

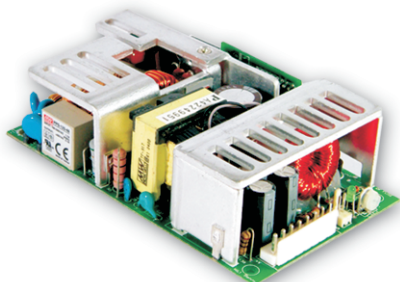
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Jameco Part Number 374097



■ Features :

- Universal AC input / Full range
- Built-in active PFC function
- Protections: Short circuit / Overload / Over voltage
- PWM control and regulated
- High power density 6.117W/inch³
- Built-in remote sense function
- LED indicator for power on
- 100% full load burn-in test
- 125W with 18CFM FAN
- 5"x3" compact size
- 3 years warranty

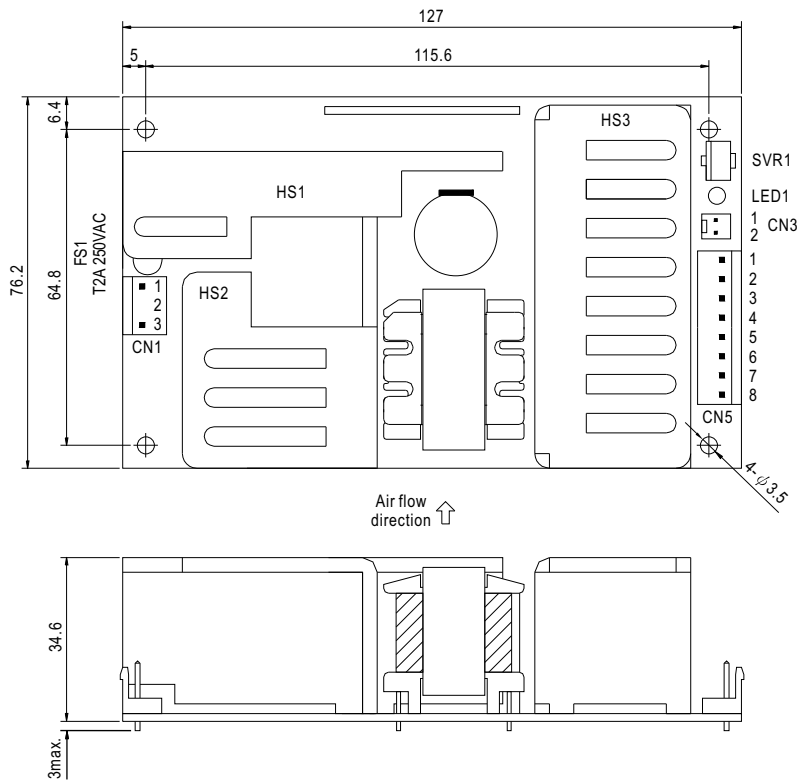


SPECIFICATION

MODEL		PPS-125-3.3	PPS-125-5	PPS-125-12	PPS-125-13.5	PPS-125-15	PPS-125-24	PPS-125-27	PPS-125-48
OUTPUT	DC VOLTAGE	3.3V	5V	12V	13.5V	15V	24V	27V	48V
	RATED CURRENT	20A	20A	8.5A	7.5A	6.7A	4.2A	3.8A	2.1A
	CURRENT RANGE (convection)	0 ~ 20A	0 ~ 20A	0 ~ 8.5A	0 ~ 7.5A	0 ~ 6.7A	0 ~ 4.2A	0 ~ 3.8A	0 ~ 2.1A
	CURRENT RANGE (18CFM FAN)	0 ~ 25A	0 ~ 25A	0 ~ 10.5A	0 ~ 9.3A	0 ~ 8.4A	0 ~ 5.2A	0 ~ 4.6A	0 ~ 2.6A
	RATED POWER (convection)	66W	100W	102W	101.25W	100.5W	100.8W	102.6W	100.8W
	RATED POWER (18CFM FAN)	82.5W	125W	126W	125.55W	126W	124.8W	124.2W	124.8W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	150mVp-p	150mVp-p	250mVp-p
	VOLTAGE ADJ. RANGE	3.13 ~ 3.46V	4.75 ~ 5.25V	11.40 ~ 12.60V	12.82 ~ 14.17V	14.25 ~ 15.75V	22.80 ~ 25.20V	25.65 ~ 28.35V	45.60 ~ 50.40V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	1000ms, 30ms/230VAC 2000ms, 30ms/115VAC at full load							
HOLD UP TIME (Typ.)	24ms/230VAC 24ms/115VAC at full load								
INPUT	VOLTAGE RANGE	90 ~ 264VAC 127 ~ 370VDC							
	FREQUENCY RANGE	47~63Hz							
	POWER FACTOR (Typ.)	PF>0.93/230VAC PF>0.98/115VAC at full load							
	EFFICIENCY (Typ.)	70%	79%	80%	80%	80%	83%	83%	84%
	AC CURRENT (Typ.)	115VAC	1.2A 1.7A						
		230VAC	0.6A 0.75A						
	INRUSH CURRENT (Typ.)	COLD START 24A/230VAC							
LEAKAGE CURRENT	<2mA / 240VAC								
PROTECTION	OVERLOAD	130 ~ 160% rated output power Protection type : Fold back current limiting, recovers automatically after fault condition is removed							
	OVER VOLTAGE	3.63 ~ 4.45V	5.5 ~ 6.75V	13.8 ~ 16.2V	15.5 ~ 20.25V	17.25 ~ 20.25V	27.6 ~ 32.4V	31.05 ~ 36.45V	57.6 ~ 67.2V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
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	±0.05%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes							
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved							
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC 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							
	EMI CONDUCTION & RADIATION	Compliance to 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, light industry level, criteria A							
OTHERS	MTBF	111.7Khrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	127*76.2*34.6mm (L*W*H)							
	PACKING	0.37Kg; 36pcs/14.3Kg/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. Heat Sink HS1,HS2 & HS3 can not be shorted.								

Mechanical Specification

Unit:mm



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

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

DC Output Connector (CN5) : JST B8P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1~4	-V	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
5~8	+V		

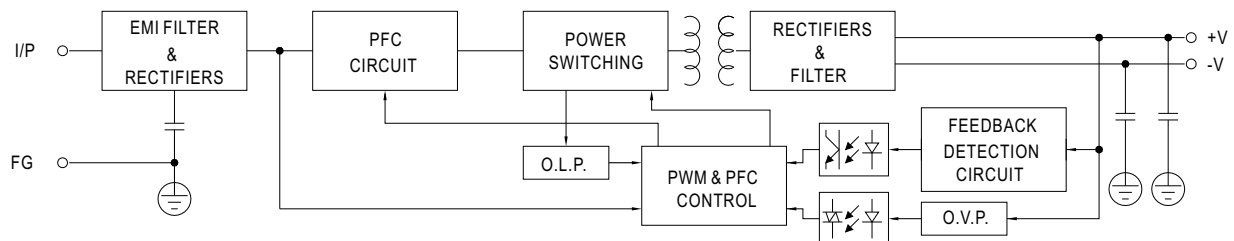
Remote Sense(CN3) : Molex 5045-02 or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	RS+	Molex 5051 or equivalent	Molex 4809 or equivalent
2	RS-		

⚠ HS1, HS2 & HS3 can not be shorted

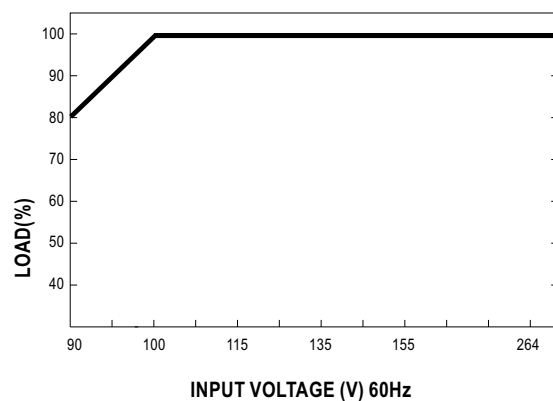
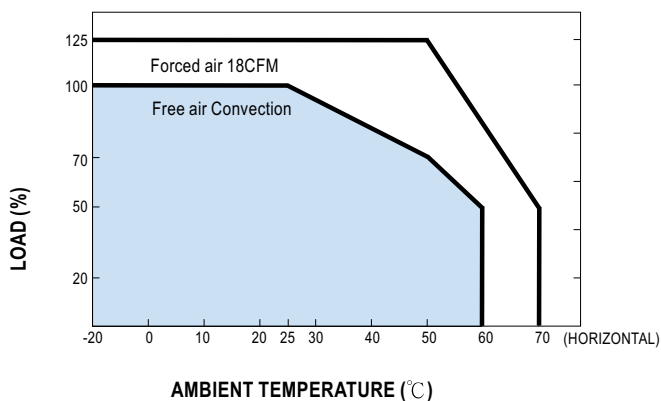
Block Diagram

fosc : 100KHz



Derating Curve

Output Derating VS Input Voltage



MODEL : PPS-125-15V

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 100 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 14 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 14.25 V~15.75V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	12.56V~ 17.94 V/ 230 VAC 12.56V~ 17.94V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: +2 %~ -2 % (Max)	I/P: 264 VAC / 100 VAC O/P:FULL/ 0 % LOAD Ta:25°C	V1:0.02 %~ -0.02 %	P
4	LINE REGULATION	V1: +0.5%~ -0.5 % (Max)	I/P: 264 VAC ~ 100 VAC O/P:FULL LOAD Ta:25°C	V1:0 %~ 0%	P
5	LOAD REGULATION	V1: +1 %~ -1 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0 %~ 0.04 %	P
6	SET UP TIME	230 VAC/ 1000 ms (Max) 115 VAC/ 2000 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 452 ms 115 VAC/ 1030 ms	P
7	RISE TIME	230 VAC/ 30 ms (Max) 115 VAC/ 30 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 17 ms 115 VAC/ 17 ms	P
8	HOLD UP TIME	230 VAC/ 20 ms (TYP) 115 VAC/ 20 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 31 ms 115VAC/ 31 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: 1500 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	170mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	264 VAC~ 90 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	64 V~ 264 V	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	47 HZ ~ 63 HZ NO DAMAGE OSC	I/P: 264 VAC ~ 100 VAC O/P:FULL-MIN LOAD Ta:25°C	TEST:OK	P
3	POWER FACTOR	0.93/ 230 VAC(TYP) <u>0.98</u> / 115 VAC(TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	PF=0.98/ 230 VAC PF=1/ 115 VAC	P
4	EFFICIENCY	80 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	82.6%	P
5	INPUT CURRENT	230 V/ 0.75 A(TYP) 115 V/ 1.7 A(TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I =0.56 A/ 230 VAC I =1.14 A/ 115 VAC	P
6	INRUSH CURRENT	230V/ 40 A(TYP) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	I =30 A/ 230 VAC	P
7	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P:254 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.7 mA N-FG: 0.6 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	130 %~ 160 %	I/P: 230 VAC I/P: 115 VAC O/P: TESTING Ta: 25°C	145%/ 230 VAC 137%/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 17.25 V~ 20.25 V	I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta: 25°C	12.56V/ 230 VAC 17.94V/ 115 VAC Hiccup Model	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	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																																																																																
1	TEMPERATURE RISE TEST	MODEL : PPS-125-5 WITH FAN 17.8CFM 1. ROOM AMBIENT BURN-IN : 2 HRS I/P: 230 VAC O/P: 125% LOAD Ta= 27.2 °C 2. HIGH AMBIENT BURN-IN : 3 HRS I/P: 230 VAC O/P: 125% LOAD Ta=51.6 °C <table><thead><tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta=27.2°C</th><th>HIGH AMBIENT Ta=51.6°C</th></tr></thead><tbody><tr><td>1</td><td>BD1</td><td>RS606M 6A/800V</td><td>57.2°C</td><td>89.4°C</td></tr><tr><td>2</td><td>D1</td><td>IN5406 3A/600V</td><td>50.6°C</td><td>81.8°C</td></tr><tr><td>3</td><td>L1</td><td>TR-341</td><td>56.9°C</td><td>88.9°C</td></tr><tr><td>4</td><td>Q2</td><td>2SK2850 6A/900V</td><td>44.0°C</td><td>76.2°C</td></tr><tr><td>5</td><td>D4</td><td>HER208 2A/1KV</td><td>35.7°C</td><td>65.3°C</td></tr><tr><td>6</td><td>C40</td><td>22U/35V ST 105°C</td><td>55.4°C</td><td>85.7°C</td></tr><tr><td>7</td><td>T1 COIL</td><td>TF-887 LS</td><td>54.2°C</td><td>82.6°C</td></tr><tr><td>8</td><td>T1 CORE</td><td>TF-887 LS</td><td>52.7°C</td><td>80.4°C</td></tr><tr><td>9</td><td>C20</td><td>100U/25V 105°C KY</td><td>50.9°C</td><td>81.3°C</td></tr><tr><td>10</td><td>D3</td><td>HFA08TB60 8A/600V</td><td>59.5°C</td><td>91.8°C</td></tr><tr><td>11</td><td>C5</td><td>68U/400V 105°C KMX</td><td>57.8°C</td><td>86.8°C</td></tr><tr><td>12</td><td>D100</td><td>S60SC4M 60A/40V</td><td>76.3°C</td><td>104.2°C</td></tr><tr><td>13</td><td>D101</td><td>S60SC4M 60A/40V</td><td>68.6°C</td><td>95.9°C</td></tr><tr><td>14</td><td>C102</td><td>2200U/6.3V 105°C YXG</td><td>55.4°C</td><td>84.4°C</td></tr><tr><td>15</td><td>Q1</td><td>IRFP450 14A/500V</td><td>59.7°C</td><td>92.4°C</td></tr></tbody></table>			NO	Position	P/N	ROOM AMBIENT Ta=27.2°C	HIGH AMBIENT Ta=51.6°C	1	BD1	RS606M 6A/800V	57.2°C	89.4°C	2	D1	IN5406 3A/600V	50.6°C	81.8°C	3	L1	TR-341	56.9°C	88.9°C	4	Q2	2SK2850 6A/900V	44.0°C	76.2°C	5	D4	HER208 2A/1KV	35.7°C	65.3°C	6	C40	22U/35V ST 105°C	55.4°C	85.7°C	7	T1 COIL	TF-887 LS	54.2°C	82.6°C	8	T1 CORE	TF-887 LS	52.7°C	80.4°C	9	C20	100U/25V 105°C KY	50.9°C	81.3°C	10	D3	HFA08TB60 8A/600V	59.5°C	91.8°C	11	C5	68U/400V 105°C KMX	57.8°C	86.8°C	12	D100	S60SC4M 60A/40V	76.3°C	104.2°C	13	D101	S60SC4M 60A/40V	68.6°C	95.9°C	14	C102	2200U/6.3V 105°C YXG	55.4°C	84.4°C	15	Q1	IRFP450 14A/500V	59.7°C	92.4°C	P
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P: 135% LOAD with FAN Ta:25°C	TEST : OK	P																																																																																
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 230VAC O/P: 125% LOAD with FAN 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:125% LOAD with FAN Ta= 50 °C HUMIDITY= 95 %R.H	TEST : OK	P																																																																																
5	TEMPERATURE COEFFICIENT	± 0.05 %(0~50°C)	I/P: 230 VAC O/P:125% LOAD with FAN	± 0.001 %(0~50°C)	P																																																																																
6	VIBRATION TEST	1 Carton & 1 Set Operating at I/P: 230 VAC NO LOAD (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	SPECICATION	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: 1.34 mA I/P-FG: 7.46 mA O/P-FG: 0.3 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: 3G Ω I/P-FG: 5.07G Ω O/P-FG: 3.3G Ω NO DAMAGE	P
3	APPROVAL	TUV: Certificate NO : R50038987 UL: File NO : E183223			P

E.M.C TEST

NO	TEST ITEM	SPECICATION	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 LIGHT 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 LIGHT INDUSTRY INPUT: 1KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 LIGHT INDUSTRY 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	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C 103 IS THE MOST CRITICAL COMPONENT WITH FAN I/P: 230VAC O/P:125% LOAD Ta=25 °C LIFE TIME=216593.8 HRS I/P: 230VAC O/P:125% LOAD Ta=50 °C LIFE TIME=27843.5 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 111.7K 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	Q 2 Rated 2SK2850 : 900 V 6 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 544 V (2) 680V (3) 828 V	P
2	Diode Peak Voltage	D17 Rated 20TQ150:50 V 20 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 67.2V (2) 88.4 V (3) 88.4 V	P
3	Clamp Diode Peak Voltage	D4 Rated HER208 : 1K V 2 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 672V (2) 668V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2003/10/20	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2003/12/17	PRODUCT SAMPLE A311A38	PASS	VINCENT TSENG	MAX LIN

2003/7/14 A50-F023