.67V
B: 19.5V
C: 38.6V</td><td>P</td></tr>
<tr><td>18</td><td>BURN-IN TEST</td><td>I/P: 230VAC O/P:100% LOAD with 17.8CFM FAN
TA:26.4ºC BURN-IN DURATION : 1.5 hrs</td><td>A: NON BREAK</td><td>P</td></tr>
<tr><td rowspan="3">19</td><td rowspan="3">ENVIRONMENT TEST</td><td>1.LOW TEMPERATURE TEST
I/P:230 VAC O/P:100% LOAD
AMBIENT TEMPERATURE:-9.2ºC</td><td>A :AFTER 2 hrs POWER ON OK</td><td rowspan="3">P</td></tr>
<tr><td>2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST
I/P:230VAC O/P:FULL LOAD
AMBIENT TEMPERATURE:51.7ºC with 17.8CFM FAN</td><td>A :AFTER 5 hrs NON BREAK</td></tr>
<tr><td>3.HIGH HUMIDITY HIGH VOLTAGE ON/OFF TEST
I/P:264VAC O/P:FULL LOAD
AMBIENT TEMPERATURE：25ºC
AMBIENT HUMIDITY：95%</td><td>A :
AFTER50 hrs POWER ON/OFF
NON BREAK</td></tr>
<tr><td>20</td><td>TEMPERATURE RISE TEST Trise OF PARTS</td><td colspan="2">A: I/P :230VAC AFTER 2 hr BURN-IN
O/P :100%LOAD TA26.4ºC
with 17.8CFM FAN
<table>
<tr><th></th><th>POSITION</th><th>P/N</th><th>TEMP</th><th>T rise</th></tr>
<tr><td></td><td>BD1</td><td>BRIDGE DIODE</td><td>59.8ºC</td><td>33.4ºC</td></tr>
<tr><td></td><td>Q1</td><td>MAIN TRANSISTOR</td><td>39.4ºC</td><td>13ºC</td></tr>
<tr><td></td><td>T1</td><td>MAIN TRANSFORMER</td><td>53.8ºC</td><td>17.4ºC</td></tr>
<tr><td></td><td>D40</td><td>O/P DIODE</td><td>94.8ºC</td><td>68.4ºC</td></tr>
<tr><td></td><td>C44</td><td>O/P FILTER CAPACITOR</td><td>69.6ºC</td><td>43.2ºC</td></tr>
<tr><td></td><td>L2</td><td>O/P CHOKE</td><td>73.3ºC</td><td>46.9ºC</td></tr>
<tr><td></td><td>C5</td><td>I/P FILTER CAPACITOR</td><td>39.6ºC</td><td>13.2ºC</td></tr>
</table></td><td>P</td></tr>
<tr><td>21</td><td>LIFE CYCLE</td><td colspan="2">A: SUPPOSE C44 IS THE MOST CRITICAL COMPONENT with 17.8CFM FAN
I/P:230VAC O/P:100% LOAD Ta:26.4ºC Tc44:69.6ºC Life:94150.1hrs
I/P:230VAC O/P:100% LOAD Ta:51.7ºC Tc97.0:ºC Life:14394.2hrs</td><td>P</td></tr>
</table>

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
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 105ºC INPUT CAPACITOR : HITACHI 150uF/400V HP3 85ºC 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**