



■ Features :

- Universal AC input / Full range
- Low leakage current <200uA
- Protections: Short circuit / Overload / Over voltage
- Free air convection for rated power and 23.5CFM forced air convection for peak load
- UL60601-1/IEC60601-1/EN60601-1 medical safety approved
- Fixed switching frequency at 65KHz
- 3 years warranty



SPECIFICATION

MODEL		RPT-75A			RPT-75B			RPT-75C		
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
	DC VOLTAGE	5V	12V	-5V	5V	12V	-12V	5V	15V	-15V
	RATED CURRENT	6A	3A	0.5A	6A	3A	0.5A	6A	2.3A	0.5A
	CURRENT RANGE	0.6 ~ 8A	0.2 ~ 4A	0.1 ~ 1A	0.6 ~ 8A	0.2 ~ 4A	0.1 ~ 1A	0.6 ~ 8A	0.1 ~ 3A	0.1 ~ 1A
	RATED POWER	68.5W			72W			72W		
	PEAK LOAD (23.5CFM)	93W			100W			100W		
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	80mVp-p	120mVp-p	120mVp-p	80mVp-p	150mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	CH1:4.75 ~ 5.5V								
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±5.0%	±2.0%	±6.0%	±5.0%	±2.0%	±8.0%	±5.0%
	LINE REGULATION	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%
	LOAD REGULATION	±1.5%	±3.0%	±1.0%	±1.5%	±3.0%	±1.0%	±1.5%	±3.0%	±1.0%
	SETUP, RISE TIME	500ms, 30ms/230VAC			500ms, 30ms/115VAC at full load					
HOLD UP TIME (Typ.)	80ms/230VAC			20ms/115VAC at full load						
INPUT	VOLTAGE RANGE	90 ~ 264VAC		127 ~ 370VDC						
	FREQUENCY RANGE	47 ~ 63Hz								
	EFFICIENCY(Typ.)	76%			77%			77%		
	AC CURRENT (Typ.)	1.5A/115VAC		1A/230VAC						
	INRUSH CURRENT (Typ.)	COLD START 25A/115VAC			50A/230VAC					
LEAKAGE CURRENT	Earth leakage current <200uA / 264VAC, Patient leakage current <100uA/264VAC									
PROTECTION	OVERLOAD	140 ~ 180% 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								
ENVIRONMENT	WORKING TEMP.	-20 ~ +70°C (Refer to output load derating curve)								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 45°C)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes								
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60601-1, TUV EN60601-1, IEC60601-1 approved								
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC			I/P-FG:1.5KVAC			O/P-FG:1.5KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC								
	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, EN61000-6-2, EN61204-3, heavy industry level, EN61204-3 medical level, criteria A									
OTHERS	MTBF	521.2K hrs min.		MIL-HDBK-217F (25°C)						
	DIMENSION	127*76.2*31mm (L*W*H)								
	PACKING	0.26Kg; 63pcs/17.4Kg/1.35CUFT								
NOTE	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>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.</p> <p>5. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.</p>									



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- Fixed switching frequency at 65KHz
- 3 years warranty

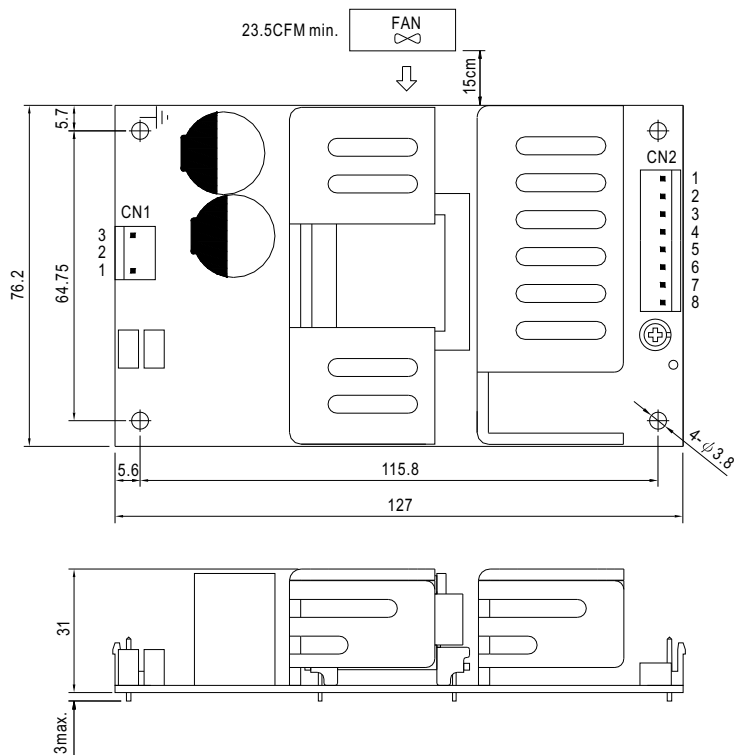


SPECIFICATION

MODEL	RPT-75D			RPT-7503			
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH3	CH1	CH2	CH3
	DC VOLTAGE	5V	24V	12V	3.3V	5V	12V
	RATED CURRENT	5A	1.5A	1A	6A	6A	1A
	CURRENT RANGE	0.6 ~ 7A	0.1 ~ 2A	0.1 ~ 1A	0.7 ~ 7A	0 ~ 8A	0 ~ 1.5A
	RATED POWER	73W			61.8W		
	PEAK LOAD (23.5CFM)	95W			81W		
	RIPPLE & NOISE (max.) Note.2	80mVp-p	200mVp-p	120mVp-p	80mVp-p	120mVp-p	120mVp-p
	VOLTAGE ADJ. RANGE	CH1:4.75 ~ 5.5V			-----		
	VOLTAGE TOLERANCE Note.3	±2.0%	±8.0%	±8.0%	±4.0%	±6.0%	+10,-6%
	LINE REGULATION	±0.5%	±1.0%	±1.0%	±1.0%	±1.0%	±1.5%
	LOAD REGULATION	±1.5%	±3.0%	±3.0%	+3,-4%	+5,-4%	±6.0%
	SETUP, RISE TIME	500ms, 30ms/230VAC 500ms, 30ms/115VAC at full load					
HOLD UP TIME (Typ.)	80ms/230VAC 20ms/115VAC at full load						
INPUT	VOLTAGE RANGE	90 ~ 264VAC 127 ~ 370VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY(Typ.)	79%		74%			
	AC CURRENT (Typ.)	1.5A/115VAC 1A/230VAC					
	INRUSH CURRENT (Typ.)	COLD START 25A/115VAC 50A/230VAC					
LEAKAGE CURRENT	Earth leakage current <200uA / 264VAC, Patient leakage current <100uA/264VAC						
PROTECTION	OVERLOAD	140 ~ 180% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	CH1: 5.75 ~ 6.75V		CH1: 3.8 ~ 4.45V Protection type : Shut down o/p voltage, re-power on to recover			
ENVIRONMENT	WORKING TEMP.	-20 ~ +70°C (Refer to output load derating curve)					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 45°C)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60601-1, TUV EN60601-1, IEC60601-1 approved					
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC I/P-FG:1.5KVAC O/P-FG:1.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC					
	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, EN61000-6-2, EN61204-3 heavy industry level, EN61204-3 medical level, criteria A						
OTHERS	MTBF	521.2K hrs min. MIL-HDBK-217F (25°C)					
	DIMENSION	127*76.2*31mm (L*W*H)					
	PACKING	0.26Kg; 63pcs/17.4Kg/1.35CUFT					
NOTE	<ol style="list-style-type: none"> 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C 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. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time. 						

Mechanical Specification

Unit:mm



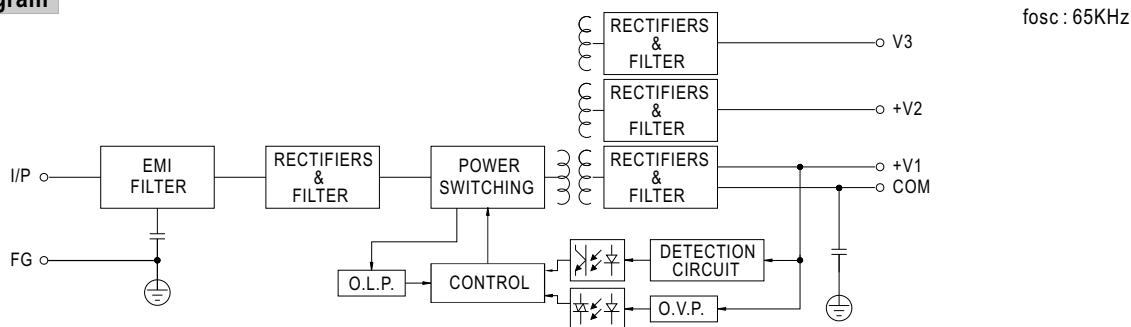
AC Input Connector (CN1) : JST B3P-VH or equivalent

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		

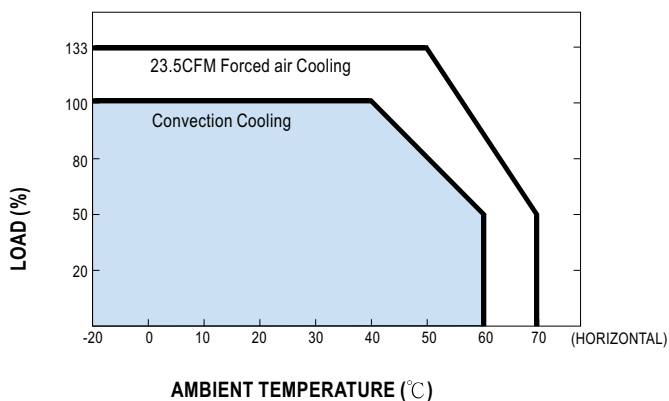
DC Output Connector (CN2) : JST B8P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1,2	V1	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
3,4,5	COM		
6,7	V2		
8	V3		

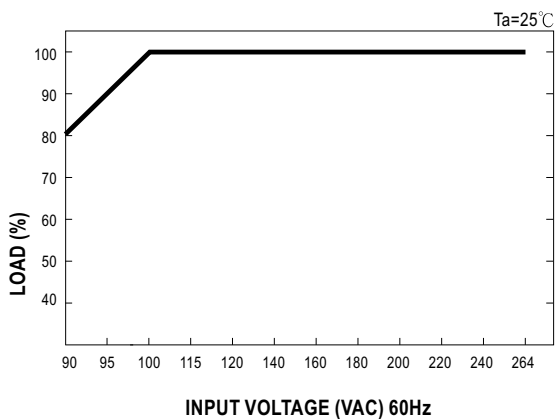
Block Diagram



Derating Curve



Output Derating VS Input Voltage



MODEL : RPT-75D

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 80 mVp-p (Max) V2: 200 mVp-p (Max) V3: 120 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25°C	V1: 15 mVp-p (Max) V2: 26 mVp-p (Max) V3: 16 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 4.75 V--5.5 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	4.55V~ 5.88 V / 230VAC 4.55V~ 5.88 V / 115VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 2 %- -2 % (Max) V2: 8 %- -8 % (Max) V3: 8 %- -8 % (Max)	I/P: 100 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.12 %- -0.12 % V2: 2.6 %- -2.6 % V3: 3.4 %- -3.4 %	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: 0.28 %- -0.28 % V3: 0.47 %- -0.47 %	P
5	LOAD REGULATION	V1: 1.5 %- -1.5 % (Max) V2: 3 %- -3 % (Max) V3: 3 %- -3 % (Max)	I/P: 230 VAC O/P:FULL -MIN LOAD Ta:25°C	V1: 0 %- 0 % V2: 1.4 %- -1.4 % V3: 1 %- -1 %	P
6	CROSS REGULATION	V1: 1.5 %- -1.5 % (Max) V2: 3 %- -3 % (Max) V3: 3 %- -3 % (Max)	I/P: 230 VAC O/P: Testing O/P 60%LOAD Other O/P 40%LOAD Change Ta:25°C	V1: 0 %- 0 % V2: 2.2 %- -2.2 % V3: 2.7 %- -2.7 %	P
7	SET UP TIME	230VAC: 500 ms (Max) 115 VAC: 500 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 150 ms 115VAC/ 111 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/ 6 ms 115VAC/ 6 ms	P
9	HOLD UP TIME	230VAC: 90 ms (TYP) 115VAC: 20 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 105 ms 115VAC/ 22.4 ms	P
10	OVER/UNDERSHOOT 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	150 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	90VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	52V~264V	P
			I/P: LOW-LINE-3V= 87V 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: 90VAC ~ 264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	79% (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	79.4 %	P
4	INPUT CURRENT	230V/ 1 A (TYP) 115V/ 1.5 A (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 0.84 A/ 230 VAC I = 1.42 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 50 A (TYP) 115V/ 25 A (TYP) COLD START	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 36 A/ 230 VAC I = 18 A/ 115 VAC	P
6	LEAKAGE CURRENT	< 200 uA / 264 VAC	I/P: 264 VAC O/P:Min LOAD Ta:25°C	L-FG: 107 uA N-FG: 107 uA	P
		< 100 uA/264 VAC for patient	I/P: 264 VAC O/P:Min LOAD Ta:25°C	L-FG: 38 uA N-FG: 38 uA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	140 %~ 180 %	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25°C	168 %/ 230 VAC 161 %/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 5.75V~ 6.75V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	6.4 V/ 230 VAC 6.4 V/ 115 VAC Shunt down Re- power ON	P
3	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

ENVIRONMENT TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : RPT-75A WITH FAN 1. ROOM AMBIENT BURN-IN : 1HRS I/P: 230VAC O/P: FULL LOAD Ta=31.3°C 2. HIGH AMBIENT BURN-IN : 1.5HRS I/P: 230VAC O/P: FULL LOAD Ta=52.5°C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P:V1=10A V2=5A V3=1A 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= -20°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	± 0.019 %(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: 1.5 KVAC/min	I/P-O/P: 4.2 KVAC/min I/P-FG: 1.8 KVAC/min O/P-FG: 1.8 KVAC/min Ta:25°C	I/P-O/P: 2.01 mA I/P-FG: 1.32 mA O/P-FG: 1.42 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	I/P-O/P: 15 GΩ I/P-FG: 15 GΩ O/P-FG: 30 GΩ NO DAMAGE	P
3	APPROVAL	TUV: Certificate NO : TA 50096088 UL: File NO : E227340			P

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A	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 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	RPT-75A WITH FAN : SUPPOSE C105 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 1419902 HRS I/P: 230VAC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 217049 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 521.2K HRS			P

COMPONENT STRESS TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated STP9NK70ZFP : 700V 7.5A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Output Short Ta:25°C	(1) 646 V (2) 694 V	P
2	Diode Peak Voltage	D100 Rated STPS2045CT : 45V 20A D200 Rated YG805C010R : 100V 20 A D300 Rated HER303 : 200V 3A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short Ta:25°C	(1) 42 V (2) 33 V (1) 148 V (2) 132 V (1) 116 V (2) 94 V	P
3	Clamp Diode Peak Voltage	D1 Rated HER308 : 1000V 3A	I/P:High-Line +3V = 267 V O/P: (1) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 570 V	P
4	Input Capacitor Voltage	C5 Rated : 100u / 400V/ 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) 374 V (2) 380 V (3) 380 V	P
5	Control IC Voltage Test	U1 Rated 1230D165R2G : 18V	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) 12.57 V (2) 11.74 V (3) 12.57 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2006/9/5	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2006/11/14	PRODUCT SAMPLE W0610A20	PASS	VINCENT TSENG	MAX LIN
2007/5/9	PRODUCT SAMPLE W0703A31	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023