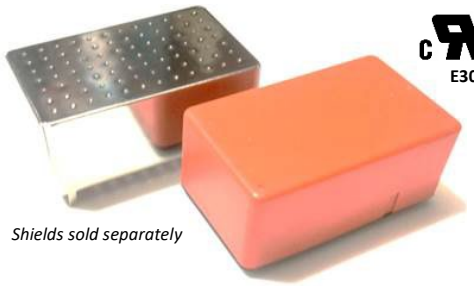
ZETTLER MAGNETICS
A ZETTLER GROUP COMPANY

HPI10SXX00E Series

10-Watt Ultra-Wide Input Power Modules

The HPI10 series of Plug & Play 10W Power Modules support input voltages from 90-528VAC with regulated outputs from 5VDC to 24VDC. The HPI10 series offer the industry's smallest footprint while meeting the requirements of UL 62368-1 safety standards and EMC requirements. With the option for 6-sided shielding, they are ideally suited for smart cities, building management systems, and other industrial IoT applications with wireless communications.



Shields sold separately

ORDERING CODE

HPI 10 S 05 00 E D

Series
HPI = High Performance Industrial Series

Output Power
10 = 10 watts

Output Type
S = Single output

First Output Voltage
05, 12, 15, 18, and 24 (Vdc) options

Second Output Voltage
n/a

Input Voltage Range
E = Extended (ultra-wide) input range for 100-480VAC circuits

Case Size
D = default size
R = reduced size (5V version only)

FEATURES

- Ultra-wide input range: 90-528VAC (or 120-745VDC)
- Wide operating temperature range: -40°C to +80°C
- Isolation voltage: 4000VAC
- Built-in over current/voltage and short-circuit protection
- Integrated EMI filter for EMC compliance
- Optional 6-sided shielding

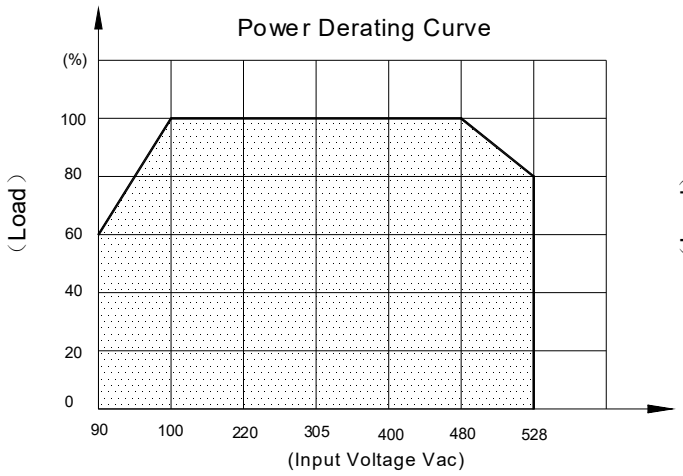
MODEL LIST

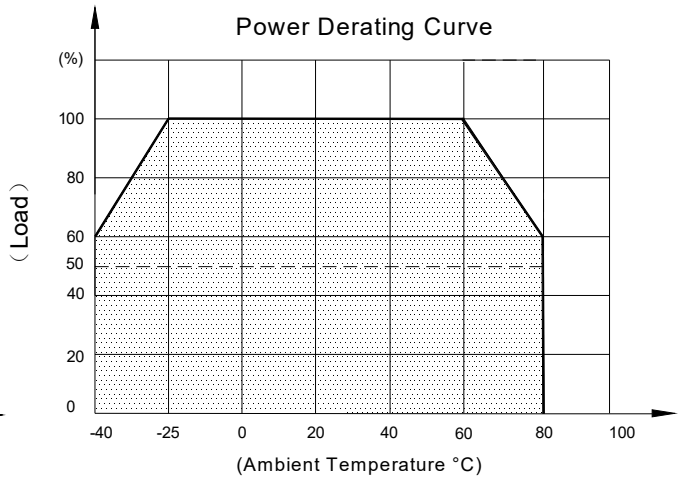
Part No.	Output Voltage	Output Current	Weight	Case Size (L x W x H)	Certificate
HPI10S0500ER	5 Vdc	2000 mA	61g	52.0 x 31.5 x 20.5	UL
HPI10S1200ED	12 Vdc	830 mA	88g	55.2 x 35.2 x 25.5	UL, CE, CB
HPI10S1500ED	15 Vdc	660 mA	88g		
HPI10S1800ED	18 Vdc	550 mA	88g		
HPI10S2400ED	24 Vdc	420 mA	88g		

ELECTRICAL SPECIFICATIONS

Model No.		HPI10SXX00E	
Input	Rated Voltage	100-480VAC & 120VDC-745VDC	
	Input Voltage Range	90-528VAC	
	Frequency (Hz)	47-63 Hz	
	Current (Full load)	100VAC	480VAC
		220mA	52mA
	Inrush Current (<500us)	20A	35A
	No Load Loss	0.5W Max	
	HOT PLUG	Unavailable	
Output	Voltage (V)	See model list	
	Current (mA) max.		
	Voltage Accuracy	±5%	
	Line Regulation	±5%	
	Load Regulation	±5%	
	Minimum Load (mA)	0	
	Ripple & Noise (mV)	Vout * 3% / 20MHz bandwidth (peak-to-peak value)	
	Efficiency (typ.)	80% at 230VAC	
	Set-up Time	3s	
	Hold up Time	15ms min	
Protection	Over Current Protection	Hiccup mode	
	Short Circuit Protection	Hiccup mode	
Environment	Operating Temperature	-40°C…+ 80°C (see Derating Curve) @Free air convection	
	Operating Humidity	10-90% RH	
	Storage Temperature	-40°C…+85°C	
	Storage Humidity	5-95% RH	
	Temperature Coefficient	±0.04%/°C (0~60°C)	
Physical	Case Material	Plastic (UL 94V-0)	
	Weight	See model list	
Safety & EMC	Dielectric Strength	I/P-O/P : 4000VAC	
	Safety Standards	UL/EN 62368-1 (Class II)	
	EMI	CISPR32/EN55032 CLASS B	
	EMS (Noise Immunity)	ESD ±4KV contact；±8KV Air EN 61000-4-2:2009 Criteria B SURGE ±2KV EN 61000-4-5 Criteria A EFT ±2KV EN 61000-4-4 Criteria A	
Reliability Requirement	MTBF	300KHrs Min @ 480VAC MIL-HDBK-217F（25℃）	
	Burn-In Test	The unit shall be burned in for 2~4 Hours under 480Vac input and DC with full load at 25℃	

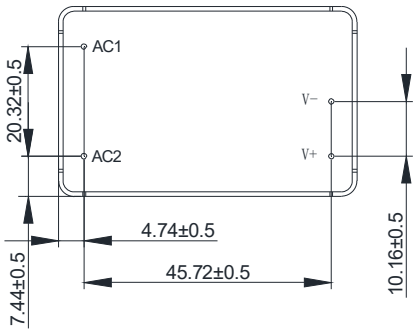
DERATING CURVES





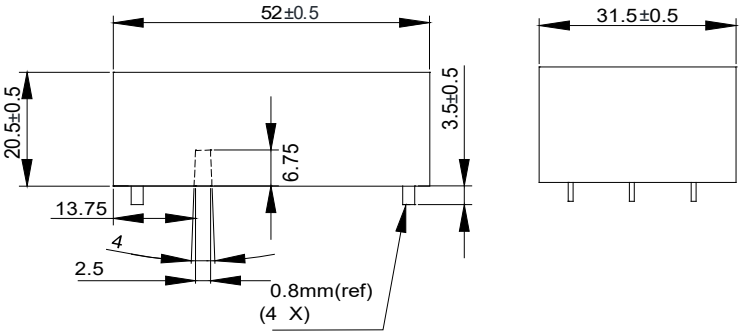
MECHANICAL SPECIFICATIONS – DEFAULT CASE SIZE

Side Views

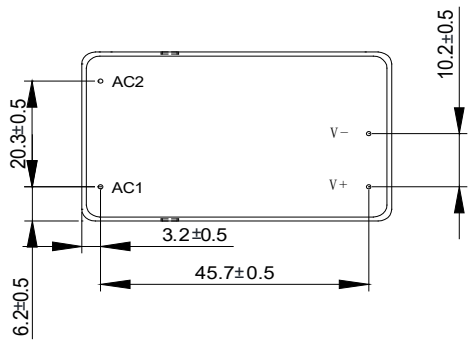


Bottom View

MECHANICAL SPECIFICATIONS – REDUCED CASE SIZE (available for 5Vdc only)

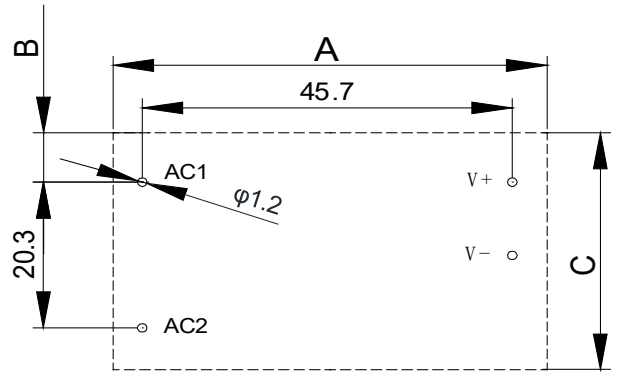


Side Views



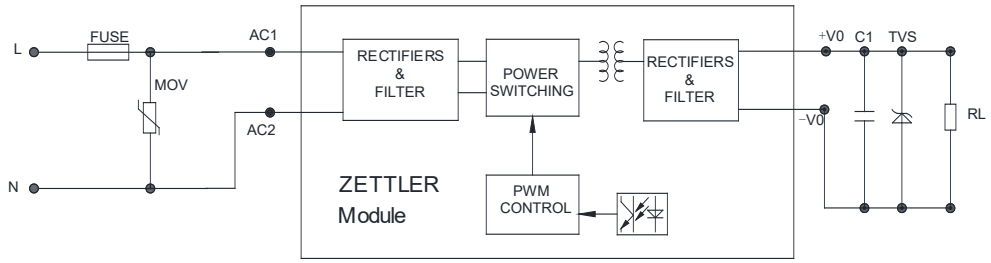
Bottom View

PCB LAYOUT



	Default (*ED)	Reduced (*ER)
A	56mm	53mm
B	7.85mm	6.55mm
C	36mm	32.3mm

TYPICAL APPLICATION SCHEMATIC

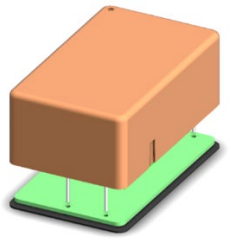


ITEM	MOV	FUSE
1~2W	14D911K	1A/600V
3~5W	14D911K	2A/600V
10~20W	14D911K	3.15A/600V

Note: External circuit components are only recommendations, customers should choose their own components and values according to their specific system application requirements.

SHIELDING

The base of HPI10 power modules integrate a shield plane allowing system designers to easily implement 6-sided shielding. An optional top shield can be added and bonded to digital ground (-VO) in order to minimize radiated noise from the power supply interfering with sensitive communications receivers.



Contact ZETTLER for bundling a shield with the HPI10 power module or to obtain 3D files. If designing your own shield, creepages and clearances around the AC input need to be considered.