



Test Report: LOP-200-24

200W 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

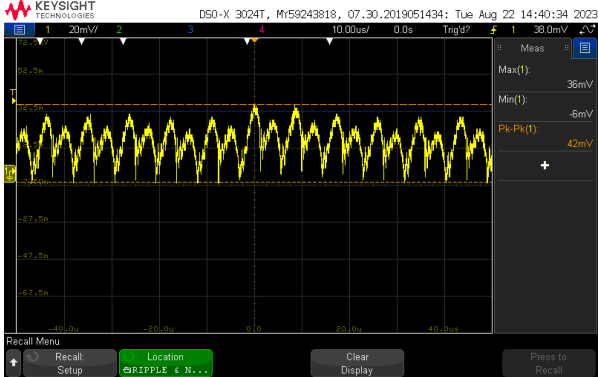
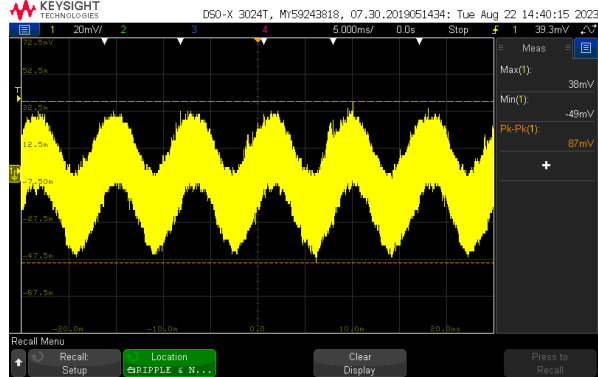
E.M.C. Test

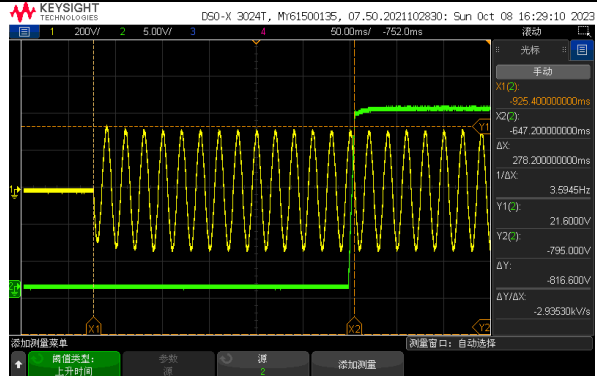
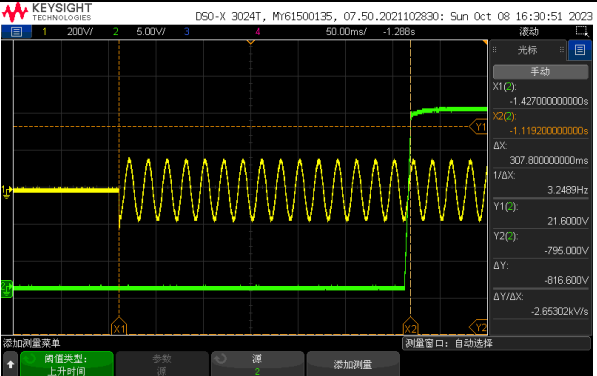
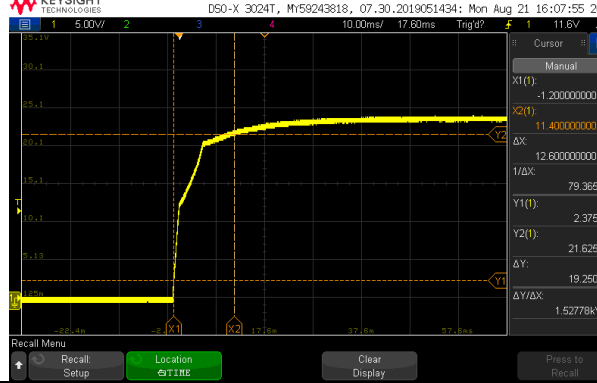
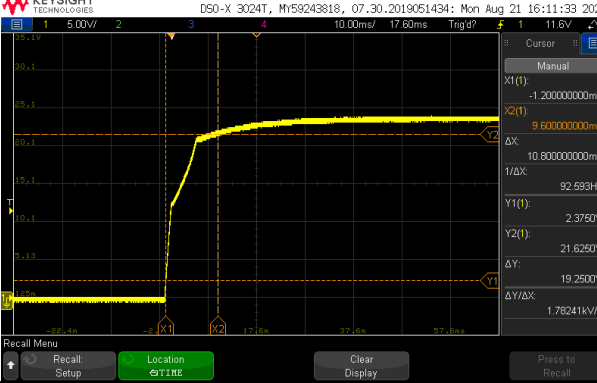
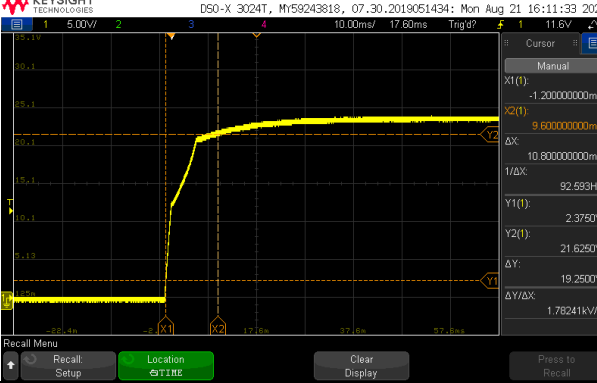
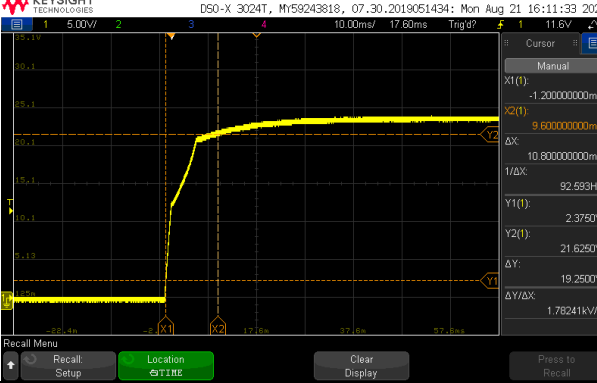
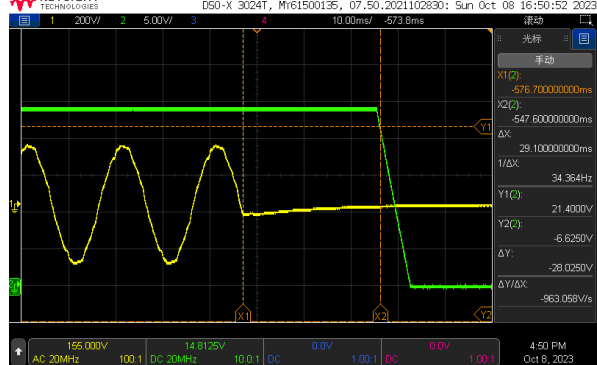
■ RELIABILITY TEST

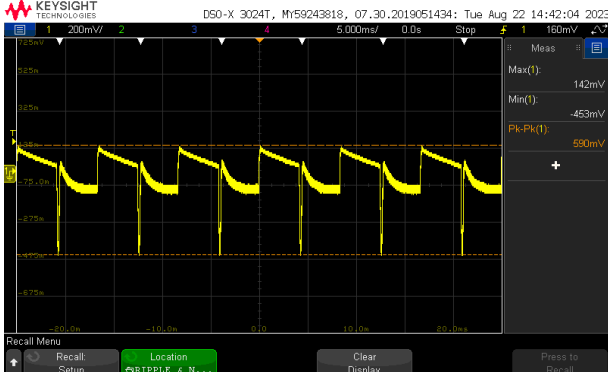
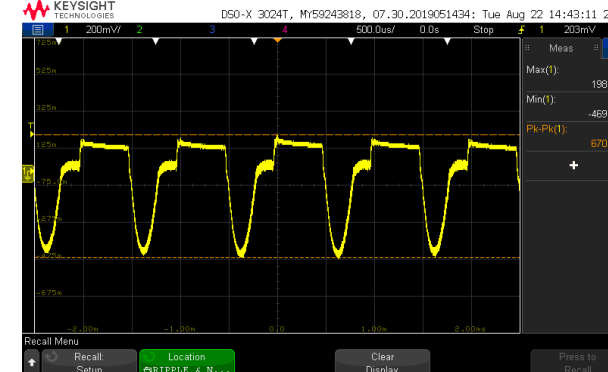
ENVIRONMENT TEST

DESIGN VERIFY TEST

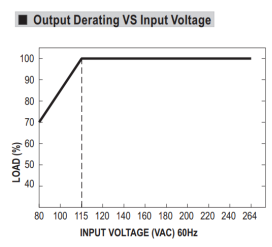
OUTPUT FUNCTION TEST

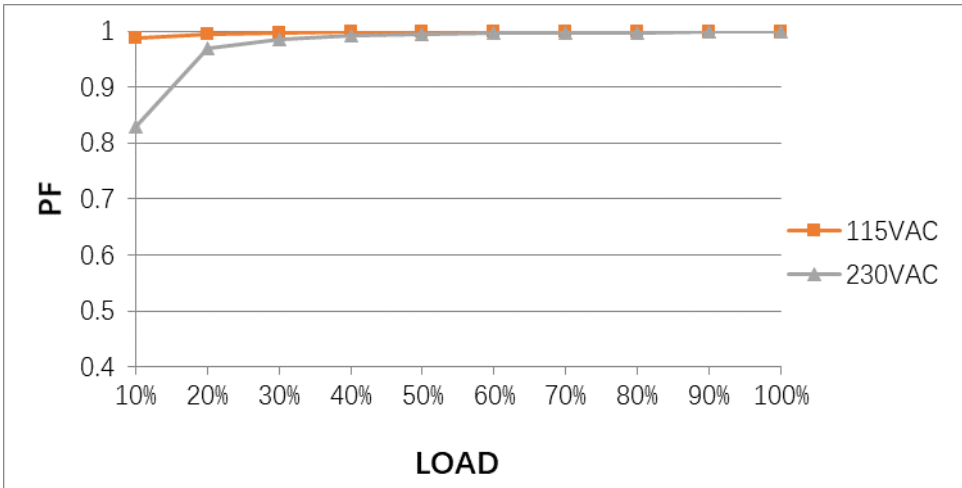
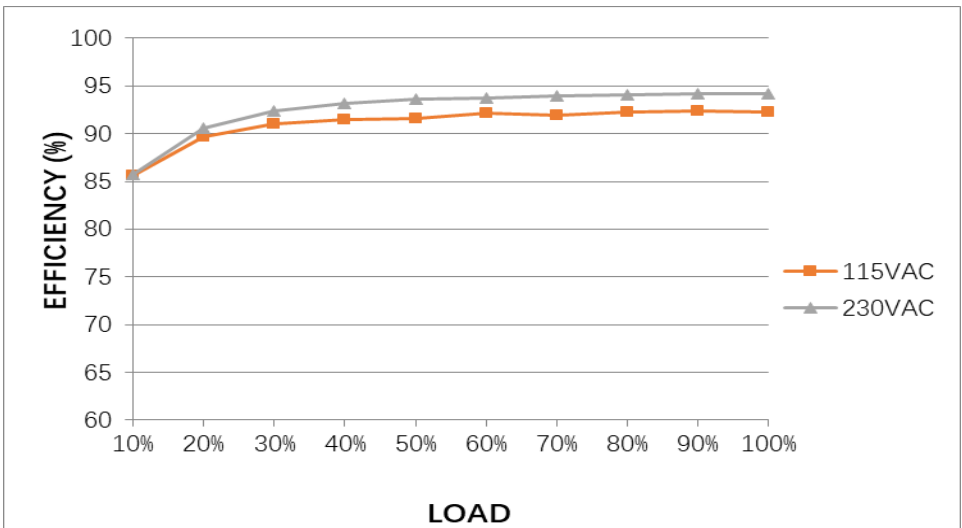
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 22.8V~25.2V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	21.831V~26.016V/230VAC 21.830V~26.016V/115VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -2% ~ +2%	I/P: 80VAC~ 264VAC O/P:FULL~ MIN. LOAD Ta:25°C	V1: -0.03% ~0.02 %
3	LINE REGULATION	V1: -0.5% ~ +0.5%	I/P: 80VAC~ 264VAC O/P:FULL LOAD Ta:25°C	V1: -0.01% ~ 0%
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	1.3%
6	RIPPLE & NOISE (Max)	V1: 200mVp-p	I/P:230VAC O/P: FULL LOAD Ta:25°C	V1: 42mVp-p / high frequency 87mVp-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/ 278.0ms 115VAC/ 307.8ms
INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage			INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage	

		230VAC/30ms 115VAC/30ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	
8	RISE TIME (Max)	230VAC/30ms 115VAC/30ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 12.6ms 115VAC/ 10.8ms
	INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage 	INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage 	INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage 	INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage 
9	HOLD UP TIME (Typ.)	16ms /140W load 8ms /200W load	I/P : 230 VAC O/P : TESTING Ta : 25°C	29.1ms /140W load 20.4ms /200W load
	INPUT=230VAC/50HZ @ 180W load CH1: Output Voltage CH3: AC Input Voltage 	INPUT=230VAC/50HZ @ 180W load CH1: Output Voltage CH3: AC Input Voltage 	INPUT=230VAC/50HZ @ 300W load CH1: Output Voltage CH3: AC Input Voltage 	INPUT=230VAC/50HZ @ 300W load CH1: Output Voltage CH3: 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	590mVp-p 670mVp-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	410mVp-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) 74.6V~264V/ FULL LOAD 74.5V~264V/ 70% LOAD (2) 106Vdc~370Vdc/FULL LOAD 105.5Vdc~370Vdc/70% LOAD (3) 106Vdc~370Vdc/FULL LOAD 105.5Vdc~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/ 1A 115V/ 2.2A	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =0.936A/ 230VAC I =1.96A/ 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: 261.3uA / 264VAC Touch:38.4uA / 264VAC
5	NO LOAD CONSUMPTION	<0.5W	I/P : 230VAC I/P : 115VAC O/P : NO LOAD	0.375W/ 230VAC 0.278W/ 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=0.9912/230VAC PF=0.9940/115VAC
P.F vs LOAD 				
7	EFFICIENCY(Typ.)	93%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	94.31 %
EFFICIENCY vs LOAD 				
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 =52.7A/ 230VAC I =26.5A/ 115VAC T50= 450us/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	134.52%/ 264VAC 134.52%/ 230VAC 133.93%/ 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	29.01V/ 264VAC 28.93V/ 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 : 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 : 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@0.1A without fan ; (10.98CFM) tolerance -15% ~+15% at main output 20% rated current.	I/P: 230 VAC O/P: TESTING Ta:25°C	TEST : -0.544% ~ 0.502%

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: Q6: VDS: VDS: (1) 460V (1) 452V (2) 484V (2) 508V (3) 460V (3) 452V (4) 460V (4) 452V (5) 460V (5) 452V (6) 460V (6) 452V (7) 460V (7) 496V (8) 460V (8) 464V
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated: 18A / 600 V	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) 435V (2) 411V (3) 435V (4) 435V (5) 435V (6) 431V (7) 415V (8) 439V
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 (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:1.79mA I/P-FG:2.57 mA O/P-FG:1.205mA 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:50 GΩ I/P-FG:50 GΩ 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-200-18 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=26.5 °C With fan</th><th>ROOM AMBIENT Ta=25.5 °C No fan</th><th>HIGH AMBIENT Ta=51.0 °C With fan</th><th>HIGH AMBIENT Ta=50.2 °C No fan</th></tr><tr><td>1</td><td>D1</td><td>42.7°C</td><td>68.2°C</td><td>66.9°C</td><td>91.9°C</td></tr><tr><td>2</td><td>Q1</td><td>40.3°C</td><td>68.8°C</td><td>65.0°C</td><td>92.6°C</td></tr><tr><td>3</td><td>BD1</td><td>40.0°C</td><td>67.9°C</td><td>64.3°C</td><td>91.2°C</td></tr><tr><td>4</td><td>L2</td><td>35.0°C</td><td>65.4°C</td><td>59.4°C</td><td>88.9°C</td></tr><tr><td>5</td><td>LF2</td><td>34.3°C</td><td>56.1°C</td><td>59.3°C</td><td>79.9°C</td></tr><tr><td>6</td><td>C10</td><td>35.2°C</td><td>69.4°C</td><td>60.3°C</td><td>93.6°C</td></tr><tr><td>7</td><td>C5</td><td>31.1°C</td><td>66.2°C</td><td>55.8°C</td><td>89.5°C</td></tr><tr><td>8</td><td>C15</td><td>34.4°C</td><td>74.1°C</td><td>60.0°C</td><td>98.1°C</td></tr><tr><td>9</td><td>RTH2</td><td>33.3°C</td><td>70.6°C</td><td>59.3°C</td><td>94.6°C</td></tr><tr><td>10</td><td>U1</td><td>36.6°C</td><td>77.3°C</td><td>62.3°C</td><td>101.7°C</td></tr><tr><td>11</td><td>C106</td><td>29.8°C</td><td>57.5°C</td><td>56.0°C</td><td>86.5°C</td></tr><tr><td>12</td><td>C105</td><td>34.7°C</td><td>59.2°C</td><td>62.6°C</td><td>89.4°C</td></tr><tr><td>13</td><td>L100</td><td>39.9°C</td><td>58.6°C</td><td>69.8°C</td><td>90.4°C</td></tr><tr><td>14</td><td>C110</td><td>36.3°C</td><td>51.7°C</td><td>65.4°C</td><td>83.2°C</td></tr><tr><td>15</td><td>L1</td><td>43.0°C</td><td>62.7°C</td><td>67.4°C</td><td>87.5°C</td></tr><tr><td>16</td><td>D41</td><td>33.9°C</td><td>62.8°C</td><td>58.7°C</td><td>85.4°C</td></tr><tr><td>17</td><td>R4</td><td>36.7°C</td><td>70.5°C</td><td>62.2°C</td><td>94.3°C</td></tr><tr><td>18</td><td>D31</td><td>30.7°C</td><td>72.2°C</td><td>56.8°C</td><td>97.2°C</td></tr><tr><td>19</td><td>Q6</td><td>35.9°C</td><td>80.1°C</td><td>56.2°C</td><td>106.0°C</td></tr><tr><td>20</td><td>Q5</td><td>40.0°C</td><td>80.5°C</td><td>67.2°C</td><td>105.7°C</td></tr><tr><td>21</td><td>U4</td><td>30.2°C</td><td>66.3°C</td><td>56.5°C</td><td>92.8°C</td></tr><tr><td>22</td><td>R100</td><td>35.7°C</td><td>78.0°C</td><td>62.1°C</td><td>104.1°C</td></tr><tr><td>23</td><td>Q100</td><td>39.1°C</td><td>78.3°C</td><td>65.7°C</td><td>106.6°C</td></tr><tr><td>24</td><td>U101</td><td>38.0°C</td><td>80.5°C</td><td>64.9°C</td><td>106.9°C</td></tr><tr><td>25</td><td>Q101</td><td>42.9°C</td><td>78.7°C</td><td>69.9°C</td><td>105.8°C</td></tr><tr><td>26</td><td>T1 coil</td><td>40.3°C</td><td>81.4°C</td><td>67.1°C</td><td>108.8°C</td></tr><tr><td>27</td><td>T1 core</td><td>34.5°C</td><td>71.0°C</td><td>60.8°C</td><td>97.3°C</td></tr><tr><td>28</td><td>RTH1</td><td>57.5°C</td><td>72.2°C</td><td>74.3°C</td><td>90.5°C</td></tr><tr><td>29</td><td>ZNR1</td><td>37.4°C</td><td>61.8°C</td><td>60.6°C</td><td>82.6°C</td></tr><tr><td>30</td><td>LF1</td><td>34.8°C</td><td>56.4°C</td><td>58.7°C</td><td>78.4°C</td></tr><tr><td>31</td><td>C1</td><td>35.8°C</td><td>63.7°C</td><td>59.4°C</td><td>85.2°C</td></tr></table>				NO	Position	ROOM AMBIENT Ta=26.5 °C With fan	ROOM AMBIENT Ta=25.5 °C No fan	HIGH AMBIENT Ta=51.0 °C With fan	HIGH AMBIENT Ta=50.2 °C No fan	1	D1	42.7°C	68.2°C	66.9°C	91.9°C	2	Q1	40.3°C	68.8°C	65.0°C	92.6°C	3	BD1	40.0°C	67.9°C	64.3°C	91.2°C	4	L2	35.0°C	65.4°C	59.4°C	88.9°C	5	LF2	34.3°C	56.1°C	59.3°C	79.9°C	6	C10	35.2°C	69.4°C	60.3°C	93.6°C	7	C5	31.1°C	66.2°C	55.8°C	89.5°C	8	C15	34.4°C	74.1°C	60.0°C	98.1°C	9	RTH2	33.3°C	70.6°C	59.3°C	94.6°C	10	U1	36.6°C	77.3°C	62.3°C	101.7°C	11	C106	29.8°C	57.5°C	56.0°C	86.5°C	12	C105	34.7°C	59.2°C	62.6°C	89.4°C	13	L100	39.9°C	58.6°C	69.8°C	90.4°C	14	C110	36.3°C	51.7°C	65.4°C	83.2°C	15	L1	43.0°C	62.7°C	67.4°C	87.5°C	16	D41	33.9°C	62.8°C	58.7°C	85.4°C	17	R4	36.7°C	70.5°C	62.2°C	94.3°C	18	D31	30.7°C	72.2°C	56.8°C	97.2°C	19	Q6	35.9°C	80.1°C	56.2°C	106.0°C	20	Q5	40.0°C	80.5°C	67.2°C	105.7°C	21	U4	30.2°C	66.3°C	56.5°C	92.8°C	22	R100	35.7°C	78.0°C	62.1°C	104.1°C	23	Q100	39.1°C	78.3°C	65.7°C	106.6°C	24	U101	38.0°C	80.5°C	64.9°C	106.9°C	25	Q101	42.9°C	78.7°C	69.9°C	105.8°C	26	T1 coil	40.3°C	81.4°C	67.1°C	108.8°C	27	T1 core	34.5°C	71.0°C	60.8°C	97.3°C	28	RTH1	57.5°C	72.2°C	74.3°C	90.5°C	29	ZNR1	37.4°C	61.8°C	60.6°C	82.6°C	30	LF1	34.8°C	56.4°C	58.7°C	78.4°C	31	C1	35.8°C	63.7°C	59.4°C	85.2°C
NO	Position	ROOM AMBIENT Ta=26.5 °C With fan	ROOM AMBIENT Ta=25.5 °C No fan	HIGH AMBIENT Ta=51.0 °C With fan	HIGH AMBIENT Ta=50.2 °C No fan																																																																																																																																																																																																
1	D1	42.7°C	68.2°C	66.9°C	91.9°C																																																																																																																																																																																																
2	Q1	40.3°C	68.8°C	65.0°C	92.6°C																																																																																																																																																																																																
3	BD1	40.0°C	67.9°C	64.3°C	91.2°C																																																																																																																																																																																																
4	L2	35.0°C	65.4°C	59.4°C	88.9°C																																																																																																																																																																																																
5	LF2	34.3°C	56.1°C	59.3°C	79.9°C																																																																																																																																																																																																
6	C10	35.2°C	69.4°C	60.3°C	93.6°C																																																																																																																																																																																																
7	C5	31.1°C	66.2°C	55.8°C	89.5°C																																																																																																																																																																																																
8	C15	34.4°C	74.1°C	60.0°C	98.1°C																																																																																																																																																																																																
9	RTH2	33.3°C	70.6°C	59.3°C	94.6°C																																																																																																																																																																																																
10	U1	36.6°C	77.3°C	62.3°C	101.7°C																																																																																																																																																																																																
11	C106	29.8°C	57.5°C	56.0°C	86.5°C																																																																																																																																																																																																
12	C105	34.7°C	59.2°C	62.6°C	89.4°C																																																																																																																																																																																																
13	L100	39.9°C	58.6°C	69.8°C	90.4°C																																																																																																																																																																																																
14	C110	36.3°C	51.7°C	65.4°C	83.2°C																																																																																																																																																																																																
15	L1	43.0°C	62.7°C	67.4°C	87.5°C																																																																																																																																																																																																
16	D41	33.9°C	62.8°C	58.7°C	85.4°C																																																																																																																																																																																																
17	R4	36.7°C	70.5°C	62.2°C	94.3°C																																																																																																																																																																																																
18	D31	30.7°C	72.2°C	56.8°C	97.2°C																																																																																																																																																																																																
19	Q6	35.9°C	80.1°C	56.2°C	106.0°C																																																																																																																																																																																																
20	Q5	40.0°C	80.5°C	67.2°C	105.7°C																																																																																																																																																																																																
21	U4	30.2°C	66.3°C	56.5°C	92.8°C																																																																																																																																																																																																
22	R100	35.7°C	78.0°C	62.1°C	104.1°C																																																																																																																																																																																																
23	Q100	39.1°C	78.3°C	65.7°C	106.6°C																																																																																																																																																																																																
24	U101	38.0°C	80.5°C	64.9°C	106.9°C																																																																																																																																																																																																
25	Q101	42.9°C	78.7°C	69.9°C	105.8°C																																																																																																																																																																																																
26	T1 coil	40.3°C	81.4°C	67.1°C	108.8°C																																																																																																																																																																																																
27	T1 core	34.5°C	71.0°C	60.8°C	97.3°C																																																																																																																																																																																																
28	RTH1	57.5°C	72.2°C	74.3°C	90.5°C																																																																																																																																																																																																
29	ZNR1	37.4°C	61.8°C	60.6°C	82.6°C																																																																																																																																																																																																
30	LF1	34.8°C	56.4°C	58.7°C	78.4°C																																																																																																																																																																																																
31	C1	35.8°C	63.7°C	59.4°C	85.2°C																																																																																																																																																																																																

			NO	Position	ROOM AMBIENT Ta=26.5 °C With fan	ROOM AMBIENT Ta=28.3 °C No fan	HIGH AMBIENT Ta=50.0 °C With fan	HIGH AMBIENT Ta=48.6 °C No fan
			32	C50	30.0°C	62.8°C	55.1°C	85.6°C
			33	D2	35.4°C	66.1°C	62.4°C	90.7°C
			34	D151	42.8°C	64.5°C	70.6°C	94.7°C
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)			I/P : 230 VAC O/P : 130% 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		± 0.010 %/°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 C105 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) 325698.1HRS (no fan) (2) 39325.4HRS (no fan) (3) 67464.1HRS (no fan) (4) 110694.7HRS (no fan)	
		SUPPOSE C105 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) 590661.7 HRS (with fan) (2) 75908.4 HRS (with fan) (3) 151704 HRS (with fan) (4) 244682 HRS (with fan)	
10	MTBF	Conducted by Parts Stress Analysis Prediction						



		2928.9K hrs min. Telcordia SR-332 (Bellcore) ; 393.9K 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