



**Features**

- . Input 90V to 264VAC, 50~60Hz suitable for worldwide use
- . Output voltage optional from 3.3V to 48Vdc constant voltage
- . Protections: Short Circuit / Overload / Over Voltage Protection
- . 100% full load burn-in test for 2Hrs to make every unit reliable.
- . Small and compact size, low profile: 23mm thickness
- . Cooling by free air convection, operating temperature -20~50°C
- . Long life and high reliability design with 2 years warranty

**Safety Standards**

- . IEC62368-1 CB report for worldwide use
- . UL62368-1 + CAN/CSA 62368-1 for USA and Canada
- . EN 62368-1:2014/A11:2017 for European Union
- . AS/NZS 62368.1:2018 for Australia and New Zealand
- . J62368-1 for Japan and GB4943.1 for China market.



**Product Description:**

It is a highly reliable and quality 50W open frame switching power supply solution with wide range 90-264Vac input and designed strictly according to the international safety standards. The entire series supplies different models with output voltages ranging between 3.3Vdc and 48Vdc that can satisfy the demands for various types of consumer electronic devices, household electronic device, communication device and so on. The 50W open frame type switching power supply solution is built-in full protections of over load / short circuit and over voltage with small and compact size and low profile of 23mm thickness. The entire series can operate at the ambient temperature between -20 and 50°C without any derating under air convection.

**Technical Specification**

Typ. Model	KLPS-50-3.3	KLPS-50-5	KLPS-50-12	KLPS-50-24	KLPS-50-48
<b>Output</b>					
Output Voltage	3.3VDC	5VDC	12VDC	24VDC	48VDC
Rated Current	10A	10A	4.2A	2.1A	1.1A
Current Range	0 ~ 10A	0 ~ 10A	0 ~ 4.2A	0 ~ 2.1A	0 ~ 1.1A
Output Power	33W Max.	50W Max.	50.4W Max.	50.4W Max.	52.8W Max.
Voltage Tolerance	±3%	±3%	±2%	±2%	±2%
Ripple & Noise	100mVp-p	100mVp-p	150mVp-p	200mVp-p	200mVp-p
<b>Input</b>					
Input voltage	90 - 264Vac or 120- 370Vdc				
Input Frequency	50-60Hz (When the input is AC)				
Input Current	1.2A Max. @ 100 ~240Vac 50/60Hz input				
Inrush Current	35A Max. @ 100 ~240Vac 50/60Hz input				
Efficiency (Typ.)	75%	81%	82%	85%	86%
Leakage Current	≤ 1mA @ full input range				
<b>Protections</b>					
Over current	122~160% rated output power. Auto-Recovery when the fault is removed				
Short Circuit	No damage. Auto-Recovery when the fault is removed				
Over temperature	Shut down o/p voltage, re-power on to recover				
<b>Environmental</b>					
Operation Temperature	-20°C to +50°C, 20%RH to 90%RH				
Storage Temp, Humidity	-45~ +85°C, 10%RH to 95%RH				
Operation Altitude	≤3000m @ full load and rated operating temperatures				
MTBF	≥50000Hrs @ full load and rated operating temperatures				
<b>Mechanical</b>					
Dimensions (L x W x H)	195.0 x 55.0 x 23.0mm (7.68 x 2.17 x 0.91 inch)				
Unit Weight	240g±15 grams				
Packing Information	48pcs/ Carton, carton dimensions:47*37*20cm, 12.5kgs/ Carton				

## TEST REPORT

**OUTPUT FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDIDTION	RESULT	VERDICT
1	RIPPLE & NOISE	100mVp-p (Max)	I/P:230VAC / O/P:FULL LOAD / Ta:25°C	44mVp-p	P
2	VOLTAGE TOLERANCE	-2% ~ +2% (Max)	I/P:90VAC~264VAC O/P:FULL~MIN. LOAD / Ta:25°C	-1% ~ +1% of output voltage	P
3	LINE REGULATION	-1% ~ +1% (Max)	I/P:90VAC ~264VAC O/P:FULL LOAD / Ta:25°C	-0.06% ~ +0.06% of output voltage	P
4	LOAD REGULATION	-1% ~ +1% (Max)	I/P:230VAC O/P:FULL ~MIN LOAD / Ta:25°C	-0.59% ~ +0.66% of output voltage	P
5	OVER/UNDERSHOOT	<±5%	I/P: 230VAC O/P:FULL LOAD / Ta:25°C	0.9%	P
6	SET UP TIME	500 mS (Max)	I/P:230VAC O/P:FULL LOAD / Ta:25°C	410 mS	P
7	RISE TIME	40 mS (Max)	I/P: 230VAC O/P:FULL LOAD / Ta:25°C	29 mS	P
8	HOLD UP TIME	12 mS (Min)	I/P: 115VAC O/P:FULL LOAD / Ta:25°C	16 mS	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDIDTION	RESULT	VERDICT
1	VOLTAGE RANGE	90VAC~264VAC	I/P:TESTING O/P:FULL LOAD / Ta:25°C	78V~264V	P
2	FREQUENCY RANGE	50HZ - 60HZ (Typ) NO DAMAGE OSC	I/P: 100VAC ~ 240VAC O/P:FULL~MIN LOAD / Ta:25°C	TEST: OK	P
3	EFFICIENCY	86% (Typ)	I/P:230VAC O/P:FULL LOAD / Ta:25°C	87.32%	P
4	AVERAGE EFFICIENCY	>84%	I/P:115/230VAC & O/P:25%、50%、75%、100% LOAD & Ta:25°C	84.64% (115VAC) 85.11% (230VAC)	P
5	AC CURRENT	1.2A (Max)	I/P:100VAC & O/P:FULL LOAD Ta:25°C	1.03A	P
6	INRUSH CURRENT	<35A COLD START	I/P: 230VAC / O/P:FULL LOAD Ta:25°C	24.8A	P
7	LEAKAGE CURRENT	< 1mA	I/P:240VAC & O/P:Min LOAD Ta:25°C	L-FG:0.422mA N-FG:0.412mA	P

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDIDTION	RESULT	VERDICT
1	OVER LOAD PROTECTION	122 ~ 160% (Typ)	I/P:230VAC & O/P:TESTING Ta:25°C	140.6% HICCUP MODE	P
2	OVER VOLTAGE PROTECTION	115 ~ 135% (Typ)	I/P:230VAC O/P:MIN LOAD & Ta:25°C	Hiccup mode ,recovers automatically after fault condition is removed	P
3	SHORT PROTECTION	SHORT OUTPUT 1 HOUR NO DAMAGE	I/P:264VAC O/P:FULL LOAD & Ta:25°C	NO DAMAGE HICCUP MODE	P

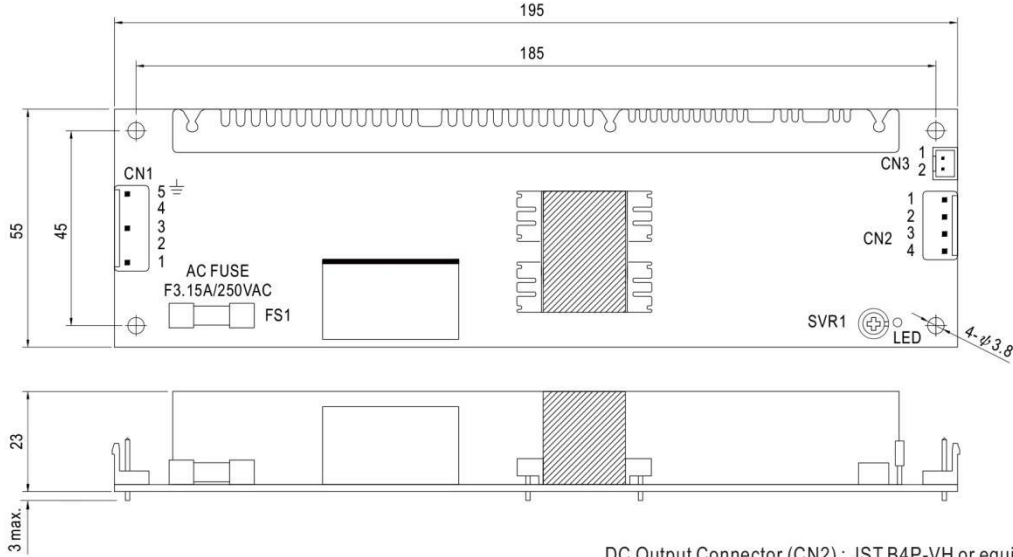
**SAFETY TEST & E.M.C TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDIDTION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 3KVAC/min I/P- FG: 2KVAC/min O/P-FG:0.5KVAC/min	I/P-O/P: 3.6 KVAC/min I/P-FG: 2.4KVAC/min O/P-FG: 0.6KVAC/min Ta:25°C	I/P-O/P:6.62mA I/P-FG: 6.12mA O/P-FG: 3.36mA 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: 9999MΩ I/P-FG: 9999MΩ O/P-FG:9999 MΩ NO DAMAGE	P
3	CONDUCTION	BS EN/EN55032(CISPR32), FCC PART 15 / CISPR22 CAN	I/P: 230 VAC (50HZ) O/P: FULL/50% LOAD Ta: 25°C	PASS Test by certified Lab	P
4	RADIATION	BS EN/EN55032(CISPR32), FCC PART 15 / CISPR22 CAN	I/P: 230 VAC (50HZ) O/P: FULL LOAD Ta: 25°C	PASS Test by certified Lab	P
5	SURGE	BS EN/EN61000-4-5 LIGHT INDUSTRY L-N: 1KV	I/P: 230 VAC/50HZ O/P: FULL LOAD Ta: 25°C	CRITERIA B	P
6	E.S.D	BS EN/EN61000-4-2 LIGHT INDUSTRY AIR: 8KV / Contact: 4KV	I/P: 230 VAC/50HZ O/P: FULL LOAD Ta: 25°C	CRITERIA B	P

TEST RESULT	TESTER	REVIEW	APPROVAL
<b>PASS</b>	<b>ZHU LI</b>	<b>WANG LW</b>	<b>ZHANG DL</b>

**Mechanical Specification**

Unit:mm



AC Input Connector (CN1) : JST B5P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	AC/L	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
2,4	No Pin		
3	AC/N		
5	FG $\perp$		

DC Output Connector (CN2) : JST B4P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1,2	-V	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
3,4	+V		

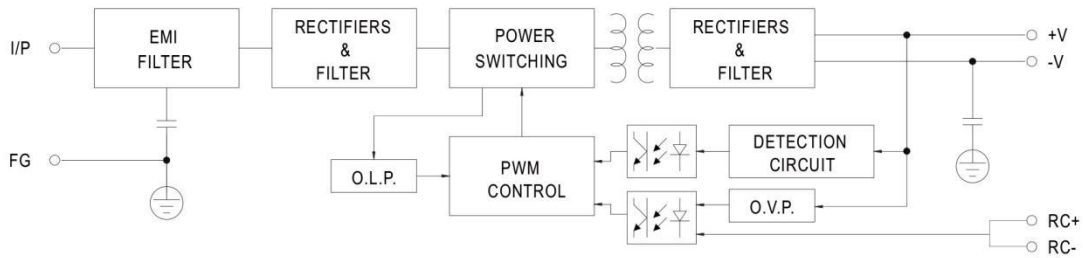
Remote ON/OFF Connector (CN3): JST B2B-XH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	RC+	JST XHP or equivalent	JST SXH-001T-P0.6 or equivalent
2	RC-		

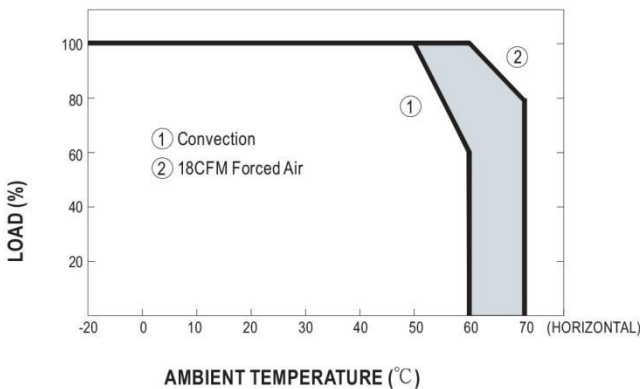
$\perp$  : Grounding Required  
CN1: Pin 5 is safety ground

**Block Diagram**

fosc : 60KHz



**Derating Curve**



**Static Characteristics (15V)**

