

# TPSBU60 SERIES

63W Open Frame Type  
I.T.E. Power Supplies

## Features:

- Wide Operating Voltage 90 to 264 VAC, 47 to 63 Hz
- Internal EMI filter
- Single to Quad Output
- Over Voltage Protection (Crowbar Design)
- Power Fail Detect (Optional)
- Input Surge Current, Over Voltage and Over Load protection
- Class I
- 2 year warranty



## Electrical Characteristics:

Vin	Safety Approvals Input Voltage Range		100~240VAC
	Operate Voltage Range		90~264VAC
fin	Input Frequency		47~63Hz
Po	Output Power Range		See rating chart
Vo	Output Voltage Range		See rating chart
Io	Output Current Range		See rating chart
Iil	Input Current (Low Line)	Io=Full load, Vin=100VAC	1.6A
		Io=Full load, Vin=240VAC	1.0A
Iih	Input Current (High Line)	Io=Full load, 25°C, Cool start, Vin=115VAC	33A (max.)
		Io=Full load, 25°C, Cool start, Vin=230VAC	65A (max.)
Irr	Low Line Inrush Current	Io=Full Load, Vin=230VAC	70~88%
		Io=Full Load, Vin=230VAC	70~88%
Eff	Efficiency	Io=Full Load, Vin=230VAC	70~88%
REG-i	Line Regulation	Io=Full Load	0.5~1%
REG-o	Load Regulation	Vin=230VAC	2~7%
OVP	Over Voltage Protection	Over Voltage Protection	112~132%
OCP	Over Current Protection	Over Current Protection	110~150%
Ttr	Time of Transient Response	Io=Full Load to Half Load, Vin=100VAC	4mS (max.)
Th	Hold-Up Time	Io=Full Load, Vin=110VAC	12mS (min.)
Ts	Start Up Time	Io=Full Load, Vin=100VAC	2S (max.)
Vp-p	Ripple & Noise(Peak to Peak)	Full Load, Vin=90VAC	1% (max.)
Iik	Safety Ground Leakage Current	Vin=240VAC/60Hz	0.75mA (max.)
TC	Temperature Coefficient	All output	±0.04%/°C
Pno	No-Load Power Consumption	No load, Vin=230VAC	See rating chart
Vps	Dielectric Withstanding Voltage for Primary to secondary	Primary to secondary	4242VDC (min.)
Vpg	Dielectric Withstanding Voltage for Primary to PE	Primary to PE	2506VDC (min.)
Ris	Isolation Resistance	Test Voltage=500VDC	50MΩ (min.)

**Note:** The Ripple & Noise which is under 3.3VDC at 2% max.  
The range of OCP is set between 110-150% of total output power .

## Environmental

To	Operating Temperature	See derating curve
Ts	Storage Temperature	-40~85°C
Ho	Operating Humidity	0~95%
Hr	Storage Humidity	0~95%
MTBF	Operating Temperature at 25°C, Calculated per MIL-HDBK-217F	0.1M Hrs (min.)
Pd	Derate linearly from 100% load at 25°C to 50% load at 70°C	

## Application:

- Monitor
- Industrial PC
- Set-top box
- AV equipment
- CCD recorder

## Safety Approvals:



UL/c-UL(UL 60950-1:2nd Edition)  
TUV/GS(EN 60950-1:2nd Edition)



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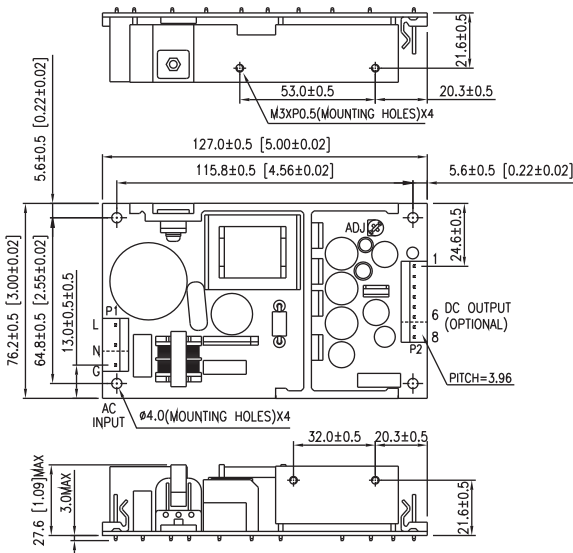
## Output Voltage And Current Rating Chart ( Single Output ) :

Model Number	Output Voltage	Output Current	Total Regulation	Max. Output Power	Pno (max.)
TPSBU60-101	3 ~ 5 VDC	16.66 ~ 10.0 A	5%	50W	5W
TPSBU60-102	5 ~ 6 VDC	11.00 ~ 9.16 A	5%	55W	5W
TPSBU60-103	6 ~ 8 VDC	10.00 ~ 7.50 A	4%	60W	5W
TPSBU60-104	8 ~ 11 VDC	7.87 ~ 5.72 A	3%	63W	5W
TPSBU60-105	11 ~ 13 VDC	5.72 ~ 4.84 A	3%	63W	5W
TPSBU60-106	13 ~ 16 VDC	4.84 ~ 3.93 A	3%	63W	5W
TPSBU60-107	16 ~ 21 VDC	3.93 ~ 3.00 A	3%	63W	5W
TPSBU60-108	21 ~ 27 VDC	3.00 ~ 2.33 A	2%	63W	5W
TPSBU60-109	27 ~ 33 VDC	2.33 ~ 1.90 A	2%	63W	5W
TPSBU60-110	33 ~ 40 VDC	1.90 ~ 1.57 A	2%	63W	5W
TPSBU60-111	40 ~ 50 VDC	1.57 ~ 1.26 A	2%	63W	5W

## Output Voltage And Current Rating Chart ( Multi Output ) :

Model Number	Output #1				Output #2				Output #3				Output #4				Max. Output Power	Pno (max.)
	Vonom	Iomin	Iomax	Regmax	Vonom	Iomin	Iomax	Regmax	Vonom	Iomin	Iomax	Regmax	Vonom	Iomin	Iomax	Regmax		
TPSBU60-200	+3.3V	1.4A	7A	7%	+12V	0.6A	3A	5%									59.1W	5.5W
TPSBU60-201	+5V	0.7A	7A	5%	+12V	0.3A	3A	5%									63W	5.5W
TPSBU60-202	+5V	0.7A	7A	5%	+15V	0.3A	3A	5%									63W	5.5W
TPSBU60-203	+5V	0.7A	7A	5%	+24V	0.4A	2A	5%									63W	5.5W
TPSBU60-204	+3.3V	1.4A	7A	7%	+5V	0.5A	5A	5%									48.1W	5.5W
TPSBU60-215	+5V	0.7A	7A	5%					-24V	0.2A	2A	5%					63W	5.5W
TPSBU60-218	+3.3V	0.5A	5A	7%	+48V	0.1A	1.25A	5%									63W	5.5W
TPSBU60-219	+5V	0.1A	5A	5%	+28V	0.2A	2A	5%									63W	5.5W
TPSBU60-220	+5V	0.5A	5A	5%	+35V	0.1A	1.5A	5%									63W	5.5W
TPSBU60-221	+5V	0.5A	5A	5%	+36V	0.1A	1.5A	5%									63W	5.5W
TPSBU60-300	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%					63W	5.5W
TPSBU60-300-1	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%					63W	5.5W
TPSBU60-301	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	-5V	0A	0.8A	5%					63W	5.5W
TPSBU60-301-1	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	+5V	0A	0.8A	5%					63W	5.5W
TPSBU60-302	+5V	0.6A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%					63W	5.5W
TPSBU60-302-1	+5V	0.6A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%					63W	5.5W
TPSBU60-303	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	-15V	0A	0.8A	5%					63W	5.5W
TPSBU60-303-1	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	+15V	0A	0.8A	5%					63W	5.5W
TPSBU60-304	+5V	1.2A	6A	5%	+24V	0.4A	2A	5%	-24V	0A	0.5A	5%					63W	5.5W
TPSBU60-304-1	+5V	1.2A	6A	5%	+24V	0.4A	2A	5%	+24V	0A	0.5A	5%					63W	5.5W
TPSBU60-305	+5V	1.2A	6A	5%	+24V	0.4A	2A	5%	-12V	0A	0.8A	5%					63W	5.5W
TPSBU60-305-1	+5V	1.2A	6A	5%	+24V	0.4A	2A	5%	+12V	0A	0.8A	5%					63W	5.5W
TPSBU60-306	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	-5V	0A	0.8A	5%					59.8W	5.5W
TPSBU60-306-1	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	+5V	0A	0.8A	5%					59.8W	5.5W
TPSBU60-307	+5V	0.6A	6A	5%	+10V	0.2A	2A	5%	-10V	0A	1A	5%					60W	5.5W
TPSBU60-307-1	+5V	0.6A	6A	5%	+10V	0.2A	2A	5%	+10V	0A	1A	5%					60W	5.5W
TPSBU60-308	+3.3V	0.5A	5A	7%	+5V	0.5A	5A	5%	+12V	0A	1A	5%					53.5W	5.5W
TPSBU60-308-1	+3.3V	0.5A	5A	7%	+5V	0.5A	5A	5%	-12V	0A	1A	5%					53.5W	5.5W
TPSBU60-400	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W	5.5W
TPSBU60-400-1	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W	5.5W
TPSBU60-400-2	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W	5.5W
TPSBU60-400-3	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W	5.5W
TPSBU60-401	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	-12V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W	5.5W
TPSBU60-401-1	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	-12V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W	5.5W
TPSBU60-401-2	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	+12V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W	5.5W
TPSBU60-401-3	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	+12V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W	5.5W
TPSBU60-402	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	+12V	0A	0.8A	5%	63W	5.5W
TPSBU60-402-1	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	+12V	0A	0.8A	5%	63W	5.5W
TPSBU60-402-2	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	-12V	0A	0.8A	5%	63W	5.5W
TPSBU60-402-3	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	-12V	0A	0.8A	5%	63W	5.5W
TPSBU60-403	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	+24V	0A	0.8A	5%	63W	5.5W
TPSBU60-403-1	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	+24V	0A	0.8A	5%	63W	5.5W
TPSBU60-403-2	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	-24V	0A	0.8A	5%	63W	5.5W
TPSBU60-403-3	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	-24V	0A	0.8A	5%	63W	5.5W
TPSBU60-404	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	-15V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W	5.5W
TPSBU60-404-1	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	-15V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W	5.5W
TPSBU60-404-2	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	+15V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W	5.5W
TPSBU60-404-3	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	+15V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W	5.5W
TPSBU60-423	+5V	0.1A	1A	5%	+24V	0.18A	1.8A	5%	-15V	0A	0.1A	5%	+12V	0A	0.8A	5%	59.3W	5.5W

## Mechanical Specifications :

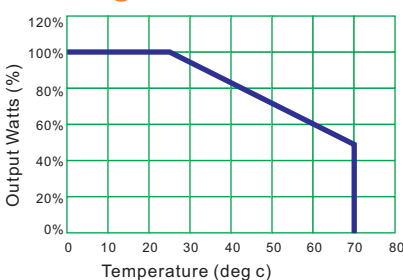


## PIN CHART

MODEL	PIN	1	2	3	4	5	6	7	8
TPSBU60-1XX	OUT	OUT	OUT	RTN	RTN	RTN			
TPSBU60-2XX	Vo2	Vo1	Vo1	COM	COM	N/C			
TPSBU60-215	N/C	Vo1	Vo1	COM	COM	Vo3			
TPSBU60-3XX	Vo2	Vo1	Vo1	COM	COM	Vo3			
TPSBU60-4XX	Vo2	Vo1	Vo1	COM	COM	Vo3	Vo4	Vo4	

Note: Vo1:Output#1 Vo2:Output#2 Vo3:Output#3 Vo4:Output#4

## Derating Curve :



- Note:
- Dimensions are shown in inches or mm.
  - Weight: 250gs approx.
  - Input connector mates with Molex housing 09-50-3051 and Molex 2478 series crimp terminal.
  - Output connector mates with Molex housing 09-50-3061 (or 09-50-3081) and Molex 2478 series crimp terminal.

- Operating Temperature: 0 to 70°C
- Derate linearly from 100% load at 25°C to 50% load at 70°C

