

TPMBU60 SERIES

63W Open Frame Type
Medical Power Supplies

Features:

- Wide Operating Voltage 90 to 264 VAC, 47 to 63 Hz
- Internal EMI filter
- Single to Quad Output
- Size: 3"x5"x1.1"
- Power Fail Detect (Optional)
- Class I
- 3 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
Iih	Input Current (High Line)	Io=Full load, Vin=240VAC	0.8A
Ir	Low Line Inrush Current	Io=Full load, 25°C, Cool start, Vin=115VAC	35A (max.)
	High Line Inrush Current	Io=Full load, 25°C, Cool start, Vin=230VAC	70A (max.)
Eff	Efficiency	Io=Full Load, Vin=230VAC	70~85%
REG-i	Line Regulation	Io=Full Load	0.5~1%
REG-o	Load Regulation	Vin=230VAC	3~6%
OVP	Over Voltage Protection		112~132%
OCP	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	16mS (min.)
Ts	Start Up Time	Io=Full Load, Vin=100VAC	0.3~2S
Vp-p	Ripple & Noise(Peak to Peak)	Full Load, Vin=90VAC	1% (max.)
Ilk	Safety Ground Leakage Current	Vin=240VAC/60Hz	0.25mA (typ.)
TC	Temperature Coefficient	All output	±0.04%/°C
OA	Operating Altitude		Up to 3000m
Pno	No-Load Power Consumption	No load, Vin=230VAC	See rating chart
Vps	Dielectric Withstanding Voltage	Primary to secondary	6290VDC (min.)
Vpg	Dielectric Withstanding Voltage for Primary to PE	Primary to PE	2121VDC (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 50°C to 50% load at 70°C	

Application:

- Medical Touch Panel PC
- Patient Monitoring System
- Ultrasound System

Safety Approvals:

c  US  CE



RoHS
2002/95/EC
COMPLIANT



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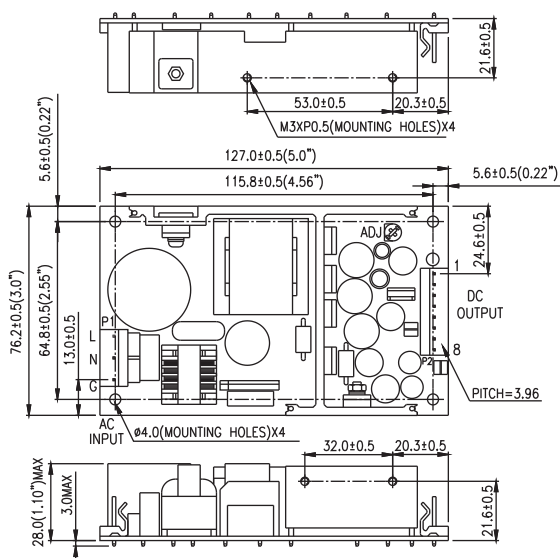
Output Voltage And Current Rating Chart (Single Output) :

Model Number	Output Voltage	Output Current	Total Regulation	Max. Output Power	Pno (max.)
TPMBU60-101	3 ~ 5 VDC	16.66 ~ 10.0 A	5%	50W	3W
TPMBU60-102	5 ~ 6 VDC	11.00 ~ 9.16 A	5%	55W	3W
TPMBU60-103	6 ~ 8 VDC	10.00 ~ 7.50 A	5%	60W	3W
TPMBU60-104	8 ~ 11 VDC	7.87 ~ 5.72 A	3%	63W	3W
TPMBU60-105	11 ~ 13 VDC	5.72 ~ 4.84 A	3%	63W	4W
TPMBU60-105-1	11 ~ 13 VDC	4.09 ~ 3.46 A	3%	45W	4W
TPMBU60-106	13 ~ 16 VDC	4.84 ~ 3.93 A	3%	63W	4W
TPMBU60-107	16 ~ 21 VDC	3.93 ~ 3.00 A	3%	63W	4W
TPMBU60-108	21 ~ 27 VDC	3.00 ~ 2.33 A	2%	63W	5W
TPMBU60-109	27 ~ 33 VDC	2.33 ~ 1.90 A	2%	63W	5W
TPMBU60-110	33 ~ 40 VDC	1.90 ~ 1.57 A	2%	63W	6W

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		
TPMBU60-200	+3.3V	1.4A	7A	6%	+12V	0.6A	3A	5%									59.1W	4W
TPMBU60-201	+5V	0.7A	7A	5%	+12V	0.3A	3A	5%									63W	4W
TPMBU60-202	+5V	0.7A	7A	5%	+15V	0.3A	3A	5%									63W	4W
TPMBU60-203	+5V	0.7A	7A	5%	+24V	0.4A	2A	5%									63W	4W
TPMBU60-204	+3.3V	1.4A	7A	6%	+5V	0.5A	5A	5%									48.1W	3W
TPMBU60-215	+5V	0.7A	7A	5%					-24V	0.2A	2A	5%					63W	4W
TPMBU60-300	+3.3V	1.2A	6A	6%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%					63W	4W
TPMBU60-300-1	+3.3V	1.2A	6A	6%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%					63W	4W
TPMBU60-301	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	-5V	0A	0.8A	5%					63W	4W
TPMBU60-301-1	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	+5V	0A	0.8A	5%					63W	4W
TPMBU60-302	+5V	0.6A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%					63W	4W
TPMBU60-302-1	+5V	0.6A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%					63W	4W
TPMBU60-303	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	-15V	0A	0.8A	5%					63W	4W
TPMBU60-303-1	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	+15V	0A	0.8A	5%					63W	4W
TPMBU60-305	+5V	1.2A	6A	5%	+24V	0.4A	2A	5%	-12V	0A	0.8A	5%					63W	5W
TPMBU60-305-1	+5V	1.2A	6A	5%	+24V	0.4A	2A	5%	+12V	0A	0.8A	5%					63W	5W
TPMBU60-306	+3.3V	1.2A	6A	6%	+12V	0.6A	3A	5%	-5V	0A	0.8A	5%					59.8W	4W
TPMBU60-306-1	+3.3V	1.2A	6A	6%	+12V	0.6A	3A	5%	+5V	0A	0.8A	5%					59.8W	4W
TPMBU60-308	+3.3V	0.5A	5A	6%	+5V	0.5A	5A	5%	-12V	0A	1A	5%					53.5W	3W
TPMBU60-308-1	+3.3V	0.5A	5A	6%	+5V	0.5A	5A	5%	+12V	0A	1A	5%					53.5W	3W
TPMBU60-400	+3.3V	1.2A	6A	6%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W	4W
TPMBU60-400-1	+3.3V	1.2A	6A	6%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W	4W
TPMBU60-400-2	+3.3V	1.2A	6A	6%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W	4W
TPMBU60-400-3	+3.3V	1.2A	6A	6%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W	4W
TPMBU60-401	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	-12V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W	4W
TPMBU60-401-1	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	-12V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W	4W
TPMBU60-401-2	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	+12V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W	4W
TPMBU60-401-3	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	+12V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W	4W
TPMBU60-402	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	-12V	0A	0.8A	5%	63W	4W
TPMBU60-402-1	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	+12V	0A	0.8A	5%	63W	4W
TPMBU60-402-2	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	-12V	0A	0.8A	5%	63W	4W
TPMBU60-402-3	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	+12V	0A	0.8A	5%	63W	4W
TPMBU60-403	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	-24V	0A	0.8A	5%	63W	4W
TPMBU60-403-1	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	+24V	0A	0.8A	5%	63W	4W
TPMBU60-403-2	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	-24V	0A	0.8A	5%	63W	4W
TPMBU60-403-3	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	+24V	0A	0.8A	5%	63W	4W
TPMBU60-404	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	-15V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W	4W
TPMBU60-404-1	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	-15V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W	4W
TPMBU60-404-2	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	+15V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W	4W
TPMBU60-404-3	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	+15V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W	4W

Mechanical Specifications :



PIN CHART

MODEL	1	2	3	4	5	6	7	8 (Optional)
TPMBU60-1XX	OUT	OUT	OUT	RTN	RTN	RTN	RTN	PFD
TPMBU60-2XX	Vo2	Vo1	Vo1	COM	COM	N/C	N/C	PFD
TPMBU60-215	N/C	Vo1	Vo1	COM	COM	Vo3	N/C	PFD
TPMBU60-3XX	Vo2	Vo1	Vo1	COM	COM	Vo3	N/C	PFD
TPMBU60-4XX	Vo2	Vo1	Vo1	COM	COM	Vo3	Vo4	PFD

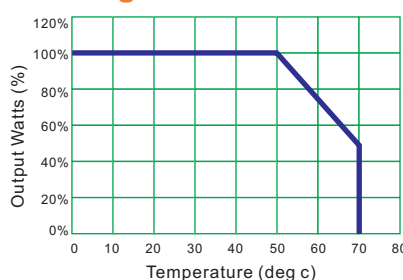
Note: Vo1:Output#1

Vo2:Output#2

Vo3:Output#3

Vo4:Output#4

Derating Curve :



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

Note:

- Dimensions are shown in inches or mm.
- Weight: 300gs approx.
- Input connector mates with Molex housing 09-50-3051 and Molex 2478 series crimp terminal.
- Output connector mates with Molex housing 09-50-3081 and Molex 2478 series crimp terminal.

