



# Test Report: LOP-300-24

---

300W 4"×2" Low Profile Open Frame Power Supply

## ■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Control Function Test

Component Stress Test

## ■ SAFETY & E.M.C. TEST

Safety Test

E.M.C. Test

## ■ RELIABILITY TEST

ENVIRONMENT TEST

■ DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 22.8V~25.2V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	21.989V~26.272V/230VAC 21.989V~26.272V/115VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -2% ~ +2%	I/P: 80VAC~ 264VAC O/P:FULL~ MIN. LOAD Ta:25°C	V1: -0.03% ~ 0.02%
3	LINE REGULATION	V1: -0.5% ~ +0.5%	I/P: 80VAC~ 264VAC O/P:FULL LOAD Ta:25°C	V1: -0.01% ~ 0.01%
4	LOAD REGULATION	V1: -1% ~ +1%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.03% ~ 0.02%
5	OVER/UNDERSHOOT TEST	<±5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	-1.69%
6	RIPPLE & NOISE (Max)	V1: 200mVp-p	I/P:230VAC O/P: FULL LOAD Ta:25°C	V1: 105mVp-p / high frequency 142mVp-p / low frequency
		high frequency :	low frequency :	
7	SET UP TIME(Max)	230VAC/1000ms 115VAC/1500ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 442ms 115VAC/ 393ms
		INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage CH2: AC Input Voltage	INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage CH2: AC Input Voltage	

<p>8</p> <p>RISE TIME (Max)</p>	<p>230VAC/30ms 115VAC/30ms</p>	<p>I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C</p>	<p>230VAC/ 4.36ms 115VAC/ 4.29ms</p>
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage</p>		<p>INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage</p>	
<p>9</p> <p>HOLD UP TIME (Typ.)</p>	<p>8ms /300W load 16ms /180W load</p>	<p>I/P : 230 VAC O/P : TESTING Ta : 25°C</p>	<p>14.2ms /300W load 22.40ms /180W load</p>
<p>INPUT=230VAC/50HZ @ 300W load CH1: Output Voltage CH2: AC Input Voltage</p>		<p>INPUT=230VAC/50HZ @ 180W load CH1: Output Voltage CH2: AC Input Voltage</p>	
<p>10</p> <p>DYNAMIC LOAD</p>	<p>V1: 2400mVp-p</p>	<p>I/P: 230VAC O/P: (1) FULL/0% LOAD 50%DUTY / 120HZ (2) FULL/0% LOAD 50%DUTY / 1KHZ Ta:25°C</p>	<p>1010mVp-p 1050mVp-p</p>
<p>FULL /0% LOAD 50%DUTY / 120HZ</p>		<p>FULL /0% LOAD 50%DUTY / 1KHZ</p>	

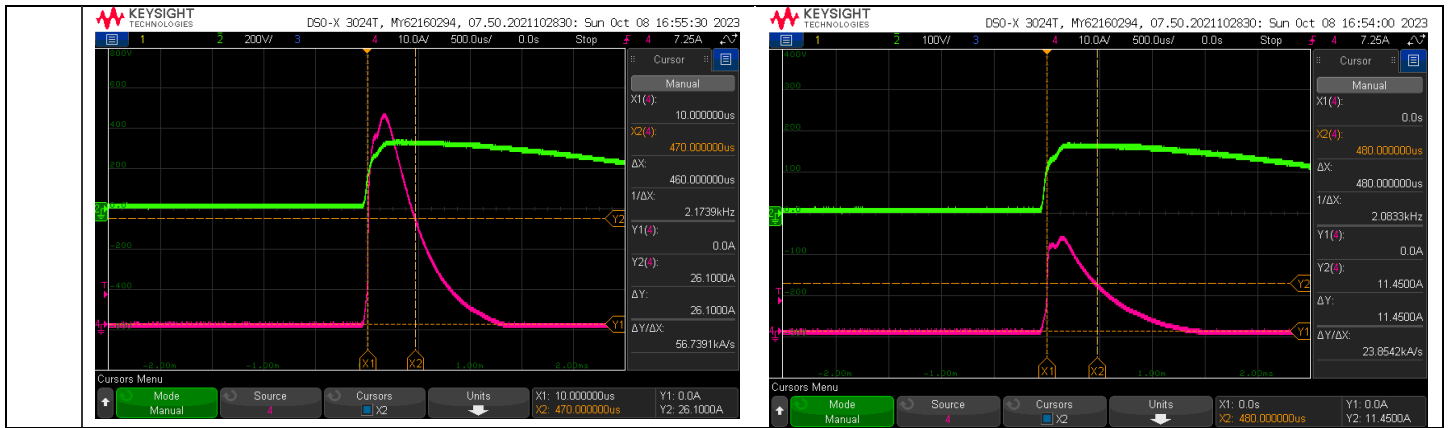
<p>11 TRANSIENT RECOVERY TIME</p>	<p>V1: 240mVp-p &lt; 500us</p>	<p>I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us</p>	<p>390mVp-p 0us</p>
<p>12 PEAK LOAD</p>	<p>150% PEAK LOAD@3S</p>	<p>I/P: 264VAC I/P: 115VAC O/P: PEAK LOAD</p>	<p>TEST : OK</p>

### INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	80VAC~264VAC 113VDC~ 370VDC 	(1) I/P: TESTING O/P: FULL / 70% LOAD (2) I/P: DC TESTING (L: + N: -) O/P: FULL / 70% LOAD (3) I/P: DC TESTING (L: - N: +) O/P: FULL / 70% LOAD Ta:25°C  I/P: HIGH-LINE+15%=300V O/P:FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	(1) 75.8V~264V/ FULL LOAD 75.5V~264V/ 70% LOAD (2) 107.5Vdc~370Vdc/FULL LOAD 107.5Vdc~370Vdc/70% LOAD (3) 107.5Vdc~370Vdc/FULL LOAD 107.5Vdc~370Vdc/70% LOAD  TEST : OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P:80 VAC ~264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST : OK
3	INPUT CURRENT (Typ.)	230V/ 1.8A 115V/ 3.5A	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =1.396A/ 230VAC I =2.908A/ 115VAC
4	LEAKAGE CURRENT	Earth leakage current < 500uA(rms) @ 264VAC Touch current < 70uA(rms) @ 264VAC	I/P : 264 VAC O/P : Min LOAD Ta : 25°C	Earth: 286.8uA / 264VAC Touch:43.9uA / 264VAC
5	NO LOAD CONSUMPTION	<0.5W	I/P : 230VAC I/P : 115VAC O/P : NO LOAD	0.3254W/ 230VAC 0.2661W/ 115VAC



			Ta : 25°C																																		
6	POWER FACTOR (Typ.)	0.95/ 230VAC 0.98/115VAC	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	PF=0.9975/230VAC PF=0.9974/115VAC																																	
<p>P.F vs LOAD</p> <table border="1"> <caption>P.F vs LOAD Data</caption> <thead> <tr> <th>LOAD (%)</th> <th>115VAC PF</th> <th>230VAC PF</th> </tr> </thead> <tbody> <tr><td>10%</td><td>0.98</td><td>0.95</td></tr> <tr><td>20%</td><td>0.99</td><td>0.99</td></tr> <tr><td>30%</td><td>0.99</td><td>0.99</td></tr> <tr><td>40%</td><td>0.99</td><td>0.99</td></tr> <tr><td>50%</td><td>0.99</td><td>0.99</td></tr> <tr><td>60%</td><td>0.99</td><td>0.99</td></tr> <tr><td>70%</td><td>0.99</td><td>0.99</td></tr> <tr><td>80%</td><td>0.99</td><td>0.99</td></tr> <tr><td>90%</td><td>0.99</td><td>0.99</td></tr> <tr><td>100%</td><td>0.99</td><td>0.99</td></tr> </tbody> </table>					LOAD (%)	115VAC PF	230VAC PF	10%	0.98	0.95	20%	0.99	0.99	30%	0.99	0.99	40%	0.99	0.99	50%	0.99	0.99	60%	0.99	0.99	70%	0.99	0.99	80%	0.99	0.99	90%	0.99	0.99	100%	0.99	0.99
LOAD (%)	115VAC PF	230VAC PF																																			
10%	0.98	0.95																																			
20%	0.99	0.99																																			
30%	0.99	0.99																																			
40%	0.99	0.99																																			
50%	0.99	0.99																																			
60%	0.99	0.99																																			
70%	0.99	0.99																																			
80%	0.99	0.99																																			
90%	0.99	0.99																																			
100%	0.99	0.99																																			
7	EFFICIENCY(Typ.)	93%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	93.56%																																	
<p>EFFICIENCY vs LOAD</p> <table border="1"> <caption>EFFICIENCY vs LOAD Data</caption> <thead> <tr> <th>LOAD (%)</th> <th>115VAC Efficiency (%)</th> <th>230VAC Efficiency (%)</th> </tr> </thead> <tbody> <tr><td>10%</td><td>87</td><td>89</td></tr> <tr><td>20%</td><td>91</td><td>92</td></tr> <tr><td>30%</td><td>92</td><td>93</td></tr> <tr><td>40%</td><td>92</td><td>93</td></tr> <tr><td>50%</td><td>92</td><td>93</td></tr> <tr><td>60%</td><td>92</td><td>93</td></tr> <tr><td>70%</td><td>92</td><td>93</td></tr> <tr><td>80%</td><td>91</td><td>93</td></tr> <tr><td>90%</td><td>91</td><td>93</td></tr> <tr><td>100%</td><td>91</td><td>93</td></tr> </tbody> </table>					LOAD (%)	115VAC Efficiency (%)	230VAC Efficiency (%)	10%	87	89	20%	91	92	30%	92	93	40%	92	93	50%	92	93	60%	92	93	70%	92	93	80%	91	93	90%	91	93	100%	91	93
LOAD (%)	115VAC Efficiency (%)	230VAC Efficiency (%)																																			
10%	87	89																																			
20%	91	92																																			
30%	92	93																																			
40%	92	93																																			
50%	92	93																																			
60%	92	93																																			
70%	92	93																																			
80%	91	93																																			
90%	91	93																																			
100%	91	93																																			
8	INRUSH CURRENT(Typ.)	230V/80A 115V/40A COLD START	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =52.2A/ 230VAC I =22.9A/ 115VAC T50= 460us/230V																																	
INPUT=230VAC/50HZ @ FULL LOAD CH1: AC Input Voltage CH4: Input current		INPUT=115VAC/ 60HZ @ FULL LOAD CH1: AC Input Voltage CH4: Input current																																			



### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105 ~ 150% rated output power PROTECTION TYPE : Hiccup after 3 sec, recovers automatically(3 sec) after fault condition is removed.	I/P: 264VAC I/P: 230VAC I/P: 115VAC O/P: TESTING Ta: 25°C	126.288%/ 264VAC 126.344%/ 230VAC 127.80%/ 115VAC PROTECTION TYPE : Hiccup after 3 sec, recovers automatically(3 sec) after fault condition is removed.
2	OVER VOLTAGE PROTECTION	26.4V~31.2V Protection type: Shut down o/p voltage, re-power on to recover	I/P: 264VAC I/P: 80VAC O/P: MIN LOAD Ta: 25°C	28.7V/ 264VAC 28.5V/ 80VAC Protection type: Shut down o/p voltage, re-power on to recover
3	OVER TEMPERATURE PROTECTION	Protection type: Shut down o/p voltage, recovers automatically after temperature goes down	I/P: 264VAC I/P: 80VAC O/P: FULL LOAD	O.T.P Active Protection type : OK Shut down o/p voltage, recovers automatically after temperature goes down
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE Protection type: Hiccup mode, recovers automatically after fault condition is removed	I/P: 264VAC I/P: 80VAC O/P: FULL LOAD Ta: 25°C	NO DAMAGE PROTECTION TYPE : OK Hiccup mode, recovers automatically after fault condition is removed

### CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	EXTERNAL FAN SUPPLY	12V@0.5A for driving a fan / 12V@0.5A without fan cooling ; (10.98CFM) tolerance -15%~+15% at main output 20% rated current	I/P: 230 VAC O/P: TESTING Ta: 25°C	TEST : 1) <u>-0.23%~ 0.28%</u>

### COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor ( D to S) or (C to E) Peak Voltage	Q5/ Q6 Rated: 18A/600V	AC ON/OFF I/P: High-Line +3V =267V VDS: O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load (8) Peak Load Ta:25°C	Q5: VDS: (1) 460V (2) 484V (3) 460V (4) 460V (5) 460V (6) 460V (7) 460V (8) 460V Q6: VDS: (1) 452V (2) 508V (3) 452V (4) 452V (5) 452V (6) 452V (7) 496V (8) 464V
2	P.F.C Transistor ( D to S) or (C to E) Peak Voltage	Q1 Rated: 22A/600V	AC ON/OFF I/P: High-Line +3V =267V VDS: O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load (8) Peak Load Ta:25°C	VDS: (1) 468V (2) 439V (3) 456V (4) 456V (5) 456V (6) 452V (7) 419V (8) 460V
3	P.F.C DIODE	D1 Rated: 8A/ 600V	I/P: High-Line +3V =267 V AC ON/OFF O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (4) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (5) Peak Load Ta:25°C	(1) 448V (2) 440V (3) 448V (4) 444V (5) 452V

4	Diode Peak Voltage	<p>Q100/Q101 Rated: 120A/80V</p>	<p>AC ON/OFF I/P: High-Line +3V =267 V Vo=Vomax O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. (8).NO LOAD (9) burst Mode 脫離前 (10) Peak Load Vo=Vnormal O/P: (1) Full Load Ta:25°C</p>	<p>Q100: Vo=Vmax VDS: (1) 65.6V (2) 65.6V (3) 67.4V (4) 65.6V (5) 65.6V (6) 66.8V (7) 62.6V (8) 59.6V (9) 60.2V (10) 66.8V Vo=Vnormal (1) 63.2V</p>	<p>Q101: Vo=Vmax VDS: (1) 65.0V (2) 65.0V (3) 66.2V (4) 66.2V (5) 65.0V (6) 65.6V (7) 61.4V (8) 62.0V (9) 60.2V (10) 66.2V Vo=Vnormal (1) 63.2V</p>
5	Input Capacitor Voltage	<p>C5 Rated: 100μ / 420V</p>	<p>I/P: High-Line +3V =267V O/P: (1)Full Load input on/off (2) Min load input on /Off (3) Full Load /Min load Change (4) Full load continue (5) Peak Load on/off (6) Peak Load continue Ta:25°C</p>	<p>(1) 405V (2) 395V (3) 405V (4) 401V (5) 405V (6) 407V</p>	
6	Control IC Voltage Test	<p>PFC /PWM IC U1: Rated : 18.2V~ 28.7V  O/P IC U101 Rated : 4.75V~38V</p>	<p>AC ON/OFF I/P: High-Line +3V =267 V O/P: (1) FULL LOAD (2) Output Short (3) O.L.P (4) O.V.P. (5) NO LOAD VRmin (LOW LINE) Ta:25°C</p>	<p>U1 (1) 23.9V (2) 19.2V (3) 19.2V (4) 25.5V (5) 21.0V</p>	<p>U101 (1) 18.0V (2) 8.8V (3) 18.6V (4) 18.0V (5) 10.8V</p>



## ■ SAFETY& E.M.C. TEST

### SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 4KVAC/min I/P-FG :2KVAC/min O/P-FG:1.5KVAC/min	I/P-O/P: 4.4 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG:1.8 KVAC/min Ta:25°C	I/P-O/P:1.566mA I/P-FG: 2.51mA O/P-FG:0.438mA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ I/P-FG: 500VDC>100MΩ O/P-FG:500VDC>100MΩ	I/P-O/P: 600 VDC I/P-FG: 600 VDC O/P-FG: 600 VDC Ta:25°C	I/P-O/P:50GΩ I/P-FG:50GΩ O/P-FG:50GΩ NO DAMAGE

### E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	BS EN/EN61000-3-2 CLASS A	I/P:230VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS
2	CONDUCTION	BS EN/EN55032(CISPR32) BS EN/EN55011(CISPR11) Class I: Class B, Class II: Class A BS EN/EN55014(CISPR32) Class I: Class B	I/P : 230 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab
3	RADIATION	BS EN/EN55032(CISPR32) BS EN/EN55011(CISPR11) Class I: Class B, Class II: Class A BS EN/EN55014(CISPR32) Class I: Class B	I/P : 230 VAC (50HZ) O/P : FULL LOAD Ta : 25°C	PASS Test by certified Lab
4	E.S.D	BS EN/EN61000-4-2 ■ MEDICAL AIR : 15KV / Contact : 8KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	■ CRITERIA A
5	E.F.T	BS EN/EN61000-4-4 ■ INDUSTRY INPUT : 2KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	■ CRITERIA A
6	SURGE	IEC61000-4-5 ■ INDUSTRY L-N : 2KV L,N-PE : 4KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	■ CRITERIA A
7	Test by certified Lab & Test Report Prepare Any contradictions of the test results, please refer to the latest EMC test report			

## ■ RELIABILITY TEST

### ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																																																																																																																																								
1	TEMPERATURE RISE TEST	MODEL : LOP-300-24 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 25 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 50 °C																																																																																																																																										
				<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 25 °C</th> <th>HIGH AMBIENT Ta= 50 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>RTH1</td><td>78.0°C</td><td>99.9°C</td></tr> <tr><td>2</td><td>C1</td><td>56.6°C</td><td>78.5°C</td></tr> <tr><td>3</td><td>ZNR1</td><td>46.5°C</td><td>69.1°C</td></tr> <tr><td>4</td><td>LF1</td><td>48.1°C</td><td>70.9°C</td></tr> <tr><td>5</td><td>C50</td><td>42.5°C</td><td>64.2°C</td></tr> <tr><td>6</td><td>LF2</td><td>41.7°C</td><td>67.2°C</td></tr> <tr><td>7</td><td>L2</td><td>40.6°C</td><td>65.1°C</td></tr> <tr><td>8</td><td>C10</td><td>41.4°C</td><td>63.1°C</td></tr> <tr><td>9</td><td>C5</td><td>49.4°C</td><td>69.5°C</td></tr> <tr><td>10</td><td>T1 coil</td><td>62.9°C</td><td>83.8°C</td></tr> <tr><td>11</td><td>T1 core</td><td>51.2°C</td><td>78.2°C</td></tr> <tr><td>12</td><td>C106</td><td>42.8°C</td><td>72.5°C</td></tr> <tr><td>13</td><td>C110</td><td>31.4°C</td><td>58.8°C</td></tr> <tr><td>14</td><td>L1</td><td>43.6°C</td><td>66.8°C</td></tr> <tr><td>15</td><td>BD1</td><td>41.2°C</td><td>70.0°C</td></tr> <tr><td>16</td><td>Q1</td><td>38.7°C</td><td>66.9°C</td></tr> <tr><td>17</td><td>D1</td><td>53.5°C</td><td>69.1°C</td></tr> <tr><td>18</td><td>L100</td><td>37.9°C</td><td>69.8°C</td></tr> <tr><td>19</td><td>D41</td><td>33.7°C</td><td>59.4°C</td></tr> <tr><td>20</td><td>R4</td><td>37.2°C</td><td>63.2°C</td></tr> <tr><td>21</td><td>U1</td><td>48.1°C</td><td>74.0°C</td></tr> <tr><td>22</td><td>Q5</td><td>42.4°C</td><td>76.2°C</td></tr> <tr><td>23</td><td>Q6</td><td>43.5°C</td><td>79.5°C</td></tr> <tr><td>24</td><td>U4</td><td>44.8°C</td><td>75.0°C</td></tr> <tr><td>25</td><td>Q100</td><td>56.4°C</td><td>94.9°C</td></tr> <tr><td>26</td><td>U101</td><td>48.2°C</td><td>78.6°C</td></tr> <tr><td>27</td><td>Q101</td><td>55.9°C</td><td>69.2°C</td></tr> <tr><td>28</td><td>D2</td><td>30.3°C</td><td>57.3°C</td></tr> <tr><td>29</td><td>R101</td><td>47.1°C</td><td>75.2°C</td></tr> <tr><td>30</td><td>D151</td><td>37.2°C</td><td>65.4°C</td></tr> <tr><td>31</td><td>D34</td><td>39.7°C</td><td>65.9°C</td></tr> <tr><td>32</td><td>C14</td><td>44.5°C</td><td>68.4°C</td></tr> <tr><td>33</td><td>RTH2</td><td>43.0°C</td><td>68.6°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta= 25 °C	HIGH AMBIENT Ta= 50 °C	1	RTH1	78.0°C	99.9°C	2	C1	56.6°C	78.5°C	3	ZNR1	46.5°C	69.1°C	4	LF1	48.1°C	70.9°C	5	C50	42.5°C	64.2°C	6	LF2	41.7°C	67.2°C	7	L2	40.6°C	65.1°C	8	C10	41.4°C	63.1°C	9	C5	49.4°C	69.5°C	10	T1 coil	62.9°C	83.8°C	11	T1 core	51.2°C	78.2°C	12	C106	42.8°C	72.5°C	13	C110	31.4°C	58.8°C	14	L1	43.6°C	66.8°C	15	BD1	41.2°C	70.0°C	16	Q1	38.7°C	66.9°C	17	D1	53.5°C	69.1°C	18	L100	37.9°C	69.8°C	19	D41	33.7°C	59.4°C	20	R4	37.2°C	63.2°C	21	U1	48.1°C	74.0°C	22	Q5	42.4°C	76.2°C	23	Q6	43.5°C	79.5°C	24	U4	44.8°C	75.0°C	25	Q100	56.4°C	94.9°C	26	U101	48.2°C	78.6°C	27	Q101	55.9°C	69.2°C	28	D2	30.3°C	57.3°C	29	R101	47.1°C	75.2°C	30	D151	37.2°C	65.4°C	31	D34	39.7°C	65.9°C	32	C14	44.5°C	68.4°C	33	RTH2	43.0°C	68.6°C
NO	Position	ROOM AMBIENT Ta= 25 °C	HIGH AMBIENT Ta= 50 °C																																																																																																																																									
1	RTH1	78.0°C	99.9°C																																																																																																																																									
2	C1	56.6°C	78.5°C																																																																																																																																									
3	ZNR1	46.5°C	69.1°C																																																																																																																																									
4	LF1	48.1°C	70.9°C																																																																																																																																									
5	C50	42.5°C	64.2°C																																																																																																																																									
6	LF2	41.7°C	67.2°C																																																																																																																																									
7	L2	40.6°C	65.1°C																																																																																																																																									
8	C10	41.4°C	63.1°C																																																																																																																																									
9	C5	49.4°C	69.5°C																																																																																																																																									
10	T1 coil	62.9°C	83.8°C																																																																																																																																									
11	T1 core	51.2°C	78.2°C																																																																																																																																									
12	C106	42.8°C	72.5°C																																																																																																																																									
13	C110	31.4°C	58.8°C																																																																																																																																									
14	L1	43.6°C	66.8°C																																																																																																																																									
15	BD1	41.2°C	70.0°C																																																																																																																																									
16	Q1	38.7°C	66.9°C																																																																																																																																									
17	D1	53.5°C	69.1°C																																																																																																																																									
18	L100	37.9°C	69.8°C																																																																																																																																									
19	D41	33.7°C	59.4°C																																																																																																																																									
20	R4	37.2°C	63.2°C																																																																																																																																									
21	U1	48.1°C	74.0°C																																																																																																																																									
22	Q5	42.4°C	76.2°C																																																																																																																																									
23	Q6	43.5°C	79.5°C																																																																																																																																									
24	U4	44.8°C	75.0°C																																																																																																																																									
25	Q100	56.4°C	94.9°C																																																																																																																																									
26	U101	48.2°C	78.6°C																																																																																																																																									
27	Q101	55.9°C	69.2°C																																																																																																																																									
28	D2	30.3°C	57.3°C																																																																																																																																									
29	R101	47.1°C	75.2°C																																																																																																																																									
30	D151	37.2°C	65.4°C																																																																																																																																									
31	D34	39.7°C	65.9°C																																																																																																																																									
32	C14	44.5°C	68.4°C																																																																																																																																									
33	RTH2	43.0°C	68.6°C																																																																																																																																									



2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P : 230 VAC O/P : 126.35% LOAD Ta : 25°C	TEST : OK
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 264VAC/100VAC O/P : 100% LOAD Ta= -35 °C	TEST : OK
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50 °C/95 %R.H NO DAMAGE	I/P : 272 VAC O/P : FULL LOAD Ta= 50 °C HUMIDITY= 95 %R.H	TEST : OK
5	TEMPERATURE COEFFICIENT	± 0.03 %/°C(0~50°C)	I/P : 230 VAC O/P : FULL LOAD	± 0.013 %/°C(0~50°C)
6	STORAGE TEMPERATURE TEST	-40~85°C	1. Thermal shock Temperature : -45°C~ +90°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 10 CYCLE 5. Input/Output condition : STATIC	
7	THERMAL SHOCK TEST	-40~50°C	1. Thermal shock Temperature : -45°C~ +55°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 16 CYCLE 5. Input/Output condition : 15cycle:230V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle:230V/ FULL LOAD Burn In Test	
8	VIBRATION TEST	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 12min/sweep cycle (4) Acceleration : 3G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C	
9	CAPACITOR LIFE CYCLE	SUPPOSE C106 IS THE MOST CRITICAL COMPONENT (1) I/P : 230VAC O/P : FULL LOAD Ta= 25 °C LIFE TIME (2) I/P : 230VAC O/P : FULL LOAD Ta= 50 °C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta= 50 °C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta= 50 °C LIFE TIME		(1) 770816.6 HRS (2) 98376.6 HRS (3) 189337.6 HRS (4) 298983.2 HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 2805.6K hrs min. Telcordia SR-332 (Bellcore) ; 384.4K hrs min. MIL-HDBK-217F (25°C)		
11	Ongoing Reliability Test	I/P : 230VAC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 30,000 hours		

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	YUWEI	LIUTT	WANGDZ

2020.10.1 TAG-QA-009