3W Ultra-compact Power Module HLK-PM01 230V AC to 12V/3W DC

220V AC to 12V DC, 250mA PCB Mounted Step-Down Power Supply Module

Description:

Product features:

1. Meet UL, CE requirements,
2. Ultra-thin, ultra-small
2. All voltage input (AC: 90 ~ 264V)
3. Low ripple and low noise
4. Output overload and short circuit protection
5. High efficiency, high power density
6. The product is designed to meet the requirements of EMC and Safety Test
7. Low power consumption, environmental protection, no-load loss <0.1W
8.100% load aging and testing

Environment Condition

Item Name	**Technical Criteria**	**Unit**
Operation Temperature	-20—+60	℃
Store Temperature	-40—+80	℃
Relative humidity	5—95	%
Cooling way	Cooling by radiation	
Atmospheric pressure	80—106	Kpa
Sea level elevation	≤2000	m
Vibration	Vibration coefficient 10~500Hz,2G10min./1cycle, 60min.each along X,Y,Z axes	

Electrical Characteristic

Input characteristics (test at room temperature 20 ℃).

Item Name	**Technical Criteria**	**Unit**
Rated input voltage	100-240	VAc
Input voltage range	90-264	VAc
Maximum input current	≤0.2	A
Input current surge	≤10	A
maximum input voltage	≤270	VAc
Enter slow start	≤50	mS
Input Low Voltage Efficiency	Vin=110VAc, Output full-load≥69	%
Input High Voltage Efficiency	Vin=220VAc, output full-load≥70	%
Long-term reliability	MTBF≥100, 000	h
Load rated output voltage	+5±0.1	VDc
Full rated output voltage	+5±0.2	VDc
Short-term maximum output current	≥1000	mA
The maximum output current for a long time	≥600	mA
Voltage Regulation	±0.2	%
Load Regulation	±0.5	%
Output ripple and noise (mVp-p)	≤50 Rated input voltage, full load. Using 20MHz of bandwidth, The load side 10uF and 0.1uF capacitor to be tested.	mV
Switch overshoot amplitude	(Rated input voltage and output load plus 10%)≤5	$\%V_O$
Output over-current protection	150-200% of the output maximum load	A
Output short circuit protection	Direct short circuit at the normal output, automatically resume normal operation after a short circuit removal	

Safety \Characteristics：

Products designed to meet UL, CE safety certification requirements.

- Safety and electromagnetic compatibility
- Designed with the input of 0.5A UL certified insurance;
- PCB board using double-sided copper clad plate production, material for the 94-V0 fire rating level;
- Safety standards: Compliance with UL1012, EN60950, UL60950
- Insulation voltage: I / P-O / P: 2500VAC
- Insulation resistance :I / PO / P> 100M Ohms / 500VDC 25 ℃ 70% RH
- Conduction and radiation :comply with EN55011, EN55022 (CISPR22)
- Electrostatic discharge :IEC / EN 61000-4-2 level 4 8kV / 15kV
- RF radiation Immunity: IEC / EN 61000-4-3 See Application Note

Temperature safety design

At room temperature, the capacitors of this power , the inner surface of the main converter maximum temperature does not exceed 90 ℃;

Shell maximum surface temperature does not exceed 60 ℃