MCHQ150VxA series

150W LED Switching Power Supply (CV+CC) with output voltage and current level adjustment

■ **Features:**

- Universal AC input / Full range (Max. 305VAC)
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- Built-in active PFC function
- IP65 design for indoor and outdoor appliances
- Compliance to worldwide regulations for lighting
- Output voltage and constant current level adjustable by internal potentiometers

(for 12V, 24V) (for 12V, 24V) IP65 SELV

ELECTRICAL SPECIFICATION

MODEL	MCHQ150V12A	MCHQ150V15A	MCHQ150V24A	MCHQ150V36A	MCHQ150V48A
OUTPUT					
Rated Voltage	12V	15V	24V	36V	48V
Constant Current Region [2]	7.2 ÷ 12V	9 ÷ 15V	14.4 ÷ 24V	21.6 ÷ 36V	28.8 ÷ 48V
Rated Current	12.5A	10A	6.3A	4.2A	3.2A
Rated Power	150W	150W	151.2W	151.2W	153.6W
No Output Voltage (max.)	15V	20V	30V	44V	53V
Voltage Adjustment Range – Vadj potentiometer	10.5 ÷ 13.5V	13.5 ÷ 17V	22 ÷ 27V	33 ÷ 40V	43 ÷ 53V
Current Adjustment Range – Iadj potentiometer	7.5 ÷ 12.5A	6 ÷ 10A	3.8 ÷ 6.3A	2.5 ÷ 4.2A	1.9 ÷ 3.2A
Line Regulation	± 1%				
Load Regulation	± 1%				
Voltage Tolerance [3]	± 3%				
Current Tolerance [3]	± 5%				
Ripple & Noise (max.) [4]	500mV$_{P-P}$	600mV$_{P-P}$	600mV$_{P-P}$	800mV$_{P-P}$	1000mV$_{P-P}$
Setup, Rise, Holdup time [5]	500ms, 30ms, 30ms				
INPUT					
Voltage Range	90 ÷ 305VAC				
Frequency Range	47 ÷ 63Hz				
Power Factor (typ.)	PF > 0.98 / 115VAC; PF > 0.95 / 230VAC at full load				
Efficiency (typ.)	91%	92%	93%	93%	93%
AC current (typ.)	2.0A / 115VAC; 0.8A / 230VAC				
Inrush current (max.)	45A / 230VAC(25°C)				

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PROTECTIONS					
Over Current	Range: 110 ÷ 160%				
	Type: constant current limiting to 60% rated voltage next hiccup mode. Recovers automatically after fault condition is removed.				
Short Circuit	Type: hiccup mode. Recovers automatically after fault condition is removed.				
Over Voltage	Max. 18V	Max. 25V	Max. 35V	Max. 50V	Max. 65V
	Type: shut down output voltage. Re-power on to recovery.				
Over Temperature	Range: 110°C ± 10°C				
	Type: shut down output voltage. Auto-recovery after temperature goes down.				

WORKING ENVIRONMENT	
Working Temperature	-40°C ÷ 70°C (refer to Derating Curve)
Working Humidity	15 ÷ 95% RH non-condensing
Storage Temperature and Humidity	-40°C ÷ 80°C, 10 ÷ 95% RH non-condensing
Temperature Coefficient	± 0.05% / °C (-10°C ÷ 45°C)
Vibration	10 ÷ 500Hz, 5G, 10min / cycle, period 30min. each along X, Y, Z axes

SAFETY AND EMC REGULATIONS	
Safet Standards	Compliance to EN61347-1, EN61347-2-13
Withstand Voltage	IN/OUT: 5.3kVDC/1min
Isolation Resistance	IN/OUT; IN/GND; OUT/GND: 50MΩ/500VDC/25°C/70%
EMC Emission	Compliance to EN55015
EMC Immunity	Compliance to EN61547; EN61000-4-2, -3, -4, -5, -6, -8, -11; EN55024
Harmonic Current	Compliance to EN61000-3-3; EN61000-3-2 class C (≥ 100% load)

OTHERS	
MTBF	225 000h MIL-HDBK-217F (25°C)
Dimensions	221 x 61.5 x 36.5mm (L x W x H)
Weight and Packing	0.9kg; 15pcs./box; box weight and dimensions: 13.8kg, 27.5 x 30 x 27cm

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Constant current operation region is within announced range. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.
3. Tolerance incudes set up tolerance, line regulation and load regulation.
4. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µF i 47µF parallel capacitor.
5. Setup and rise time is measured from 0 to 90% rated output voltage.
6.Power supply is considered as component not indented to apply by end-user. Power supply meets safety and EMC standards however the final equipment with power supply must be re-quality to comply with EMC Directives.

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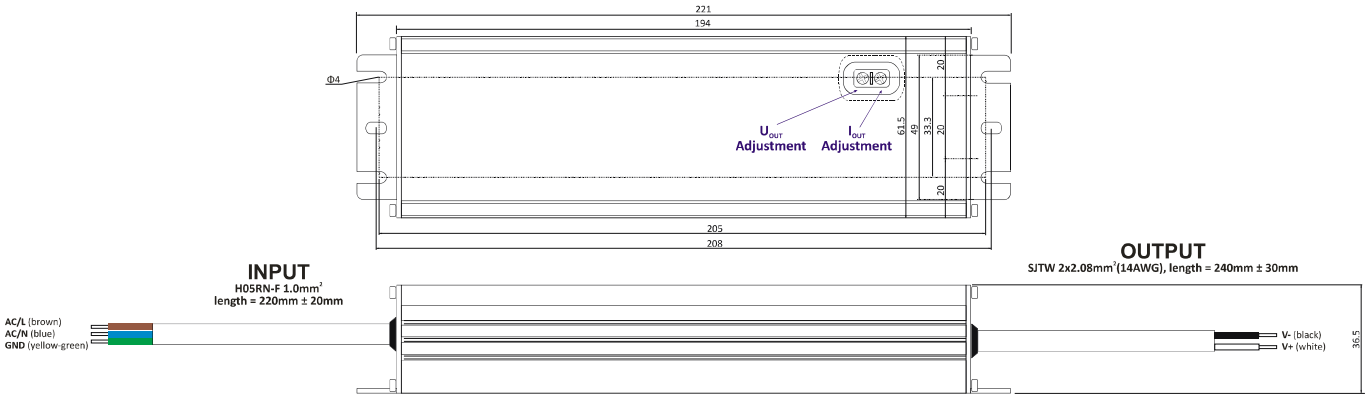
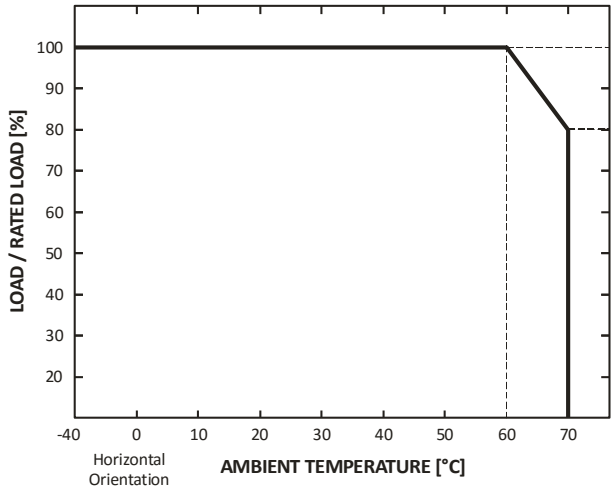
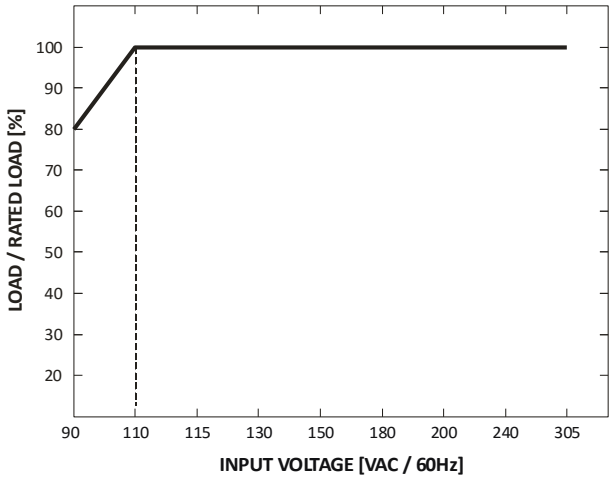
MECHANICAL SPECIFICATION



DERATING CURVE



STATIC CHARACTERISTIC



CONSTANT VOLTAGE + CONSTANT CURRENT MODE OPERATION