



# Test Report: DRS-480-36

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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

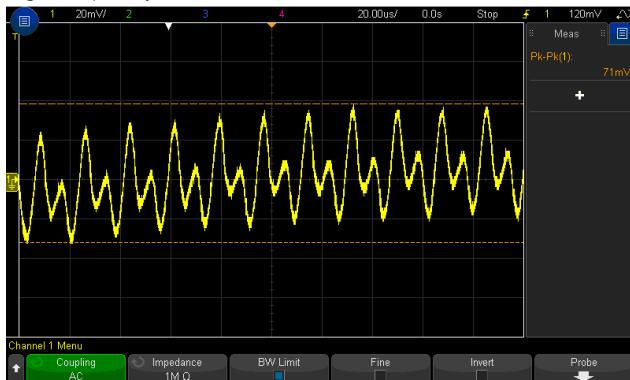
ENVIRONMENT TEST

■ DESIGN VERIFY TEST

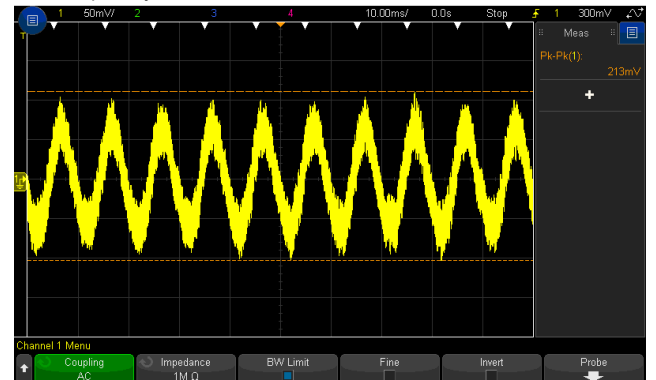
OUTPUT FUNCTION TEST

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°C	V1: -0.04 %~0.05%
2	LINE REGULATION (Max)	V1: -0.5 %~ +0.5 %	I/P: 90VAC~ 305VAC O/P:FULL LOAD Ta:25°C	V1: -0.03%~ 0.03 %
3	LOAD REGULATION(Max)	V1: -0.5 %~ +0.5 %	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.04 %~0.05%
4	OVER/UNDERSHOOT TEST	<±5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	0.78 %
5	RIPPLE & NOISE(Max )	V1: 360mVp-p	I/P:230VAC O/P: TESTING LOAD Ta:25°C	V1: 213mVp-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°C	230VAC/ 421.9 ms 115VAC/ 419.0 ms
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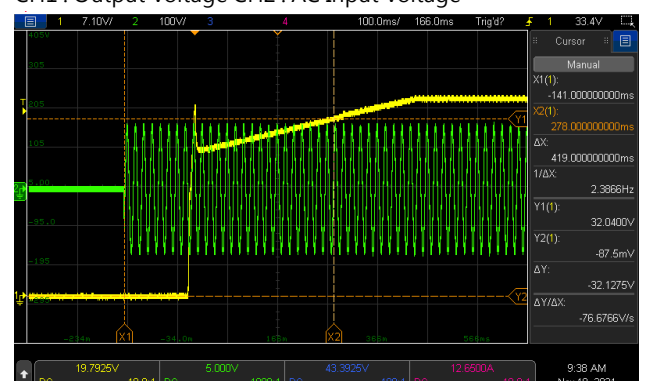
INPUT=230VAC/50HZ @ FULL LOAD

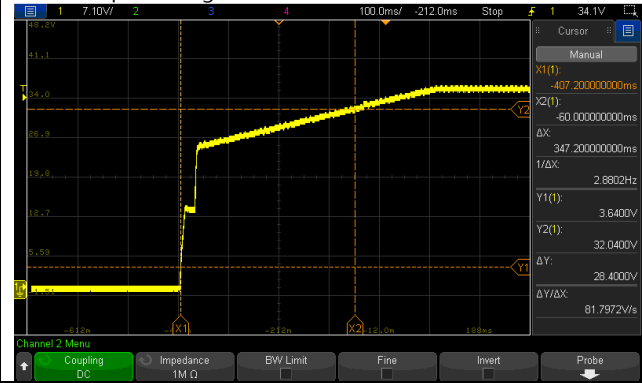
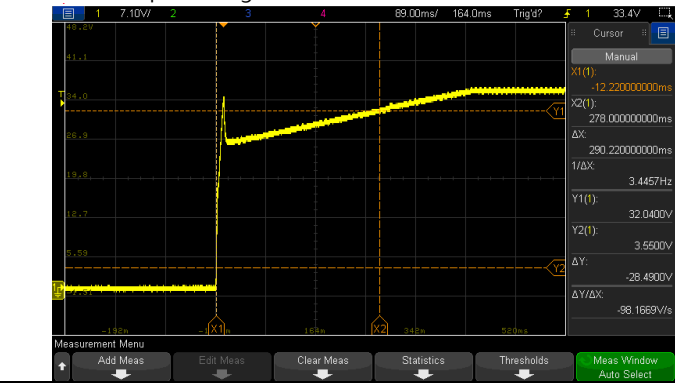
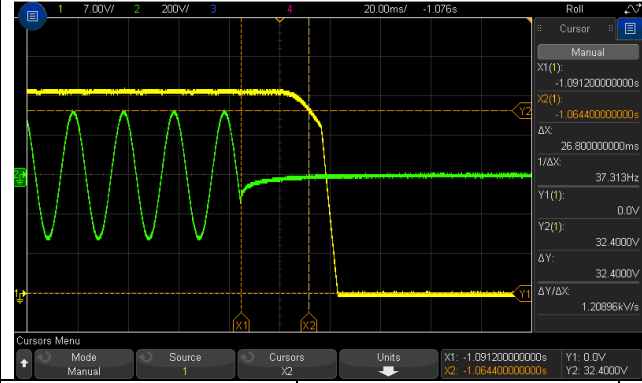
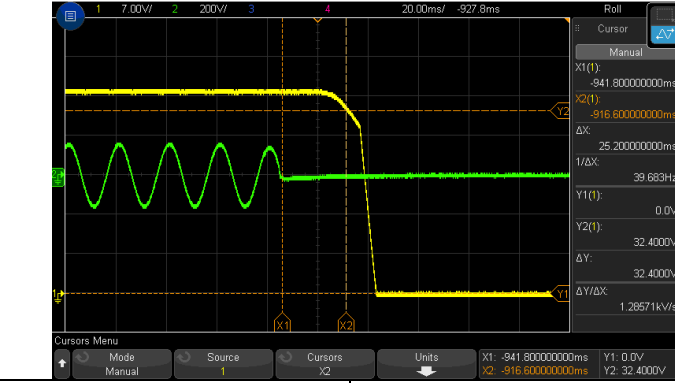

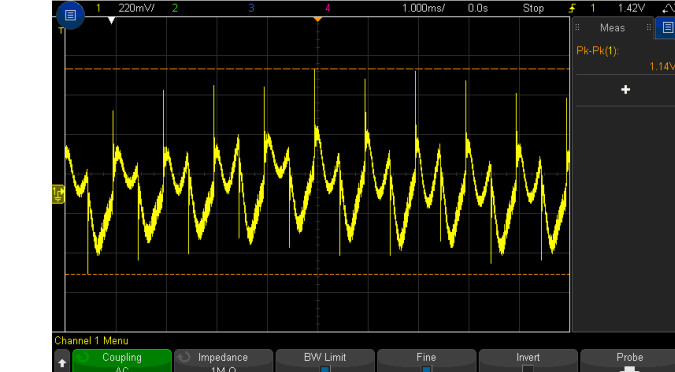
CH1 : Output Voltage CH2 : AC Input Voltage



INPUT=115VAC/60HZ @ FULL LOAD

CH1 : Output Voltage CH2 : AC Input Voltage



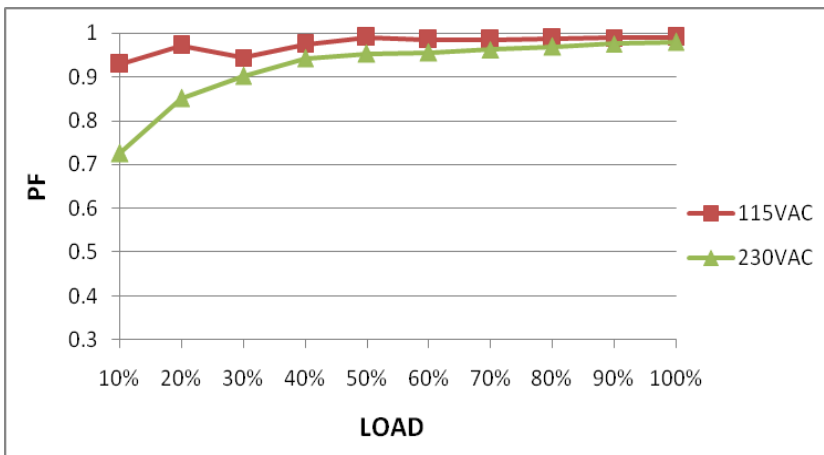
7	RISE TIME (Max)	230VAC/1000ms 115VAC/1000ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 347.2 ms 115VAC/ 290.2 ms
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage</p> 		<p>INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage</p> 		
8	HOLD UP TIME (Typ.)	230VAC/16ms 115VAC/10ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 26.8 ms 115VAC/ 25.2 ms
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage</p> 		<p>INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage</p> 		
9	DYNAMIC LOAD	V1: 3600mVp-p	I/P: 230VAC O/P: (1)FULL/50% LOAD 50%DUTY / 120HZ (2)FULL/50%LOAD50%DUTY/1KHZ Ta:25°C	(1) 1190mVp-p (2) 1140mVp-p
<p>FULL /50% LOAD 50%DUTY / 120HZ</p> 		<p>FULL /50% LOAD 50%DUTY / 1KHZ</p> 		

10	TRANSIENT RECOVERY TIME	V1: 3600mVp-p	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us	1640 mVp-p
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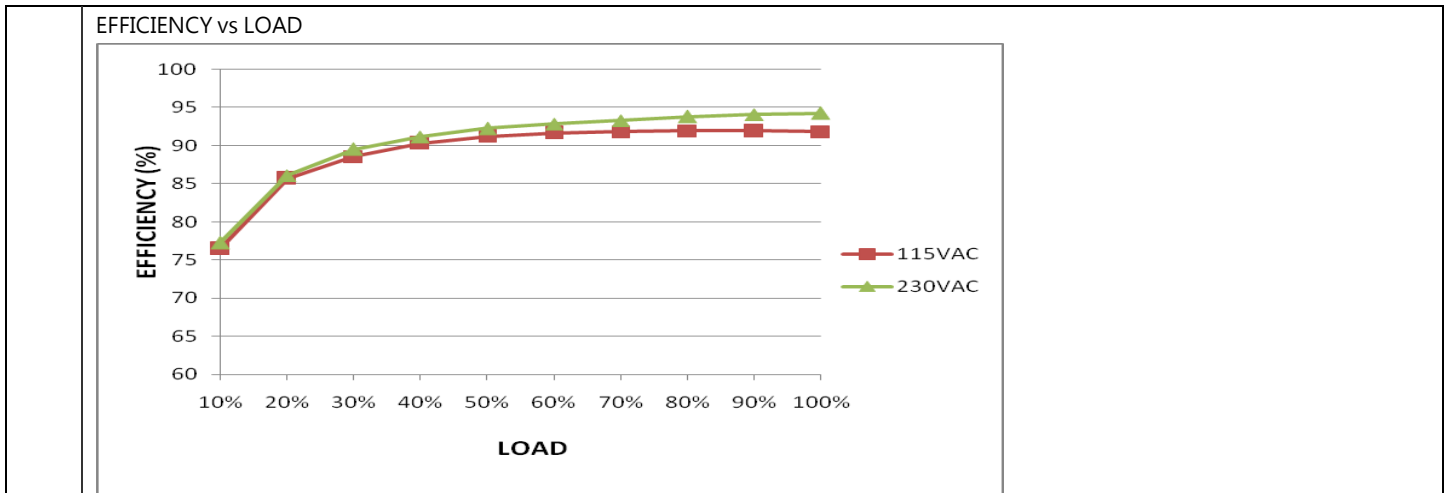
### INPUT FUNCTION TEST

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°C	(1) 86.5V~305V/ FULL LOAD 86.5V~305V/90% LOAD (2) 120Vdc~431Vdc/FULL LOAD 120Vdc~431Vdc/50% LOAD (3) 120Vdc~431Vdc/FULL LOAD 120Vdc~431Vdc/50% LOAD
			I/P: LOW-LINEV=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°C	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°C	I =2.24A/ 230VAC I =4.57A/ 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°C	PF=0.979/230VAC PF=0.990/115VAC

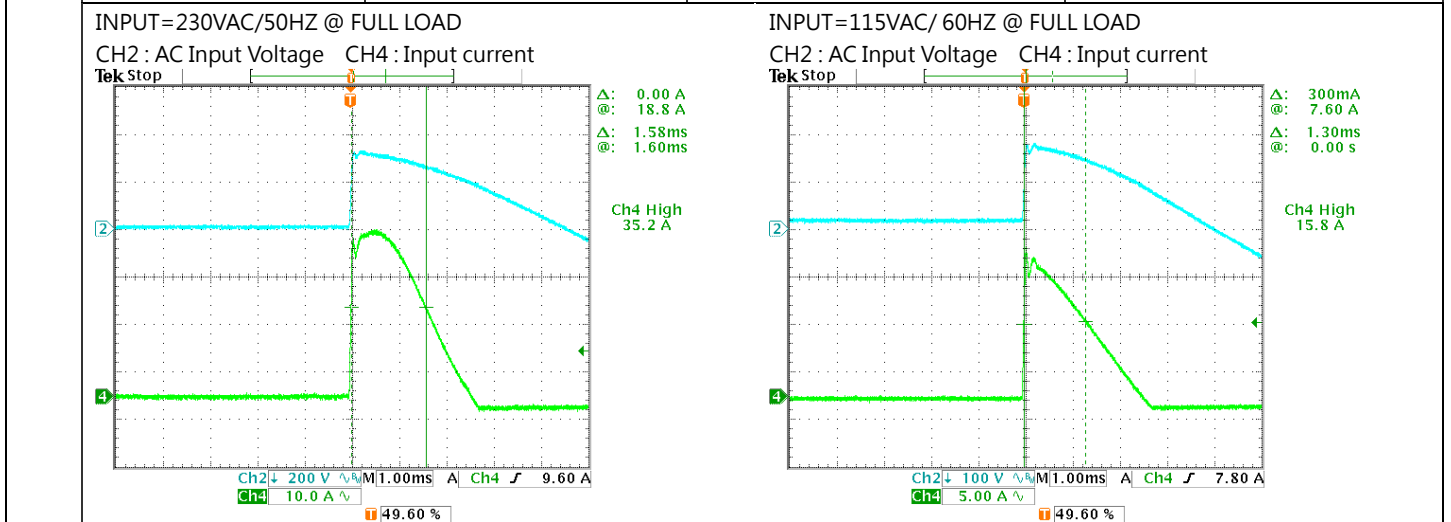
P.F vs LOAD



5	EFFICIENCY(Typ.)	93%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	94.3%
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6	INRUSH CURRENT(Typ.)	230V/60A 115V/30A COLD START	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I = 35.2A/ 230VAC I = 15.8A/ 115VAC T50= 1580 us/230V
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### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105%~135% Protection type: Constant current limiting, shutdown output voltage after 5 sec	I/P: 305VAC I/P: 230VAC I/P: 100VAC O/P:TESTING Ta:25°C	120.24%/ 305VAC 120.03%/ 230VAC 120.24%/100VAC Protection type: Constant current limiting, shutdown output voltage after 5 sec
2	OVER VOLTAGE PROTECTION	Load main output : 48.6V~55.9V 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°C	49.8V/ 305VAC 49.8V/ 230VAC 49.8V/ 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 OK 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: 15.3A~16.6A 1 HOUR NO DAMAGE	I/P: 305VAC I/P: 90VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE OK Constant current Range: 15.953A
5	BATTERY CUT OFF	31.3±0.7V	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	31.32 V
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°C	OK By internal MOSFET, no damage, recovers automatically after fault condition is removed.

### CONTROL FUNCTION TEST

N O	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	FORM-C RELAY	AC FAIL	Signals AC failure and activates when input voltage drops below : 79V~89V of 120VAC, 132V~187 of 220VAC. Relay contact output, ON : AC OK ; OFF : AC Fail ; max. rating : 30V/1A	TEST : <u>OK</u> <u>86.1 V</u> of 120VAC, <u>172.7 V</u> of 220VAC.
		CHARGER FAIL	Relay contact output, ON : Charger OK ; OFF : Charger Fail ; max. rating : 30V/1A	TEST : <u>OK</u>
		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 : <u>OK</u>
		BATTERY LOW/ ABNORMAL/ DISCONNECTED	Relay contact output, ON : Battery OK ; OFF : Battery Low ; max. rating : 30V/1A ; Battery low voltage : < 33V	TEST : <u>OK</u> Vbat < <u>33.1V</u>

2	BATTERY START	Restart system directly from battery and does not require AC power	I/P: BAT O/P:FULL LOAD Ta:25°C	TEST : <u>OK</u>																																			
3	DC-UPS	UPS switch to battery power within 10ms of AC failure	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	TEST : <u>OK</u>																																			
4	ADJUSTABLE CURRENT RANGE	20% ~ 100% charging current adjustable by VR	I/P : 230 VAC O/P : TESTING LOAD Ta : 25°C	17.2% ~100.1%																																			
5	LED INDICATOR	<table border="1"> <thead> <tr> <th>Function</th> <th>Description</th> <th>Output of alarm</th> </tr> </thead> <tbody> <tr> <td rowspan="2">DC OK</td> <td>DC fail</td> <td>OFF </td> </tr> <tr> <td>DC OK</td> <td>Green </td> </tr> <tr> <td rowspan="2">AC fail</td> <td>AC fail</td> <td>Red </td> </tr> <tr> <td>AC OK</td> <td>OFF </td> </tr> <tr> <td rowspan="10">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="8">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>Overload / 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> </tbody> </table> <p>I/P: TESTING VAC O/P:TESTING LOAD Ta:25°C</p>	Function	Description	Output of alarm	DC OK	DC fail	OFF	DC OK	Green	AC fail	AC fail	Red	AC OK	OFF	Status	Charging status	Float	Green	Charging: CC/CV	Orange	System diagnosis	Discharging	Orange: 1 Blink/Pause	Charger fail	Red : 1 Blink/Pause	Battery overvoltage / Battery reverse polarity	Red : 2 Blink/Pause	Battery low / No Battery	Red : 3 Blink/Pause	Battery discharge peak power timeout.	Red : 4 Blink/Pause	Overload / short	Red : 5 Blink/Pause	Over temperature	Red : 6 Blink/Pause	Timeout	Red : 7 Blink/Pause	TEST : <u>OK</u>
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		Battery low / No Battery	Red : 3 Blink/Pause																																				
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		Overload / short	Red : 5 Blink/Pause																																				
		Over temperature	Red : 6 Blink/Pause																																				
		Timeout	Red : 7 Blink/Pause																																				
6	FORCE BUTTON	Bat over discharge protection < 70%Bat rated	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	TEST : <u>70.8%</u>																																			
7	Battery Discharge Peak power	a) 2 Peak power > 4 min ; b) 3 Peak power > 4 s ;	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	a) TEST : <u>OK</u> b) TEST : <u>OK</u>																																			
8	TEMPERATURE COMPENSATION	<table border="1"> <thead> <tr> <th colspan="4">Constant Voltage</th> </tr> <tr> <th>SPEC:</th> <th>Ta=0°C ( 17K Ω )</th> <th>Ta=25°C ( 5K Ω )</th> <th>Ta=50°C ( 1.7K Ω )</th> </tr> </thead> <tbody> <tr> <td></td> <td>44.55±0.36V</td> <td>43.2±0.36V</td> <td>42.39±0.36V</td> </tr> <tr> <td>TEST RESULT:</td> <td>44.306V</td> <td>43.192V</td> <td>42.406V</td> </tr> </tbody> </table> <p>I/P: 230 VAC O/P:BAT. LOAD Ta:25°C</p>	Constant Voltage				SPEC:	Ta=0°C ( 17K Ω )	Ta=25°C ( 5K Ω )	Ta=50°C ( 1.7K Ω )		44.55±0.36V	43.2±0.36V	42.39±0.36V	TEST RESULT:	44.306V	43.192V	42.406V																					
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TEST RESULT:	44.306V	43.192V	42.406V																																				

### 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°C	Q15 Q16 VDS: VDS: (1) 499V (1) 535V (2) 543V (2) 531V (3) 499V (3) 527V (4) 499V (4) 531V (5) 499V (5) 531V (6) 519V (6) 527V (7) 535V (7) 531V
2	P.F.C Transistor ( D to S) or (C to E) Peak Voltage	Q1/Q4 Rated : 22A/ 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°C	Q1 Q4 VDS: VDS: (1) 483V (1) 495V (2) 483V (2) 491V (3) 479V (3) 487V (4) 479V (4) 491V (5) 479V (5) 487V (6) 471V (6) 479V (7) 467V (7) 479V
3	AUX MOS	U505 Rated : 1.04 A/ 725 V Q504 Rated : 5A/200V	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°C	U505 Q504 VDS: VDS: (1) 702V (1) 153V (2) 700V (2) 150V (3) 664V (3) 148V (4) 658V (4) 153V (5) 658V (5) 150V (6) 664V (6) 152V (7) 658V (7) 137V
4	P.F.C DIODE	D 12 Rated : 8A/ 600V	I/P:High-Line +3V =308V AC ON/OFF	(1) 550V



			<p>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°C</p>	<p>(2) 546V  (3) 546V  (4) 546V</p>						
5	Diode Peak Voltage	<p>Q100/ Q101/ Q102/ Q103  Rated  : 27.4A/ 150 V</p>	<p>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°C</p>	<table border="0"> <tr> <td>Q101: VDS: (1) 97.0V (2) 142V (3) 98.6V (4) 98.6V (5) 98.6V (6) 103.5V (7) 104.3V (8) 97.0V</td> <td>Q102: VDS: (1) 101V (2) 97V (3) 102V (4) 106V (5) 104V (6) 99V (7) 101V (8) 90V</td> </tr> <tr> <td>Q100: VDS: (1) 101V (2) 101V (3) 101V (4) 102V (5) 101V (6) 101V (7) 1V (8) 95V</td> <td>Q103: VDS: (1) 103V (2) 110V (3) 102V (4) 103V (5) 103V (6) 104V (7) 104V (8) 97V</td> </tr> </table>	Q101: VDS: (1) 97.0V (2) 142V (3) 98.6V (4) 98.6V (5) 98.6V (6) 103.5V (7) 104.3V (8) 97.0V	Q102: VDS: (1) 101V (2) 97V (3) 102V (4) 106V (5) 104V (6) 99V (7) 101V (8) 90V	Q100: VDS: (1) 101V (2) 101V (3) 101V (4) 102V (5) 101V (6) 101V (7) 1V (8) 95V	Q103: VDS: (1) 103V (2) 110V (3) 102V (4) 103V (5) 103V (6) 104V (7) 104V (8) 97V		
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7	Input Capacitor Voltage	<p>C5 Rated:  : 150 μ /450 V</p>	<p>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°C</p>	<p>(1) 443V  (2) 435V  (3) 447V  (4) 443V</p>						
8	Control IC Voltage Test	<p>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</p>	<p>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°C</p>	<table border="0"> <tr> <td>U3 (1) 15.1V (2) 15.1V (3) 15.0V (4) 15.1V (5) 15.1V</td> <td>U801 (1) 12.7V (2) 12.7V (3) 12.7V (4) 12.7V (5) 12.7V</td> </tr> <tr> <td>U1 (1) 15.5V (2) 15.4V (3) 15.4V (4) 15.4V (5) 15.4V</td> <td>U303 (1) 3.39V (2) 3.39V (3) 3.39V (4) 3.39V (5) 3.39V</td> </tr> <tr> <td>U100</td> <td>U502</td> </tr> </table>	U3 (1) 15.1V (2) 15.1V (3) 15.0V (4) 15.1V (5) 15.1V	U801 (1) 12.7V (2) 12.7V (3) 12.7V (4) 12.7V (5) 12.7V	U1 (1) 15.5V (2) 15.4V (3) 15.4V (4) 15.4V (5) 15.4V	U303 (1) 3.39V (2) 3.39V (3) 3.39V (4) 3.39V (5) 3.39V	U100	U502
U3 (1) 15.1V (2) 15.1V (3) 15.0V (4) 15.1V (5) 15.1V	U801 (1) 12.7V (2) 12.7V (3) 12.7V (4) 12.7V (5) 12.7V									
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U100	U502									

		8.5V~30V		(1) 12.1V (2) 20.1V (3) 12.0V (4) 12.1V (5) 12.5V	(1) 11.7V (2) 11.7V (3) 11.9V (4) 11.7V (5) 11.7V
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## ■ 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: 4.2 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG:1.8 KVAC/min Ta:25°C	I/P-O/P:6.23mA I/P-FG:5mA O/P-FG:15.03m 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°C	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°C	4mΩ

### 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°C	PASS
2	CONDUCTION	EN55032 CLASS B	I/P : 230 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab
3	RADIATION	EN55032 CLASS B	I/P : 230 VAC (50HZ) O/P : FULL LOAD Ta : 25°C	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°C	■ CRITERIA A
5	E.F.T	EN61000-4-4 INPUT : 2KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	■ 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°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 : DRS-480-24 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 25.0 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 50.0 °C																																																																																																																																						
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		NO		ROOM AMBIENT Ta= 25.0°C	HIGH AMBIENT Ta= 50.0 °C
		Position			
		33	C101	60.7°C	88.7°C
34	U505	64.7°C	89.0°C		
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )		I/P : 230 VAC O/P : 116%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=50.7°C HUMIDITY= 95 %R.H	TEST : OK
5	TEMPERATURE COEFFICIENT	± 0.03%/°C(0~50°C)		I/P : 230 VAC O/P : FULL LOAD	± 0.008%/°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	-30~50°C		1. Thermal shock Temperature : -35°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, 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°C	
9	CAPACITOR LIFE CYCLE	SUPPOSE C101 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) 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°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	Liutt		Wangdz

2020.10.01 TAG-QA-009