



# Total Power International, Inc.

## UNIVERSAL INPUT AC-DC OPEN FRAME SINGLE & MULTI-OUTPUT 19-20 WATTS INTERNAL SWITCHING POWER SUPPLIES TPVI19 SERIES



### FEATURES:

- ACCOMMODATE UNIVERSAL AC SOURCES
- COMPACT OPEN FRAME FORMAT
- MEET UNIVERSAL SAFETY STANDARDS
- EMI MEET CISPR PUB. 22 & FCC CLASS B
- CEMARKING COMPLIANCE

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Voltage:** Range typ. 90-264Vac.  
Rating 100 to 240Vac.

**Input Connector:** Molex 5273(vertical).

**Mating Connector:** Molex 5195 or equivalent.

**Input Frequency:** 47-63Hz.

**Inrush Current:** Typ. 20A @ 230Vac.

**Input Current:** Typ. 0.70A @ 115Vac, 0.3A @ 230Vac.

**Dielectric Withstand:** Meet IEC 60950-1.

**EMI:** Meet CISPR PUB. 22 & FCC Class B.

**Hold-up Time:** Typ. 40mS @ 115Vac, 150mS @ 230Vac.

**Earth Leakage:** Less than 0.3mA @ 230Vac.

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.

**Output Current:** See Ratings Chart.

**Output Connector:** Molex 5273 or 41671.

**Mating Connector:** Molex 5195 or 3069.

**Output Wattage:** PCB 19 watts, L-Bracket 25 watts.

**Line Regulation:** Typ. 0.1%.

**Load Regulation:** Main VO1 typ.  $\pm 1-2\%$   
Aux. VO2 typ.  $\pm 3-5\%$  (stacked on).  
Aux. VO3 typ.  $\pm 2-3\%$  (P.R.).

**Noise & Ripple:** Typ. 1.0% peak to peak.

**OVP:** Built-in at Main VO1.

**Adjustability:** Available at Main VO1.

**Overload Protection (OLP):**  
Fully protected against output overload and short circuit.  
OLP set at about 125-150% rating output wattage.  
Consult the factory for OLP setting.

#### GENERAL SPECIFICATION

**Efficiency:** Typ. 70%.

**Switching Frequency:** 40K Hz.

**Circuit Topology:** Free-running flyback circuit.

**Transient Response:** Output voltage returns in less than 3ms following a 25% load change.

**Power Density:** 1.26-1.58 Watts /Cubic Inch.

**Operating Temperature:** 0 to +50 °C.

**Storage Temperature:** -20 to +85 °C.

**Temperature Coefficient:** Typ. 0.04% / °C.

**Cooling:** Free air convection cooling.

**Safety Standard:** UL 60950-1/EN 60950-1 Class I.

**Construction:** PCB or L-Bracket format.

Note: Due to requests in market and advances in technology, specifications subject to change without notification.



For the details of safety approval, please consult the factory.



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## OUTPUT VOLTAGE / CURRENT RATINGS CHART

### SINGLE OUTPUT

MODEL NO.	MAIN VO1 @ Ⓢ		
	Typ.	Volt.	Max.
TPVI19-10	4.0A	5V	5.0A
TPVI19-10(L-B)	4.6A	5V	5.0A
TPVI19-11	1.5A	12V	1.5A
TPVI19-11(L-B)	2.0A	12V	2.5A
TPVI19-12	1.2A	15V	1.3A
TPVI19-12(L-B)	1.6A	15V	1.7A
TPVI19-13	0.8A	24V	1.0A
TPVI19-13(L-B)	1.0A	24V	

### DUAL OUTPUT

MODEL NO.	MAIN VO1 @ Ⓢ			AUX. +VO2 † or -VO3 Ⓣ		
	Typ.	Volt.	Max.	Typ.	Volt.	Max.
TPVI19-20	3.0A	+5V	4.0A	0.20A	-5V	1.0A
TPVI19-20(L-B)	4.0A	+5V	5.0A	0.50A	-5V	1.0A
TPVI19-21	2.6A	+5V	3.0A	0.50A	±12V	1.0A
TPVI19-21(L-B)	4.0A	+5V	5.0A	0.50A	±12V	1.0A
TPVI19-22	2.6A	+5V	3.0A	0.40A	±15V	0.8A
TPVI19-22(L-B)	4.0A	+5V	5.0A	0.40A	±15V	0.8A
TPVI19-23	2.6A	+5V	3.0A	0.25A	+24V	0.5A
TPVI19-23(L-B)	4.0A	+5V	5.0A	0.25A	+24V	0.5A

### 1.2A TRIPLE OUTPUT

MODEL NO.	MAIN VO1 @ Ⓢ			AUX. VO2 †			AUX. VO3 Ⓣ		
	Typ.	Volt.	Max.	Typ.	Volt.	Max.	Typ.	Volt.	Max.
TPVI19-30	2.2A	+5V	3.0A	0.5A	+12V	1.0A	0.2A	-12V	0.5A
TPVI19-30(L-B)	3.0A	+5V	4.0A	0.5A	+12V	1.0A	0.4A	-12V	0.8A
TPVI19-31	2.0A	+5V	3.0A	0.5A	+12V	1.0A	0.2A	-5V	0.5A
TPVI19-31(L-B)	3.0A	+5V	4.0A	0.7A	+12V	1.5A	0.3A	-5V	0.6A
TPVI19-32	2.0A	+5V	3.0A	0.3A	+24V	0.5A	0.2A	-12V	0.5A
TPVI19-32(L-B)	3.0A	+5V	4.0A	0.3A	+24V	0.5A	0.3A	-12V	0.6A
TPVI19-33	2.0A	+5V	3.0A	0.3A	+15V	0.6A	0.2A	-15V	0.5A
TPVI19-33(L-B)	3.0A	+5V	4.0A	0.4A	+15V	0.8A	0.3A	-15V	0.6A

Symbol: "Ⓢ" OVP built-in. "@@" Adjustable. "†" Stacked on main O/P. "Ⓣ" Installed with Post Regulator (P.R.).

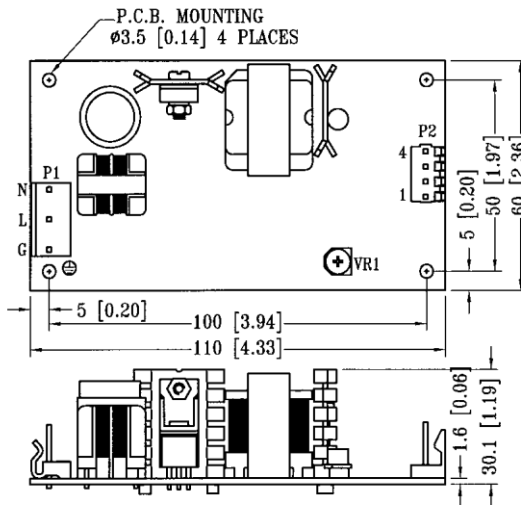
Remark: (1) At least 20% of typical main output current is required to maintain stated regulation.

(2) Max. current can't be drawn from all output at the same time.

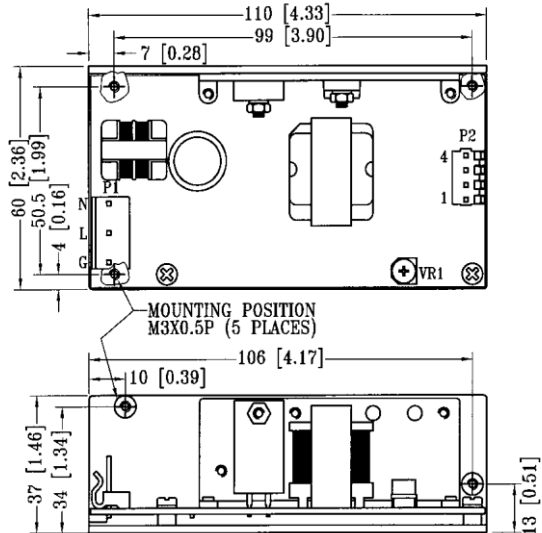
### MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: PCB 148.0g(5.2 Oz.)

L-B 223.0g(7.9 Oz.)



PCB FORMAT



L-B FORMAT

### INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

ASSIGNMENT	AC INPUT			SINGLE		SINGLE/DUAL/TRIPLE OUTPUT			
	AC-L	AC-N	AC-G	VO1	DC COM	VO1	VO2	VO3	DC COM
CONNECTOR or PIN#	P1-L	P1-N	P1-G	P2-3,4	P2-1,2	P2-2	P2-3	P2-4	P2-1

Mating connector: P1 Molex 5195 or 5239 series.

P2 Molex 5195, 5239 or 3069 series.