TOPPOWER

TPC/PD-15-X series



DESCRIPTION : **15W Wide input AC/DC switching power supply**

The rated output power of TPC/PD-15-X series is 15W，input voltage range：90-264VAC, output voltage : 3.3V,5V,12V,15V ,24V. High reliability, precision,effificency , ultra-small size, with short circuit, over-load,over-voltage protection,Widely used in telecommunications, industrial control, instrument,data acquisition,signal control , New Energy, Security,and other electronic systems.

FEATURES

AC input ： 90VAC-264VAC	100% full load burn-in test	short circuit, overload,over-current protection
Operating temperature：-20℃~70℃	RoHS complaint	Low standby power consumption<0.5W
No Fan	High reliability,effificency ,long life-time	Miniature size

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 values						
TPC/PD-15-3.3	220	90-264	3.3	3.3-3.35	4.0	0-4.0	13.2	70
TPC/PD-15-5	220	90-264	5	4.92-4.98	3.0	0-3.0	15	76
TPC/PD-15-12	220	90-264	12	12.00-12.05	1.3	0-1.3	15.6	80
TPC/PD-15-15	220	90-264	15	15.00-15.05	1.0	0-1.0	15	81
TPC/ PD-15-24	220	90-264	24	24.00-24.05	0.7	0-0.7	16.8	83

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≤70℃	3.3V 5V output voltage	≤50mVp-p
	12V 15V output voltage	≤120mVp-p
	24V output voltage	≤120mVp-p
Ripple and noise,Ta is ambient ， -20＜Ta≤0℃	3.3V 5V output voltage	≤50mVp-p
	12V 15V output voltage	≤120mVp-p
	24V output voltage	≤120mVp-p
Output adjustment range @25℃	3.3V output voltage	3.1V-3.5V
	5V output voltage	4.75V-5.25V
	12V output voltage	11.4V-12.6V
	15V output voltage	14.25V-15.75V
	24V output voltage	22.8V-25.2V

OUTPUT CHARACTERISTICS

Voltage regulation accuracy@-20~70℃	±3%
Line regulation@-20~70℃	±1%
Load regulation@-20~70℃	±2%
Temp. coefficient@-20~70℃	±0.03%/℃
Set-up time@25℃	≤2S /120Vac full load ≤1S /230Vac full load
Hold-up time@25℃	≥10mS(120Vac input, Full load) ≥20mS(230Vac input, Full load)
Overshoot&Undershoot@-20~70℃	<5.0%

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INPUT CHARACTERISTICS

Conditions	Parameter
Input voltage range	90 VAC ~264 VAC (rated input range 100VAC-240VAC)
Leakage Current	Input—output:<0.25mA Input—PG:<3.5mA
Frequency Range	47Hz~63Hz
Input current@25℃	0.7A
Inrush current @25℃	＜20A@115Vac Cold start ＜40A@230Vac Cold start
Standby power@25℃	＜0.5W

PROTECTION @-20～70℃

Conditions	Parameter	Notes
Over-load	110%-180% of rated output power	Constant power
Over-Current	110%-180% of rated output current	Constant power
Output short circuit protection(Use copper wirewith a sufficient cross-sectional area and a length of 15cm ± 5cm)		Long-term mode, Auto recovery

ENVIRONMENT CHARACTERISTICS

Conditions	Parameter
Operating amb. Temp.&Humi.	-20℃~70℃; 20%~90%RH No condensing （refer to the derating curve）
Storage Temp. & Humi.	-40℃~85℃; 10%~95%RH No condensing
Vibration	10 ~ 150HZ,2G 10min./1cycle, period for60min. each along X,Y, Z axes
Pulse	20G/11mS pulse ,3 times at each X,Y,Z axes
Altitude	3000m

SAFETY&EMC STANDARDS @25℃

Conditions	Parameter
Safety Standards	GB4943/EN60950/IEC60950/UL60950
Withstand Voltage	I/P-O/P:3.0KVac/10mA; I/P-FG:1.5KVac/10mA; O/P-FG:0.5KVdc/10mA test time:1min.
Grounding test	Test condition：32A / 2min.；Grounding resistance：＜0.1 ohms.
Leakage Current	Input—output:<0.25mA Input—PG:<3.5mA
Isolation resistance	I/P-O/P: 100M ohms; I/P-FG : 100M ohms; O/P-FG : 100M ohms
EMC emission	EN55022 Class B
EMC immunity	Compliance to EN61000-4-2,4,5,11;

OTHERS

Conditions	Parameter
Cooling method	Cooling by free air flow
Dimension (L*W*H)	79*51*28mm
Net Weight	0.185kg

RELIABIILITY CHARACTERISTICS

Conditions	Parameter
MTBF	200,000Hrs AT 25℃, MIL-217 Method 2 Components Stress Method
Design electrolytic capacitor life	35,687Hrs AT 25℃ FULL Load and Units Continuously Working

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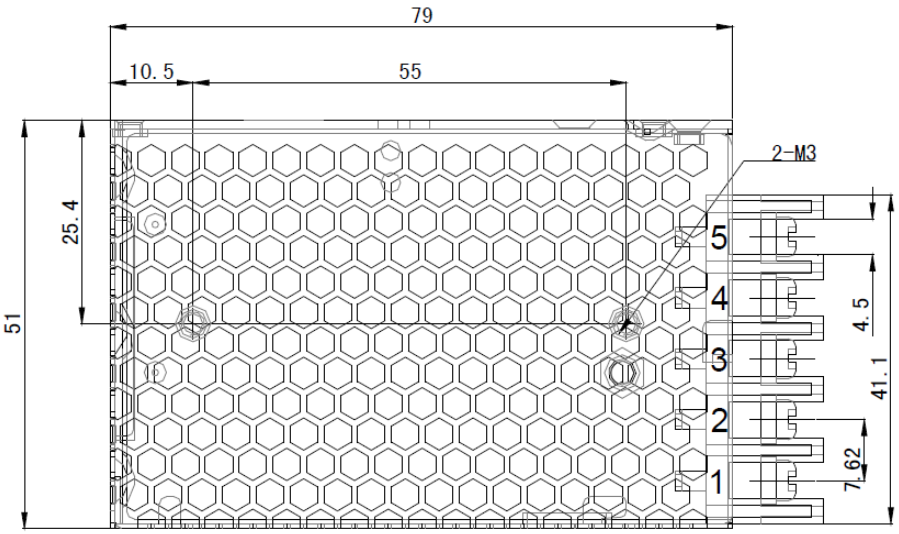
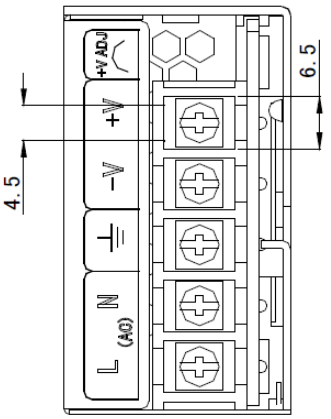
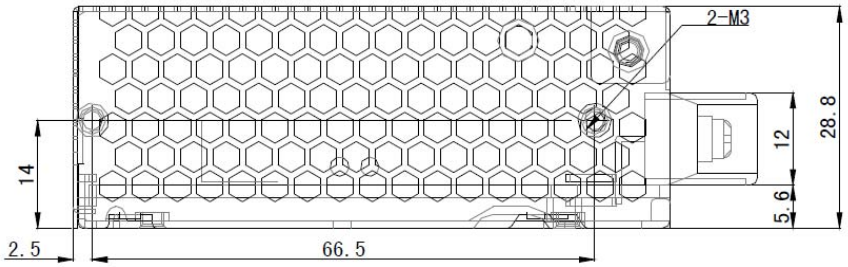
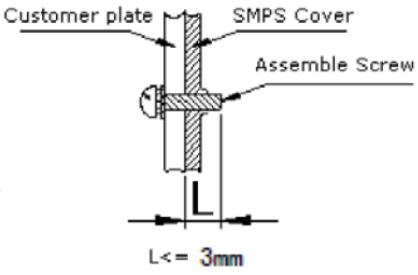
MECHANICAL DIMENSIONS

Unit:mm









1.Mounting Way

Mounting position	Mounting type	Mounting position No.	Screw Type	L max	Mounting Torque(max)
Bottom mounting	Fixing by Screw	① — ②	M3	3mm	6.5Kgf.cm
Side mounting		③ — ④	M3	3mm	

2.Instruction of AC output Connector

Part No.	Function	Terminal Connector	Requirement for Cable	Torque(max)
1	AC-L	7.62	22-14AWG	7.5Kgf.cm
2	AC-N			
3	⏚			

3.Instruction of DC output Connector

Part No.	Function	Terminal Connector	Requirement for Cable	Torque(max)
4	-V	7.62	22-14AWG	7.5Kgf.cm
5	+V			

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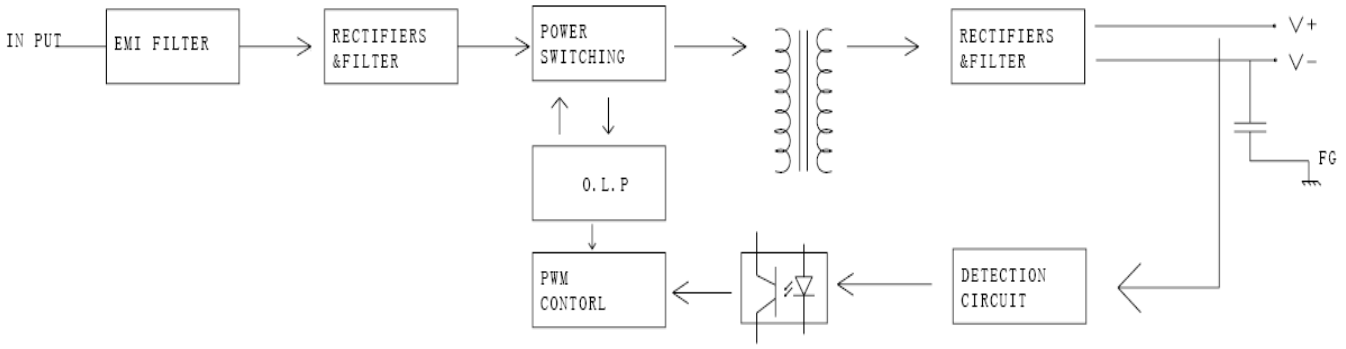
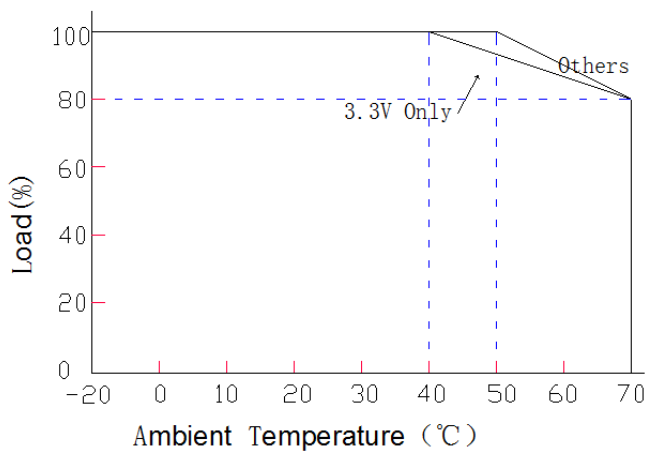
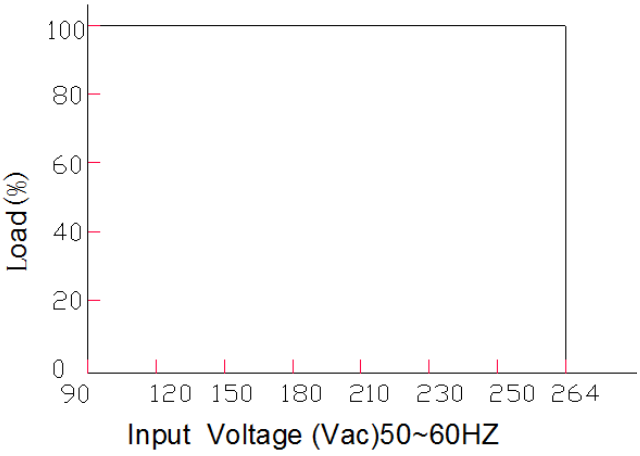
RECOMMEND CIRCUIT

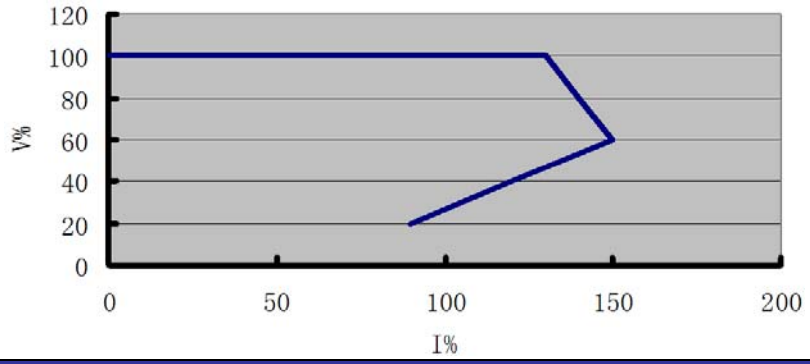


DERATING CURVE

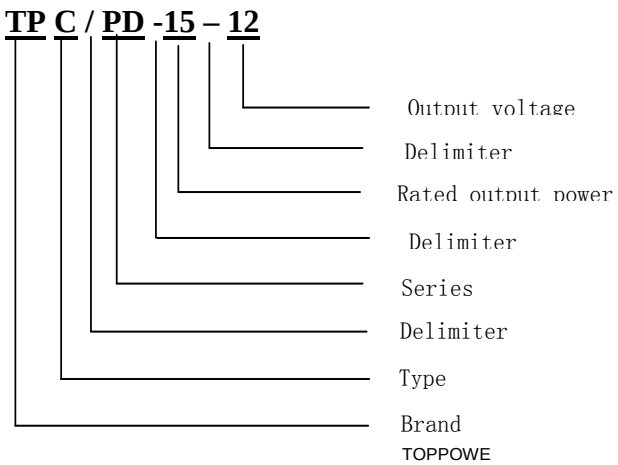




OUTPUT CHARACTERISTICS CURVE



MODEL SELECTION



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