



Test Report: XTR-240-12

240W AC/DC 3Ø Input Ultra Slim Industrial DIN Rail Power

■ 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

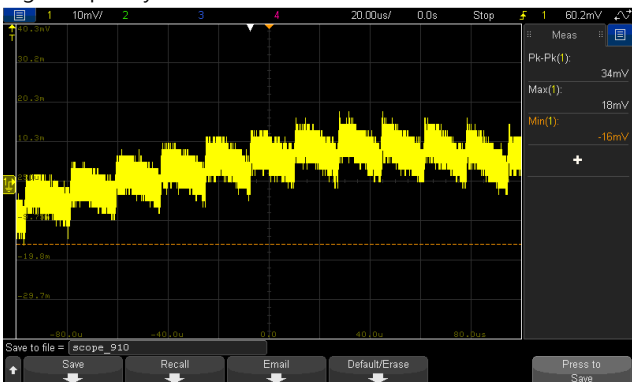
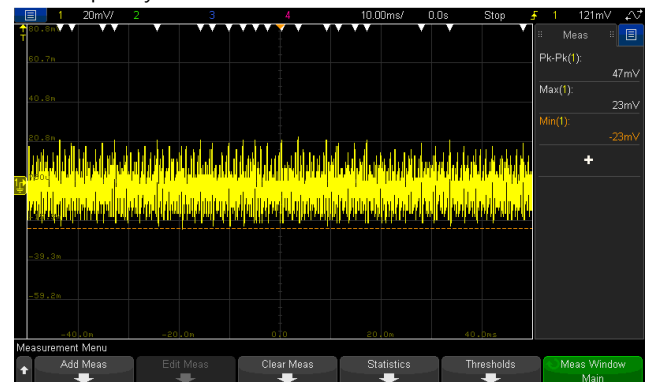
E.M.C. Test

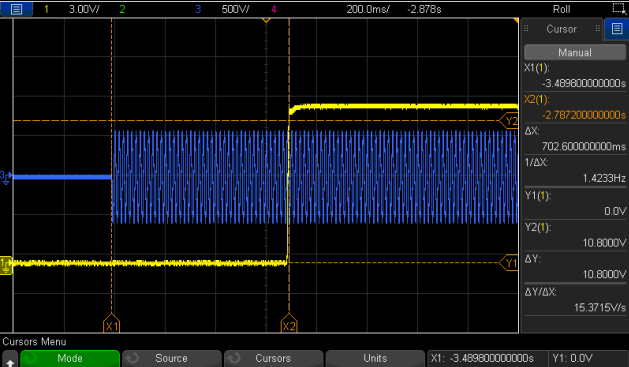
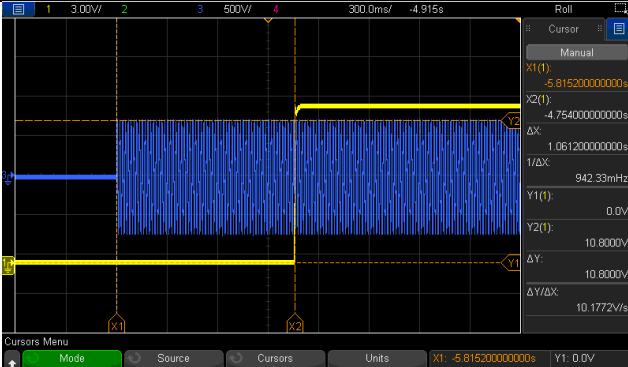
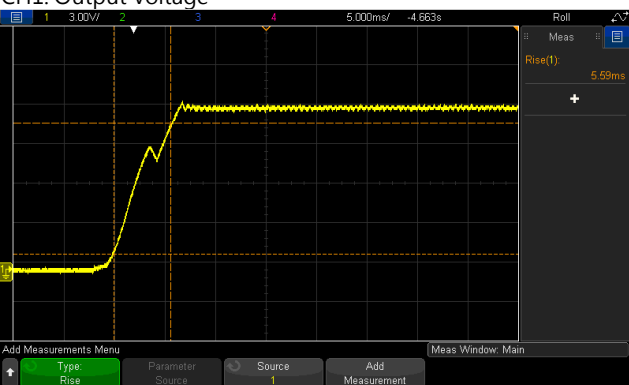
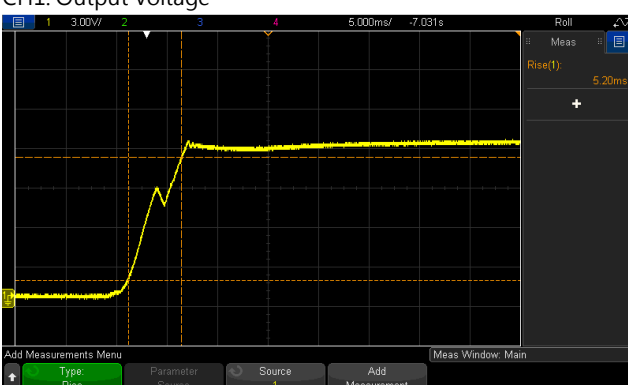
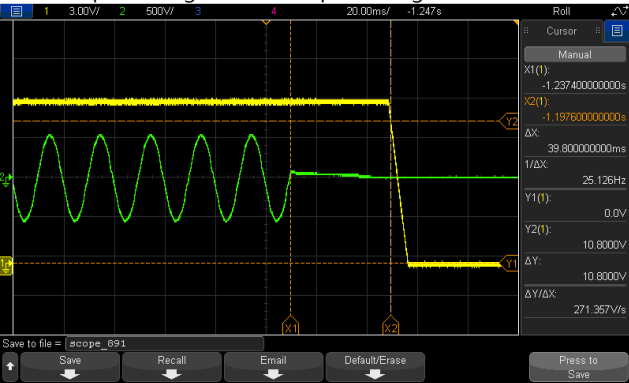
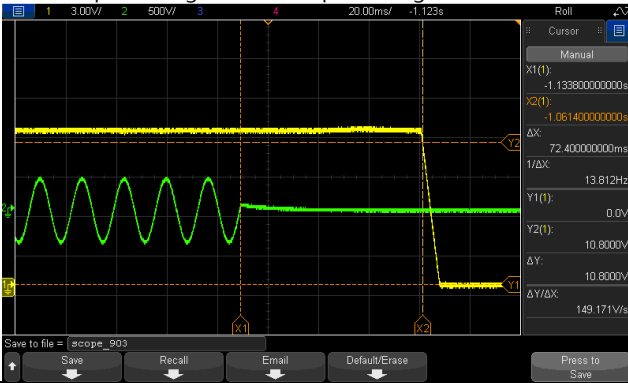
■ RELIABILITY TEST

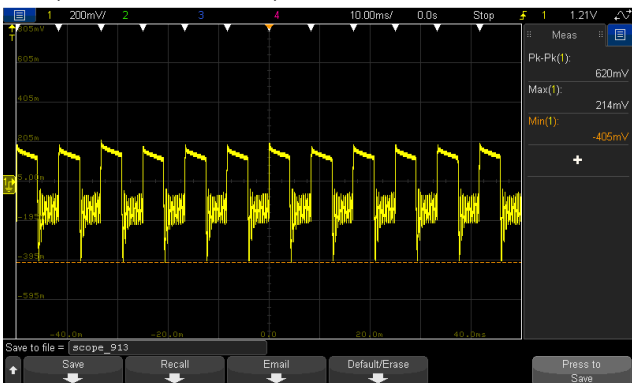
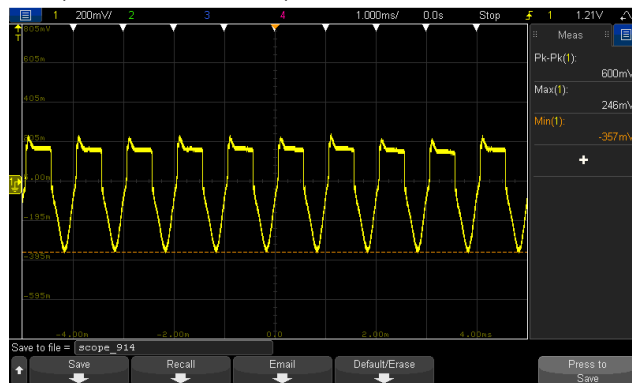
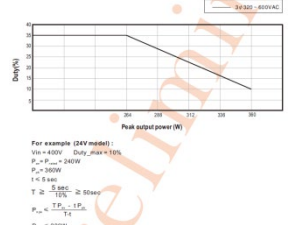
ENVIRONMENT TEST

DESIGN VERIFY TEST

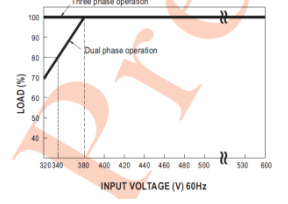
OUTPUT FUNCTION TEST

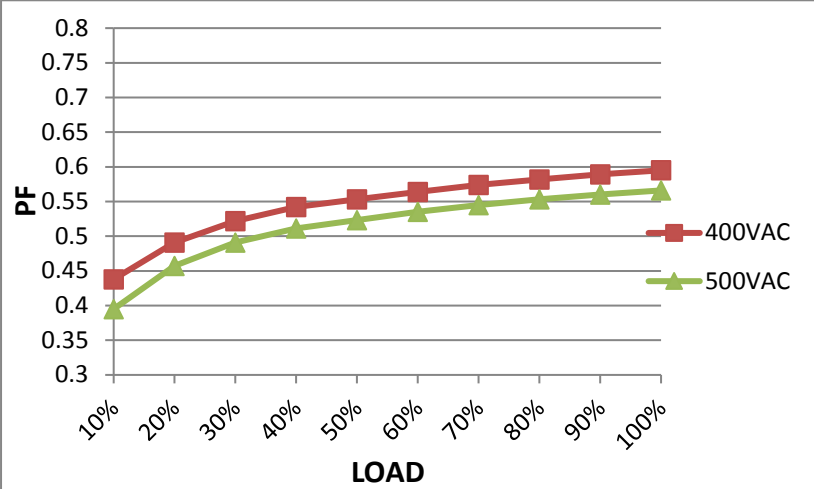
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 12V~15V	I/P : 400 VAC I/P : 500 VAC O/P : MIN LOAD Ta : 25°C	11.499V~15.683V/400VAC 11.500V~15.680V/500VAC
2	OUTPUT VOLTAGE TOLERANCE	-1.0% ~+1.0%	I/P: 320VAC ~ 600VAC O/P:FULL/ MIN. LOAD Ta:25°C	-0.6687%~0.6269%
3	LINE REGULATION	-0.5% ~+0.5%	I/P: 320VAC~ 600VAC O/P:FULL LOAD Ta:25°C	-0.0168%~0%
4	LOAD REGULATION	-1.0% ~+1.0%	I/P: 400VAC O/P:FULL ~MIN LOAD Ta:25°C	-0.6687%~0.6269%
5	OVER/UNDERSHOOT TEST	<±5%	I/P: 400VAC O/P:FULL LOAD/NO LOAD Ta:25°C	2.5% →FULL LOAD 2.6%→NO LOAD
6	RIPPLE & NOISE(Max)	V1:100mVp-p	I/P: 400VAC O/P:FULL LOAD Ta:25°C	V1: 34mVp-p / high frequency 47mVp-p / low frequency
high frequency :  low frequency : 				
7	SET UP TIME(Max)	400VAC/2000ms 500VAC/1500ms	I/P : 400 VAC I/P : 500 VAC O/P : FULL LOAD Ta : 25°C	702.6ms/400VAC 1061.2ms/500VAC
INPUT=400VAC/50HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage			INPUT=500VAC/60HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage	

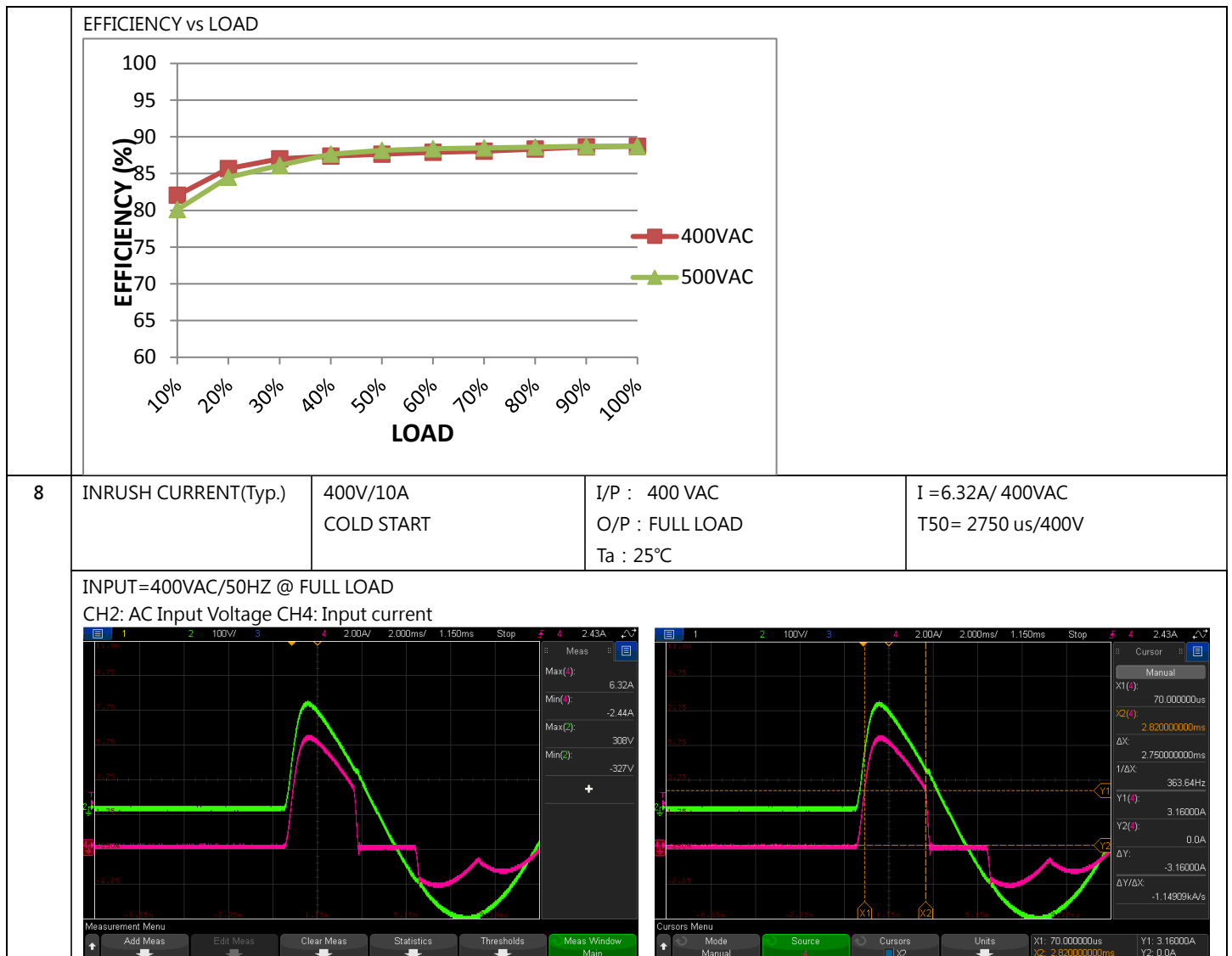
									
8	RISE TIME (Max)	400VAC/60ms 500VAC/60ms	I/P : 400 VAC I/P : 500 VAC O/P : FULL LOAD Ta : 25°C	5.59ms/400VAC 5.20ms/500VAC					
INPUT=400VAC/50HZ @ FULL LOAD CH1: Output Voltage 					INPUT=500VAC/60HZ @ FULL LOAD CH1: Output Voltage 				
9	HOLD UP TIME(Typ.)	400VAC/20ms 500VAC/40ms	I/P : 400 VAC I/P : 500 VAC O/P : FULL LOAD Ta : 25°C	39.8ms/400VAC 72.4ms/500VAC					
INPUT=400VAC/50HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage 					INPUT=500VAC/60HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage 				
10	DYNAMIC LOAD	V1:1200mVp-p	I/P: 400VAC O/P: (1)FULL/MIN LOAD50%DUTY/120HZ (2)FULL / MIN LOAD50%DUTY/ 1KHZ Ta:25°C	(1) 620mVp-p (2) 600mVp-p					

	FULL /MIN LOAD50%DUTY/120HZ 		FULL / MIN LOAD50%DUTY/ 1KHZ 	
11	PEAK LOAD 开机&循环	1) PEAK LOAD@5S 2) PEAK LOAD 循环  For example (24V model): $V_{in} = 400V$, $Duty_max = 10\%$ $P_{in_max} = 240W$ $P_o = 240W$ $T = 1.4 \text{ sec}$ $T \geq \frac{P_o}{P_{in_max}} \times 100\%$ $P_{in_max} = \frac{P_o}{T} \times 100\%$ $P_{in_max} = 240W$	I/P: 600VAC I/P: 400VAC I/P: 320VAC O/P: PEAK LOAD	TEST : I/P=600VAC : <u>OK</u> I/P=400VAC : <u>OK</u> I/P=320VAC : <u>OK</u>

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	320VAC~600VAC (Dual phase operation possible in connecting L1,L3,FG or L2,L3,FG) 450VDC~800VDC/ FULL LOAD(L3:+ L1:-) ■ OUTPUT DERATING VS INPUT VOLTAGE  Note : When the dual phase input voltage is between 320-380Vac and ambient temperature is	(1) I/P:TESTING O/P:FULL LOAD Dual phase DC Input : (2) I/P:DC TESTING(L3:+ L1:-) O/P: FULL LOAD Ta:25°C I/P: LOW-LINE-3V=317 V HIGH-LINE +10V=610V O/P:FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	(1) 260.67Vac~600Vac/FULL LOAD Dual phase DC Input : (2) 359.4Vdc~800Vdc/FULL LOAD @Dual phase operation L1,L3,FG or L2,L3,FG TEST: OK

		between-10C--40C, the power supply may experience hiccup at cold start. The power supply will start up normally after 5~10 seconds.	Dual phase operation: I/P:TESTING O/P:FULL LOAD / 70% LOAD/80% LOAD	(1)267.03Vac~600Vac/ FULL LOAD@ Dual phase operation L1,L3,FG or L2,L3,FG (2)257.16Vac~600Vac/ 70% LOAD@ Dual phase operation L1,L3,FG or L2,L3,FG (3)260.97Vac~600Vac/ 80% LOAD@ Dual phase operation L1,L3,FG or L2,L3,FG																																	
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P: 320VAC~ 600VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK																																	
3	INPUT CURRENT(Typ.)	400V/ 0.69 A 500V/ 0.60 A	I/P : 400 VAC I/P : 500 VAC O/P : FULL LOAD Ta : 25°C	TEST: <table><tr><td></td><td>400VAC</td><td>500VAC</td></tr><tr><td>L1</td><td>0.499A</td><td>0.421A</td></tr><tr><td>L2</td><td>0.496A</td><td>0.418A</td></tr><tr><td>L3</td><td>0.498A</td><td>0.422A</td></tr></table>		400VAC	500VAC	L1	0.499A	0.421A	L2	0.496A	0.418A	L3	0.498A	0.422A																					
	400VAC	500VAC																																			
L1	0.499A	0.421A																																			
L2	0.496A	0.418A																																			
L3	0.498A	0.422A																																			
4	LEAKAGE CURRENT	<2 mA / 530 VAC	I/P : 530 VAC O/P : Min LOAD Ta : 25°C	L1,L2,L3-FG : 0.644mA(Peak)→62368																																	
5	NO LOAD CONSUMPTION	<2.5 W	I/P : 400 VAC I/P : 500 VAC O/P : NO LOAD Ta : 25°C	1.0675W/400VAC 1.332W/500VAC																																	
6	POWER FACTOR(Typ.)	PF=0.53 /400VAC PF=0.52/500VAC	I/P : 400 VAC I/P : 500 VAC O/P : FULL LOAD Ta : 25°C	TEST: <table><tr><td></td><td>400VAC</td><td>500VAC</td></tr><tr><td>L1</td><td>0.5884</td><td>0.5588</td></tr><tr><td>L2</td><td>0.588</td><td>0.5584</td></tr><tr><td>L3</td><td>0.588</td><td>0.5603</td></tr></table>		400VAC	500VAC	L1	0.5884	0.5588	L2	0.588	0.5584	L3	0.588	0.5603																					
	400VAC	500VAC																																			
L1	0.5884	0.5588																																			
L2	0.588	0.5584																																			
L3	0.588	0.5603																																			
P.F vs LOAD  <table><caption>P.F vs LOAD Data</caption><thead><tr><th>LOAD</th><th>400VAC P.F.</th><th>500VAC P.F.</th></tr></thead><tbody><tr><td>10%</td><td>0.44</td><td>0.40</td></tr><tr><td>20%</td><td>0.49</td><td>0.45</td></tr><tr><td>30%</td><td>0.52</td><td>0.48</td></tr><tr><td>40%</td><td>0.54</td><td>0.50</td></tr><tr><td>50%</td><td>0.55</td><td>0.51</td></tr><tr><td>60%</td><td>0.56</td><td>0.52</td></tr><tr><td>70%</td><td>0.57</td><td>0.53</td></tr><tr><td>80%</td><td>0.58</td><td>0.54</td></tr><tr><td>90%</td><td>0.59</td><td>0.55</td></tr><tr><td>100%</td><td>0.60</td><td>0.57</td></tr></tbody></table>					LOAD	400VAC P.F.	500VAC P.F.	10%	0.44	0.40	20%	0.49	0.45	30%	0.52	0.48	40%	0.54	0.50	50%	0.55	0.51	60%	0.56	0.52	70%	0.57	0.53	80%	0.58	0.54	90%	0.59	0.55	100%	0.60	0.57
LOAD	400VAC P.F.	500VAC P.F.																																			
10%	0.44	0.40																																			
20%	0.49	0.45																																			
30%	0.52	0.48																																			
40%	0.54	0.50																																			
50%	0.55	0.51																																			
60%	0.56	0.52																																			
70%	0.57	0.53																																			
80%	0.58	0.54																																			
90%	0.59	0.55																																			
100%	0.60	0.57																																			
7	EFFICIENCY(Typ.)	88.7%	I/P: 400 VAC O/P:FULL LOAD Ta:25°C	89.24%																																	



PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOADPROTECTION	OLP : 105%~ 150% rated power Protection type: 105%~150% rated output power for more than 5 sec then constant current limiting without shutdown at rate current when Vo=30%~100%	I/P: 600VAC I/P: 400VAC I/P: 320VAC O/P:TESTING Ta:25°C	OLP : 117.35%/600VAC 116.57%/400VAC 115.32%/320VAC Protection type: 105%~150% rated output power for more than 5 sec then constant current limiting without shutdown at rate current when Vo=30%~100%

2	OVER VOLTAGE PROTECTION	15V~18V Protection type : Hiccup mode, recovers automatically after fault condition is removed.	I/P: 600VAC I/P: 320VAC O/P:MIN LOAD Ta:25°C	17.0V/600VAC 17.0V/320VAC Protection type: Hiccup mode, recovers automatically after fault condition is removed.
3	OVER TEMPERATURE PROTECTION	Protection type: Shut down o/p voltage or hiccup mode, recovers automatically after temperature goes down	I/P: 600VAC I/P: 320VAC O/P:FULL LOAD	TEST: <u>OK</u> O.T.P Active Protection type : Shut down o/p voltage or hiccup mode, recovers automatically after temperature goes down
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE Protection type: Constant current limiting with auto-recovery after fault condition is removed °	I/P: 600VAC I/P: 320VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE Protection type: Constant current limiting with auto-recovery after fault condition is removed.

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	DC OK CONTACT RATINGS	30VDC/1A , 30VAC/0.5A RESISTIVE LOAD	I/P:400VAC O/P:FULL LOAD Ta:25°C	TEST : <u>OK</u>
2	PARALLEL(optional)	Up to 960W (3+1), please refer to the Instruction manual	I/P: TESTING O/P: TESTINGLOAD Ta:25°C	TEST : <u>OK</u>

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E)Peak Voltage	Q3/Q4 Rated : 1200 V/12A	AC ON/OFF I/P:High-Line =700V <u>VO=Vomax</u> 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/	Q3 <u>VO=Vomax</u> VDS: (1) 1007V (2) 1015V (3) 993V (4) 993V (5) 1000V (6) 993V (7) 1015V (8) 986V Q4 <u>VO=Vomax</u> VDS: (1) 951V (2) 967V (3) 951V (4) 951V (5) 951V (6) 951V (7) 967V (8) 942V

			Min. Load 90%Duty/5KHz (6)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. (8) Peak Load <u>VO= Vnormal</u> O/P: (1)Full Load Ta:25°C	Vnormal (1) 952V	Vnormal (1) 936V
2	Diode Peak Voltage	Q100 Rated: 100A/ 120V	AC ON/OFF I/P:High-Line =700 V <u>VO=Vomax</u> 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)Peak Load <u>VO= Vnormal</u> O/P: (1)Full Load Ta:25°C	Q100: <u>VO=Vomax</u> VDS: (1) 64.4V (2) 78.2V (3) 65.6V (4) 64.4V (5) 63.2V (6) 65.6V (7) 76.4V (8) 57.1V (9) 65.0V <u>VO=Vnormal</u> (1) 60.1V	
3	Input Capacitor Voltage	C5/C6 Rated: 150μ/ 450V	I/P:High-Line +3V =603V 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	C5 (1) 433V (2) 431V (3) 431V (4) 427V (5) 427V (6) 431V	C6 (1) 437V (2) 433V (3) 433V (4) 429V (5) 433V (6) 433V
4	Control IC Voltage Test	PWM IC U1 Rated: 9.4~28V O/P IC U101 Rated: 4.2V ~ 35V IC U105 Rated: 3V ~30V IC U103 Rated: 3.3V~36V	AC ON/OFF I/P:High-Line +3V =700V 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) 19.9V (2) 19.7V (3) 19.7V (4) 19.7V (5) 19.4V	U101/ U105/U103 (1) 11.8V (2) 11.8V (3) 11.6V (4) 11.6V (5) 9.8V

5	Clamp Diode Peak Voltage	D37/D38 Rated : 1A/620V	AC ON/OFF I/P : High-Line = 700 V O/P : (1) Dynamic Load 90%Duty/1KHz (2)Full load continue Ta : 25°C	D37 (1) 398V (2) 395V	D38 (1) 383V (2) 383V
---	--------------------------	----------------------------	--	-----------------------------	-----------------------------

■ SAFETY& E.M.C. TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTANDVOLTAGE	I/P-O/P: 4.87KVAC/min I/P-FG:2.5KVAC/min O/P-FG:0.5KVAC/min O/P-DC OK: 0.5KVAC/min	I/P-O/P: 5.357KVAC/min I/P-FG: 3 KVAC/min O/P-FG:0.6 KVAC/min O/P-DC OK: 0.6 KVAC/min Ta:25°C	I/P-O/P: 8.96 mA I/P-FG: 10.01 mA O/P-FG: 5.68 mA O/P-DC OK: 0008 mA NO DAMAGE
2	ISOLATIONRESISTANCE	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: 50 GΩ NO DAMAGE
3	GROUNDINGCONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	8 mΩ

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	BS EN/EN61000-3-2 CLASS A	I/P: 400VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS
2	CONDUCTION	BS EN/EN55032(CISPR32) / BS EN/EN61204-3 / CNS15936 CLASS B	I/P : 400 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab
3	RADIATION	BS EN/EN55032(CISPR32) / BS EN/EN61204-3 / CNS15936 CLASS B	I/P : 400 VAC (50HZ) O/P : FULL LOAD Ta : 25°C	PASS Test by certified Lab
4	E.S.D	BS EN/ EN61000-4-2 AIR : 15KV / Contact : 8KV	I/P : 400 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
5	E.F.T	BS EN/ EN61000-4-4 INPUT : 4KV	I/P : 400 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A

6	SURGE	BS EN/ EN61000-4-5 Line-Line : 2KV Line-Earth : 4KV	I/P : 400 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 : XTR-240-12			
		1. ROOM AMBIENT BURN-IN : 2HRS I/P : 400VAC O/P : FULL LOAD Ta= 25.0 °C			
		2. HIGH AMBIENT BURN-IN : 2HRS I/P : 400VAC O/P : FULL LOAD Ta= 60.4 °C			
		NO	Position	ROOM AMBIENTTa= 25.0 °C	HIGH AMBIENT Ta= 60.4 °C
		1	C3	51.8°C	86.9°C
		2	RY100	62.1°C	96.7°C
		3	ZNR1	48.1°C	83.3°C
		4	C171	64.7°C	99.2°C
		5	LF100	77.5°C	103.4°C
		6	LF1	50.6°C	84°C
		7	D8	56.3°C	91.2°C
		8	C4	55.8°C	89.3°C
		9	ZR4	54.0°C	88.9°C
		10	LF4	54.6°C	88.7°C
		11	Q2	64.2°C	99°C
		12	L5	53.2°C	85.4°C
		13	T3	60.2°C	94.1°C
		14	RTH1	59.1°C	93°C
		15	C6	60.7°C	93.1°C
		16	R13	69.9°C	102.7°C
		17	Q3	73.7°C	104.7°C
		18	R49	82.3°C	115.7°C
		19	Q4	85.1°C	107.7°C
		20	R50	86.9°C	119.3°C
		21	ZR7	65.2°C	100.9°C
		22	Q70	79.1°C	113.5°C
		23	T1 Coil	75.5°C	109.9°C
24	T1 Core	66.7°C	101.6°C		
25	Q100	76.1°C	110.7°C		
26	Q101	75.6°C	109.3°C		

		<table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENTTa= 25.0 °C</th><th>HIGH AMBIENT Ta= 60.4 °C</th></tr><tr><td>27</td><td>C110</td><td>67.8℃</td><td>102.9℃</td></tr><tr><td>28</td><td>C107</td><td>58.1℃</td><td>92.3℃</td></tr><tr><td>29</td><td>U105</td><td>58.9℃</td><td>92.2℃</td></tr><tr><td>30</td><td>Q109</td><td>70.3℃</td><td>102.6℃</td></tr><tr><td>31</td><td>R40</td><td>78.2℃</td><td>109.5℃</td></tr><tr><td>32</td><td>D37</td><td>80.8℃</td><td>112.8℃</td></tr><tr><td>33</td><td>D38</td><td>85.4℃</td><td>116.8℃</td></tr><tr><td>34</td><td>U1</td><td>71.8℃</td><td>103.2℃</td></tr><tr><td>35</td><td>D5</td><td>58.6℃</td><td>91.7℃</td></tr><tr><td>36</td><td>U101</td><td>79.4℃</td><td>112.5℃</td></tr><tr><td>37</td><td>TSW1</td><td>68.1℃</td><td>101.5℃</td></tr><tr><td>38</td><td>D72</td><td>71.2℃</td><td>105.4℃</td></tr><tr><td>39</td><td>Q200</td><td>65.9℃</td><td>97.2℃</td></tr><tr><td>40</td><td>J102</td><td>75.1℃</td><td>107.7℃</td></tr><tr><td>41</td><td>R101</td><td>78.1℃</td><td>109.3℃</td></tr><tr><td>42</td><td>U103</td><td>69.2℃</td><td>102.8℃</td></tr><tr><td>43</td><td>U102</td><td>68.3℃</td><td>101.8℃</td></tr></table>			NO	Position	ROOM AMBIENTTa= 25.0 °C	HIGH AMBIENT Ta= 60.4 °C	27	C110	67.8℃	102.9℃	28	C107	58.1℃	92.3℃	29	U105	58.9℃	92.2℃	30	Q109	70.3℃	102.6℃	31	R40	78.2℃	109.5℃	32	D37	80.8℃	112.8℃	33	D38	85.4℃	116.8℃	34	U1	71.8℃	103.2℃	35	D5	58.6℃	91.7℃	36	U101	79.4℃	112.5℃	37	TSW1	68.1℃	101.5℃	38	D72	71.2℃	105.4℃	39	Q200	65.9℃	97.2℃	40	J102	75.1℃	107.7℃	41	R101	78.1℃	109.3℃	42	U103	69.2℃	102.8℃	43	U102	68.3℃	101.8℃
NO	Position	ROOM AMBIENTTa= 25.0 °C	HIGH AMBIENT Ta= 60.4 °C																																																																									
27	C110	67.8℃	102.9℃																																																																									
28	C107	58.1℃	92.3℃																																																																									
29	U105	58.9℃	92.2℃																																																																									
30	Q109	70.3℃	102.6℃																																																																									
31	R40	78.2℃	109.5℃																																																																									
32	D37	80.8℃	112.8℃																																																																									
33	D38	85.4℃	116.8℃																																																																									
34	U1	71.8℃	103.2℃																																																																									
35	D5	58.6℃	91.7℃																																																																									
36	U101	79.4℃	112.5℃																																																																									
37	TSW1	68.1℃	101.5℃																																																																									
38	D72	71.2℃	105.4℃																																																																									
39	Q200	65.9℃	97.2℃																																																																									
40	J102	75.1℃	107.7℃																																																																									
41	R101	78.1℃	109.3℃																																																																									
42	U103	69.2℃	102.8℃																																																																									
43	U102	68.3℃	101.8℃																																																																									
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 400 VAC O/P : 116.57 % LOAD Ta : 25℃	TEST : OK																																																																								
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 600VAC/380VAC O/P : 100% LOAD Ta= -40 °C	TEST : OK																																																																								
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 60℃ / 95 %R.H NO DAMAGE	I/P : 600 VAC O/P : FULL LOAD Ta= 60℃ HUMIDITY= 95 %R.H	TEST : OK																																																																								
5	TEMPERATURE COEFFICIENT	± 0.03 %/℃(0~60℃)	I/P : 400 VAC O/P : FULL LOAD	± 0.015 %/℃(0~60℃)																																																																								
6	STORAGE TEMPERATURE TEST	-40~85℃	1. Thermal shock Temperature : -45℃~ +90℃ 2. Temperature change rate : 25℃ / 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	-40~60℃	1. Thermal shock Temperature : -45℃~ +65℃ 2. Temperature change rate : 25℃ / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 16 CYCLE 5. Input/Output condition : 15cycle:400V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle:400V/ 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 : 10min/sweep cycle (4) Acceleration : 3G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C
9	CAPACITOR LIFE CYCLE	SUPPOSE C110 IS THE MOST CRITICAL COMPONENT (1) I/P : 400VAC O/P : FULL LOAD Ta= 25 °C LIFE TIME (2) I/P : 400VAC O/P : FULL LOAD Ta= 60.4 °C LIFE TIME (3) I/P : 400VAC O/P : 75% LOAD Ta= 60.5 °C LIFE TIME (4) I/P : 400VAC O/P : 50% LOAD Ta= 59.2 °C LIFE TIME	(1) 1336688 HRS (2) 26670 HRS (3) 76038 HRS (4) 320649 HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 1432.3K hrs min. Telcordia SR-332 (Bellcore) ; 191.5K hrs min. MIL-HDBK-217F (25°C)	
11	Ongoing Reliability Test	I/P : 400VAC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 50,000 hours	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	YUWEI	LIUTT	WANGZD

2020.10.1 TAG-QA-009