Test Report: DRS-480-24

480W All-In-One Intelligent Security 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

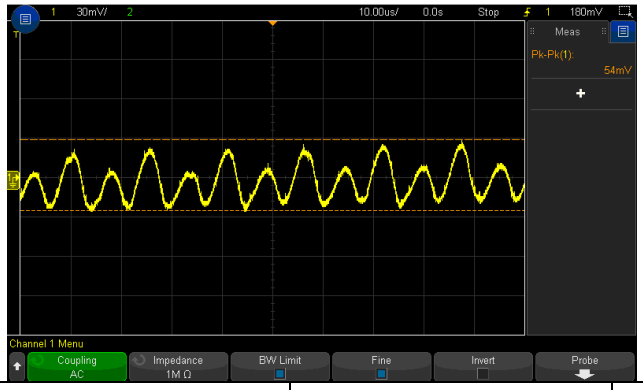
ENVIRONMENT TEST

■ DESIGN VERIFY TEST

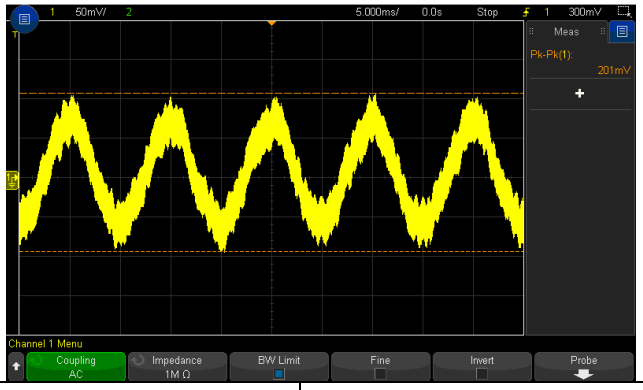
OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE(Max) TOLERANCE	V1: -1.0 %~ +1.0%	I/P: 90VAC /305VAC O/P:FULL/ MIN. LOAD Ta:25℃	V1: -0.0668%~0.092 %
2	LINE REGULATION (Max)	V1: -0.5 %~ +0.5 %	I/P: 90VAC~ 305VAC O/P:FULL LOAD Ta:25℃	V1: 0%~ 0.026%
3	LOAD REGULATION(Max)	V1: -0.5 %~ +0.5 %	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25℃	V1: -0.0668%~0.092 %
4	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230VAC O/P:FULL LOAD Ta:25℃	1.30%
5	RIPPLE & NOISE(Max)	V1: 240mVp-p	I/P:230VAC O/P: TESTING LOAD Ta:25℃	V1: 201mVp-p

high frequency :

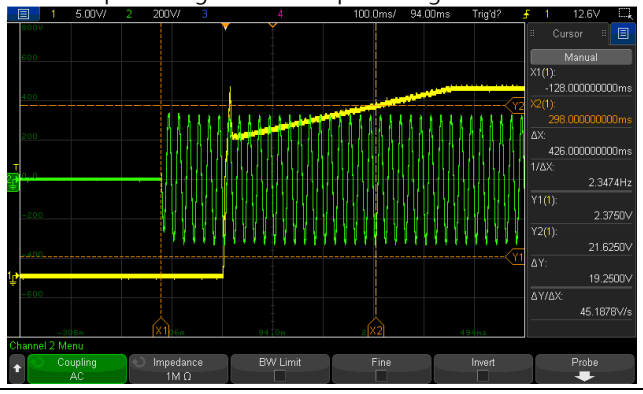


low frequency :

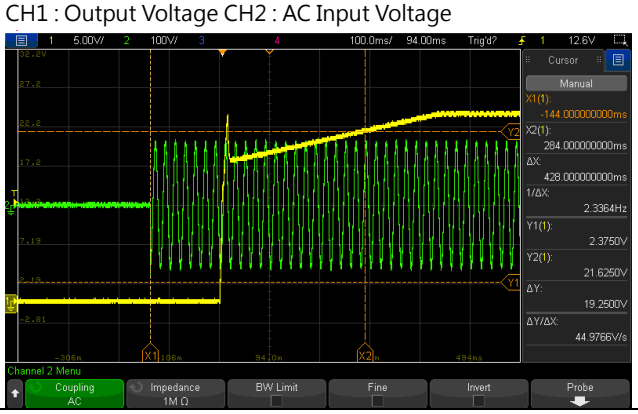


6	SET UP TIME(Max)	230VAC/2400ms 115VAC/2400ms	I/P： 230 VAC I/P： 115 VAC O/P：FULL LOAD Ta：25℃	230VAC/ 426 ms 115VAC/ 428 ms

INPUT=230VAC/50HZ @ FULL LOAD
CH1 : Output Voltage CH2 : AC Input Voltage

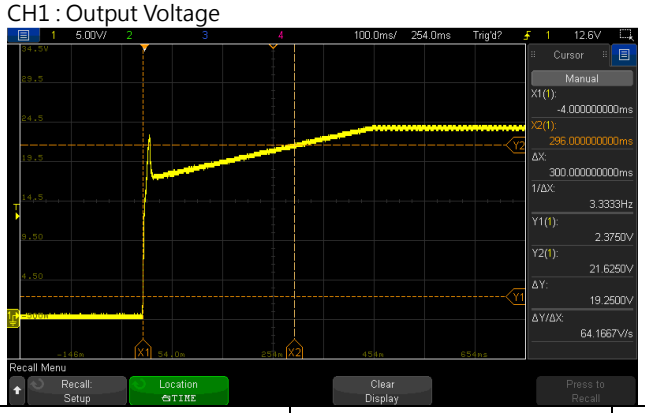


INPUT=115VAC/60HZ @ FULL LOAD
CH1 : Output Voltage CH2 : AC Input Voltage

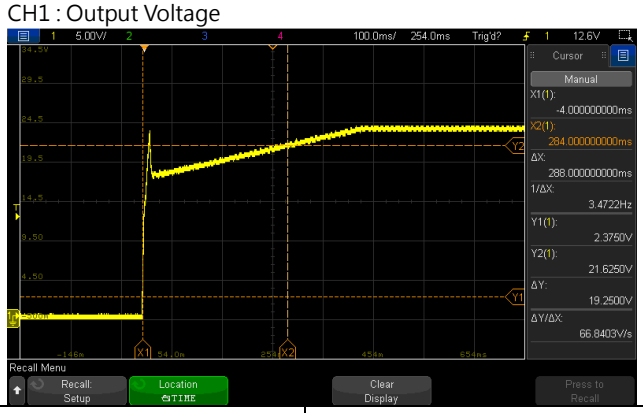


7	RISE TIME (Max)	230VAC/1000ms 115VAC/1000ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25℃	230VAC/ 300 ms 115VAC/ 288 ms

INPUT=230VAC/50HZ @ FULL LOAD
CH1 : Output Voltage

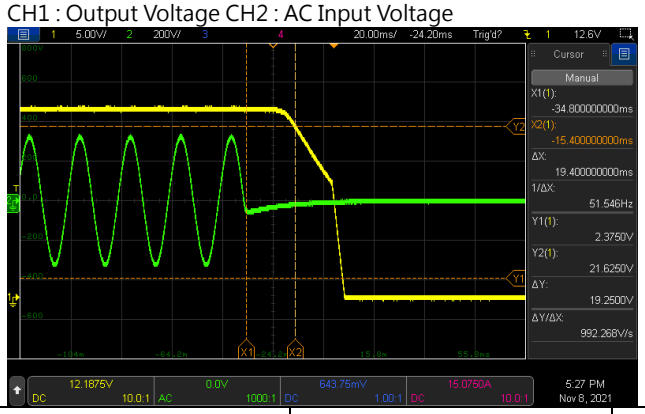


INPUT=115VAC/60HZ @ FULL LOAD
CH1 : Output Voltage

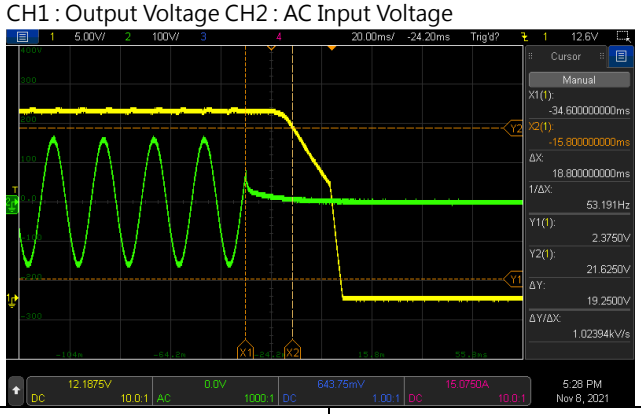


8	HOLD UP TIME (Typ.)	230VAC/16ms 115VAC/10ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25℃	230VAC/ 19.4 ms 115VAC/ 18.8 ms

INPUT=230VAC/50HZ @ FULL LOAD
CH1 : Output Voltage CH2 : AC Input Voltage

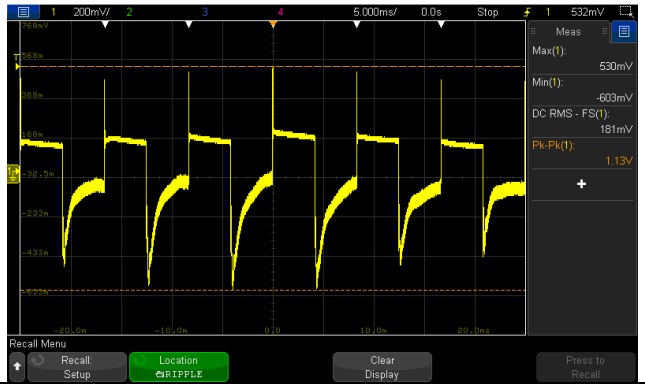


INPUT=115VAC/60HZ @ FULL LOAD
CH1 : Output Voltage CH2 : AC Input Voltage

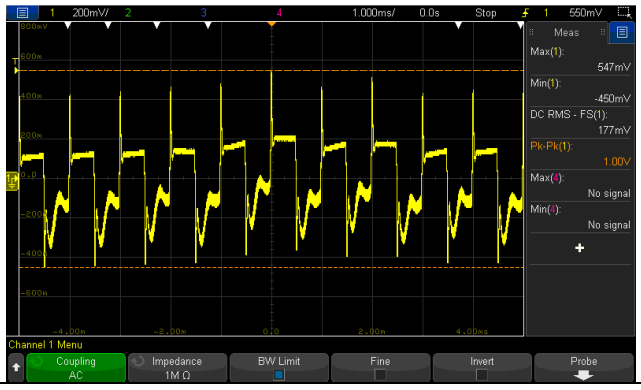


9	DYNAMIC LOAD	V1: 2400mVp-p	I/P: 230VAC O/P: (1)FULL/MIN LOAD 50%DUTY/ 120HZ (2)FULL/MIN LOAD 50%DUTY / 1KHZ Ta:25℃	2130mVp-p 1000mVp-p

FULL /50% LOAD 50%DUTY / 120HZ

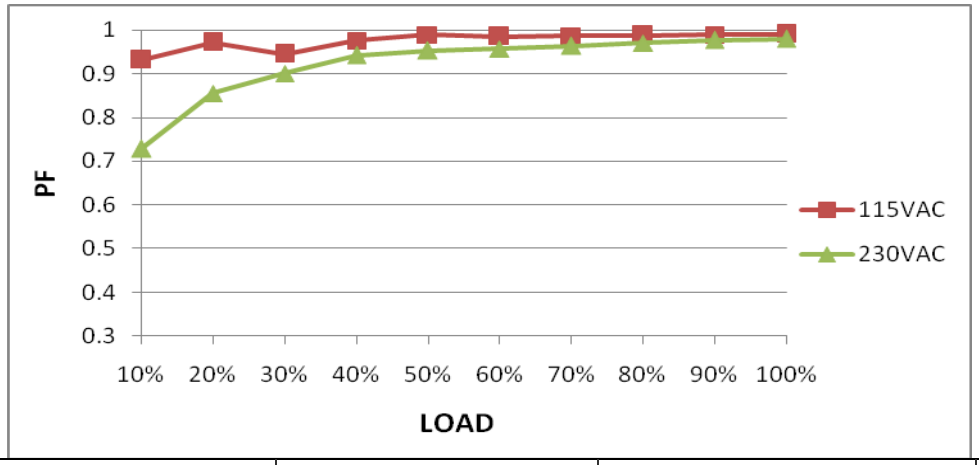


FULL /50% LOAD 50%DUTY / 1KHZ

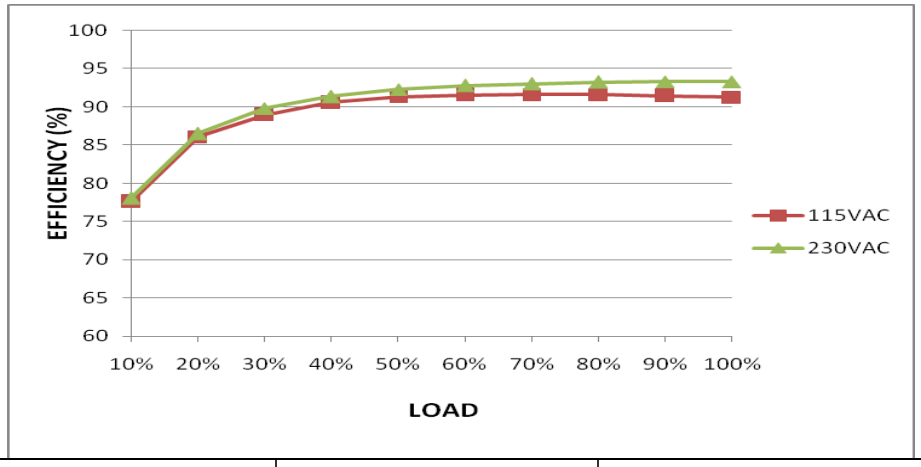


10	TRANSIENT RECOVERY TIME	V1: 2400 mVp-p	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 5A/us	1280mVp-p

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	90VAC~305VAC 127VDC~ 431VDC	(1) I/P:TESTING O/P:FULL LOAD (2) I/P:DC TESTING(L:+ N:-) O/P: FULL / 50% LOAD (3) I/P:DC TESTING(L:- N:+) O/P: FULL / 50% LOAD Ta:25℃	(1) 88.7V~305V/full load 88.7V~305V/90% load (2) 120Vdc~431Vdc/FULL LOAD 120Vdc~431Vdc/50% LOAD (3) 120Vdc~431Vdc/FULL LOAD 120Vdc~431Vdc/50% LOAD
			I/P: LOW-LINE=90 V HIGH-LINE+10=315 V O/P:FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	TEST:OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P:90 VAC ~305VAC O/P:FULL~MIN LOAD Ta:25℃	TEST: OK
3	INPUT CURRENT (Typ.)	230V/ 2.7 A 115V/ 5.4 A	I/P： 230 VAC I/P： 115 VAC O/P：FULL LOAD Ta：25℃	I =2.27A/ 230VAC I =4.60A/ 115VAC
4	POWER FACTOR (Typ.)	0.95/ 230VAC 0.98/115VAC	I/P： 230 VAC I/P： 115 VAC O/P：FULL LOAD Ta：25℃	PF=0.9804/230VAC PF=0.9889/115VAC
	P.F vs LOAD 			
5	EFFICIENCY(Typ.)	92.5%	I/P:230 VAC O/P:FULL LOAD Ta:25℃	93.44 %

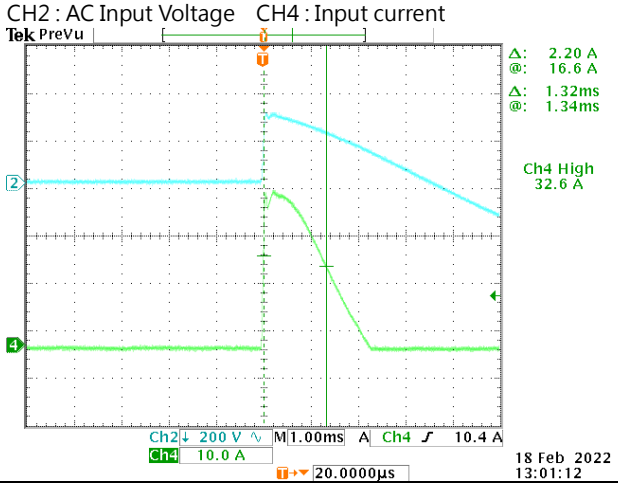
EFFICIENCY vs LOAD



6	INRUSH CURRENT(Typ.)	230V/60A 115V/30A COLD START	I/P： 230 VAC I/P： 115 VAC O/P：FULL LOAD Ta：25℃	I =32.6A/ 230VAC I =15.7A/ 115VAC T50= 1320us/230V

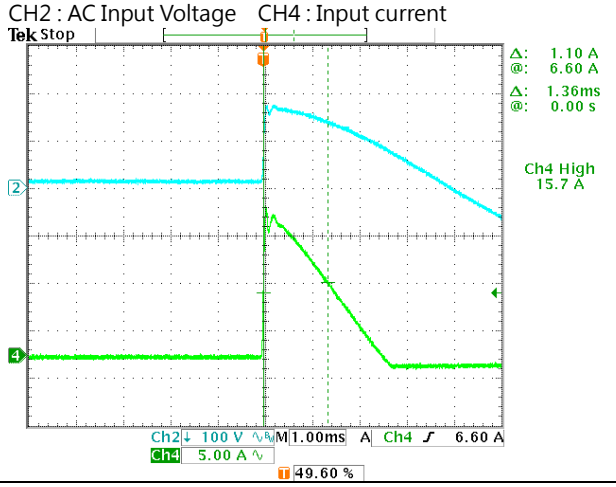
INPUT=230VAC/50HZ @ FULL LOAD

CH2 : AC Input Voltage CH4 : Input current



INPUT=115VAC/ 60HZ @ FULL LOAD

CH2 : AC Input Voltage CH4 : Input current



PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105%~135 % Protection type: Constant current limiting, shut down output voltage after 5 sec	I/P: 305VAC I/P: 230VAC I/P: 100VAC O/P:TESTING Ta:25℃	119.33%/ 305VAC 119.33%/ 230VAC 119.33%/100VAC Protection type: Constant current limiting, shut down output voltage after 5 sec
2	OVER VOLTAGE PROTECTION	Load main output : 32.4V~37.3V Protection type : Shut down o/p voltage, re-power on to recover	I/P: 305VAC I/P: 230VAC I/P: 90VAC O/P:MIN LOAD Ta:25℃	34.2V/ 305VAC 34.2V/ 230VAC 34.2V/ 90VAC Protection type : Shut down o/p voltage, re-power on to recover

3	OVER TEMPERATURE PROTECTION	Protection type : Automatically drop load with temperature only for bat. load Shut down o/p voltage, recovers automatically after temperature goes down	I/P: 305VAC I/P: 90VAC O/P:FULL LOAD	O.T.P. Active Protection type : Automatically drop load with temperature only for bat. load Shut down o/p voltage, recovers automatically after temperature goes down
4	SHORT PROTECTION	SHORT EVERY OUTPUT Constant current Range：23~25A 1 HOUR NO DAMAGE	I/P: 305VAC I/P: 90VAC O/P: FULL LOAD Ta:25℃	NO DAMAGE Constant current Range : 23.816A PROTECTION TYPE : Constant current limiting, shutdown output voltage after 5 sec
5	BATTERY CUT OFF	20.9±0.5V	I/P: 230 VAC O/P:BAT. LOAD Ta:25℃	20.89V
6	REVERSE POLARITY	By internal MOSFET, no damage, recovers automatically after fault condition is removed.	I/P: 230 VAC O/P:BAT. LOAD Ta:25℃	By internal MOSFET, no damage, recovers automatically after fault condition is removed.

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	FORM-C RELAY	AC FAIL	Signals AC failure and activates when input voltage drops below : 79~89V of 120VAC, 132~187V of 220VAC. Relay contact output, ON : AC OK ; OFF : AC Fail ; max. rating : 30V/1A	TEST : OK 86.98V of 120VAC, 171.20V of 220VAC.
		CHARGER FAIL	Relay contact output, ON : Charger OK ; OFF : Charger Fail ; max. rating : 30V/1A	TEST : OK
		DC OK	Signals normal DC output and activates when output voltage > 90% rated value. Relay contact output, ON : DC OK ; OFF : DC Fail ; max. rating : 30V/1A	TEST : OK
		BATTERY LOW/ ABNORMAL/ DISCONNECTED	Relay contact output, ON : Battery OK ; OFF : Battery Low ; max. rating : 30V/1A ; Battery low voltage : < 22V	TEST : OK Vbat ＜ 22.027 V

<table>
<tr><td>2</td><td>BATTERY START</td><td>Restart system directly from battery and does not require AC power</td><td>I/P: BAT
O/P:FULL LOAD
Ta:25℃</td><td>TEST : OK</td></tr>
<tr><td>3</td><td>DC-UPS</td><td>UPS switch to battery power within 10ms of AC failure</td><td>I/P: 230 VAC
O/P:BAT. LOAD
Ta:25℃</td><td>TEST : OK</td></tr>
<tr><td>4</td><td>ADJUSTABLE CURRENT RANGE</td><td>20% ~ 100% charging current adjustable by VR</td><td>I/P : 230 VAC
O/P : TESTING LOAD
Ta : 25℃</td><td>17.89% ~99.79 %</td></tr>
<tr><td>5</td><td>LED INDICATOR</td><td colspan="2">
<table>
<tr><th>Function</th><th></th><th>Description</th><th>Output of alarm</th></tr>
<tr><td colspan="2">DC OK</td><td>DC fail</td><td>OFF</td></tr>
<tr><td></td><td></td><td>DC OK</td><td>Green</td></tr>
<tr><td colspan="2">AC fail</td><td>AC fail</td><td>Red</td></tr>
<tr><td></td><td></td><td>AC OK</td><td>OFF</td></tr>
<tr><td rowspan="9">Status</td><td rowspan="2">Charging status</td><td>Float</td><td>Green</td></tr>
<tr><td>Charging: CC/CV</td><td>Orange</td></tr>
<tr><td rowspan="7">System diagnosis</td><td>Discharging</td><td>Orange: 1 Blink/Pause</td></tr>
<tr><td>Charger fail</td><td>Red : 1 Blink/Pause</td></tr>
<tr><td>Battery overvoltage / Battery reverse polarity</td><td>Red : 2 Blink/Pause</td></tr>
<tr><td>Battery low / No Battery</td><td>Red : 3 Blink/Pause</td></tr>
<tr><td>Battery discharge peak power timeout.</td><td>Red : 4 Blink/Pause</td></tr>
<tr><td>Over load / short</td><td>Red : 5 Blink/Pause</td></tr>
<tr><td>Over temperature</td><td>Red : 6 Blink/Pause</td></tr>
<tr><td>Timeout</td><td>Red : 7 Blink/Pause</td></tr>
</table>
I/P: TESTING VAC
O/P:TESTING LOAD
Ta:25℃
</td><td>TEST : OK</td></tr>
<tr><td>6</td><td>FORCE BUTTON</td><td>Bat over discharge protection
< 70%Bat rated</td><td>I/P: 230 VAC
O/P:BAT. LOAD
Ta:25℃</td><td>TEST : 69.73%</td></tr>
<tr><td>7</td><td>Battery Discharge Peak power</td><td>a) 2 Peak power > 4 min ;
b) 3 Peak power > 4 s ;</td><td>I/P: 230 VAC
O/P:BAT. LOAD
Ta:25℃</td><td>a) TEST : OK
b) TEST : OK</td></tr>
<tr><td>8</td><td>TEMPERATURE COMPENSATION</td><td colspan="3">I/P: 230 VAC
O/P:BAT. LOAD
Ta:25℃
<table>
<tr><td colspan="4">Constant Voltage</td></tr>
<tr><td rowspan="2">SPEC:</td><td>Ta=0℃ (17KΩ)</td><td>Ta=25℃ (5KΩ)</td><td>Ta=50℃ (1.7KΩ)</td></tr>
<tr><td>29.7±0.24V</td><td>28.8±0.24V</td><td>28.26±0.24V</td></tr>
<tr><td>TEST RESULT:</td><td>29.562V</td><td>28.675V</td><td>28.139V</td></tr>
</table>
</td></tr>
</table>

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q 15/Q16ated : 25 A/ 600 V	AC ON/OFF I/P: High-Line +3V =308V 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. Ta:25℃	Q15 VDS: (1) 512V (2) 536V (3) 516V (4) 516V (5) 512V (6) 516V (7) 528V	Q16 VDS: (1) 516V (2) 548V (3) 516V (4) 516V (5) 516V (6) 528V (7) 544V
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1/Q4 Rated : 22 A/ 600 V	I/P: High-Line +3V =308V AC ON/OFF 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. Ta:25℃	Q1 VDS: (1) 460V (2) 456V (3) 456V (4) 456V (5) 456V (6) 452V (7) 452V	Q4 VDS: (1) 472V (2) 464V (3) 468V (4) 464V (5) 460V (6) 456V (7) 456V
3	AUX MOS	U505 Rated : 1.04 A/ 725V Q504 Rated : 28 A/ 150V	I/P: High-Line +3V =308 V AC ON/OFF 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. Ta:25℃	U505 VDS: (1) 683V (2) 700V (3) 677V (4) 677V (5) 683V (6) 677V (7) 700V	Q504 VDS: (1) 42.7V (2) 42.7V (3) 42.7V (4) 42.7V (5) 42.7V (6) 43.1V (7) 36.3V
4	P.F.C DIODE	D 8 Rated : 8 A/ 600 V	I/P:High-Line +3V =308V AC ON/OFF	(1) 562V	

			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 Ta:25℃	(2) 564V (3) 560V (4) 556V
5	Diode Peak Voltage	Q100/ Q101 Rated: 100A/ 120 V Q102/Q103 Rated : 100A/ 120 V	AC ON/OFF I/P:High-Line +3V =308V 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 Ta:25℃	Q100: Q102: VDS: VDS: (1) 69.3V (1) 72.5V (2) 66.1V (2) 75.7V (3) 69.3V (3) 75.7V (4) 70.1V (4) 74.9V (5) 69.3V (5) 72.5V (6) 74.9V (6) 74.9V (7) 65.3V (7) 73.3V (8) 63.7V (8) 61.3V Q101: Q103: VDS: VDS: (1) 70.1V (1) 83.0V (2) 70.1V (2) 81.4V (3) 71.7V (3) 83.8V (4) 71.7V (4) 85.4V (5) 70.1V (5) 83.8V (6) 74.1V (6) 83.8V (7) 70.1V (7) 78.1V (8) 68.5V (8) 74.1V
6	Input Capacitor Voltage	C5 Rated: : 150 μ / 450 V	I/P:High-Line +3V =308V O/P: (1)Full Load input on/off (2) Min load input on /Off (3)Full Load /Min load Change (4)Full load continue Ta:25℃	(1)440V (2)436V (3)444V (4)440V
7	Control IC Voltage Test	PWM IC U3 Rated 8.9V~ 15.5 V PFC IC U1 Rated 11V~ 20 V O/P IC U100 Rated 8V~ 24 V IC U801 Rated 4.5V~ 36 V MCU IC U303 Rated 2.4V~ 3.6 V AUX IC U502 Rated	AC ON/OFF I/P:High-Line +3V =308V O/P(1)FULL LOAD (2) Output Short (3)O.L.P (4)O.V.P. (5)NO LOAD (LOW LINE) Ta:25℃	(1) U3 U801 (2) 14.9V (1) 12.3V (3) 14.9V (2) 12.4V (4) 14.9V (3) 12.3V (5) 14.9V (4) 12.3V (6) 14.9V (5) 12.4V U1 U303 (1) 15.7V (1) 3.38V (2) 15.6V (2) 3.38V (3) 15.6V (3) 3.38V (4) 15.6V (4) 3.38V (5) 15.6V (5) 3.38V U100 U502

		8.5V~30V		(1) 12.3V (2) 16.3V (3) 12.3V (4) 12.3V (5) 12.3V	(1) 11.6V (2) 11.6V (3) 11.6V (4) 11.6V (5) 11.6V

■ SAFETY& E.M.C. TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 4 KVAC/min I/P-FG: 2 KVAC/min O/P-FG:1.5 KVAC/min	I/P-O/P: 4.2 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG:1.8 KVAC/min Ta:25℃	I/P-O/P:6.41mA I/P-FG:5.13mA O/P-FG:15.44m A 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: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta:25℃	I/P-O/P:9999MΩ I/P-FG: 9999MΩ O/P-FG: 9999MΩ NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25℃	6mΩ

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS A	I/P:230VAC/50HZ O/P:FULL LOAD Ta:25℃	PASS
2	CONDUCTION	EN55032 CLASS B	I/P： 230 VAC (50HZ) O/P：FULL/50% LOAD Ta：25℃	PASS Test by certified Lab
3	RADIATION	EN55032 CLASS B	I/P： 230 VAC (50HZ) O/P：FULL LOAD Ta：25℃	PASS Test by certified Lab
4	E.S.D	EN61000-4-2 AIR：8KV / Contact：4KV	I/P： 230 VAC/50HZ O/P：FULL LOAD Ta：25℃	■ CRITERIA A
5	E.F.T	EN61000-4-4 INPUT： 2KV	I/P： 230 VAC/50HZ O/P：FULL LOAD Ta：25℃	■ CRITERIA A
6	SURGE	IEC61000-4-5 L-N ：1KV L,N-PE：2KV	I/P： 230 VAC/50HZ O/P：FULL LOAD Ta：25℃	■ 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 : DRS-480-24 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 25.0 ℃ 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 50.0 ℃		

NO	Position	ROOM AMBIENT Ta= 25.0℃	HIGH AMBIENT Ta= 50.0 ℃
1	U303	43.8℃	70.7℃
2	U150	59.8℃	87.7℃
3	U760	53.9℃	80.0℃
4	U151	38.0℃	62.5℃
5	Q303	35.7℃	59.3℃
6	ZNR1	35.5℃	59.0℃
7	LF1	40.0℃	64.4℃
8	C2	41.8℃	66.5℃
9	LF3	50.6℃	76.5℃
10	RTH1	50.2℃	75.9℃
11	BD1	56.1℃	79.0℃
12	C7	52.6℃	75.9℃
13	R5	55.0℃	78.9℃
14	L1	58.4℃	78.3℃
15	RTH4	55.1℃	76.9℃
16	C5	48.7℃	71.4℃
17	Q1	60.8℃	86.1℃
18	U1	52.5℃	76.0℃
19	Q16	53.1℃	79.6℃
20	U3	48.8℃	73.3℃
21	C59	52.1℃	76.1℃
22	C518	44.2℃	67.5℃
23	T500	51.0℃	74.5℃
24	T600	47.7℃	71.6℃
25	C501	50.4℃	74.4℃
26	TIcoil	77.2℃	103.0℃
27	TIcore	74.3℃	100.0℃
28	T2coil	80.2℃	106.3℃
29	T2core	57.5℃	80.6℃
30	Q101	75.7℃	102.5℃
31	Q102	70.3℃	97.3℃
32	C104	73.4℃	99.8℃

		<table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENT Ta= 25.0℃</th><th>HIGH AMBIENT Ta= 50.0 ℃</th></tr><tr><td>33</td><td>C101</td><td>60.7℃</td><td>88.7℃</td></tr><tr><td>34</td><td>U505</td><td>64.7℃</td><td>89.0℃</td></tr></table>		
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P： 230 VAC O/P：116%LOAD Ta：25℃	TEST：OK
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P： 264VAC/100VAC O/P： 100%LOAD Ta= -35℃	TEST：OK
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50 ℃/95 %R.H NO DAMAGE	I/P： 272 VAC O/P：FULL LOAD Ta=50.7℃ HUMIDITY= 95 %R.H	TEST：OK
5	TEMPERATURE COEFFICIENT	± 0.03%/℃(0~50℃)	I/P： 230 VAC O/P：FULL LOAD	±0.008%/℃(0~50℃)
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	-30~50℃	1. Thermal shock Temperature： -35℃~ +55℃ 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:230V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle:230V/ FULL LOAD Burn In Test	
8	VIBRATION TEST	10 ~ 500Hz, 5G 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：6G (5) Test Time：180min in each axis (X.Y.Z) (6) Ta：25℃	
9	CAPACITOR LIFE CYCLE	SUPPOSE C101 IS THE MOST CRITICAL COMPONENT (1) I/P： 230VAC O/P：FULL LOAD Ta= 25 ℃ LIFE TIME (2) I/P： 230VAC O/P：FULL LOAD Ta= 50 ℃ LIFE TIME (3) I/P： 230VAC O/P：75% LOAD Ta= 50 ℃ LIFE TIME (4) I/P： 230VAC O/P：50% LOAD Ta= 50 ℃ LIFE TIME	(1) 290528HRS (2) 41716.1HRS (3) 80736.6HRS (4) 134245.5HRS	
10	MTBF	Conducted by Parts Stress Analysis Prediction 556.6K hrs min. Telcordia SR-332 (Bellcore) ; 74.5K hrs min. MIL-HDBK-217F (25℃)		
11	Ongoing Reliability Test	I/P：230VAC O/P：FULL LOAD TA=50℃ Demonstration Mean Time Between Failure : 30,000 hours		

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	Liutt		Wangdz

2020.10.01 TAG-QA-009