



■ 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

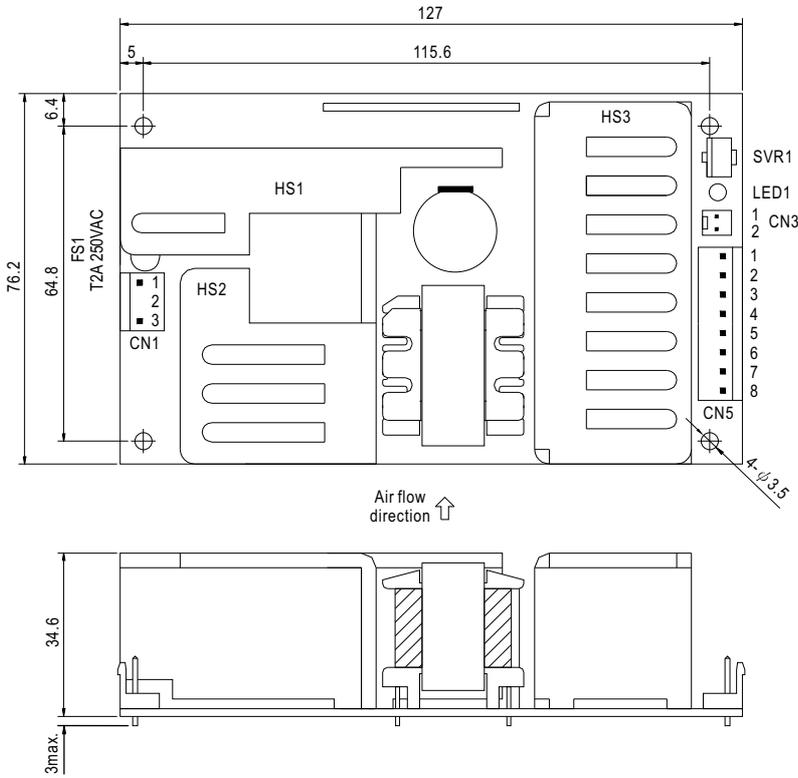


SPECIFICATION

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	
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	±0.05%/°C (0 ~ 50°C)								
	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 / 25°C / 70% RH								
	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°C)								
	DIMENSION	127*76.2*34.6mm (L*W*H)								
	PACKING	0.37Kg; 36pcs/14.3Kg/0.79CUFT								
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. 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		

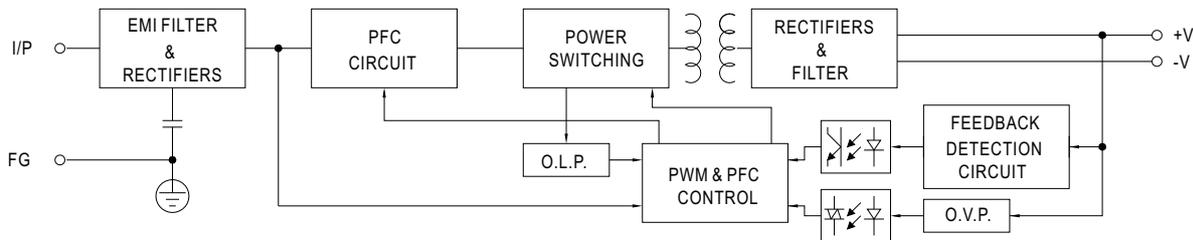
Remote Sense(CN3) : Molex 5045-02 or equivalent

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

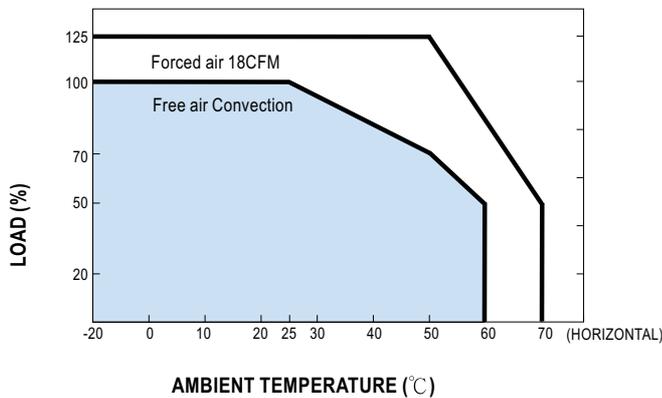
⚠ HS1, HS2 & HS3 can not be shorted

Block Diagram

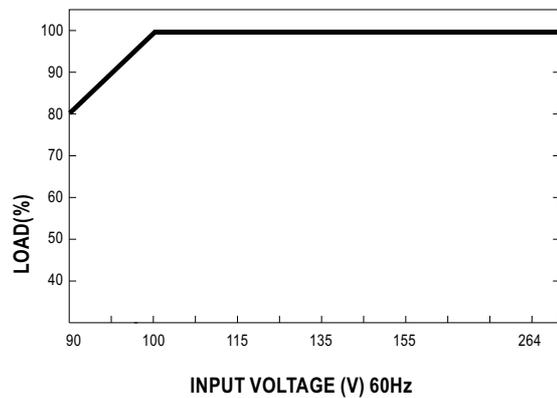
fosc : 100KHz



Derating Curve



Output Derating VS Input Voltage



MODEL : PPS-125-3.3V

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: 15 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 3.135 V~ 3.46 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	2.53V~3.55V/ 230 VAC 2.53V~3.55 V/ 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: 0.2 %~ -0.2%	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 %~ -0.2%	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/ 473 ms 115 VAC/ 1072 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/ 15 ms 115 VAC/ 15 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	230 VAC/ 43 ms 115 VAC/ 43 ms	P
9	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: < 3 %	P
10	DYNAMIC LOAD	V1: 660 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	262mVp-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	64V~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) 0.98/ 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	70 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	74.26%	P
5	INPUT CURRENT	230 V/ 0.6 A(TYP) 115 V/ 1.2 A (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I =0.42 A/ 230 VAC I =0.85 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 =25 A/ 230 VAC	P
7	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P:254 VAC O/P:Min LOAD Ta:25°C	L-FG: 1.1 mA N-FG: 0.98 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	141%/ 230 VAC 135%/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 3.63 V~ 4.45 V	I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta:25°C	3.9V/ 230 VAC 4V/ 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			P
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	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: 1.23 mA I/P-FG: 6.17 mA O/P-FG: 0.29 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: 574M Ω I/P-FG:4.07G Ω O/P-FG: 661M Ω NO DAMAGE	P
3	APPROVAL	TUV: Certificate NO : R50038987 UL: File NO : E183223			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 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)484 V (2)676 V (3)788 V	P
2	Diode Peak Voltage	D17 Rated ESAE83-004 :40 V 60 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) 14.2V (2) 16.8 V (3) 16.5 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) 668 V (2) 780V	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