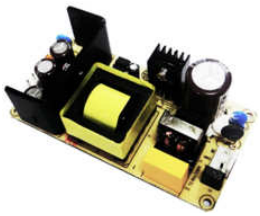
TOPPOWER

TPC/PS-60-XS Series



DESCRIPTION : **60W Wide input AC/DC switching power supply**

The rated output power of TPC/PS-60-XS series is 60W, input voltage range: 90-264VAC, output voltage : 5V,12V,15V,24V,27.5V,36V,48V,High reliability, precision,effificency , ultra-small size, no external heat sink required, stable output voltage and etc, with short circuit, overload protection, Widely used in instrument, telecommunications, industrial control, data acquisition, signal control , New Energy, Security,and other electronic systems.

FEATURES

AC input : 90VAC-264VAC	short circuit, overload,over-voltage protection	Operating temperature: -10℃~65℃
RoHS complaint	High reliability,effificency,100% full load burn-in test	All using 105℃ long-life electrolytic capacitors
Free air cooling When 176~264Vac input 60W output or 90~175Vac 45W output ; 10.5CFM air cooling when 90~175Vac input 60W output		

SELECTION GUIDE

Part Number	Input		Output					Efficiency @25℃, (Typ) %
	Volatge (VAC)		Voltage (VDC)	Pre-set voltage @25℃(V)	Rated current (A)	Current range(A)	Rated power(W)	
	Rated	Range						
TPC/PS-60-5S	220	90-264	5.0	5.00-5.05	8	0-8	40	80
TPC/PS-60-12S	220	90-264	12.0	12.00-12.05	5	0-5.00	60	83
TPC/PS-60-15S	220	90-264	15.0	15.00-15.05	4	0-4.00	60	84
TPC/PS-60-24S	220	90-264	24	24.00-24.05	2.5	0-2.50	60	85
TPC/PS-60-27.5S	220	90-264	27.5	27.50-27.55	2.2	0-2.20	60.5	85
TPC/PS-60-36S	220	90-264	36.0	36.00-36.05	1.7	0-1.70	61.2	85
TPC/PS-60-48S	220	90-264	48.0	48.00-48.05	1.25	0-1.25	60	86

All specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified.

OUTPUT CHARACTERISTICS

Conditions	Conditions	Parameter
Ripple and noise,Ta is ambient , 0<Ta≤60℃	5Voutput voltage	≤80mVp-p
	12V output voltage	≤120mVp-p
	15V, output voltage	≤150mVp-p
	24V output voltage	≤240mVp-p
	27.5V,36V,48V output voltage	≤300mVp-p
Ripple and noise,Ta is ambient , -10<Ta≤0℃	5V output voltage	≤200mVp-p
	12V output voltage	≤300mVp-p
	15V24V output voltage	≤360mVp-p
	27.5V,36V,48V output voltage	≤480mVp-p
Dynamic load characterstics, 0<Ta≤65℃	10%-100%Load:±10%p-p	10%-50%Load: ±5%p-p 50%-100%Load: ±5%p-p
Dynamic load characterstics, -10<Ta≤0℃	10%-100%Load:±10%p-p	10%-50%Load: ±7.5%p-p 50%-100%Load: ±7.5%p-p
Output adjustment range @25℃	5V output voltage	4.75~5.5V
	12V output voltage	11.4~13.2V
	15V output voltage	14.25~16.5V
	24V output voltage	22.8~26.5V
	27.5V output voltage	26.1~30.25V
	36V output voltage	34~41V
	48V output voltage	45.6~52.8V
Voltage regulation accuracy @-10~65℃	±2.0%	
Line regulation @-10~65℃	±0.5%	
Load regulation @-10~65℃	±1.0%	
Temp. coefficient @-10~65℃	±0.03%/℃	

OUTPUT CHARACTERISTICS

Set-up time @25℃	≤2.0S@115Vac input ≤1.0S@(230Vac input, Full load)
Hold-up time @25℃	≥13mS@115Vac input ≥50mS@(230Vac input, Full load)
Overshoot&Undershoot	<5.0%
Capacitive load	5000uF @12V

INPUT CHARACTERISTICS

Conditions	Parameter
Input voltage range	90Vac~264Vac
Rated input voltage range	100Vac~240Vac
Frequency Range	47Hz~63Hz
Set-up voltage @-20~65℃	90Vac（refer to the derating curve）
Input current @25℃	<1.0 A
Inrush current @25℃	<23A@115 Vac input <45A@230Vac input

PROTECTION @-20～65℃

Conditions	Parameter	Notes
Over-power（5Voutput）	31.5W~54W	Protection type: Hiccup model, auto recovery
Over-power（12Voutput）	37.8W~64.8W	
Over-power（13.5Voutput）	36.86W-63.2W	
Over-power（15Voutput）	37.8W~64.8W	
Over-power（24Voutput）	37.9W~64.8W	
Over-power（36Voutput）	37.8W~64.8W	
Over-power（48Voutput）	37.4W~64.8W	
Over-current（5Voutput）	6.3A~10.8A	Protection type:Constant voltage, auto recovery
Over-current（12Voutput）	3.15A~5.4A	
Over-current（13.5Voutput）	2.73A~4.68A	
Over-current（15Voutput）	2.52A~4.32A	
Over-current（24Voutput）	1.58A~2.7A	
Over-current（36Voutput）	1.05A~1.8A	
Over-current（48Voutput）	0.78A~1.35A	
Over-voltage（5Voutput）	5.75V~7.5V	Protection type: Hiccup model, auto recovery
Over-voltage（12Voutput）	13.8V~16.2V	
Over-voltage（13.5Voutput）	15.5V~18.2V	
Over-voltage（15Voutput）	17.25V~20.25V	
Over-voltage（24Voutput）	27.6V~32.4V	
Over-voltage（36Voutput）	41.4V~48.6V	
Over-voltage（48Voutput）	55.2V~64.8V	
Output short circuit protection	Long-term model , auto recovery	

ENVIRONMENT CHARACTERISTICS

Conditions	Parameter
Operating amb. Temp.&Humi.	-20℃~65℃; 20%~90%RH No condensing （refer to the derating curve）
Storage Temp. & Humi.	-30℃~85℃; 10%~95%RH No condensing
Vibration	10 ~ 500Hz, 2G，10min./1cycle, period for60min. each along X,Y, Z axes
Pulse	20G/11mS pulse ,3 times at each X,Y,Z axes
Altitude	5000m

SAFETY&EMC STANDARDS @25℃

Conditions	Parameter
Safety Standards	EN60950, IEC60950, UL60950 (for reference)
Withstand Voltage	I/P-O/P:3.0KVac/10mA; I/P-FG:1.5KVac/10mA; O/P-FG:0.5KVdc/10mA test time:1min.
Isolation resistance	I/P-O/P: 10M ohms; I/P-FG : 10M ohms; O/P-FG : 10M ohms
Grounding test	Test condition：32A / 2min.；Grounding resistance：<0.1 ohms.
Leakage Current @ 25℃	I/P-Grounding≤3.5mA； I/P-O/P ≤0.25mA (264Vac input, 63Hz)
EMC emission	Compliance to EN55022, CLASS B FCC PART15B
EMC immunity	Compliance to EN61000-4-2,3,4,5,8,11 heavy industry Leve

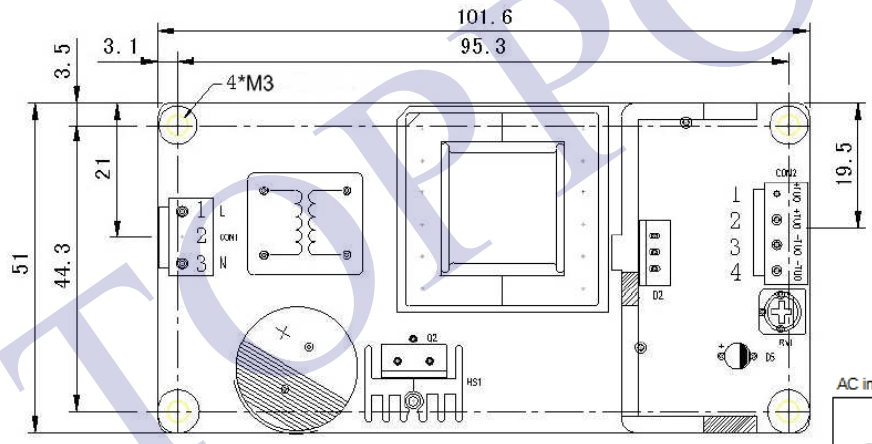
OTHERS

Conditions	Parameter
Cooling method	Cooling by free air flow
Dimension (L*W*H)	101.6*50.8*24mm
Net Weight	0.23kg

RELIABIILITY CHARACTERISTICS

Conditions	Parameter
MTBF	200，000Hrs AT 35℃, MIL-217 Method 2 Components Stress Method

MECHANICAL DIMENSIONS

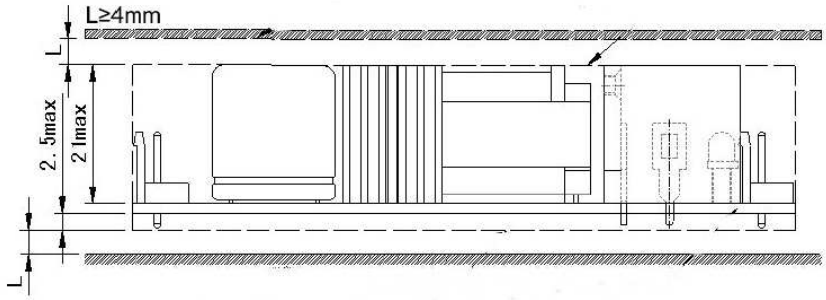


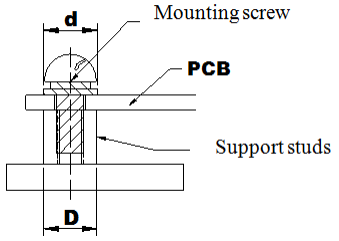
AC input PIN design

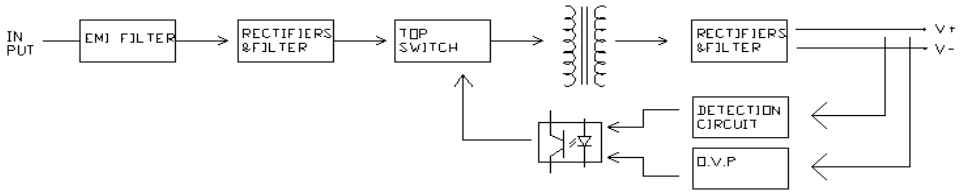
	No.	input	paratmeter
CON1	1	AC(L)	spacing 3.96/3
	2	/	
	3	AC(N)	

DC output PIN design

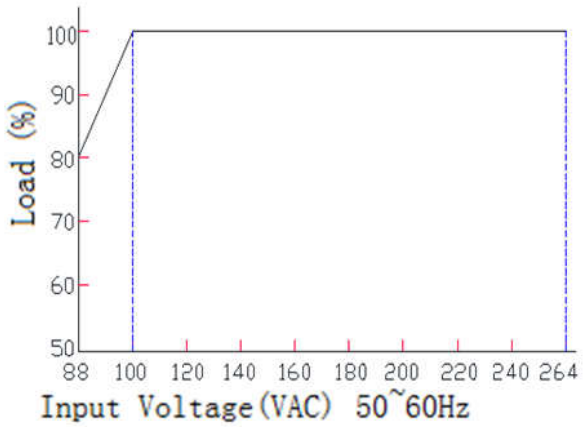
	No.	input	paratmeter
CON1	1/2	+V(OUT)	spacing 3.96/4
	3/4	-V(OUT)	

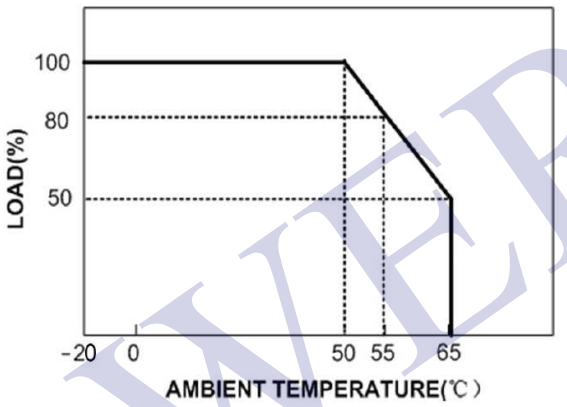




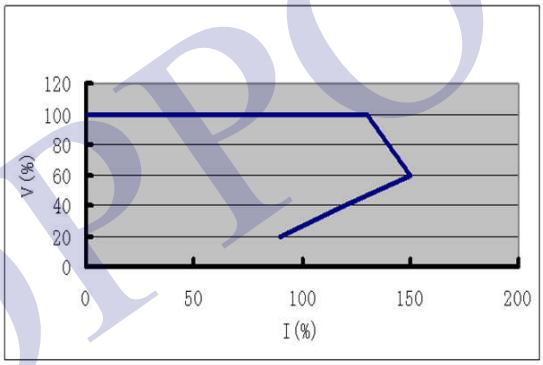


DERATING CURVE





OUTPUT CHARACTERISTICS CURVE



MODEL SELECTION

TP C / PS - 60 – 12 S

- S: Single ouput; D: Dual output
- Output voltage
- Delimiter
- Rated output Power
- Delimiter
- Series
- Delimiter
- Type
- Brand TOPPOWER