



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.).

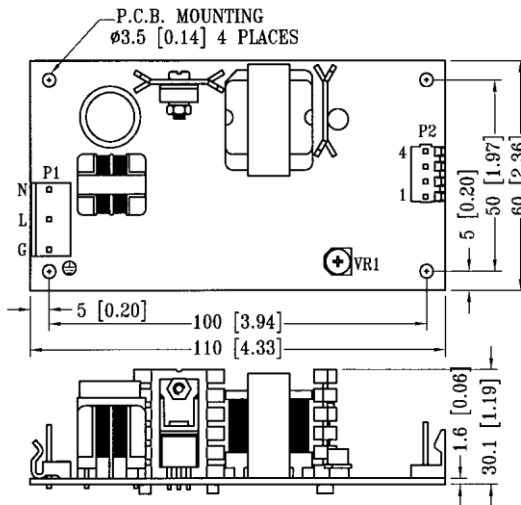
Remark: (1) At least 20% of typical main output current is required to maintain stated regulation.

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

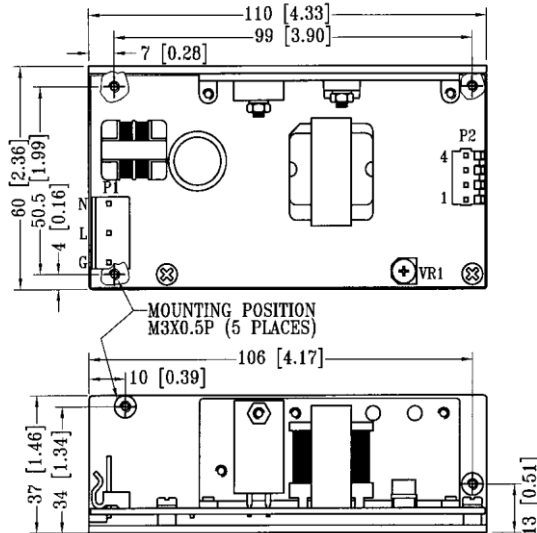
MECHANICAL DIMENSIONS: MM [INCHES]

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.