# Total Power International, Inc.

## *UNIVERSAL INPUT HARMONIC CORRECTION AC-DC MEDICAL AND IEC APPLICATION OPEN FRAME SINGLE & MULTI-OUTPUT 150 WATTS INTERNAL SWITCHING POWER SUPPLIES TPIMP151 SERIES*



## FEATURES:

- **5” X 3”* X 1.38” COMPACT SIZE**
- **ACCOMMODATE UNIVERSAL AC SOURCES**
- **MEET IEC 61000-3-2 HARMONIC CORRECTION**
- **MEET UNIVERSAL SAFETY STANDARDS**
- **EMI MEET CISPR EN 55022/EN 55011 & FCC CLASS B CONDUCTED**
- **CE MARKING COMPLIANCE**

## SPECIFICATION

### INPUT SPECIFICATION

**Input Voltage:** Typ. 90-264Vac with PFC.
**Input Connector:** V-M connector.
**Input Frequency:** 47-63Hz.
**Inrush Current:** 9.3-11.3Arms @230Vac.
**Input Current:** Typ. 2.2A @115Vac, 0.9A @230Vac.
**Dielectric Withstand:** Meet IEC 60950-1.
**EMI:** Meet CISPR EN 55022 & FCC Class B conducted.
Meet CISPR EN 55011 & FCC Class B conducted.
**Hold-up Time:** Typ. 90mS @115Vac & 230Vac.
**Power Factor & Harmonic Correction:**
Meet IEC 61000-3-2, PF typ. 0.99 @ full load.
**Over Temperature Protection:** Installed.
**Leakage Current:** 0.40-0.50mA @230Vac touch current.

### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.
**Output Current:** See Ratings Chart.
**Output Connector:** V-M connector.
**Output Wattage:** Max. 150 watts.
**Line Regulation:** Typ. 1.0%.
**Load Regulation:** Single O/P VO1 ±3.0%.
Dual O/P VO1 ±3.0% VO2 ±1.0%
Triple O/P VO1 ± 3.0% (± 8% for 3.3V), VO2/VO3 ±3.0%.
Quad O/P VO1/VO2/VO3/VO4 ±3.0%
**Noise & Ripple:** Typ. 1.0-2.0% peak to peak.
**OVP:** Built-in at VO1 and VO2.
**Adjustability:** Available at VO1 and VO2.
**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. 76-80% various with output.
**Switching Frequency:** 68K Hz.
**Circuit Topology:** Single Fixed frequency forward circuit.
Dual/Triple/Quad: Fixed freq. flyback circuit.
**Transient Response:** Output voltage returns in less than 14.8-25.2mS following a 25% load change.
**Safety Standard:** IEC 60950-1 Class I for IEC use.
IEC 60601-1 Class I for Medical use.

**Operating Temperature:** 0 to +50°C under 30 CFM forced air cooling for full load.
**Storage Temperature:** -20 to +85°C.
**Temperature Coefficient:** Typ. 0.04% /°C.
**Cooling:** Requested 30 CFM forced air flow for full load.
**Construction:** U-bracket format.
**Power Density:** 6.52-7.24 Watts / Cubic Inch .

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

# Total Power International, Inc.

## OUTPUT VOLTAGE / CURRENT RATINGS CHART

### SINGLE OUTPUT (Under air cooling)

| MODEL NO. | MAIN VO1 ★@ | | |
|---|---|---|---|
| | Typ. | Volt. | Max. |
| TPIMP151-S050270 | 27A | 5V | 30A |
| TPIMP151-S120125 | 12.5A | 12V | 12.5A |
| TPIMP151-S150100 | 10.0A | 15V | 10.0A |
| TPIMP151-S240063 | 6.3A | 24V | 6.3A |

### DUAL OUTPUT (Under forced air cooling)

| MODEL NO. | MAIN VO1 ★@ | | | AUX. VO2 ★@ | | |
|---|---|---|---|---|---|---|
| | Typ. | Volt. | Max. | Typ. | Volt. | Max. |
| TPIMP151-D050I | 15.00A | +5V | 15.00A | 6.00A | +12V | 6.00A |
| TPIMP151-D050M | 15.0A | +5V | 15.0A | 3.00A | +24V | 3.00A |
| TPIMP151-D120I | 6.25A | +12V | 6.25A | 6.25A | +12V | 6.25A |
| TPIMP151-D150K | 5.0A | +15V | 5.00A | 5.00A | +15V | 5.00A |

### TRIPLE OUTPUT (Under forced air cooling)

| MODEL NO. | MAIN VO1 ★@ | | | AUX. VO2 ★@ | | | AUX. VO3 ● | | |
|---|---|---|---|---|---|---|---|---|---|
| | Typ. | Volt. | Max. | Typ. | Volt. | Max. | Typ. | Volt. | Max. |
| TPIMP151-T033EI | 18A | +3.3V | 20A | 13.5A | +5V | 15A | 0.8A | +12V | 0.8A |
| TPIMP151-T050II | 15A | +5.0V | 15A | 5.5A | +12V | 5.5A | 0.8A | +12V | 0.8A |
| TPIMP151-T050KK | 15A | +5.0V | 15A | 4.5A | +15V | 4.5A | 0.5A | +15V | 0.5A |

### QUAD OUTPUT (Under forced air cooling)

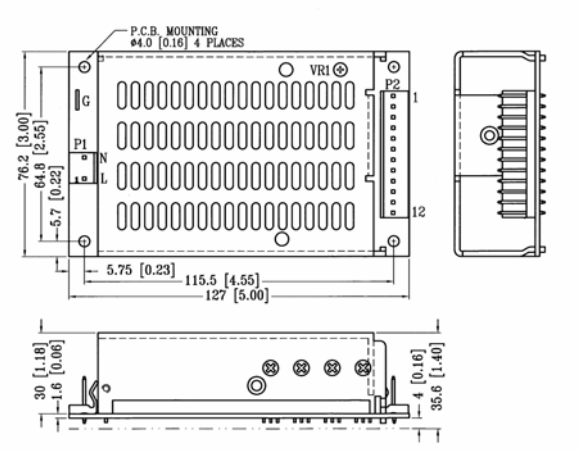
| MODEL NO. | MAIN VO1 ★@ | | | AUX. VO2 ★@ | | | AUX. VO3 ● | | | AUX. VO4 ● | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Typ. | Volt. | Max. | Typ. | Volt. | Max. | Typ. | Volt. | Max. | Typ. | Volt. | Max. |
| TPIMP151-Q050KKE | 15A | +5V | 15A | 4A | +15V | 4A | 0.8A | -15V | 0.8A | 0.5A | -5V | 0.5A |

**Symbol:** "★" OVP built-in. "@" Adjustable. "●" Post –Regulated

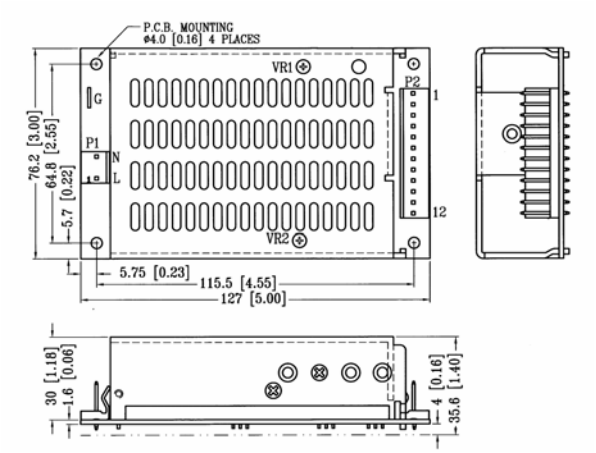
Remark: Please refer to the derating chart depending on ambient temperature and fan cooling.

## MECHANICAL DIMENSIONS: MM [INCHES]

**WEIGHT:** 385.0g (13.4 Oz.)




SINGLE




DUAL/TRIPLE/QUAD

## INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

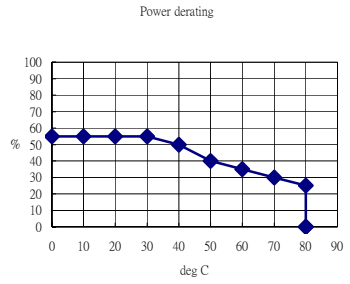
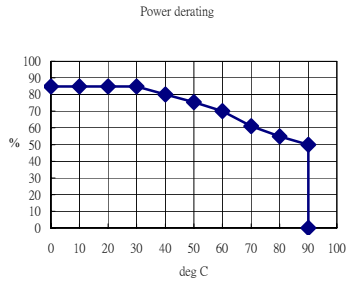
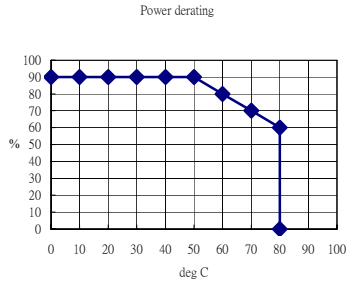
| | AC INPUT | | | SINGLE O/P | | DUAL O/P | | | TRIPLE O/P | | | | QUAD O/P | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ASSIGNMENT | AC -L | AC-N | AC-G | VO1 | DC-COM | VO1 | VO2 | DC-COM | VO1 | VO2 | VO3 | DC-COM | VO1 | VO2 | VO3 | +VO4 | DC COM |
| CNTR & PIN # | P1-L | P1-N | P1-G | P2-1,2, 3,4,5,6 | P2-7,8,9 10,11,12 | P2-1,2,3, 4 | P2-9,10 | P2-5, 6,7,8 | P2-1,2, 3,4 | P2-9,10 | P2-11 | P2-5, 6,7,8 | P2-1, 2,3,4 | P2-9,10 | P2-11 | P2-12 | P2-5,6, 7,8 |

**Mating connector:** Moles 5195 or 5239 series.

# Total Power International, Inc.

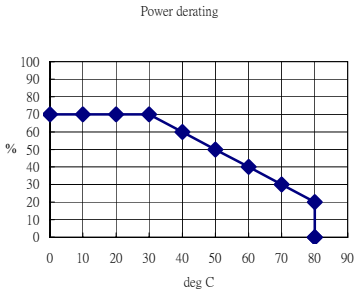
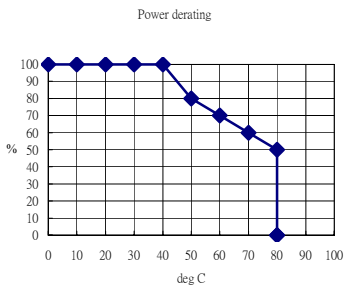
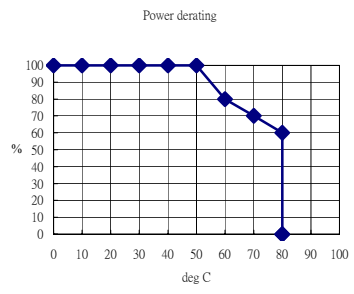
## DERATING CHART

### TPIMP151-S050270

| Forced air cooling- 5CFM | Forced air cooling- 20CFM | Forced air cooling- 30CFM |
|---|---|---|
|  |  |  |

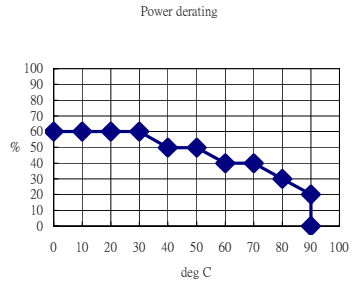
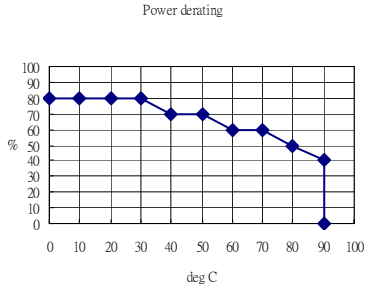
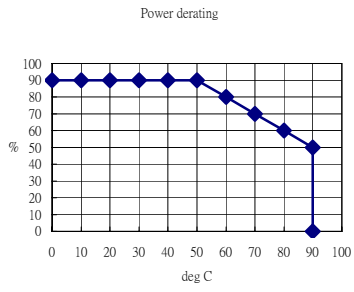


### TPIMP151-D050I

| Forced air cooling- 5CFM | Forced air cooling- 20CFM | Forced air cooling- 23CFM |
|---|---|---|
|  |  |  |

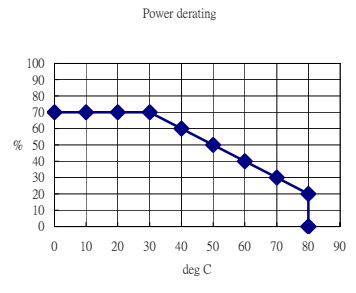
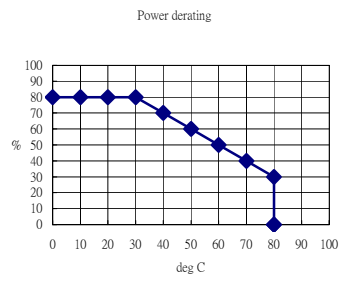
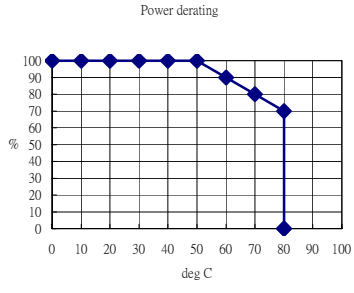


### TPIMP151-T033EI

| Forced air cooling- 5CFM | Forced air cooling- 20CFM | Forced air cooling- 30CFM |
|---|---|---|
|  |  |  |



### TPIMP151-Q050KKE

| Forced air cooling- 5CFM | Forced air cooling- 20CFM | Forced air cooling- 26CFM |
|---|---|---|
|  |  |  |