

Features

1. Wide input range (85-305VAC,100-430VDC)
2. 32.5*20.5*15.0mm compact size
3. No load power consumption<0.05W
4. Operating temperature range: -40°C to +80°C
5. 3000V isolation voltage
6. 100% high temperature burn-in and function test
7. 3 years warranty



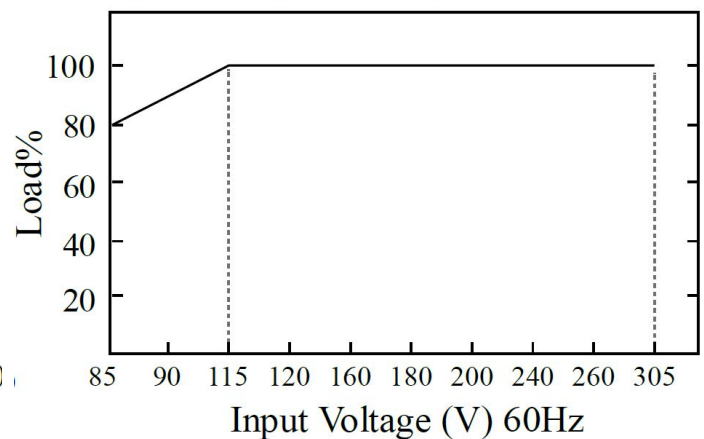
3 years
Warranty

Selection Guide

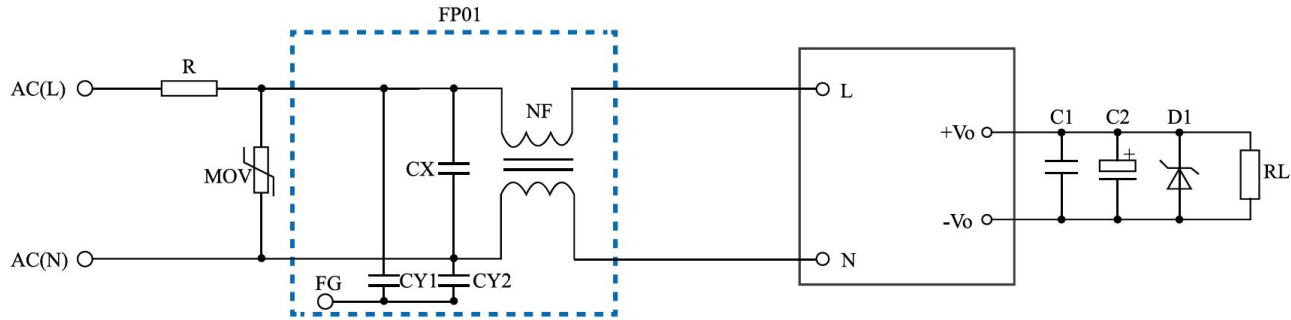
Model	Input Voltage	Rated Power(W)	Output Voltage (V)	Output Current (mA)	Ripple & Noise (mVp-p)	Efficiency (%)
QM02-23B05-M	85-305VAC 100-430VDC	2	5	400	150	70
QM02-23B09-M		2	9	222	150	73
QM02-23B12-M		2	12	167	150	76
QM02-23B15-M		2	15	133	150	76
QM02-23B24-M		2	24	83	150	81

Specifications

OUTPUT	Voltage Tolerance	±3.0%	5V: ±5.0%
	Line Regulation	±1.0%	
	Load Regulation	±1.0%	
	Setup, Rise Time (Typ.)	1000ms, 20ms/230VAC 2000ms, 50ms/115VAC at full load	
	Hold Up Time (Typ.)	40ms/230VAC 15ms/115VAC at full load	
	Ripple & Noise (Max.) (Note 2.)	200mV	
INPUT	Voltage Range	85-305VAC 100-430VDC	
	Frequency Range	47-440Hz	
	Current (Typ.)	55mA/115VAC 34mA/230VAC	
	Inrush Current (Typ.)	20A/230VAC	
	External Fuse Recommended	10Ω/1W	
	Leakage Current (Typ.)	<0.1mA/265VAC/50Hz	
ENVIRONMENT	Working Temp.	-40°C to +80°C (Refer to "Derating curve")	
	Working Humidity	85%RH max	
	Storage Temp., Humidity	-40°C to +85°C, 10-95%RH	
	Temp. Coefficient	0.03%/ (0-50°C)	
	Vibration	10-500Hz, 2G, 10min./1cycle, 60min.each along X, Y, Z axes	
SAFETY & EMC (NOTE 3.)	Safety Standards	EN62368, IEC62368, UL62368	
	Isolation Voltage	I/P-O/P: 3000VAC	
	Isolation Resistance	I/P-O/P: >100M Ohms/500VDC 25°C 70% RH	
	EMC Emission & Immunity	EN55011, EN55032 (CISPR32) CLASS B (Refer to "Typical Application")	
	ESD	IEC/EN 61000-4-2 level 4 Contact ±8kV/Air ±15kV (Refer to "Typical Application")	
	RF	IEC/EN 61000-4-3 (Refer to "Typical Application")	
	EFT	IEC/EN 61000-4-4 level 4 4kV (Refer to "Typical Application")	
	Surge	IEC/EN 61000-4-5 level 3 1kV	
OTHERS	MTBF	300K hrs min. MIL-HDBK-217F (25°C)	
	Dimension	ZPR02-SXX: 32.5*20.5*15.0mm ZPR02-SXXA/D: 90.0*35.0*29.5mm	
	Weight	15g/PCS 233g/Tube 17.33kg/Carton	
	Package	13PCS/Tube 78Tube/Carton	
	Carton Size	360*300*250mm	
NOTE	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 and connected according to "typical application". Element parameters shall be the same as those measured in the suggestion form.		
	3. The power supply is considered as an independent unit, but the final equipment still need to re-confirm that the whole system complies with the EMC directives.		



Typical Application



NOTE:

1. Output filter capacitor C2 is electrolytic capacitor. It is recommended to use high-frequency low-resistance electrolytic capacitor. Refer to technical specifications provided by manufacturers for capacity and current. C1 is to remove high frequency noise.
2. The dotted box in the figure shows the EMC filter connected to meet the higher EMC requirements. It can be omitted in general applications.
3. Our company has formed a filter with L1, CX and NF in the dashed box for customers to use. The model is FP01.

List Of Components

Position Model	R	MOV	FP01	C1	C2	D1
QM02-23B05-M	10Ω/1W	Varistors 14D561K	Filter Type FP01	104K/50V (Ceramic capacitor)	220uF-1000uF/16V	P6KE7.5A
QM02-23B09-M					150uF-680uF/16V	P6KE15A
QM02-23B12-M					100uF-470uF/16V	P6KE16A
QM02-23B15-M					100uF-330uF/25V	P6KE20A
QM02-23B24-M					100uF-220uF/35V	P6KE30A