



DESCRIPTION :

60W Wide input Triple output AC/DC switching power supply

The rated output power of TPC/GZM-60-T05D15 is 60W, input voltage range : 176-264VAC, output voltage : 5/±15VDC ,High reliability&efficiency ,long-life , 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 : 176VAC-264VAC	overload,over-voltage,short circuit protection	Operating temperature : 0℃~50℃
RoHS complaint	High reliability,efficiency	No fans
Triple output	160*99*38mm	

SELECTION GUIDE

Part Number	Input		Output		Efficiency @25℃, (Typ) %	Ripple (mV p-p), @0℃~50℃
	Volatge (VAC)		Voltage (VDC)	Rated current (A)		
	Rated	Range values				
TPC/GZM-60-T05D15	220	176-264	+5/+15/-15	7/0.5/0.5	68	≤80,≤150,≤150

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

OUTPUT CHARACTERISTICS

Conditions	Conditions		Parameter
Output power	Total peak output power(Sustainable time 5 S)		70W Max
Peak output current	5V (V1)	+15V (V2)	-15V (V3)
	8A	1A	1A
Rated output power	5V (V1)	+15V (V2)	-15V (V3)
	35W	7.5W	7.5W
Output light load setting range @25℃	5V (V1)	+15V (V2)	-15V (V3)
	5.00~5.05V	/	/
Output voltage range	4.5-5.5V	/	/
Dynamic load characteristics@0℃~50℃	0.7A~3.5A: Vp-p<±350mV 0.7A~7A: Vp-p<±500mV 3.5A~7A: Vp-p<±350mV		
Voltage regulation accuracy@0℃~50℃	±1.0% /V1, ±5.0% /V2, ±5.0% /V3		
Line regulation @0℃~50℃	±1.0%		
Load regulation @0℃~50℃	±1.0% /V1, ±5.0% /V2, ±5.0% /V3		
Set-up risetime@25℃	<1.2s/220VAC at 100%load		
Hold-up time@25℃	≤130ms/230VAC at V1/0.2A, V2/0.2A, V3/0.4A		
Overshoot Voltage@0℃~50℃	<5%		

INPUT CHARACTERISTICS

Conditions	Parameter
Input voltage range	176Vac~264Vac
Rated input voltage range	200Vac~240Vac
Frequency Range	47Hz~63Hz
Set-up Voltage	176Vac
Input current @25℃	<0.9 A
Inrush current @25℃	Cold Start <40A@220Vac

PROTECTION @-20~65℃

Conditions	Parameter	Notes
Over-power	65W~95W swinging machine	protection mode: swinging machine, automatic recovery after eliminating over power; over power protection point is V1, V2, V3 output total The sum of the powers, $P = V1 * I1 + V2 * I2 + V3 * I3$)
Over-current	V1@7.7A-105A,V2@1.1A-2A,V3@1.1A-2A	Output current continues to increase until protection;Protection mode: Swing machine, can automatically resume normal work after eliminating overcurrent.
short circuit	Long-term short circuit, automatic recovery after eliminating short circuit (V2, V3 can not be short circuit)	

ENVIRONMENT CHARACTERISTICS

Conditions	Parameter
Operating amb. Temp.&Humi.	0℃~50℃; 20%~90%RH (refer to the derating curve)
Storage Temp. & Humi.	-25℃~85℃, 10%~95%RH
Altitude	3000m
Temperature coefficient @0℃~50℃	0.03%

SAFETY&EMC STANDARDS @25℃

Conditions	Parameter
Safety Standards	GB4943/EN60950 (for reference)
Isolation Voltage	I/P-O/P:3Kvac/10mA I/P-FG : 1.5Kvac/10mA O/P-FG :0.5Kvac/10mA test time:1min
Leakage current @25℃	I/P-FG :≤3.5MA I/P-O/P: ≤0.25MA
Isolation resistance	I/P-O/P: I/P-FG : O/P-FG : 100M ohms/500VDC 25℃ 65% RH
Grounding test	Test condition: 32A / 1min.; Grounding resistance: <0.1 ohms.
ESD	EN61000-4-2 LEVEL3
EFT	EN61000-4-4 LEVEL3
Interrupted	EN61000-4-11
Surge	EN61000-4-5 LEVEL4

OTHERS

Conditions	Parameter
Cooling method	Cooling by free air flow
Dimension (L*W*H)	160*99*38mm

RELIABILITY CHARACTERISTICS

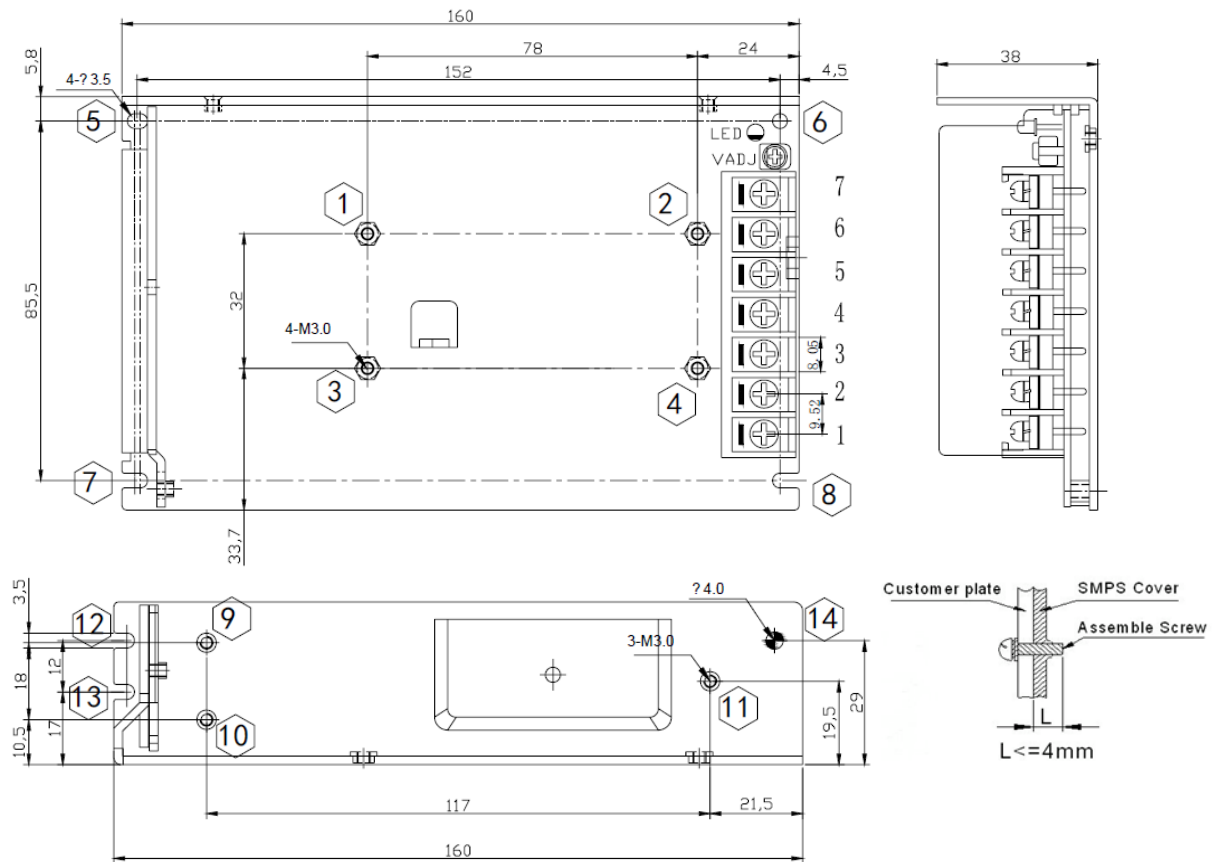
Conditions	Parameter
MTBF	200, 000Hrs MIL-217 Method 2 Components Stress Method
Design electrolytic capacitor life	35,687Hrs AT 25℃ FULL Load and Units Continuously Working

NOTES

1. The expected output power can reach 57W, and the pre-output current can reach 8.4A.
2. Ripple noise is connected by 12# twisted pair. The oscilloscope bandwidth is set to 20MHz. Tektronix P3010 100M bandwidth probe is used, and 0.1uF polypropylene capacitor and 10uF electrolytic capacitor are connected in parallel on the probe end. The oscilloscope sampling uses Sample sampling mode.
- 3.The derating should be carried out at low voltage input or when working in a high temperature environment. For more details, please refer to the derating curve.
- 4.Minimum load requirement: V1@0.7A V2@0.05A V3@0.05A

MECHANICAL DIMENSIONS

Unit: mm



1. AC terminal blocks installation information

Terminal No.	Function	Wire Spec.	Recommended Torque
1	L	22-12AWG	7.5Kgf. cm (max)
2	N		
3	⊕		

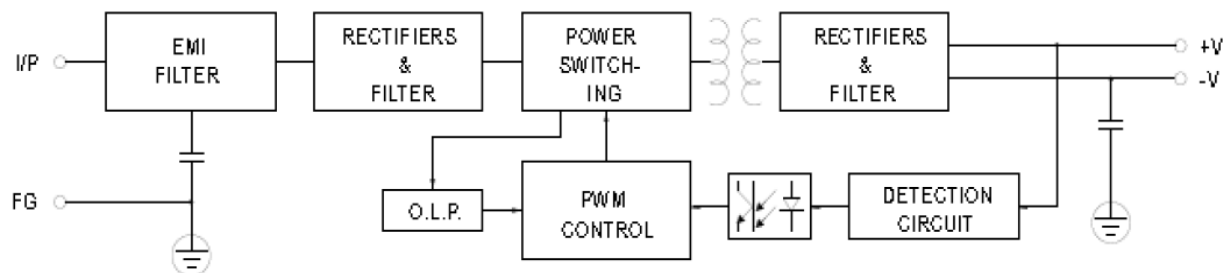
2. DC terminal blocks installation information

Terminal No.	Function	Wire Spec.	Recommended Torque
4	V3	22-12AWG	7.5Kgf. cm (max)
5	V1		
6	V-		
7	V2		

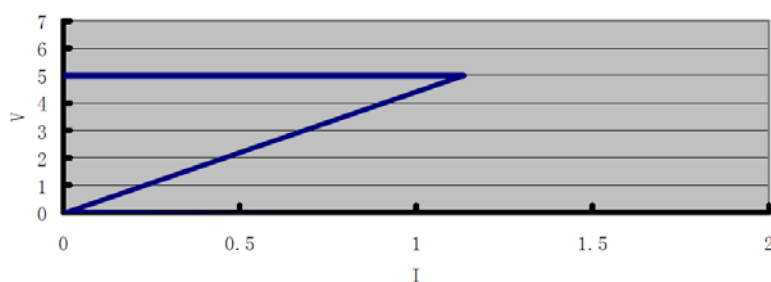
3.

Mounting position	Mounting type	Mounting position No.	Screw type	Lmax	Mounting Torque
Bottom	Fixing by screws	①—④	M3	4MM	12Kgf. cm (max)
		⑤—⑧	M3	-	10Kgf. cm (max)
Side	Fixing by Bracket	⑨—⑪	M3	4MM	6.5Kgf. cm (max)
		⑫—⑭		-	10Kgf. cm (max)

Internal block diagram:



DERATING CURVE



MODEL SELECTION

TP C / GZM - 60 - T 05D15

