

Medical Power Supply

MKP150 Series

MEGMEET
www.megmeet.com

150W AC-DC OPEN FRAME



FEATURES

- Medical 60601-1 Safety Approvals
- Small 4.1" x 2" x 1" Package
- Class I Installation
- High Power Density
- High Efficiency up to 94%
- Universal AC Input with Active PFC
- 3-Year Warranty



GENERAL DESCRIPTION

MKP150 series is an AC-DC converter using PFC and LLC integrated chip solution, efficiency can reach 94%. With a full voltage range input and Class I installation structure, the model meets all medical compliance requirements including 4th Edition EMC and Level VI efficiency.

APPLICATIONS



MODELS & RATINGS

MODELS	OUTPUT VOLTAGE	OUTPUT CURRENT	PEAK CURRENT	TOTAL REGULATION
MKP150-12A	12V	12.5A	16.67A	±3%
MKP150-15A	15V	10A	13.33A	±3%
MKP150-18A	18V	8.33A	11.11A	±3%
MKP150-19A	19V	7.89A	10.52A	±3%
MKP150-24A	24V	6.25A	8.33A	±3%

NOTES

- 1). Derate output power by 2% per VAC for input voltage<90vac
- 2). To ensure EMC performance, all mounting holes shall be connected to metal plate
- 3). The outer diameter of the screw post of the mounting hole on the metal plate should not exceed 5.5mm

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MKP150	-	xyy	-	abc
OPEN FRAME 150 Watts		OUTPUT VOLTAGE 12: 12V y=A:Product grounding		CUSTOMER CODE OR OTHERS

INPUT ELECTRICAL CHARACTERISTICS

Normal voltage range	100-240VAC
Input Voltage Range	80~264Vac (Universal)
Input Frequency	47~63Hz
Input Current	2.2A _{RMS} @100VAC/ 1.0A _{RMS} @240VAC
Inrush Current	<120A @ 230 VAC, Cold start
Input Protection	Internal T3.15A/250V Fuse (Line&Neutral)
Power Factor	0.98 min.@100VAC 60Hz Full Load 0.92 min.@240VAC 50Hz Full Load

Standby Power	≤0.15W@230Vac/50Hz
Earth Leakage Current(NC)	<150μA @ 264VAC(Class I)
Earth Leakage Current (SFC)	<300μA @ 264VAC(Class I)
Touch Current (NC)	<100μA @ 264VAC
Touch Current (SFC)	<200μA @ 264VAC
Patient Leakage Current	<100uA @ 264VAC

OUTPUT ELECTRICAL CHARACTERISTICS

Total Regulation	±3%
Line Regulation	±0.5%
Load Regulation	±2%
Minimum Load	None
Transient Response	±5%,5%-50% or 50%-100%, Slew Rate 1A/μS

Ripple & Noise	1% pk-pk typical(12V 200mV max)
Turn-On Delay	2 seconds Max @ 100VAC
Hold-Up Time	>20mS @115VAC Full Load

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SAFETY & EMC

Safety	IEC60601-1, 3.1 Edition
	ANSI / AAMI ES60601-1
	CSA C22.2 No. 60601-1
	CE Mark (LVD)
EMC	IEC60601-1-2 4th Edition
Conduction Emission	EN55011, FCC Part J15, Class B
Radiated Emission	EN55011, FCC Part J15, Class B
Voltage Fluctuation & Flicker	EN61000-3-3
Harmonic Distortion	EN61000-3-2 Class A
ESD	EN61000-4-2, 8kV contact, 15kV Air Discharge
EFT	EN61000-4-4, Level 3, Criterion A
SURGE	EN61000-4-5 Installation Class 3, Criterion A
DIP ⁽¹⁾	EN61000-4-11
Conducted Immunity	EN61000-4-6, 3VRMS (6Vrms for ISM band), Criterion A
Radiated Immunity	EN61000-4-3, 10V/m, Criterion A
Magnetic Fields Immunity	EN61000-4-8, 30A/m, Criterion A

PROTECTION

Over shoot	5%
Over-Voltage	110-140% Latching, Recycle input to recovery
Over-Temperature	Latching, Recycle input to recovery
Over-Load	Hiccup, Auto-Recovery
Short Circuit	Hiccup, Auto-Recovery
Input Brown Out	AC On Voltage ≤ 80Vac
	AC Off Voltage ≥ 55Vac
	Minimum Hysteresis 5Vac

RELIABILITY & ENVIRONMENTAL REQUIREMENTS

Operating Temperature	0°C to +40°C
Derating	1.67%/°C, > 40°C, up to 70°C max, for convection cooling;
Storage Temperature	-40°C to +80°C
Operating Humidity	10% to 90% (non-condensing)
Storage Humidity	10% to 90% (non-condensing)
Operating Altitude	-60 to 4000m
Storage Altitude	up to 5000m
Shock	294 m/s ² (30G), 10ms, 6 times on each of 3axes
Vibration	10-500 Hz, 19.6 m/s ² (2G), 20 mins on 3 axes

DIMENSION & PACKING

Efficiency	92%/94%min @ 115/230 VAC, Full Load
Isolation	4000 VAC – Input to Output; 2xMOPP 1500 VAC – Input to Ground; 1xMOPP 1500 VAC – Output to Ground; 1xMOPP
MTBF	500K Hours, Mil-217F @ 25 °C, Full Load
Weight	200g ref
Dimensions	104.14 x 50.8 x 25.4mm
	4.1 x 2 x 1" inch

(1) Power supply DIP voltage sag requirements table:

Drop	Time	Criterion
0%Ut	0.5cycle	A
0%Ut	1cycle	B
70%Ut	25/30 cycles	B
0%Ut	300cycles	C

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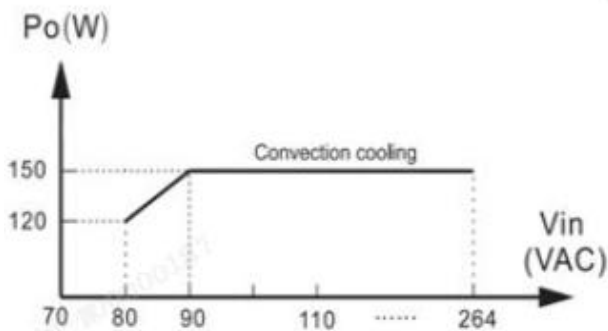
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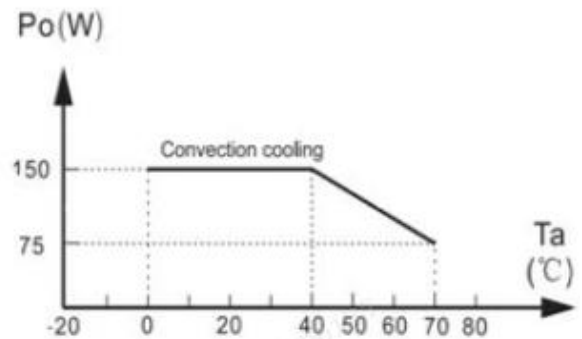
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DERATING CURVE

OUTPUT POWER VS INPUT VOLTAGE



OUTPUT POWER VS AMBIENT TEMPERATURE



MECHANICAL AND CONNECTOR INFORMATION

AC INPUT

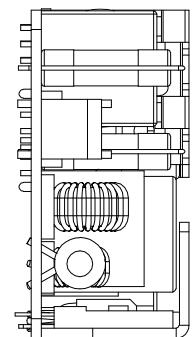
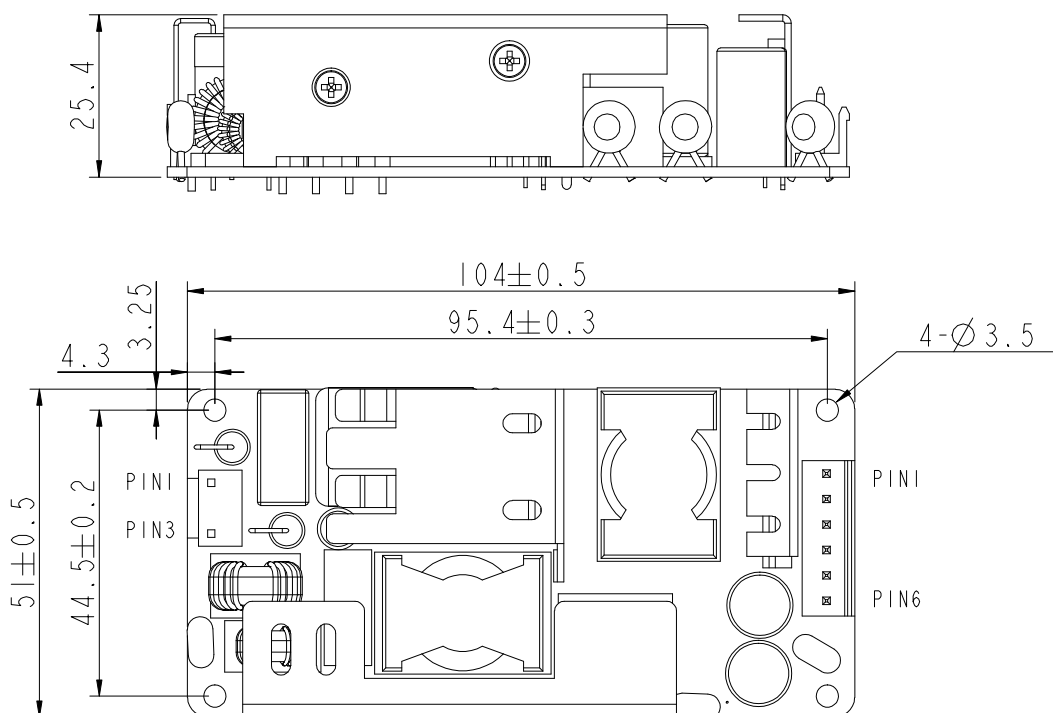
JST P/N: B3P2-VH (LF)(SN)
Mates With: JST VHR-3N

Pin 1	Neutral
Pin 3	Line

DC OUTPUT

JST P/N: B6P-VH(LF)(SN)
Mates With: JST VHR-6N

Pin 1, 2, 3	Output VDC
Pin 4, 5, 6	Return



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GLOBAL OPERATION AND SERVICE



MANUFACTURER

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TECHNICAL SUPPORT

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