THIS SERIES IS NOT recommended for new design-ins and this series is discontinued

Recommended alternative: 50ACPE_4 series

Please click here for the datasheet.

50ACP_S series

50W - Single Output AC-DC Converter - Universal Input - Isolated & Regulated

AC-DC Converter 50 Watt

- High efficiency up to 88.5%
- Universal AC input range (90~264VAC)
- Withstand 300VA surge input for 5 sec.
- Over voltage protection (OVP)
- Over load protection (OLP)
- Short circuit protection (SCP)
- Wide operating ambient temperature (-25°C~70°C)
- Operating altitude up to 5000M
- 100% full load burn-in test
- Easy assembling from top side
- PCB soldering side with conformal coating

The 50ACP_S series features standard rail mounting, energy efficiency and is highly cost-effective. The series offers stability and high noise immunity especially for industrial control equipment, machinery and other demanding environments for industrial equipment. This converter offers a compact and light weight design with and standard rail installation (35mm). Furthermore this series offers Easy Fuse Tripping due and a built-in DC OK relay contact. The converter can be installed on TS-35/7.5 or TS-35/15.

SHORT CIRCUIT PROTECTED

c UL us

UL-60950-1 (E347551)

Common specifications

Short circut protection:	Long-term mode, automatic recovery
Temperature rise at full load:	40°C MAX
Cooling:	Free air convection
Operation temperature range:	-25°C~+70°C
Storage temperature range:	-40°C ~+85°C
Storage humidity range:	< 95%
Temperature coefficient:	0.03%/°C MAX
MTBF (using MIL-HDBK-217F):	+25°C >200,000 hours
Safety standards:	UL60950-1 2nd Ed; IEC 60950-1:2005 (2nd Ed); EN60950-1:2006
Case material:	Heat-resistant Plastic (UL94-V0) and metal
Dimensions (L*W*H):	99×82×35mm
Weight:	320g

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Withstand voltage*	• Primary-Sec.: 10mA • Primary-PG: 10mA • Secondary-PG: 10mA	3000 1500 500			VAC
Isolation resistance		100			MΩ

* Input-Output, tested for 1 minute, 500VDC and leakage current less than 1mA

Protection specifications

Over-load protection	•5V: 8.4~12A •12V: 4.41~6.3A •15V: 3.57~5.1A •24V: 2.31~3.3A •48V: 1.155~1.65A	Protection type: 5V is hiccup mode, rest are constant power, auto recovery
Over-voltage protection	•5V: 5.75~7.5V •12V: 13.8~18V •15V: 17.25~22.5V •24V: 27.6~36V •48V: 55.2~72V	Protection type: constant voltage, auto recovery

Note:

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.

Input specifications

Input voltage range		88~264VAC, 127~370VDC
Input frequency		47~63Hz
AC current		1.3A (max)
Inrush current	Cold start, 230VAC	45A (max)
Leakage current (input 264Vac, 63Hz)	Input—output: <0.25mA Input—PG: <3.5mA	

Output specifications

Item	Test conditions	Min	Typ	Max	Units
Output voltage accuracy	Full load			±3	%
Voltage adjustment range	•5V: 4.75~5.5V •12V: 11.4~13.2V •15V: 14.25~15V •24V: 22.8~26.4V •48V: 45.6~52.8V				
Line regulation	Vin= min. to max. at full load			±0.5	%
Load regulation	0% to 100% load			±1	%
Set-up time	@230VAC input, full load			1.5	s
Hold-up time (full load)	@230VAC input	50			ms
Overshoot and undershoot				5	%
Switching frequency			100		KHz

* Measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 uF & 10uF parallel capacitor.

Example:
50ACP_24S

50 = 50Watt
AC = AC-DC
P = series
24 = 24 Vout
S = single output

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50ACP_S series

50W - Single Output AC-DC Converter - Universal Input - Isolated & Regulated

EMC specifications	
EMC / Emission	Compliance to EN55022 Class B / FCC Part15 Class B
EMC / Immunity	Compliance to EN61000-4-2, -3, -4, -5, -6, -8, -11; heavy industry level

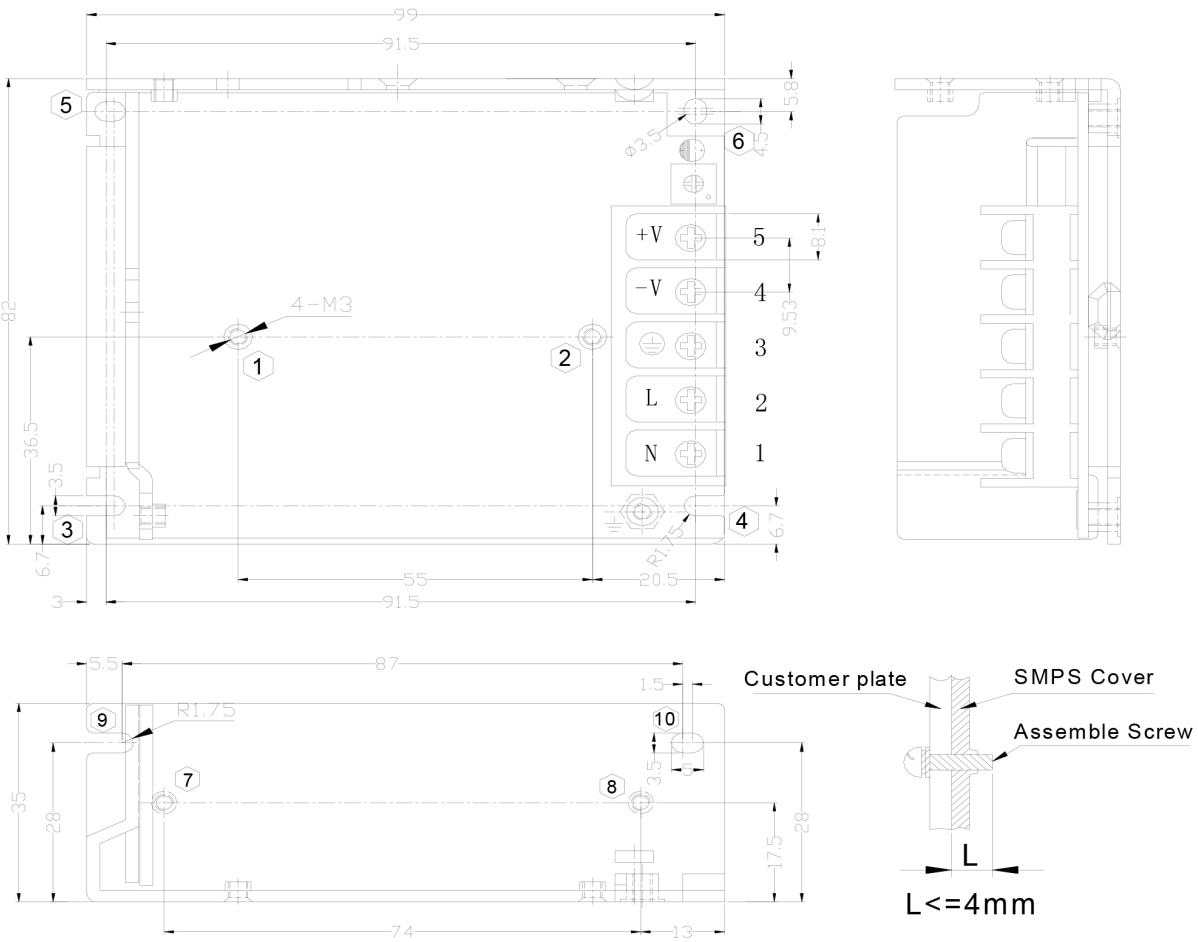
The power supply is considered as a component which will be installed into a final equipment.
The final equipment must be re-confirmed that it still meets EMC directives.

Approval	Model	Power [W]	Output [Vo, VDC]	Rated Current [A]	Current Range [A]	Ripple&Noise* [mV, typ] 0~70°C	-25~0°C	Efficiency [%, typ] 230VAC	115VAC
UL	50ACP_05S	50	5	8	0~8	80	80	79	80
UL	50ACP_12S	50	12	4.2	0~4.2	120	200	82.5	84.5
UL	50ACP_15S	50	15	3.4	0~3.4	120	200	83.5	85.5
UL	50ACP_24S	50	24	2.2	0~2.2	200	300	85	87
UL	50ACP_48S	50	48	1.12	0~1.12	200	500	86.5	88.5

Measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 uF & 10uF parallel capacitor.

Mechanical dimensions

Unit: mm



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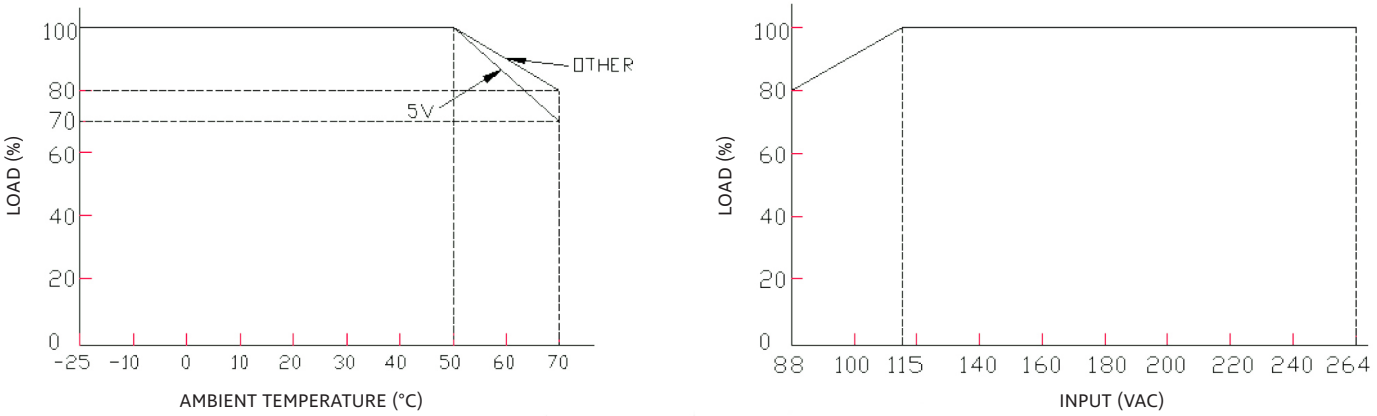
Typical characteristics

Derating Curves



Functional block diagram

Functional diagram