



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

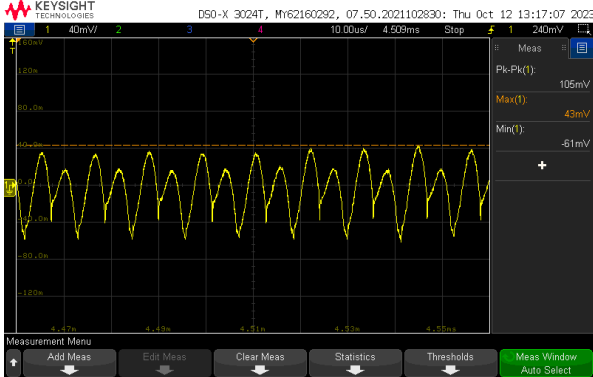
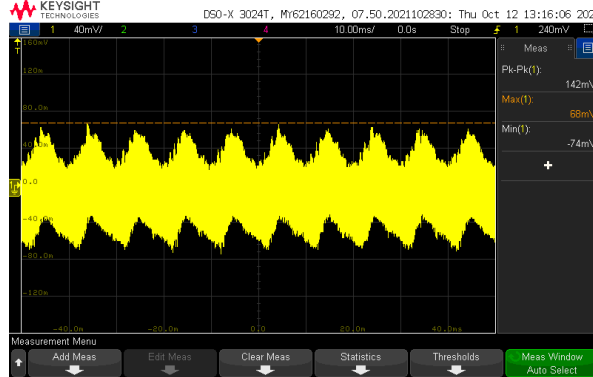
E.M.C. Test

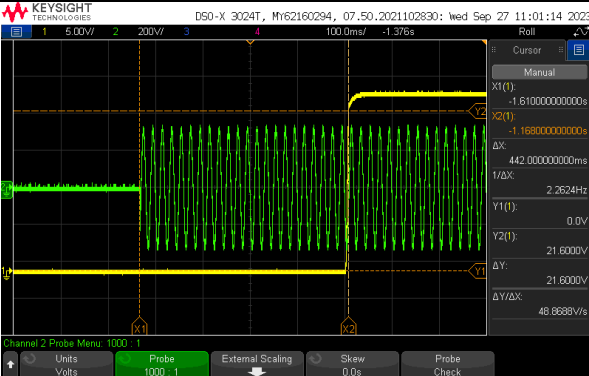
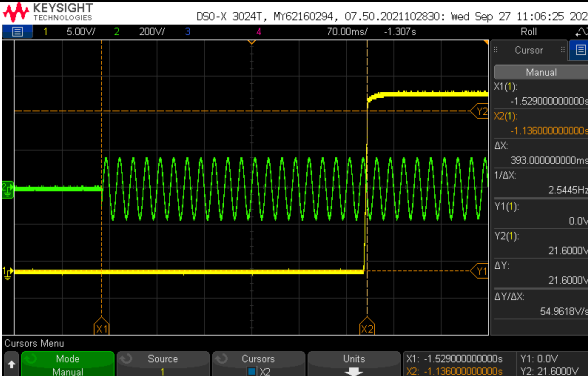
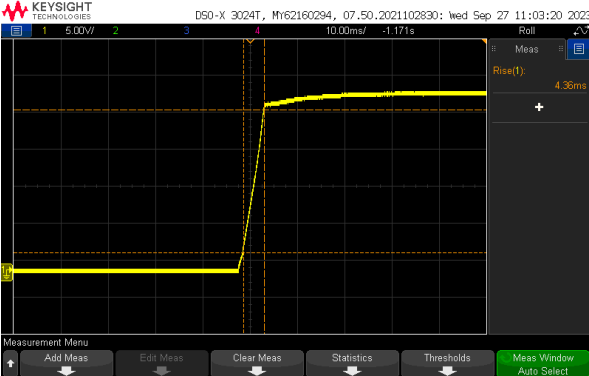
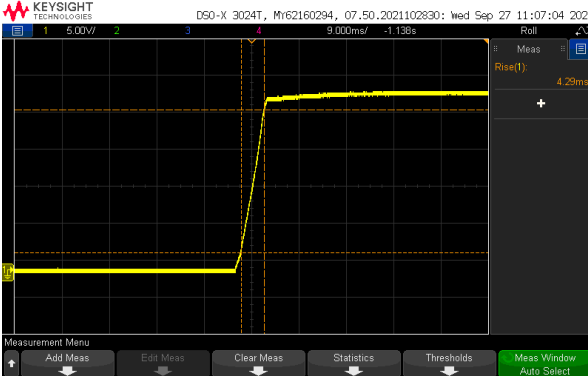
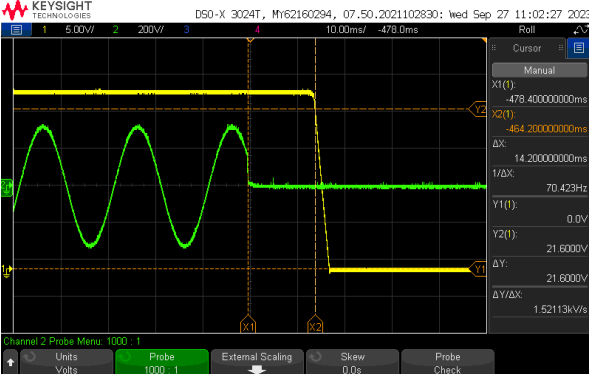
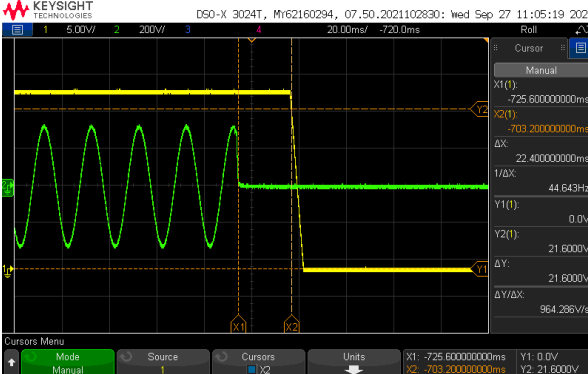
■ RELIABILITY TEST

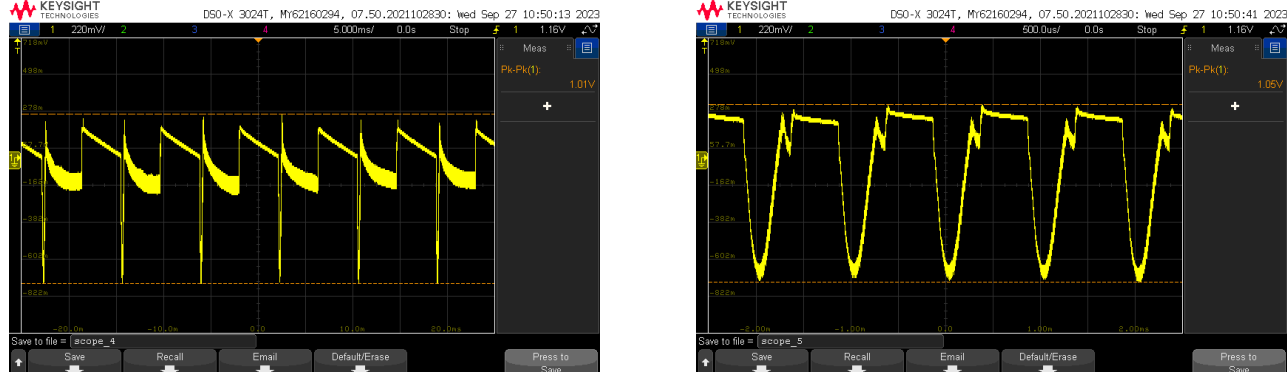
ENVIRONMENT TEST

DESIGN VERIFY TEST

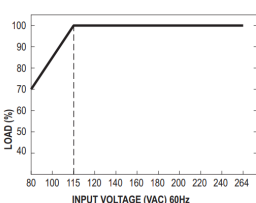
OUTPUT FUNCTION TEST

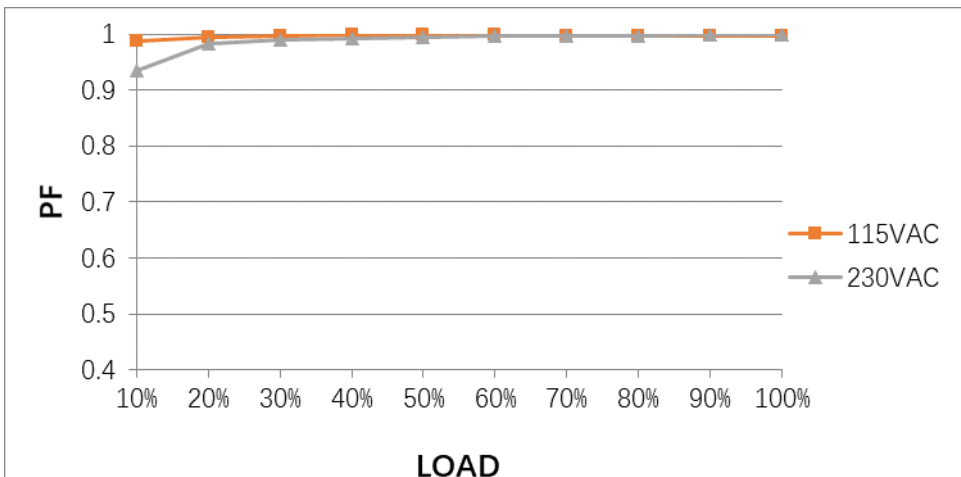
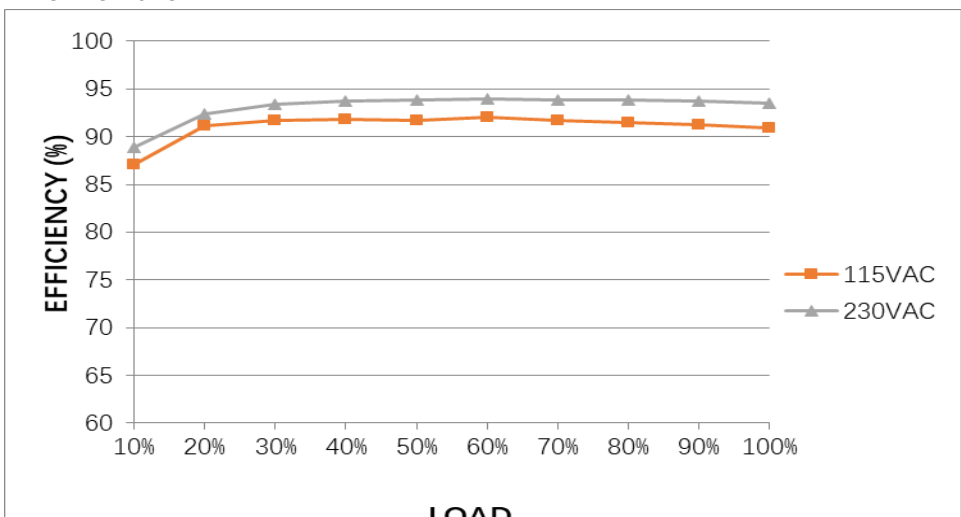
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 22.8V~25.2V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	21.989V~26.272V/230VAC 21.989V~26.272V/115VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -2% ~ +2%	I/P: 80VAC~ 264VAC O/P:FULL~ MIN. LOAD Ta:25°C	V1: -0.03% ~ 0.02%
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		

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

				
11	TRANSIENT RECOVERY TIME	V1: 2400mVp-p < 500us	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us	390mVp-p 0us
12	PEAK LOAD	150% PEAK LOAD@3S	I/P: 264VAC I/P: 115VAC O/P: PEAK LOAD	TEST : OK

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.F vs LOAD <table><caption>P.F vs LOAD Data</caption><thead><tr><th>LOAD</th><th>115VAC</th><th>230VAC</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>0.98</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	230VAC	10%	0.98	0.95	20%	0.99	0.98	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
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7	EFFICIENCY(Typ.)	93%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	93.56%																																	
EFFICIENCY vs LOAD <table><caption>EFFICIENCY vs LOAD Data</caption><thead><tr><th>LOAD</th><th>115VAC</th><th>230VAC</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>92</td><td>93</td></tr><tr><td>90%</td><td>92</td><td>93</td></tr><tr><td>100%</td><td>92</td><td>93</td></tr></tbody></table>					LOAD	115VAC	230VAC	10%	87	89	20%	91	92	30%	92	93	40%	92	93	50%	92	93	60%	92	93	70%	92	93	80%	92	93	90%	92	93	100%	92	93
LOAD	115VAC	230VAC																																			
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100%	92	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	Q100/Q101 Rated: 120A/80V	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	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	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
5	Input Capacitor Voltage	C5 Rated: 100μ / 420V	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	(1) 405V (2) 395V (3) 405V (4) 401V (5) 405V (6) 407V	
6	Control IC Voltage Test	PFC /PWM IC U1: Rated : 18.2V~ 28.7V O/P IC U101 Rated : 4.75V~38V	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	U1 (1) 23.9V (2) 19.2V (3) 19.2V (4) 25.5V (5) 21.0V	U101 (1) 18.0V (2) 8.8V (3) 18.6V (4) 18.0V (5) 10.8V

■ 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 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD <table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENT Ta= 25 °C NO FAN</th><th>HIGH AMBIENT Ta= 45 °C NO FAN</th><th>ROOM AMBIENT Ta= 25 °C WITH FAN</th><th>HIGH AMBIENT Ta= 50 °C WITH FAN</th></tr><tr><td>1</td><td>RTH1</td><td>76.4°C</td><td>92.6°C</td><td>78.0°C</td><td>99.9°C</td></tr><tr><td>2</td><td>C1</td><td>66.8°C</td><td>85.2°C</td><td>56.6°C</td><td>78.5°C</td></tr><tr><td>3</td><td>ZNR1</td><td>58.6°C</td><td>75.6°C</td><td>46.5°C</td><td>69.1°C</td></tr><tr><td>4</td><td>LF1</td><td>62°C</td><td>82.2°C</td><td>48.1°C</td><td>70.9°C</td></tr><tr><td>5</td><td>C50</td><td>62.8°C</td><td>81.2°C</td><td>42.5°C</td><td>64.2°C</td></tr><tr><td>6</td><td>LF2</td><td>59.9°C</td><td>82.9°C</td><td>41.7°C</td><td>67.2°C</td></tr><tr><td>7</td><td>L2</td><td>73°C</td><td>96.5°C</td><td>40.6°C</td><td>65.1°C</td></tr><tr><td>8</td><td>C10</td><td>75.6°C</td><td>97.9°C</td><td>41.4°C</td><td>63.1°C</td></tr><tr><td>9</td><td>C5</td><td>67.8°C</td><td>90.1°C</td><td>49.4°C</td><td>69.5°C</td></tr><tr><td>10</td><td>T1 coil</td><td>85.1°C</td><td>106°C</td><td>62.9°C</td><td>83.8°C</td></tr><tr><td>11</td><td>T1 core</td><td>82.2°C</td><td>104.8°C</td><td>51.2°C</td><td>78.2°C</td></tr><tr><td>12</td><td>C106</td><td>67.6°C</td><td>88.8°C</td><td>42.8°C</td><td>72.5°C</td></tr><tr><td>13</td><td>C110</td><td>56.3°C</td><td>77.8°C</td><td>31.4°C</td><td>58.8°C</td></tr><tr><td>14</td><td>L1</td><td>78°C</td><td>96°C</td><td>43.6°C</td><td>66.8°C</td></tr><tr><td>15</td><td>BD1</td><td>76.3°C</td><td>101°C</td><td>41.2°C</td><td>70.0°C</td></tr><tr><td>16</td><td>Q1</td><td>77.4°C</td><td>101.6°C</td><td>38.7°C</td><td>66.9°C</td></tr><tr><td>17</td><td>D1</td><td>89.3°C</td><td>99.9°C</td><td>53.5°C</td><td>69.1°C</td></tr><tr><td>18</td><td>L100</td><td>69.5°C</td><td>90°C</td><td>37.9°C</td><td>69.8°C</td></tr><tr><td>19</td><td>D41</td><td>62.4°C</td><td>81.9°C</td><td>33.7°C</td><td>59.4°C</td></tr><tr><td>20</td><td>R4</td><td>74.7°C</td><td>95.9°C</td><td>37.2°C</td><td>63.2°C</td></tr><tr><td>21</td><td>U1</td><td>86.2°C</td><td>106.4°C</td><td>48.1°C</td><td>74.0°C</td></tr><tr><td>22</td><td>Q5</td><td>89.8°C</td><td>114.3°C</td><td>42.4°C</td><td>76.2°C</td></tr><tr><td>23</td><td>Q6</td><td>86.7°C</td><td>112.9°C</td><td>43.5°C</td><td>79.5°C</td></tr><tr><td>24</td><td>U4</td><td>77.7°C</td><td>99.5°C</td><td>44.8°C</td><td>75.0°C</td></tr><tr><td>25</td><td>Q100</td><td>87°C</td><td>111.4°C</td><td>56.4°C</td><td>94.9°C</td></tr><tr><td>26</td><td>U101</td><td>89°C</td><td>108.6°C</td><td>48.2°C</td><td>78.6°C</td></tr><tr><td>27</td><td>Q101</td><td>89.9°C</td><td>101.5°C</td><td>55.9°C</td><td>69.2°C</td></tr><tr><td>28</td><td>D2</td><td>72.7°C</td><td>94°C</td><td>30.3°C</td><td>57.3°C</td></tr><tr><td>29</td><td>R101</td><td>90.1°C</td><td>107.2°C</td><td>47.1°C</td><td>75.2°C</td></tr><tr><td>30</td><td>D151</td><td>68.3°C</td><td>91.5°C</td><td>37.2°C</td><td>65.4°C</td></tr><tr><td>31</td><td>D34</td><td>66.2°C</td><td>98.8°C</td><td>39.7°C</td><td>65.9°C</td></tr></table>				NO	Position	ROOM AMBIENT Ta= 25 °C NO FAN	HIGH AMBIENT Ta= 45 °C NO FAN	ROOM AMBIENT Ta= 25 °C WITH FAN	HIGH AMBIENT Ta= 50 °C WITH FAN	1	RTH1	76.4°C	92.6°C	78.0°C	99.9°C	2	C1	66.8°C	85.2°C	56.6°C	78.5°C	3	ZNR1	58.6°C	75.6°C	46.5°C	69.1°C	4	LF1	62°C	82.2°C	48.1°C	70.9°C	5	C50	62.8°C	81.2°C	42.5°C	64.2°C	6	LF2	59.9°C	82.9°C	41.7°C	67.2°C	7	L2	73°C	96.5°C	40.6°C	65.1°C	8	C10	75.6°C	97.9°C	41.4°C	63.1°C	9	C5	67.8°C	90.1°C	49.4°C	69.5°C	10	T1 coil	85.1°C	106°C	62.9°C	83.8°C	11	T1 core	82.2°C	104.8°C	51.2°C	78.2°C	12	C106	67.6°C	88.8°C	42.8°C	72.5°C	13	C110	56.3°C	77.8°C	31.4°C	58.8°C	14	L1	78°C	96°C	43.6°C	66.8°C	15	BD1	76.3°C	101°C	41.2°C	70.0°C	16	Q1	77.4°C	101.6°C	38.7°C	66.9°C	17	D1	89.3°C	99.9°C	53.5°C	69.1°C	18	L100	69.5°C	90°C	37.9°C	69.8°C	19	D41	62.4°C	81.9°C	33.7°C	59.4°C	20	R4	74.7°C	95.9°C	37.2°C	63.2°C	21	U1	86.2°C	106.4°C	48.1°C	74.0°C	22	Q5	89.8°C	114.3°C	42.4°C	76.2°C	23	Q6	86.7°C	112.9°C	43.5°C	79.5°C	24	U4	77.7°C	99.5°C	44.8°C	75.0°C	25	Q100	87°C	111.4°C	56.4°C	94.9°C	26	U101	89°C	108.6°C	48.2°C	78.6°C	27	Q101	89.9°C	101.5°C	55.9°C	69.2°C	28	D2	72.7°C	94°C	30.3°C	57.3°C	29	R101	90.1°C	107.2°C	47.1°C	75.2°C	30	D151	68.3°C	91.5°C	37.2°C	65.4°C	31	D34	66.2°C	98.8°C	39.7°C	65.9°C
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		32	C14	83.3°C	103.9°C	44.5°C	68.4°C
		33	RTH2	61.8°C	85.4°C	43.0°C	68.6°C
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)			I/P : 230 VAC O/P : 126% 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= 45 °C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta= 45 °C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta= 45 °C LIFE TIME					(1) 175981.9 HRS (NO FAN) (2) 40484.1 HRS (NO FAN) (3) 70379 HRS (NO FAN) (4) 117042.2 HRS (NO FAN)
		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 (WITH FAN) (2) 98376.6 HRS (WITH FAN) (3) 189337.6 HRS (WITH FAN) (4) 298983.2 HRS (WITH FAN)
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
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TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	YUWEI	LIUTT	WANGDZ

2020.10.1 TAG-QA-009