

MODEL : HRPG-300-3.3

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 80 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25°C	V1: 74 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 2.8 V~ 3.8 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	2.677 V~ 3.929 V/ 230 VAC 2.676 V~ 3.923 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 2.5 %~ -2.5 % (Max)	I/P: 100 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 1 %~ -1 %	P
4	LINE REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 100 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0.2 %~ -0.2 %	P
5	LOAD REGULATION	V1: 1 %~ -1 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.94 %~ -0.94 %	P
6	SET UP TIME	230VAC: 1000 ms (Max) 115 VAC: 2500 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 190 ms 115VAC/ 400 ms	P
7	RISE TIME	230VAC: 50 ms (Max) 115VAC: 50 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 13 ms 115VAC/ 13 ms	P
8	HOLD UP TIME	230VAC: 16 ms (TYP) 115VAC: 16 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 42 ms 115VAC/ 34 ms	P
9	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: < 5 %	P
10	DYNAMIC LOAD	V1: 660 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	564 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	85VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	69V~264V	P
			I/P: LOW-LINE-3V= 97 V HIGH-LINE+15%=300 V O/P:FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE)	TEST: OK	
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE OSC	I/P: 100 VAC ~ 264 VAC O/P:FULL-MIN LOAD Ta:25°C	TEST: OK	P
3	POWER FACTOR	0.95 / 230 VAC(TYP)	I/P: 230 VAC	PF= 0.97 / 230 VAC	P
		0.99 / 115 VAC(TYP)	I/P: 115 VAC O/P:FULL LOAD Ta:25°C	PF= 0.99 / 115 VAC	
4	EFFICIENCY	80% (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	81%	P
5	INPUT CURRENT	230V/ 2.5 A (TYP)	I/P: 230 VAC	I = 1 A/ 230 VAC	P
		115V/ 5 A (TYP)	I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 2.15 A/ 115 VAC	
6	INRUSH CURRENT	230V/ 70 A (TYP)	I/P: 230 VAC	I = 63 A/ 230 VAC	P
		115V/ 35 A(TYP) COLD START	I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 31 A/ 115 VAC	
7	LEAKAGE CURRENT	< 1.2 mA / 240 VAC	I/P: 264 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.85 mA N-FG: 0.8 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105 %~ 135 %	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25°C	121%/ 230 VAC 121%/ 115 VAC Constant current limiting, recovers automatically after fault condition is removed	P
2	OVER VOLTAGE PROTECTION	CH1: 3.96V~ 4.62 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	4.01V/ 230 VAC 4.01V/ 115 VAC Shut down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: TSW1: 90 ± 5°C detect on heatsink of power transistor TSW2: 100 ± 5°C detect on heatsink of power doide NO DAMAGE	I/P: 230 VAC O/P:FULL LOAD	O.T.P. Active Shut down o/p voltage, recovers automatically after temperature goes down	P
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P:FULL LOAD Ta:25°C	NO DAMAGE Constant current limiting, recovers automatically after fault condition is removed	P

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	DC OK SIGNAL	PSU turn on : 3.3 ~ 5.6V ; PSU turn off : 0 ~ 1V	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	PSU turn on : 5.159 V PSU turn off : 0 V	P
2	REMOTE CONTROL	Rc+ / Rc- 4 ~ 10V or open = power on 0 ~ 0.8V or short = power off	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	3.3V ~ 10 V POWER ON 0V ~ 3 V POWER OFF	P
3	REMOTE SENSE	>0.5V	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	>0.3V	P
4	AUX POWER	4.75V~5.25V / 0.3A Ripple:50mV	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	5.014V/0.3A Ripple: 13 mV	P
5	No load power consumption	<0.5W	I/P: 240 VAC O/P:NO LOAD RC+&RC- SHORT Ta:25°C	0.19W	P
6	FAN ON/OFF control test	---	I/P: 230 VAC O/P:TESTING Ta:25°C	> 35.8 %LOAD FAN ON < 35.7 %LOAD FAN OFF	P

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 3 KVAC/min I/P-FG: 1.5 KVAC/min O/P-FG: 0.5 KVAC/min	I/P-O/P: 3.6 KVAC/min I/P-FG: 1.8 KVAC/min O/P-FG: 0.6 KVAC/min Ta:25°C	I/P-O/P: 6.69 mA I/P-FG: 5.85 mA O/P-FG: 4.34 mA NO DAMAGE	P
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/70%RH	I/P-O/P: 30 GΩ I/P-FG: 30 GΩ O/P-FG: 30 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C / 70%RH	2 mΩ	P
4	APPROVAL	TUV: Certificate NO : R 50156798 UL: File NO : E183223			P

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A CLASS D	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab	P
4	E.S.D	EN61000-4-2 INDUSTRY AIR:8KV / Contact:4KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
5	E.F.T	EN61000-4-4 INDUSTRY INPUT: 2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
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	P
7	Test by certified Lab & Test Report Prepare				

M.T.B.F & LIFE CYCLE CALCULATION

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	HRPG-300-5 :SUPPOSE C106	IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 1542452.8 HRS I/P: 230VAC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 208132.4 HRS		P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 176K HRS			P



COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q4 Rated 2SK4106 : 12A/500V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Output Short Ta:25°C	(1) 428 V (2) 408 V	P
2	Diode Peak Voltage	Q101 Rated STP85N3LH5 : 80A/30V Q103 Rated STP85N3LH5 : 80A/30V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short Ta:25°C	(1) 21.2 V (2) 20.6 V (1) 21.8 V (2) 17.8 V	P
3	Input Capacitor Voltage	C5 Rated 100u/400V 105°C PEAK 450V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C	(1) 374.9 V (2) 376.2 V (3) 376.4 V	P
4	Control IC Voltage Test	U1 Rated FAN4801NY:9.3V~ 30V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C	(1) 15.792 V (2) 15.716 V (3) 15.533 V	P
5	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated IRFP460A :20A/500V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Output Short Ta:25°C	(1) 494 V (2) 408 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2009/4/29	RD SAMPLE	PASS	SANFORD SU	VINCENT TSENG
2009/6/12	PRODUCT SAMPLE W0905B34	PASS	SANFORD SU	VINCENT TSENG

2003/12/12 A50-F023