Test Report: HEP-2300-115

2300W Switching Power Supply for Harsh Environment

■ DESIGN VERIFY TEST

Output Function Test
Input Function Test
Protection Function Test
Control Function Test
Component Stress Test

■ SAFETY & E.M.C. TEST

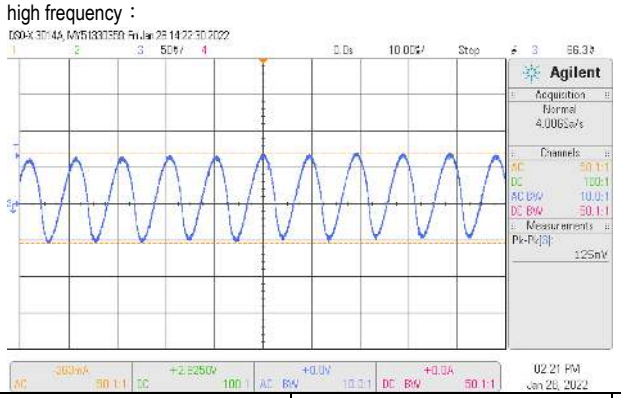
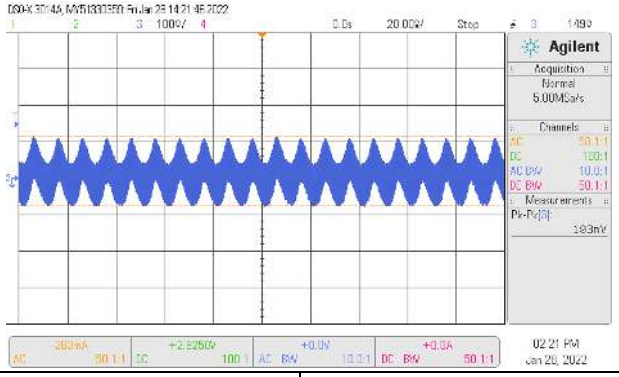
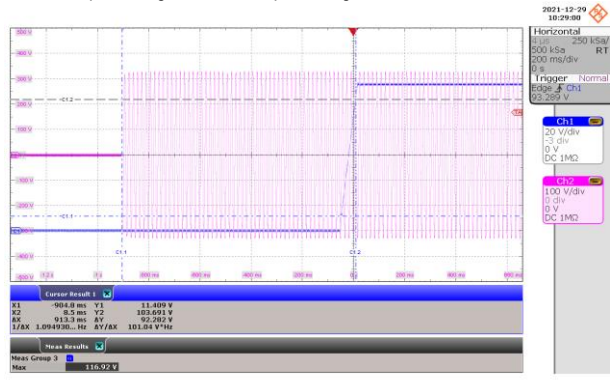
Safety Test
E.M.C. Test

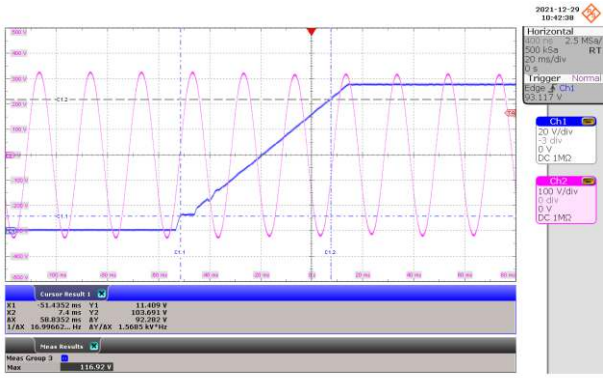
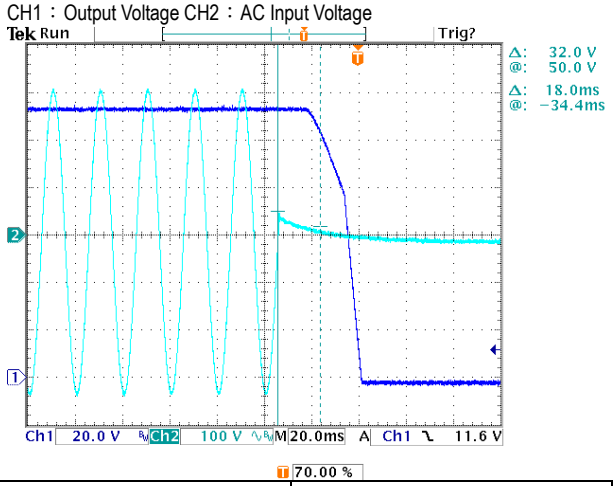
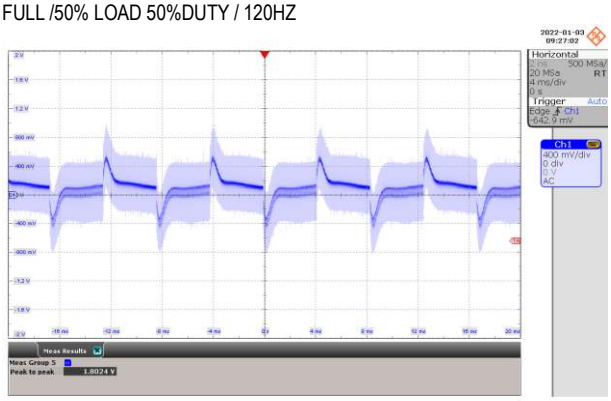
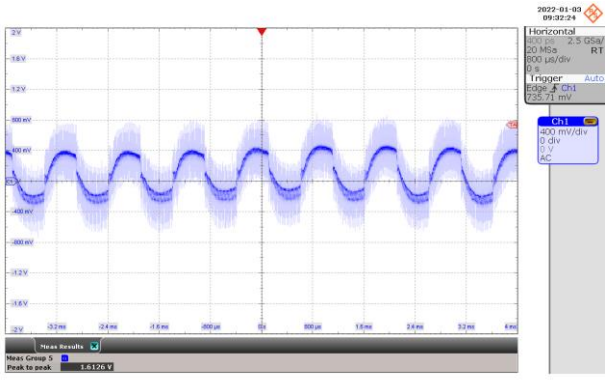
■ RELIABILITY TEST

ENVIRONMENT TEST

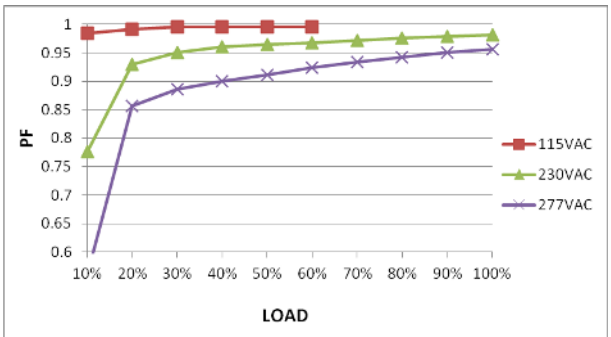
■ DESIGN VERIFY TEST

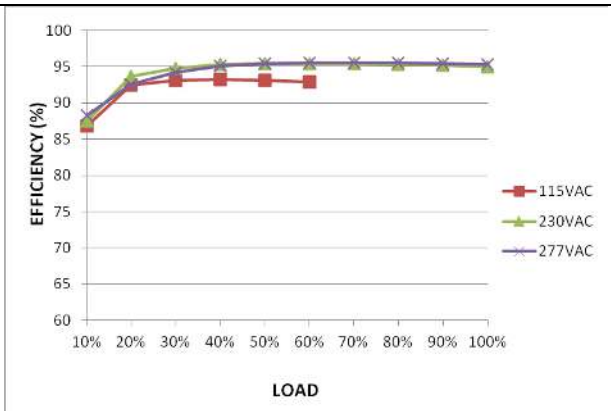
OUTPUT FUNCTION TEST

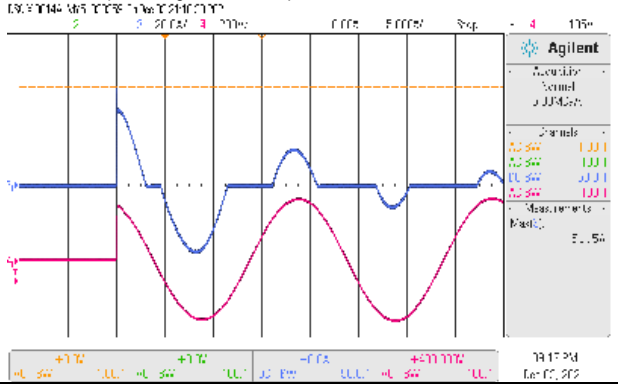
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1： 90V ~ 138V	I/P：230 VAC I/P：115 VAC O/P：MIN LOAD Ta：25℃	87.49V~141.59V/230VAC 87.48V~141.57V/115VAC
2	OUTPUT VOLTAGE(Max) TOLERANCE	V1： -1%~ +1%	I/P：90VAC /305VAC O/P:FULL/ MIN. LOAD Ta：25℃	V1： 0.243%~ +0.139%
3	LINE REGULATION (Max)	V1： -0.5%~ +0.5%	I/P：220VAC~ 305VAC O/P：FULL LOAD Ta：25℃	V1： -0.03%~ +0.03%
4	LOAD REGULATION(Max)	V1： -0.5%~ +0.5%	I/P：230VAC O/P：FULL ~MIN LOAD Ta：25℃	V1：-0.04%~ +0.04%
5	OVER/UNDERSHOOT TEST	< ±5%	I/P：230VAC O/P：FULL LOAD Ta：25℃	<1.4 %
6	RIPPLE & NOISE(Max)	V1：1500mVp-p	I/P：230VAC O/P：FULL LOAD Ta：25℃	V1：193mVp-p
	high frequency： 		low frequency： 	
7	SET UP TIME(Max)	230VAC/1800ms	I/P：230 VAC O/P：FULL LOAD Ta：25℃	230VAC/ 913ms
	INPUT=230VAC/50HZ @ FULL LOAD CH1：Output Voltage CH2：AC Input Voltage 			

8	RISE TIME (Max)	230VAC/100ms	I/P：230 VAC O/P：FULL LOAD Ta：25℃	230VAC/ 58.8 ms
	INPUT=230VAC/50HZ @ FULL LOAD CH1：Output Voltage 			
9	HOLD UP TIME (Typ.)	230VAC/12ms @FULL LOAD	I/P：230 VAC O/P：FULL LOAD Ta：25℃	230VAC/ 18 ms@ FULL LOAD
	INPUT=230VAC/50HZ @ FULL LOAD CH1：Output Voltage CH2：AC Input Voltage 			
10	DYNAMIC LOAD	V1: 11.5Vp-p	I/P：230VAC O/P： (1)FULL /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD 50%DUTY / 1KHZ Ta：25℃	1.802Vp-p 1.612Vp-p
	FULL /50% LOAD 50%DUTY / 120HZ 		FULL /50% LOAD 50%DUTY / 1KHZ 	

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	90VAC~305VAC	I/P：TESTING O/P：Derating Load Ta：25℃	78.8V~305V
			I/P： LOW-LINE-3V=87 V HIGH-LINE+10V=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 ~305 VAC O/P：FULL~MIN LOAD Ta：25℃	TEST： OK
3	INPUT CURRENT (Typ.)	277/ 9.3A 230V/ 11A 115V/ 13.3A	I/P：277 VAC O/P：FULL LOAD I/P：230 VAC O/P：FULL LOAD I/P：115 VAC O/P：60% LOAD Ta：25℃	I =9.18A/ 277VAC I =10.7A/ 230VAC I =12.8A/ 115VAC
4	LEAKAGE CURRENT	<1.8mA(peak)/240V <2 mA(peak)/277V	I/P：264 VAC I/P：305 VAC O/P：Min LOAD Ta：25℃	L-FG：1.28 mA / 264V N-FG：1.28 mA /264V L-FG：1.52 mA /305V N-FG：1.52 mA /305V
5	POWER FACTOR (Typ.)	0.93/277VAC 0.95/230VAC 0.99/115VAC	I/P：277AC O/P：FULL LOAD I/P：230 VAC O/P：FULL LOAD I/P：115 VAC O/P：60% LOAD Ta：25℃	PF=0.956 /277VAC PF=0.982 /230VAC PF=0.996 /115VAC
	P.F vs LOAD			
6	EFFICIENCY(Typ.)	95%	I/P：230 VAC O/P：FULL LOAD Ta：25℃	95.4 %
	EFFICIENCY vs LOAD			

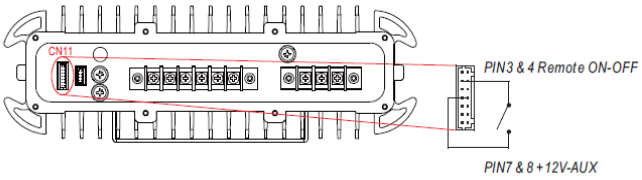


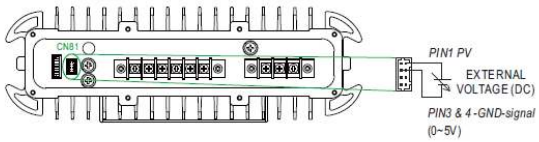
7	INRUSH CURRENT(Typ.)	230V/60A COLD START	I/P：230 VAC O/P：FULL LOAD Ta：25℃	I =51.5A / 230VAC T50= 1.44 ms /230V
	INPUT=230VAC/50HZ @ FULL LOAD CH2：AC Input Voltage CH4：Input current 			

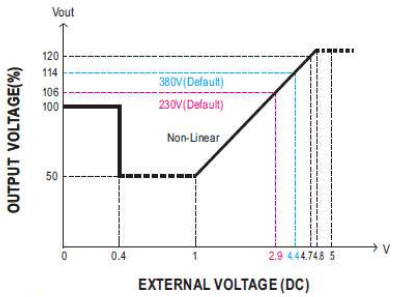
PROTECTION FUNCTION TEST

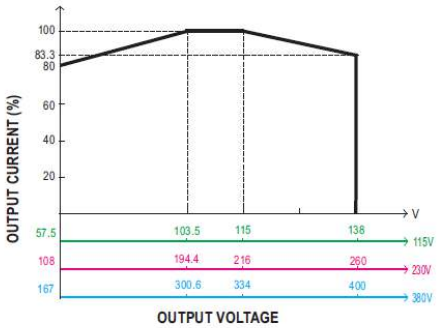
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105%～115% PROTECTION TYPE： Constant current limiting,unit will shutdown after 5 sec,re-power on to recover.	I/P：305VAC I/P：90V O/P：TESTING Ta：25℃	111.0%/ 305VAC 53.5% /90VAC
2	OVER VOLTAGE PROTECTION	145V ～ 166V Protection type： Shut down O/P voltage,re-power on to recover.	I/P：305VAC I/P：90VAC O/P：MIN LOAD Ta：25℃	148.3V/ 305VAC 148.3V/ 90VAC
3	OVER TEMPERATURE PROTECTION	Protection type： Shut down O/P voltage,, recovers automatically after temperature goes down	I/P：305VAC O/P：FULL LOAD I/P：90VAC O/P：50% LOAD	O.T.P. Active Shutdown O/P voltage,, recovers automatically after temperature goes down
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE PROTECTION TYPE： Constant current limiting,unit will shutdown after 5 sec,re-power on to recover.	I/P：305VAC I/P：90VAC O/P：FULL LOAD Ta：25℃	NO DAMAGE

CONTROL FUNCTION TEST

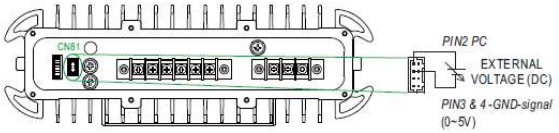
<table>
<tr><th>NO</th><th>TEST ITEM</th><th>SPECIFICATION</th><th>TEST CONDITION</th><th>RESULT</th></tr>
<tr><td>1</td><td>AUXILIARY POWER (AUX)</td><td colspan="3">I/P：230 VAC
O/P：FULL LOAD
Ta：25℃
Test Result：
<table>
<tr><th>AUX</th><th>TOLERANCE</th><th>RIPPLE</th><th>TEST RESULT</th></tr>
<tr><td>12V / 0.5A</td><td>10.8~13.2 V</td><td>150mVp-p</td><td>11.948V/45mv</td></tr>
</table></td></tr>
<tr><td>2</td><td>REMOTE ON/OFF CONTROL</td><td colspan="3">3.Remote ON-OFF Control
The power supply can be turned ON/OFF individually or along with other units in parallel by using the "Remote ON-OFF" function.
 

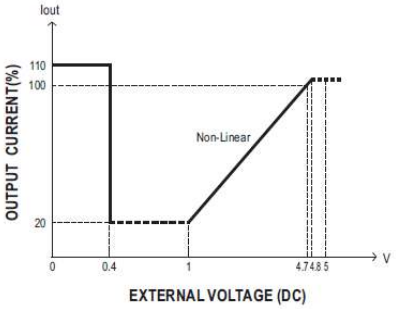
<table>
<tr><th>Remote ON-OFF</th><th>Power Supply Status</th></tr>
<tr><td>Short circuit</td><td>ON</td></tr>
<tr><td>Open circuit</td><td>OFF</td></tr>
</table>
I/P：230 VAC
O/P：FULL LOAD
Ta：25℃
Test Result：
<table>
<tr><th>Between ON/OFF and +5V-AUX</th><th>Power Supply Status</th></tr>
<tr><td>SW SHORT</td><td>ON</td></tr>
<tr><td>SW OPEN</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>3</td><td>OUTPUT VOLTAGE PROGRAMMABLE(PV)</td><td colspan="3">1.Output Voltage Programming (or, PV / remote voltage programming / remote adjust / margin programming / dynamic voltage trim)
※ In addition to the adjustment via the built-in potentiometer, the output voltage can be trimmed by applying EXTERNAL VOLTAGE.
 



◎ The 100% output voltage is 115/216/334V.
 

◎ The rated current should change with the Output Voltage Programming accordingly.
I/P：230 VAC
O/P：FULL LOAD
Ta：25℃
TEST RESULT：
<table>
<tr><th>PV / MODEL</th><th><0.4V</th><th>1V</th><th>5V</th></tr>
<tr><td>SPEC</td><td>115±5%</td><td>57.5±5%</td><td>138±5%</td></tr>
<tr><td>Vout</td><td>115.5V</td><td>55.39V</td><td>140.44V</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>4</td><td>OUTPUT CURRENT
PROGRAMMABLE (PC)</td><td colspan="3">
2.Output Current Programming (or, PC / remote current programming / dynamic current trim)
※ The output current can be trimmed to 20~100% of the rated current by applying EXTERNAL VOLTAGE.




◎ The 100% output current is rated current.
◎ Maximum operation current <100% is recommended.
I/P： 230 VAC
O/P：TESTING
Ta：25℃
<table>
<tr><td>ADJ V</td><td><0.4V</td><td>1V</td><td>5V</td></tr>
<tr><td>SPEC</td><td>22A±5%</td><td>4A±10%</td><td>20A±5%</td></tr>
<tr><td>TEST</td><td>21.93A</td><td>4.16A</td><td>20.43A</td></tr>
</table>
</td></tr>
<tr><td>5</td><td>DC-OK SIGNAL</td><td>The TTL signal out,
PSU turn on = 4.5 ~ 5.5V
PSU turn off = -0.5V ~ 0.5V
Please refer to the Function Manual</td><td>I/P：230VAC
O/P：FULL LOAD
Ta：25℃</td><td>PSU turn on = 5.127 V
PSU turn off = -0.005 V</td></tr>
<tr><td>6</td><td>LED Indicators</td><td colspan="2">※ LED Status Indicators
<table>
<tr><th>LED</th><th>Description</th></tr>
<tr><td>Green</td><td>The power supply functions normally.</td></tr>
<tr><td>Red</td><td>Abnormal status (Over temperature protection, Overload protection)</td></tr>
<tr><td>Red (Flashing)</td><td>The LED will flash with the red light when the internal temperature reaches 95℃; under this condition, the unit still operates normally without entering OTP. (In the meantime, an alarm signal will be sent out through the PMBus/CANBus/MODBus interface.)</td></tr>
</table></td><td>PASS</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	Q903 Rated 76A/600V VGS：± 30V	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. (8)CV-1V(CHARGE MODE) I/P：Low-Line -3V = 217V 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	VDS： (1) 485.0V (2) 490.0V (3) 485.7V (4) 481.8V (5) 481.8V (6) 485.1V (7) 481.2V (8) 482.1V VDS： (1) 454.2V (2) 458.1V (3) 458.1V (4) 454.2V (5) 454.2V (6) 450.4V

			(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)CV-1V(CHARGE MODE) Ta：25℃	(7) 454.1V (8) 450.5V
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q66 Rated 40A/650V VGS：± 30V	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. I/P：Low-Line -3V = 217V 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℃	VDS： (1) 588.7V (2) 577.5V (3) 580.6V (4) 581.3V (5) 581.1V (6) 580.8V (7) 556.9V VDS: (1) 545.1V (2) 485.7V (3) 537.2V (4) 537.2V (5) 537.2V (6) 509.6V (7) 481.8V
3	P.F.C DIODE	D14 Rated 10A/650V	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/5KHz (4)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz I/P：Low-Line -3V = 217V 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 Ta：25℃	(1) 509V (2) 549V (3) 541.1V (4) 539.8V (1) 505.5V (2) 489.7V (3) 481.8V (4) 500.3V
4	Diode Peak Voltage	Q201 Rated 18A/600V VGS：± 20V Q207 Rated	AC ON/OFF I/P：High-Line +3V =308V O/P：(1)Full Load (2)Output Short	Q201： VDS： (1) 292.0 V (2) 294.3V Q207： VDS： (1) 306.0V (2) 294.3V

		18A/600V VGS：± 20V	(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)CV-1V(CHARGE MODE) Ta：25℃	(3) 290.3V (4) 290.3V (5) 290.3V (6) 292.4V (7) 294.2V (8) 260.7V (9) 290.1V (10) 288.7V	(3) 290.3V (4) 290.3V (5) 290.3V (6) 290.0V (7) 292.3V (8) 286.4V (9) 282.1V (10) 288.3V
5	Input Capacitor Voltage	C5 Rated： 220u/450V -40~105℃ Surge Voltage 495V	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) 449V (2) 448V (3) 449V (4) 445V	
6	Control IC Voltage Test	PWM IC U900 Rated 8.9 V ~ 15.5V PFC IC U301 Rated 23V ~ 27 V O/P IC U203 Rated -0.3V ~37 V MCU IC U701 Rated 2.0V ~3.6V AUX IC U601 Rated 10.5V~25V	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 VRmin (LOW LINE) Ta：25℃	U900： (1) 13.2V (2) 12.9V (3) 13.2V (4) 13.0V (5) 13.0V U301： (1) 13.6V (2) 13.0V (3) 13.4V (4) 12.7V (5) 12.8V U203： (1) 12.4V (2) 12.5V (3) 12.4V (4) 12.2V (5) 12.2V	U701： (1) 3.37V (2) 3.39V (3) 3.59V (4) 3.37V (5) 3.39V U601： (1) 14.4V (2) 14.3V (3) 14.4V (4) 14.0V (5) 14.4V
7	TOP SWITCHING STAND BY POWER	U601 Rated 3.5 A/ 800 V	AC ON/OFF I/P:High-Line +3V =308V O/P：(1)Full Load (2)Remote On/Off I/P：Low-Line -3V =217V O/P：(1)Full Load (2)Remote On/Off Ta：25℃	U601： (1) 564.8V (2) 576.7V (1) 529.2V (2) 541.1V	

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P：6KVDC/min I/P-FG：4KVDC/min O/P-FG：4KVDC/min	I/P-O/P：6.6KVDC/min I/P-FG：4.8KVDC /min O/P-FG：4.8KVDC /min Ta：25℃	PASS 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：4.3GΩ I/P-FG：>30GΩ O/P-FG：3.31GΩ NO DAMAGE

3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta：25℃	26 mΩ

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 (CISPR32) CLASS B	I/P：230 VAC (50HZ) O/P：FULL/50% LOAD Ta：25℃	PASS
3	RADIATION	EN55032 (CISPR32) CLASS B	I/P：230 VAC (50HZ) O/P：FULL LOAD Ta：25℃	PASS
4	E.S.D	EN61000-4-2 Level 3, 8KV air Level 2, 4KV contact	I/P：230 VAC/50HZ O/P：FULL LOAD Ta：25℃	CRITERIA A
5	E.F.T	EN61000-4-4 Level 3	I/P：230 VAC/50HZ O/P：FULL LOAD Ta：25℃	CRITERIA A
6	SURGE	IEC61000-6-2 INDUSTRY 2KV/Line-Line 4KV/Line-Earth	I/P：230 VAC/50HZ O/P：FULL LOAD Ta：25℃	CRITERIA A
7	Test by certified Lab & Test Report Prepare			

■ RELIABILITY TEST

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT

1	TEMPERATURE RISE TEST	MODEL : HEP-2300-115 1. ROOM AMBIENT BURN-IN : 2HRS I/P : 230VAC O/P : FULL LOAD Ta= 25.5 ℃ 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 51.2 ℃

NO	Position	ROOM AMBIENT Ta=25.5℃	HIGH AMBIENT Ta=51.2℃
1	C2	62.0℃	89.8℃
2	LF3	68.6℃	97.2℃
3	C13	67.7℃	94.7℃
4	ZNR3	67.2℃	94.5℃
5	T51	68.2℃	96.0℃
6	L1coil	70.3℃	99.8℃
7	L1core	67.3℃	97.0℃
8	L2coil	66.2℃	94.5℃
9	L2core	64.8℃	93.2℃
10	L3coil	71.9℃	103.6℃
11	L3core	68.7℃	100.3℃
12	RT2	66.8℃	95.4℃
13	RY1	65.3℃	93.9℃
14	C5	61.1℃	88.7℃
15	C7	59.6℃	86.8℃
16	C556	64.4℃	93.0℃
17	C553	71.1℃	102.1℃
18	Q910	70.2℃	100.8℃
19	T1 Primary	74.6℃	105.3℃
20	T1 Secondary	70.7℃	99.9℃
21	T1core	66.2℃	95.8℃
22	T2 Primary	72.1℃	102.6℃
23	T2 Secondary	69.7℃	99.3℃
24	T2core	58.9℃	86.1℃
25	C111	66.8℃	96.7℃
26	C114	60.2℃	87.3℃
27	C124	59.1℃	85.9℃
28	LF201	58.6℃	85.5℃
29	C132	56.1℃	82.6℃
30	C325	62.0℃	89.7℃
31	BD1	79.6℃	106.6℃
32	BD2	80.4℃	106.9℃

			33	U301	65.8℃	93.4℃
			34	U900	61.3℃	89.4℃
			35	Q51	72.2℃	99.7℃
			36	Q65	71.6℃	99.5℃
			37	D14	83.4℃	112.1℃
			38	Q901	69.9℃	100.6℃
			39	Q904	69.5℃	101.2℃
			40	Q202	75.2℃	104.2℃
			41	Q204	67.7℃	95.9℃
			42	Q206	73.8℃	101.2℃
			43	Q209	74.0℃	103.0℃
			44	Q214	71.2℃	98.4℃
			45	U201	69.0℃	97.0℃
			46	RT31	63.1℃	91.6℃
			47	RT5	66.6℃	94.7℃
			48	U601	76.4℃	104.9℃
			49	C611	65.4℃	93.8℃
			50	T601	67.6℃	95.9℃
			51	D651	67.0℃	94.5℃
			52	C652	65.2℃	92.9℃
			53	C675	61.0℃	88.1℃
			54	R613	74.3℃	103.0℃
			55	U751	61.5℃	88.6℃
			56	RG75	58.0℃	84.8℃
			57	L751	59.5℃	86.7℃
			58	RG65	62.8℃	90.1℃
			59	TC	57.6℃	85.3℃
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)		I/P： 230 VAC O/P：108.5%LOAD Ta：25℃	TEST：OK
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR		I/P： 305VAC/220VAC O/P： 100 %LOAD Ta= -45 ℃	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： 315 VAC O/P：FULL LOAD Ta= 50 ℃ HUMIDITY= 95 %R.H	TEST：OK
5	TEMPERATURE COEFFICIENT	± 0.03 %/℃(0~50℃)		I/P： 230 VAC O/P：FULL LOAD	± 0.003 %/℃(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	-40~50℃	1. Thermal shock Temperature： -45℃~ +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	20~500Hz, 10G 12min./1cycle, 72min. each along X, Y, Z axes	1 Carton & 1 Set (1) Waveform： Sine Wave (2) Frequency：20~500Hz (3) Sweep Time：12min/sweep cycle (4) Acceleration：10G (5) Test Time：180min in each axis (X.Y.Z) (6) Ta：25℃
9	CAPACITOR LIFE CYCLE	SUPPOSE C111 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) 201245HRS (2) 26590HRS (3) 96451HRS (4) 267975HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 478K hrs min. Telcordia SR-332 (Bellcore) ; 44.8K hrs min. MIL-HDBK-217F (25℃)	
11	Ongoing Reliability Test	I/P：230VAC O/P：FULL LOAD TA=50℃ Demonstration Mean Time Between Failure : 55,000 hours	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	DANIEL GAO	SANFORD SU	VINCENT TSENG

2020.10.1 TAG-QA-009