

MAC10 Series



10Watts Single outputs & Dual output AC-DC Power Module

Features

- Switching power module for PCB mounting
- Fully encapsulated plastic case
- Universal input range 85~264VAC, 47~440Hz
- Protections: Short circuit/ Overload/ Over voltage
- No load power consumption<0.5W
- 100% full load burn in test
- Isolation class II
- IEC60601-1/EN60601-1 medical safety approved
- CE,UL approval
- 3 years product warranty
- Ultra-miniature size, light weight
- High reliability



ALL SPECIFICATIONS ARE ON 25°C, NOMINAL INPUT AND MAXIMUM OUTPUT CURRENT UNLESS OTHERWISE NOTED.
The power supply shall be installed and operated according the following specification.

OUTPUT SPECIFICATIONS	
Output Voltage	3.3, 5, 12, 15, 24, ±5, ±12, ±15
Rated Current	See Table
Current Range	See Table
Voltage Tolerance	±2%
Ripple & Noise (max.) (20 MHz bandwidth)	See Table
Line Regulation	See Table
Load Regulation (0% to 100%)	See Table
Cross Regulation (Dual Output) (1)	±5% max
Hold up Time(Typ.)	24ms/115Vac min at full load
Setup Time	<1000ms/230Vac at full load
Rise Time	<20ms/230Vac at full load
Maximum Capacitive Load	1000~28000uF depending on model

INPUT SPECIFICATIONS	
Input Voltage Range	100-240Vac (85-264Vac, 120-370Vdc)
Input Frequency	47-440Hz
Input Current (Full Load)	0.25A max(100V)/0.15A max(240V)
Inrush Current (Tye.)	25A max(115V)/45A max(230V)
Efficiency(Typ.)	See Table
Leakage Current	0.1mA max
Input Dissipation (No Load)	<0.5W(Nom)

PROTECTION	
Over Power Protection	Hiccup technique, auto-recovery
Over Voltage Protection	Zener diode clamp
Short Circuit Protection	Auto- recovery

PHYSICAL SPECIFICATIONS	
Case Material	Plastic resin+Fiberglass (UL94V-0 rated)
Pin Material	1.0mm Brass Solder-coated
Potting Material	Epoxy (UL94V-0 rated)
Weight	130.50g
Dimensions	70(L)"x50(W)"x22.7(H)"mm

SAFETY & EMC	
EMI Conduction & Radiation	
EN55011(CISPR11)	Class B
EN55022 (CISPR22)	Class B
Harmonic Current	
EN61000-3-2,-3	
EMS Immunity	medical level, criteria A
EN61000-4-2,3,4,5,6,8,11	
ENV50204	
EN55024	
EN60601-1-2	
EN61204-3	
Withstand Voltage (Input to Output)	4000Vac
Isolation Resistance	100M Ohm/500Vdc
Safety Standards	UL60950-1, TUV EN60601-1, IEC60601-1

ENVIRONMENT	
Operating Temperature	+50°C(Operating Starts -40°C)
Storage/Conveyance Temperature	-40°C ~ +85°C
Operating/Conveyance Humidity	10 ~ 95% RH
Cooling	Free air convection
Temp Coefficient	0.03%/°C
Reliability Calculated MTBF(MIL-HDBK-217 F)	>780,000 h @ 25°C

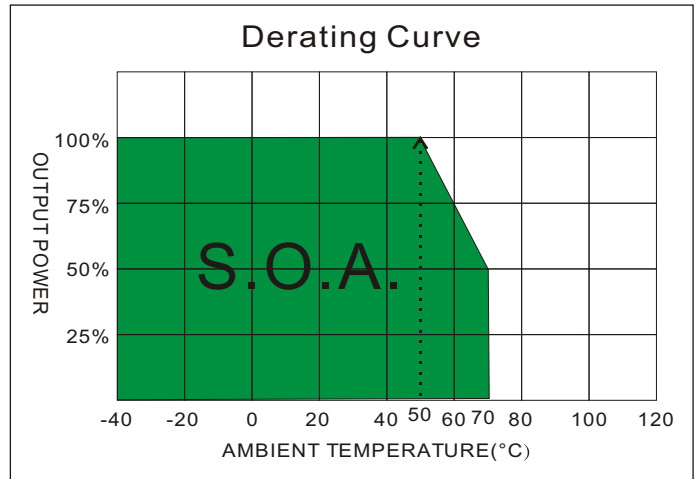
OTHERS	
Topology	Fixed frequency flyback circuit

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PART NUMBER STRUCTURE

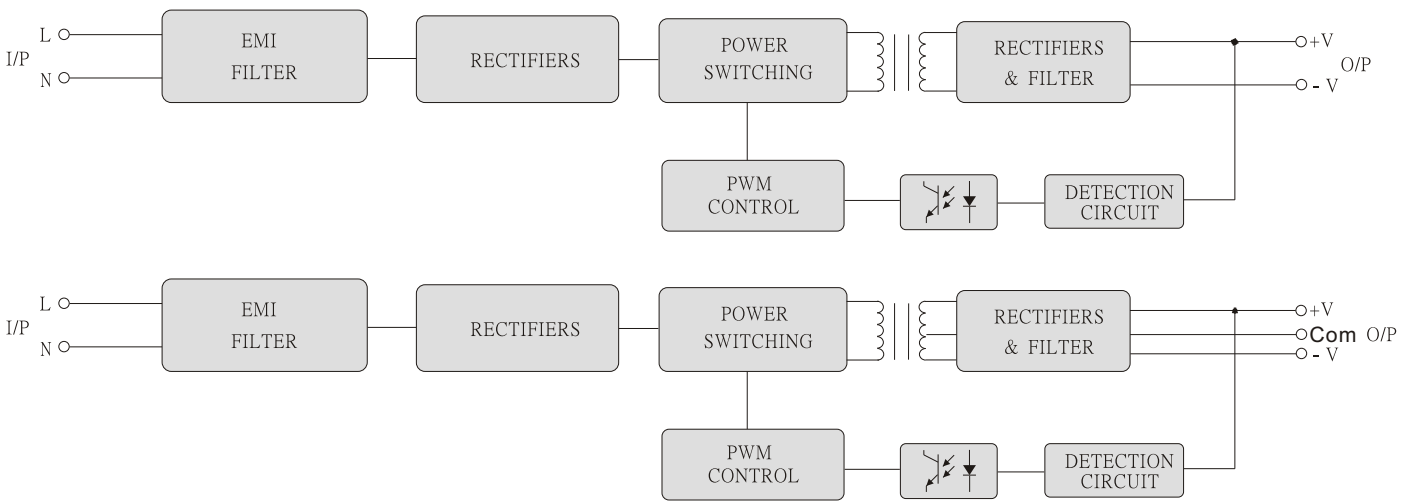
MAC10 - 12S

Series Name
 Output Watt Range
 Output Type
 S - Single output
 D - Dual Output
 Nominal Output Voltage
 3.3 - 3.3V
 05 - 5V
 12 - 12V
 15 - 15V



Input Rating and load on output shall not exceed the label rating.

MODEL NUMBER	OUTPUT Voltage (Vdc)	Rated power (W)	OUTPUT Current		Ripple & Noise (max) (mVp-p)	Line Regulation (%)	Load Regulation (%)	EFFICIENCY @FL(%)
			Min. load (%)	Full load (A)				
MAC10-3.3S	3.3	8.25	0%	2.5	80	±1	±1	69
MAC10-05S	5	10	0%	2	80	±1	±1	75
MAC10-12S	12	10.2	0%	0.85	150	±0.5	±1	79
MAC10-15S	15	10.05	0%	0.67	150	±0.5	±1	80
MAC10-24S	24	10.08	0%	0.42	240	±0.5	±0.5	80
MAC10-05D	±5	10	10%	±1	±80	±1	±1	75
MAC10-12D	±12	10.2	10%	±0.425	±150	±1	±1	80
MAC10-15D	±15	10.05	10%	±0.335	±150	±1	±1	80

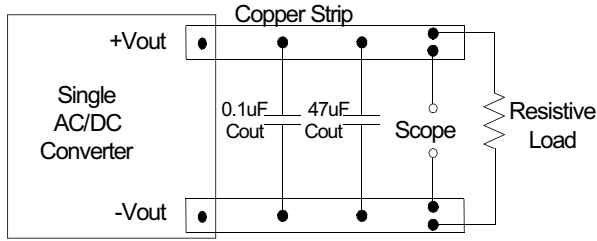


- Note: 1. One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
 2. **WARNING: No modification of this equipment is allowed**
 3. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
 4. The power supply in end product has to be considered to a component of compliance to IEC60601/EN60601.
 5. Do not dispose in the household waste and follow the disposal regulations.

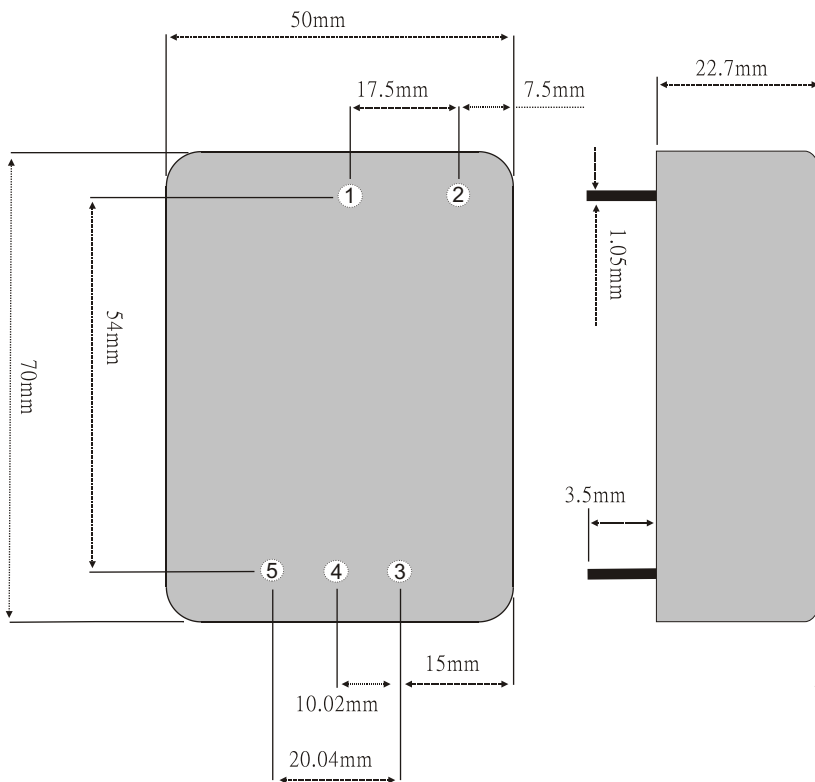
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OUTPUT RIPPLE & NOISE

Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.



MECHANICAL SPECIFICATION



PIN	SINGLE	Dual
1	AC IN (N)	AC IN (N)
2	AC IN (L)	AC IN (L)
3	+DC OUT	+DC OUT
4	N.P.	COM
5	-DC OUT	-DC OUT

All dimensions are typical in millimeters (inches).
 1. Pin diameter: 1.0 ± 0.05 (0.04 ± 0.002)
 2. Pin pitch tolerance: ± 0.35 (± 0.014)
 3. Case Tolerance: ± 0.5 (± 0.02)