



ONICS Features:

- Universal AC input / Full range
- Built-in active PFC function
- Protections: Short circuit / Overload / Over voltage / Over temperature
- 5"x3" compact size
- Free air convection for 100W and 145W with 20.5 CFM forced air
- With power good and fail signal output
- No load power consumption under 0.75W by PS-ON control (G model)
- Standby 5V@0.8A with fan, @0.6A without fan (G model)
- 3 years warranty

G: With 5Vsb & no load power consumption < 0.75 W

Blank: Basic function (without 5Vsb)

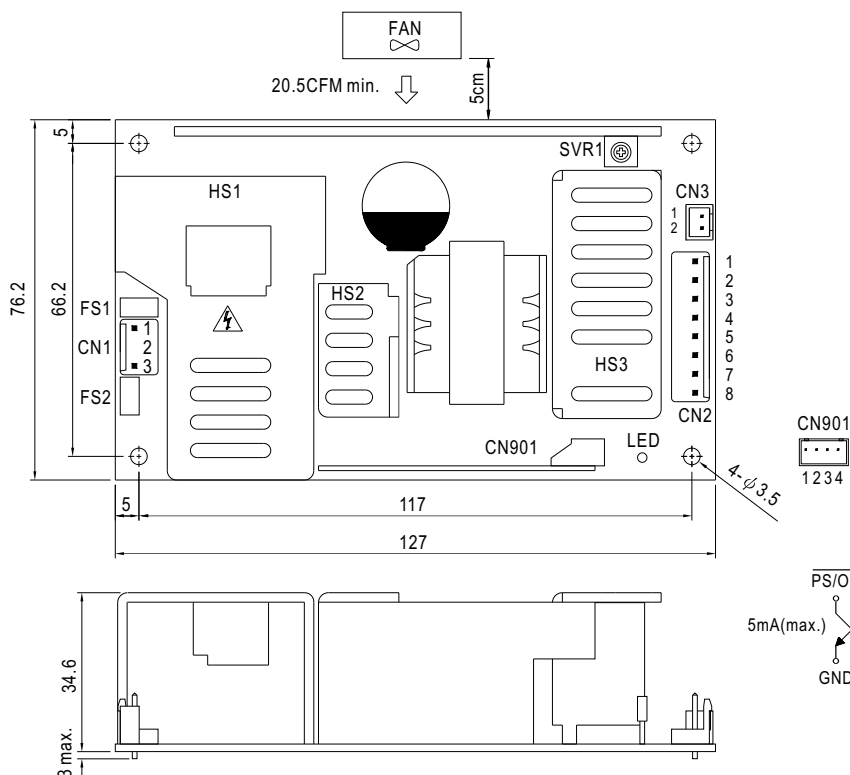
RPT **G** — 160A

SPECIFICATION

MODEL		RPT□-160A			RPT□-160B			RPT□-160C			RPT□-160D		
	OUTPUT NUMBER	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
OUTPUT	DC VOLTAGE	5V	12V	-5V	5V	12V	-12V	5V	15V	-15V	5V	12V	24V
	RATED CURRENT (20.5CFM)	14A	5.5A	1A	14A	5A	1A	14A	3.6A	1A	11A	5A	1.2A
	CURRENT RANGE (convection)	0.6 ~ 9A	0.2 ~ 3.8A	0.1 ~ 0.6A	0.6 ~ 9A	0.2 ~ 3.4A	0.1 ~ 0.8A	0.6 ~ 9A	0.1 ~ 2.6A	0.1 ~ 0.8A	0.3 ~ 8A	0.2 ~ 2.6A	0.15 ~ 1A
	CURRENT RANGE (20.5CFM)	0.6 ~ 14A	0.2 ~ 5.5A	0.1 ~ 1A	0.6 ~ 14A	0.2 ~ 5A	0.1 ~ 1A	0.6 ~ 14A	0.1 ~ 3.6A	0.1 ~ 1A	0.3 ~ 11A	0.2 ~ 5A	0.15 ~ 1.2A
	RATED POWER (convection) Note.7	98.6W			98.4W			99W			98.2W		
	RATED POWER (20.5CFM) Note.8	145W			146W			143W			147.8W		
	RIPPLE & NOISE (max.) Note.2	100mVp-p	120mVp-p	120mVp-p	100mVp-p	120mVp-p	120mVp-p	100mVp-p	150mVp-p	150mVp-p	100mVp-p	120mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	CH1:5 ~ 5.5V											
	VOLTAGE TOLERANCE Note.3	±2.0%	±5.0%	-5,+7%	±2.0%	±5.0%	-4,+5%	±2.0%	±4.0%	+8.0%	±2.0%	±5.0%	+7,-5%
	LINE REGULATION	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%
	LOAD REGULATION	±1.5%	±3.0%	-5,+6%	±1.5%	±3.0%	-4,+5%	±2.0%	±3.0%	±8.0%	±1.5%	±3.0%	-3,+4%
	SETUP, RISE TIME	1200ms, 30ms/230VAC 2500ms, 30ms/115VAC at full load											
HOLD UP TIME (Typ.)	16ms/230VAC/115VAC at full load												
INPUT	VOLTAGE RANGE Note.6	90 ~ 264VAC 127 ~ 370VDC											
	FREQUENCY RANGE	47 ~ 63Hz											
	POWER FACTOR (Typ.)	PF>0.93/230VAC			PF>0.98/115VAC at full load								
	EFFICIENCY (Typ.)	84%			84%			83%			83%		
	AC CURRENT (Typ.)	1.8A/115VAC 0.9A/230VAC											
	INRUSH CURRENT (Typ.)	COLD START 35A/115VAC 70A/230VAC											
PROTECTION	LEAKAGE CURRENT	Earth leakage current <300uA / 264VAC, Patient leakage current <100uA/264VAC											
	OVERLOAD	105 ~ 135% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed											
	OVER VOLTAGE	CH1: 5.75 ~ 6.75V Protection type : Shut down o/p voltage, re-power on to recover											
	OVER TEMPERATURE	105℃ (TSW1)detect on heatsink of power transistor											
		90℃ (TSW2)detect on heatsink of power transistor Protection type : (TSW1)Shut down o/p voltage, recovers automatically after temperature goes down Protection type : (TSW2)Shut down o/p voltage, re-power on to recover											
FUNCTION	5V STANDBY (G model)	5VSB : 5V@0.6A without fan, 0.8A with fan 20.5CFM ; tolerance ± 2%, ripple : 50mVp-p(max.)											
	PS-ON INPUT SIGNAL (G model)	Power on: PS-ON = "Hi" or " > 2 ~ 5V" ; Power off: PS-ON = "Low" or " < 0 ~ 0.5V"											
	POWER GOOD / POWER FAIL	500ms>PG>10ms			PF>1ms								
ENVIRONMENT	WORKING TEMP.	-20 ~ +70℃ (Refer to output load derating curve)											
	WORKING HUMIDITY	20 ~ 90% RH non-condensing											
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH											
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)											
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes											
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60601-1, TUV EN60601-1 approved											
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC											
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH											
	EMI CONDUCTION & RADIATION	Compliance to EN55011 (CISPR11), EN55022 (CISPR22) Class B											
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3											
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, EN60601-1-2, EN61204-3, medical level, criteria A											
OTHERS	MTBF	191.4Khrs min. MIL-HDBK-217F (25℃)											
	DIMENSION	127*76.2*34.6mm (L*W*H)											
	PACKING	0.33Kg; 36pcs/12.9Kg/0.79CUFT											
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 5. HS1,HS2 & HS3 can not be shorted. 6. Derating may be needed under low input voltages. Please check the derating curve for more details. 7. The rated power includes 5Vsb @ 0.6A. 8. The rated power includes 5Vsb @ 0.8A.												

Mechanical Specification

Unit:mm



AC Input Connector (CN1) : JST B3P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	AC/N	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
2	No Pin		
3	AC/L		

DC Output Connector (CN2) : JST B8P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1,2,3,4	COM	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
5,6	CH1		
7	CH2		
8	CH3		

Power Good Connector(CN3):JST B2B-XH or equivalent

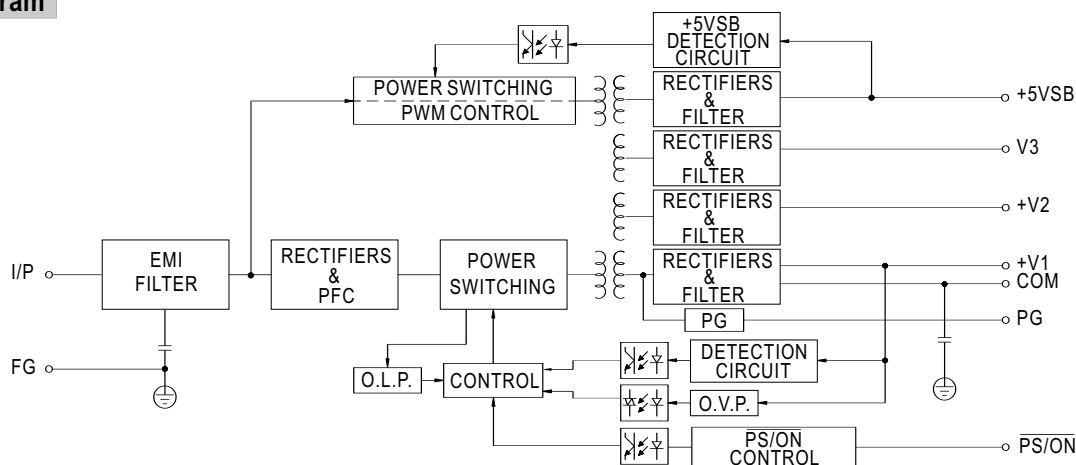
Pin No.	Status	Mating Housing	Terminal
1	PG	JST XHP or equivalent	JST SXH-001T-P0.6 or equivalent
2	GND		

5VSB Connector(CN901) : JST B-XH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	PS/ON	JST XHP or equivalent	JST SXH-001T or equivalent
2,4	GND		
3	5VSB		

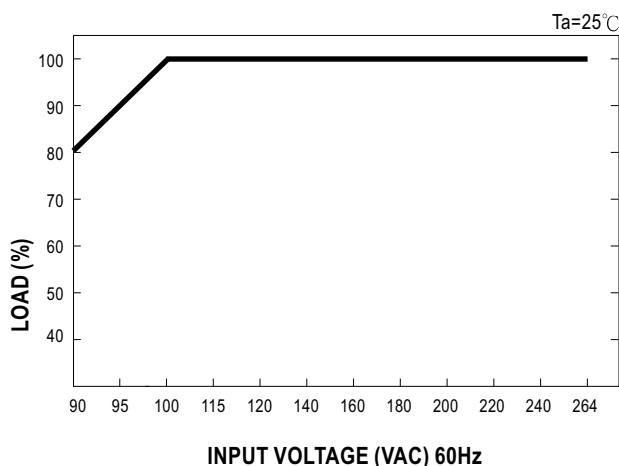
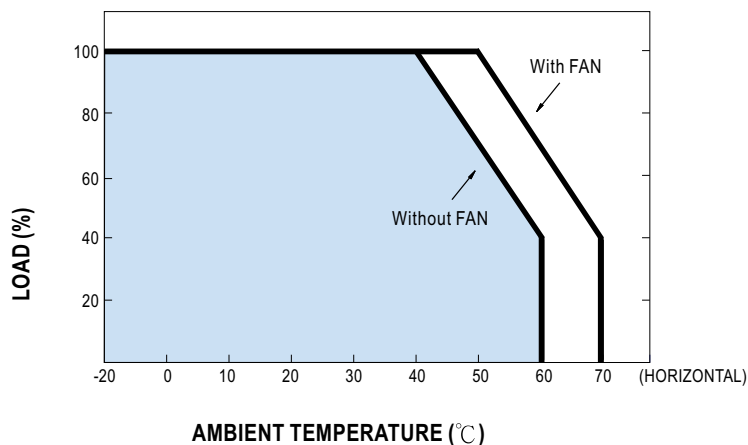
⚠ HS1,HS2,HS3 can not be shorted

Block Diagram



Derating Curve

Output Derating VS Input Voltage



MODEL : RPTG-160A

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1 : 100 mVp-p (Max) V2 : 120 mVp-p (Max) V3 : 120 mVp-p (Max)	I/P : 230VAC O/P : FULL LOAD Ta : 25°C	V1 : 39.4 mVp-p (Max) V2 : 41.6 mVp-p (Max) V3 : 97.2 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1 : 5 V~ 5.5 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	4.833 V~ 5.651 V/ 230 VAC 4.839 V~ 5.661 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1 : 2 %~ -2 % (Max) V2 : 5 %~ -5 % (Max) V3 : 7 %~ -5 % (Max)	I/P : 100 VAC / 264 VAC O/P : FULL/ MIN LOAD Ta : 25°C	V1 : 0.5 %~ -0.5 % V2 : 2.1 %~ -2.1 % V3 : 4.5 %~ -4.5 %	P
4	LINE REGULATION	V1 : 0.5 %~ -0.5 % (Max) V2 : 1 %~ -1 % (Max) V3 : 1 %~ -1 % (Max)	I/P : 100 VAC ~ 264 VAC O/P : FULL LOAD Ta : 25°C	V1 : 0 %~ 0 % V2 : 0 %~ 0 % V3 : 0.13 %~ -0.13 %	P
5	LOAD REGULATION	V1 : 1.5 %~ -1.5 % (Max) V2 : 3 %~ -3 % (Max) V3 : 6 %~ -5 % (Max)	I/P : 230 VAC O/P : FULL ~MIN LOAD Ta : 25°C	V1 : 0.36 %~ -0.36 % V2 : 0.15 %~ -0.15 % V3 : 3 %~ -3 %	P
6	CROSS REGULATION	V1 : 1.5 %~ -1.5 % (Max) V2 : 3 %~ -3 % (Max) V3 : 6 %~ -5 % (Max)	I/P : 230 VAC O/P : Testing O/P 60%LOAD Other O/P 40%LOAD Change Ta : 25°C	V1 : 0.24 %~ -0.24 % V2 : 1.6 %~ -1.6 % V3 : 5.4 %~ -2.5 %	P
7	SET UP TIME	230VAC : 1200 ms (Max) 115 VAC : 2500 ms (Max)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 930 ms 115VAC/ 1860 ms	P
8	RISE TIME	230VAC : 30 ms (Max) 115VAC : 30 ms (Max)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 5.8 ms 115VAC/ 6 ms	P
9	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/ 36 ms 115VAC/ 27 ms	P
10	OVER/UNDER SHOOT TEST	< ±5%	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	TEST : < 5 %	P
11	DYNAMIC LOAD	V1 : 1000 mVp-p	I/P : 230 VAC O/P : FULL /Min LOAD 90%DUTY/1KHZ Ta : 25°C	99 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	90VAC~264 VAC	I/P : TESTING O/P : FULL LOAD Ta : 25°C	72 V~264V	P
			I/P : LOW-LINE-3V= 87 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	0.93 / 230 VAC(TYP) 0.98 / 115 VAC(TYP)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	PF= 0.95 / 230 VAC PF= 0.99 / 115 VAC	P
4	EFFICIENCY	84% (TYP)	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	84 %	P
5	INPUT CURRENT	230V/ 0.9 A (TYP) 115V/ 1.8 A (TYP)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I = 0.79 A/ 230 VAC I = 1.56 A/ 115 VAC	P
6	INRUSH CURRENT	230V/ 70 A (TYP) 115V/ 35 A (TYP) COLD START	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I = 57 A/ 230 VAC I = 29 A/ 115 VAC	P
7	LEAKAGE CURRENT	EARTH LEAKAGE CURRENT<300 uA PATIENT LEAKAGE CURRENT<100 uA	I/P : 264 VAC O/P : Min LOAD Ta : 25°C	FOR EARTH : L-FG : 96.8 uA N-FG : 106.9 uA FOR PATIENT L-FG : 90.2 uA N-FG : 90.1 uA	P
8	No load power consumption	<0.75W/240VAC	I/P : 264 VAC O/P : NO LOAD PS/ON -GND SHORT Ta : 25°C	0.55 W/240VAC	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	118 %/ 230 VAC 118 %/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1 : 5.75 V~ 6.75 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	6.33 V/ 230 VAC 6.3 V/ 115 VAC Shut down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC : TSW1 : 105 ± 5°C detect on heatsink of power transistor TSW2 : 90 ± 5°C detect on heatsink of power transistor Protection type : TSW1 : Shut down o/p voltage, recovers automatically after temperature goes down TSW2 : Shut down o/p voltage, re-power on to recover NO DAMAGE	I/P : 230 VAC O/P : FULL LOAD	O.T.P. Active TSW1 : Shut down o/p voltage, recovers automatically after temperature goes down TSW2 : Shut down o/p voltage, re-power on to recover	P
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P : 264 VAC O/P : FULL LOAD Ta : 25°C	NO DAMAGE Hiccup Mode	P

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	POWER GOOD SIGNAL	DELAY 10ms ~ 500ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	89 ms/ 230 VAC 91 ms/ 115 VAC	P
2	POWER FAIL SIGNAL	> 1ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	9.4 ms/ 230 VAC 9.4 ms/ 115 VAC	P
3	5V STANDBY	5VSB : 5V@0.6A without Fan, 0.8A with Fan 20.5CFM ; tolerance ±2%, ripple : 50mVp-p(max.)	I/P : 230 VAC O/P : FULL LOAD; 5VSB=0.8A Ta : 25°C	Tolerance : 0.12 %~ -0.12 % Ripple : 15 mv	P
4	PS-ON INPUT SIGNAL (OPTIONAL)	Power on : PS-ON = "Hi" or ">2 ~ 5 V" ; Power off : PS-ON = "Low" or "<0 ~ 0.5 V"	I/P : 230 VAC O/P : FULL LOAD; 5VSB=0.8A Ta : 25°C	Power on : PS-ON = "Hi" or "> 1.5 V ~ 5 V" ; Power off : PS-ON = "Low" or "< 0 V ~ 1.4 V"	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																																																																																																														
1	TEMPERATURE RISE TEST	MODEL : RPTG-160A WITH FAN 1. ROOM AMBIENT BURN-IN : 1 HRS I/P : 230VAC O/P : FULL LOAD Ta= 26.7 °C 2. HIGH AMBIENT BURN-IN : 1 HRS I/P : 230VAC O/P : FULL LOAD Ta= 50.7 °C <table><tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= 26.7 °C</th><th>HIGH AMBIENT Ta= 50.7 °C</th></tr><tr><td>1</td><td>LF1</td><td>TR652</td><td>48.4°C</td><td>56.0°C</td></tr><tr><td>2</td><td>BD1</td><td>GBU4J 4A/600V</td><td>67.3°C</td><td>65.7°C</td></tr><tr><td>3</td><td>L3</td><td>TF-1669</td><td>59.4°C</td><td>61.7°C</td></tr><tr><td>4</td><td>Q1</td><td>IRFP460A 20A/500V</td><td>63.8°C</td><td>68.9°C</td></tr><tr><td>5</td><td>D1</td><td>BYC10X-600 10A/600V</td><td>60.4°C</td><td>68.2°C</td></tr><tr><td>6</td><td>C5</td><td>120u/420V 105°C PT</td><td>43.9°C</td><td>63.0°C</td></tr><tr><td>7</td><td>Q3</td><td>2SK3568 12A/500V</td><td>48.7°C</td><td>69.4°C</td></tr><tr><td>8</td><td>C18</td><td>100u/35V 105°C KZH</td><td>36.7°C</td><td>58.5°C</td></tr><tr><td>9</td><td>U1</td><td>CM6800</td><td>35.9°C</td><td>57.6°C</td></tr><tr><td>10</td><td>T1</td><td>TF-1665</td><td>62.2°C</td><td>86.7°C</td></tr><tr><td>11</td><td>Q100</td><td>IRL3103 64A/30V</td><td>75.1°C</td><td>102.8°C</td></tr><tr><td>12</td><td>D200</td><td>MBR1545CT 15A/45V</td><td>77.2°C</td><td>106.4°C</td></tr><tr><td>13</td><td>L100</td><td>TR769</td><td>74.7°C</td><td>104.7°C</td></tr><tr><td>14</td><td>C105</td><td>2200U/10V 105°C ZLH</td><td>65.0°C</td><td>93.3°C</td></tr><tr><td>15</td><td>C205</td><td>1000u/16V 105°C YXG</td><td>49.9°C</td><td>76.2°C</td></tr><tr><td>16</td><td>U903</td><td>TNY274</td><td>48.4°C</td><td>66.8°C</td></tr><tr><td>17</td><td>T900</td><td>TF-1670</td><td>54.1°C</td><td>72.5°C</td></tr><tr><td>18</td><td>C955</td><td>220u/25V 105°C ZL</td><td>51.1°C</td><td>61.1°C</td></tr><tr><td>19</td><td>TSW1</td><td>ST-22 105°C</td><td>64.1°C</td><td>91.8°C</td></tr><tr><td>20</td><td>C305</td><td>470u/16V 105°C YXG</td><td>53.8°C</td><td>79.6°C</td></tr><tr><td>21</td><td>D300</td><td>SB1040FCT 10A/40V</td><td>63.5°C</td><td>91.6°C</td></tr></table>			NO	Position	P/N	ROOM AMBIENT Ta= 26.7 °C	HIGH AMBIENT Ta= 50.7 °C	1	LF1	TR652	48.4°C	56.0°C	2	BD1	GBU4J 4A/600V	67.3°C	65.7°C	3	L3	TF-1669	59.4°C	61.7°C	4	Q1	IRFP460A 20A/500V	63.8°C	68.9°C	5	D1	BYC10X-600 10A/600V	60.4°C	68.2°C	6	C5	120u/420V 105°C PT	43.9°C	63.0°C	7	Q3	2SK3568 12A/500V	48.7°C	69.4°C	8	C18	100u/35V 105°C KZH	36.7°C	58.5°C	9	U1	CM6800	35.9°C	57.6°C	10	T1	TF-1665	62.2°C	86.7°C	11	Q100	IRL3103 64A/30V	75.1°C	102.8°C	12	D200	MBR1545CT 15A/45V	77.2°C	106.4°C	13	L100	TR769	74.7°C	104.7°C	14	C105	2200U/10V 105°C ZLH	65.0°C	93.3°C	15	C205	1000u/16V 105°C YXG	49.9°C	76.2°C	16	U903	TNY274	48.4°C	66.8°C	17	T900	TF-1670	54.1°C	72.5°C	18	C955	220u/25V 105°C ZL	51.1°C	61.1°C	19	TSW1	ST-22 105°C	64.1°C	91.8°C	20	C305	470u/16V 105°C YXG	53.8°C	79.6°C	21	D300	SB1040FCT 10A/40V	63.5°C	91.6°C	P
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16	U903	TNY274	48.4°C	66.8°C																																																																																																															
17	T900	TF-1670	54.1°C	72.5°C																																																																																																															
18	C955	220u/25V 105°C ZL	51.1°C	61.1°C																																																																																																															
19	TSW1	ST-22 105°C	64.1°C	91.8°C																																																																																																															
20	C305	470u/16V 105°C YXG	53.8°C	79.6°C																																																																																																															
21	D300	SB1040FCT 10A/40V	63.5°C	91.6°C																																																																																																															
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 120 % LOAD Ta : 25°C	TEST : OK	P																																																																																																														
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 230 VAC O/P : 100 % LOAD Ta= -25 °C	TEST : OK	P																																																																																																														
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50 °C NO DAMAGE	I/P : 272 VAC O/P : FULL LOAD Ta= 50 °C HUMIDITY= 95 %R.H	TEST : OK	P																																																																																																														
5	TEMPERATURE COEFFICIENT	± 0.03 %(0-50°C)	I/P : 230 VAC O/P : FULL LOAD	± 0.008 %(0-50°C)	P																																																																																																														
6	VIBRATION TEST	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10-500Hz (3) Sweep Time : 10min/sweep cycle (4) Acceleration : 2G (5) Test Time : 1 hour in each axis (X.Y.Z) (6) Ta : 25°C		TEST : OK	P																																																																																																														

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P : 4 KVAC/min I/P-FG : 1.5 KVAC/min O/P-FG : 0.5 KVAC/min	I/P-O/P : 4.2 KVAC/min I/P-FG : 1.8 KVAC/min O/P-FG : 0.6 KVAC/min Ta : 25°C	I/P-O/P : 1.654 mA I/P-FG : 1.514 mA O/P-FG : 0.182 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	9 mΩ	P
4	APPROVAL	TUV : Certificate NO : UL : File NO :			N/A

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 EN55011 CLASS B	I/P : 230 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 EN55011 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 MEDICAL AIR : 8KV / Contact : 6KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A	P
5	E.F.T	EN61000-4-4 MEDICAL INPUT : 2KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 MEDICAL L-N : 1KV L,N-PE : 2KV	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	RPTG-160A WITH FAN : SUPPOSE C 105 IS THE MOST CRITICAL COMPONENT I/P : 230VAC O/P : FULL LOAD Ta= 25 °C LIFE TIME= 201640 HRS I/P : 230VAC O/P : FULL LOAD Ta= 50 °C LIFE TIME= 26809 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE : 191.4KHRS			P

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q3 Rated 2SK3568 12A/500V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on (2) Output Short Ta : 25°C	(1) 412 V (2) 422 V	P
2	Diode Peak Voltage	Q101 Rated IRL3103PbF 64A/30V D200 Rated STPS2045CT 20A/45V D300 Rated FME-220A 20A/100V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on (2)Output Short Ta : 25°C	(1) 28.4 V (2) 26.8 V (1) 39.8 V (2) 32.6 V (1) 27.6 V (2) 25.2 V	P
3	Input Capacitor Voltage	C5 Rated 120u/420V 105°C	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) 384.7 V (2) 385.5 V (3) 385.5 V	P
4	Control IC Voltage Test	U 1 Rated FAN4801 : 12V~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) 14.209 V (2) 14.262 V (3) 14.276 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) 460 V (2) 412 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2009/1/10	RD SAMPLE	PASS	SANFORD SU	VINCENT TSENG
2009/6/16	PRODUCT SAMPLE W0901A22	PASS	SANFORD SU	VINCENT TSENG

2003/12/12 A50-F023