



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,efficiency, 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,efficiency,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) %
	Voltage (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℃, nominal input voltage and rated output current unless otherwise specified.

OUTPUT CHARACTERISTICS

Conditions	Conditions	Parameter
Ripple and noise,Ta is ambient , 0<Ta≤60℃	5V output 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 characteristics, 0<Ta≤65℃	10%-100%Load: ±10%p-p	10%-50%Load: ±5%p-p 50%-100%Load: ±5%p-p
Dynamic load characteristics, -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°C	≤2.0S@115Vac input	≤1.0S@(230Vac input, Full load)
Hold-up time @25°C	≥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°C	90Vac (refer to the derating curve)
Input current @25°C	<1.0 A
Inrush current @25°C	<23A@115 Vac input <45A@230Vac input

PROTECTION @-20~65°C

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	Protection type:Constant voltage, auto recovery
Over-current (5Voutput)	6.3A~10.8A	
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	Protection type: Hiccup model, auto recovery
Over-current (48Voutput)	0.78A~1.35A	
Over-voltage (5Voutput)	5.75V~7.5V	
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	Protection type: Hiccup model, auto recovery
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°C~65°C; 20%~90%RH No condensing (refer to the derating curve)
Storage Temp. & Humi.	-30°C~85°C; 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°C

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°C	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

RELIABILITY CHARACTERISTICS

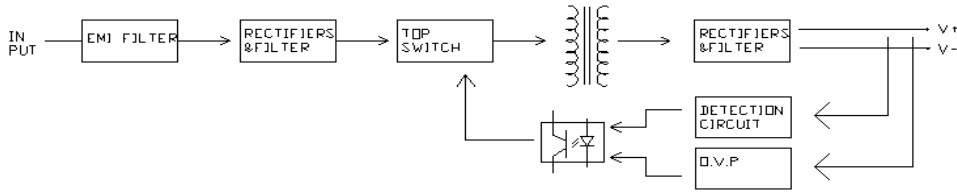
Conditions	Parameter
MTBF	200, 000Hrs AT 35°C, MIL-217 Method 2 Components Stress Method

MECHANICAL DIMENSIONS

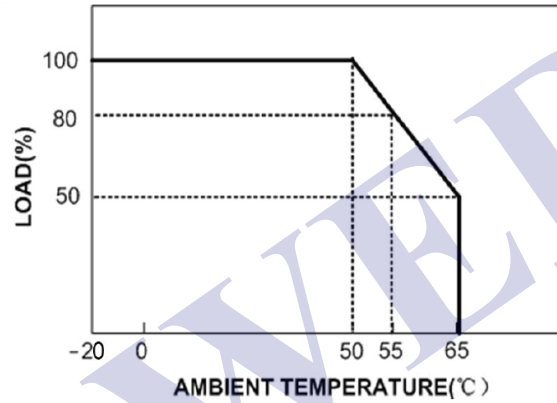
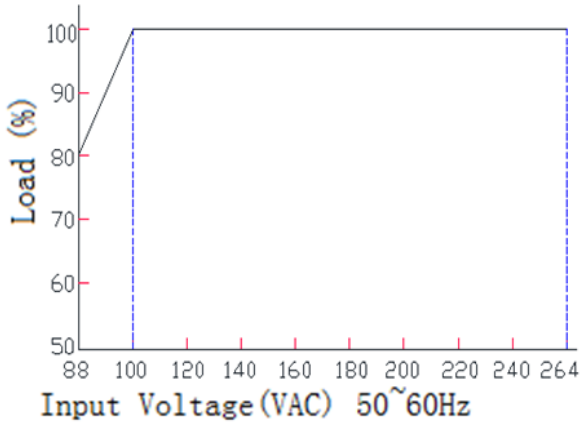
The drawing shows a top view of the power supply with dimensions: total length 101.6mm, mounting hole spacing 95.3mm, total width 51mm, and mounting hole spacing 44.3mm. It also shows a 4*M3 screw hole and a 19.5mm wide terminal block. A side view shows a height of 24mm with a mounting hole diameter of L ≥ 4mm and a distance of 2.5max from the bottom edge. A detail view shows the PCB mounted on support studs with a mounting screw of diameter d and a total stud diameter D.

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

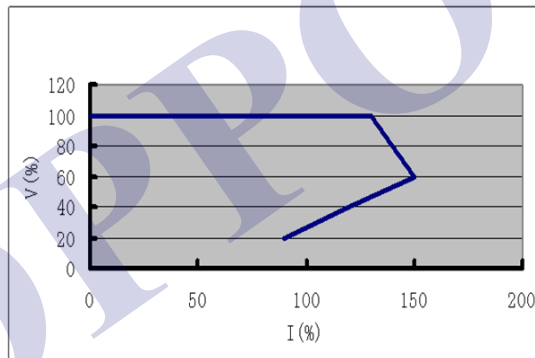
No.	input	parameter
1/2	+V(OUT)	spacing 3.96/4
3/4	-V(OUT)	



DERATING CURVE

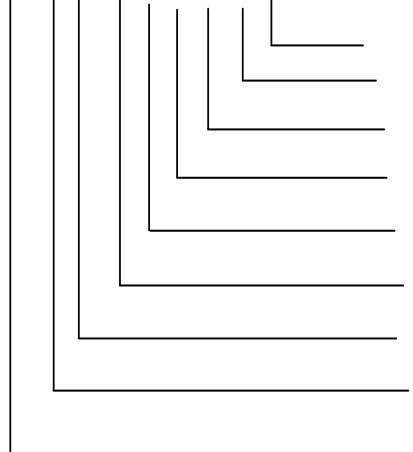


OUTPUT CHARACTERISTICS CURVE



MODEL SELECTION

TP C / PS - 60 - 12 S



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