



2019-V1.0-0115

Specifications

AC-DC Converter
ASQ05 Series, 2.5-5W

2019

PAIRUI ELECTRONICS

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AC-DC Converter, ASQ05 Series, 2.5-5W

Features

- Compact Size, High Power Density
- Universal Input Voltage Range: 85~264Vac/120~370Vdc
- Output Voltage Range: 3.3VDC~24VDC
- Low Standby Power Consumption<0.2W
- Better Energetic Efficiency: Meet Requirements of Energy Star and EC Code of Conduct
- Encapsulated Design and Same Footprint as EI30 Transformer
- Protections: Short Circuit, Over Temperature, Over Current



Electrical

Part Number	Nominal Input Voltage	Output Voltage	Output Power	Max. Output Current	Efficiency	Max. Ambient Temp.	Certificate
ASQ05020	85-265VAC	3.3V	2.5W 4.5W	750mA 1350mA	65%	70°C 50°C	UL, CE, VDE, ENEC
ASQ05021	85-265VAC	5V	2.5W 5W	500mA 900mA	68%	70°C 50°C	UL, CE, VDE, ENEC
ASQ05022	85-265VAC	9V	3.2W 5W	360mA 560mA	73%	70°C 50°C	UL, CE, VDE, ENEC
ASQ05023	85-265VAC	12V	3.2W 5W	270mA 420mA	75%	70°C 50°C	UL, CE, VDE, ENEC
ASQ05024	85-265VAC	15V	2.5W 5W	170mA 320mA	75%	70°C 50°C	UL, CE, VDE, ENEC
ASQ05025	85-265VAC	18V	3.2W 5W	180mA 280mA	78%	70°C 50°C	UL, CE, VDE, ENEC
ASQ05026	85-265VAC	24V	3.2W 5W	130mA 210mA	80%	70°C 50°C	UL, CE, VDE, ENEC
ASQ05027	85-265VAC	3.8V	4.5W	1180mA	66%	50°C	UL, CE, VDE, ENEC

INPUT

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Input voltage		85 120		265 370	Vac Vdc
Input frequency	Vin=85~265Vac	47		63	Hz
Input current	Full load, Vin=85~265Vac/120~370Vdc		0.2		A
Inrush current	Cold start, Vin=230Vac			15	A
Standby power	No load, rated output voltage			0.2	W

OUTPUT

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Output voltage accuracy	Rated input voltage, full load		±5		%
Line regulation	Vin from 85~265Vac or 120~370Vdc		±3		%
Load regulation	Vout from min. to max.		±5		%
Dynamic Response(Vout)	50%~100% load, 1A/us, 1Khz, 50% duty ratio			110	%
Turn-on delay time	Rated input voltage, full load, cold start			3	S
Turn-on rise time	Rated input voltage, full load			50	ms
Hold up time	Rated input voltage, full load	5			ms
Overshoot	Rated input voltage, full load			10	%
Undershoot	Rated input voltage, full load			10	%
Ripple	Refer to below note		200		mVp-p

NOTE: The values are measured at 20MHz of bandwidth by using a 12'' twisted pair-wire terminated with 0.1uF & 47uF parallel capacitor under ambient temperature 25°C at rated input voltage and rated load.

Protection

Short circuit	In hiccup mode, it will recover automatically after fault condition is removed; No excessive heat, odor, or plastic deformation shall occur with no safety hazard
Over temperature	130-150°C, shut off output voltage, it will recover automatically after the temperature turn to normal
Over current	When output current exceeds the rated range, it will be protected automatically, and will recover automatically after fault condition is removed

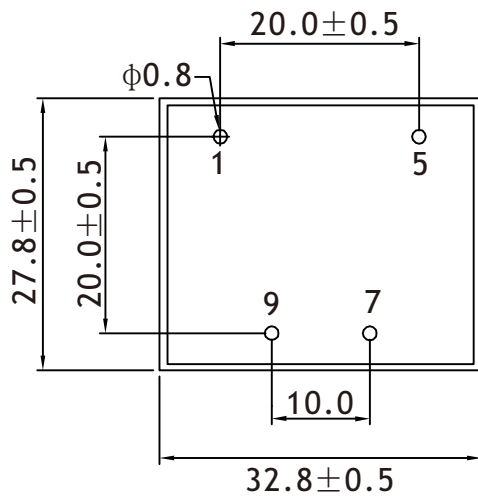
Environment

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Ambient operating temperature	Startup at rated voltage	-25		/	°C
Operating relative humidity	Non condensing	10		90	%
Storage temperature	Humidity 5 ~ 95% RH	-40		+85	°C
MTBF	Full load, 220Vac input, 25°C ambient temperature	500			Khrs
Dimension(LxWxH)	32.8 x 27.8 x 21.8mm, pin length 4mm				
Weight	30.5g				

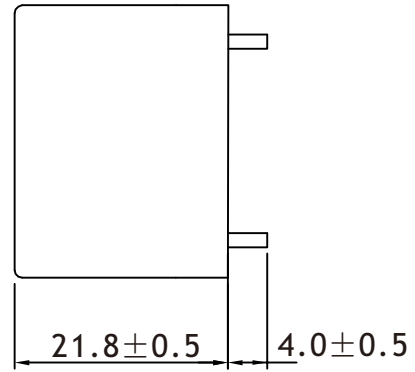
Safety/EMC

Safety	Design refer to UL/CUL60950, UL/CUL62368, IEC/EN60950, IEC/EN60335, IEC/EN61558-2-16, IEC/EN62368, CE, VDE, ENEC mark
Withstand voltage	I/P-O/P: 4KVAC, 5mA, 3s
EMI	Design refer to EN55032, EN55014, FCC part15, ClassB under 3dB margin
EMS	Design refer to EN61000-3-2:2014, ClassA EN61000-3-3:2013 IEC61000-4-2:2008 Contact Discharge±4KV, Air Discharge±8KV IEC61000-4-3:2006+A1:2007+A2:2010 IEC61000-4-4:2012, ±1KV IEC61000-4-5:2014, ±1KV IEC61000-4-6:2013 IEC61000-4-11:2004

Dimension & Pinout



View from pins side



Unit: mm

- PRI:**
 Pins 1-5: AC or DC Input
SEC:
 Pin 7: DC Output +V
 Pin 9: DC Output 0V

Electrical Curve

