



# Total Power International, Inc.

## ON-BOARD UNIVERSAL INPUT AC-DC ENCAPSULATED MODULAR POWER SUPPLIES 10 WATTS SINGLE & DUAL OUTPUT TPAM10S & TPAM10D SERIES



### FEATURES:

- ON-BOARD AC/DC MODULAR POWER SUPPLIES
- UNIVERSAL AC INPUT RANGE
- COMPACT IN SIZE
- MEET UNIVERSAL SAFETY STANDARDS
- EMI MEET CISPR PUB.22 / FCC CLASS B
- CE MARKING COMPLIANCE

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Voltage:** Typical 90-264Vac. (or 110-340Vdc).  
**Input Frequency:** 47-63 Hz. (50/60Hz.Nom.) or DC.  
**Input Current:** 0.3A at 115Vac./ 0.13A at 230Vac.  
**Inrush Current:** 32.5A peak at 230Vac.  
**Input Fuse:** Use external fuse. 1.0A/250Vac for primary fuse is suggested.  
**Dielectric Withstand:** Meet IEC950.  
3,000Vac-Output/Input.  
1,500Vac-Input/GND.  
500Vac-Output/GND.  
**EMI:** Meet CISPR PUB.22/ FCC Class B.  
**Hold-up time:** 20ms at 115Vac, 80ms at 230Vac.  
**Earth Leakage Current:** Less than 3.5mA at 230Vac.

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.  
**Output Current:** See Ratings Chart.  
**Output Wattage:** Typical 10 Watts.  
**Output Indicator:** LED.  
**Line Regulation:** Various with output voltage.  
TPAM10S typical  $\pm 0.1\%$ .  
TPAM10D typical  $\pm 0.2\%$ .  
**Load Regulation:** Various with output voltage.  
TPAM10S typical  $\pm 1.0\%$ .  
TPAM10D typical  $\pm 2.0\%$ .  
**Noise & Ripple:** Typical 1.0% peak to peak.  
**OVP:** Built-in on main output.  
**Adjustability:** From -10% of main output till OVP.  
**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:** Typical 67-79%. (Various with output voltage)  
**Switching Frequency:** 75K Hz.  
**Circuit Topology:** Fixed Frequency Flyback circuit.  
**Transient Response:** Typical peak deviation 250mV,  
Recovery time  $< 3\text{ms}$  for a 25% load change.  
**Case:** Impact resistant thermo-plastic enclosure.  
**Weight:** 120g (4.23 Oz).  
**Power Density:** 2.51 Watts. / Cubic inch.  
**Safety Standard:** EN60950/ UL1950 Class I.  
**MTBF:** 100,000 hours. Mil Std 217, 25°C.

**Operating Temperature:** -10 to +70°C range.  
-10°C to +50°C full load without derating.  
From +50°C, derating linearly to half load at +70°C.  
(Refer to Derating Chart.)  
**Storage Temperature:** -20°C to +85°C.  
**Temperature Coefficient:**  $\pm 0.02\%$  /°C.  
**Humidity:** Up to 95%RH, Non-condensing.  
**Cooling:** Convection cooling for +50°C at full load.  
At least 100LFM moving air is recommended  
for full load  $> +50^\circ\text{C}$  in a confined area.  
**Commercial Grade only.**

NOTE: (1) All measurements are at nominal input, full load, and +25°C unless otherwise specified.

(2) Load Regulation measured from Full-Load (F-L) to Half-Load (H-L) at nominal input and others loaded at half load.

(3) Due to requests in market and advances in technology, specifications subject to change without notice.



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



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## OUTPUT VOLTAGE/ CURRENT RATINGS CHART

### SINGLE OUTPUT

| MODEL NO.      | VO1 @ ★ |       |       |
|----------------|---------|-------|-------|
|                | TYP.    | VOLT. | PEAK  |
| TPAM10S-033243 | 2.43A   | 3.3V  | 2.91A |
| TPAM10S-050200 | 2.00A   | 5.0V  | 2.44A |
| TPAM10S-090112 | 1.12A   | 9.0V  | 1.34A |
| TPAM10S-120090 | 0.90A   | 12.0V | 1.08A |
| TPAM10S-150072 | 0.72A   | 15.0V | 0.86A |
| TPAM10S-240045 | 0.45A   | 24.0V | 0.54A |
| TPAM10S-480025 | 0.25A   | 48.0V | 0.30A |

### DUAL OUTPUT

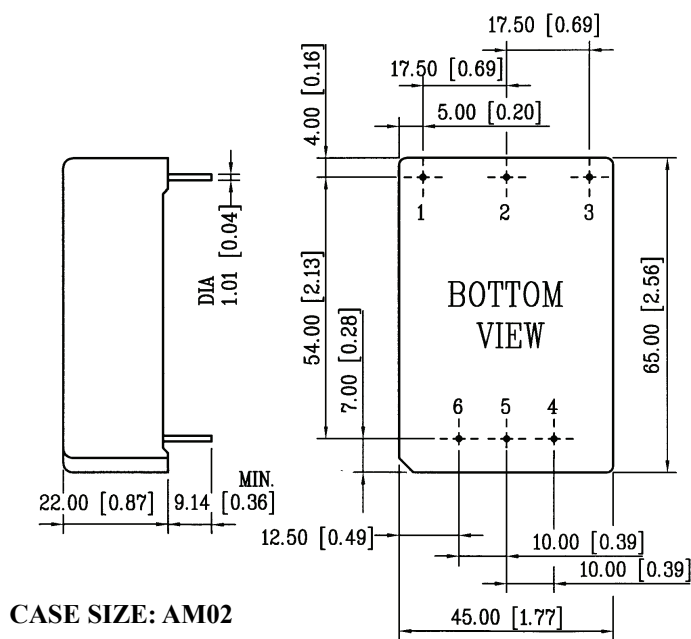
| MODEL NO.      | +VO1 @ ★ |        |       | -VO2  |        |       |
|----------------|----------|--------|-------|-------|--------|-------|
|                | TYP.     | VOLT.  | MAX.  | TYP.  | VOLT.  | MAX.  |
| TPAM10D-033120 | 1.20A    | +3.3V  | 1.38A | 1.20A | -3.3V  | 1.38A |
| TPAM10D-050100 | 1.00A    | +5.0V  | 1.15A | 1.00A | -5.0V  | 1.15A |
| TPAM10D-120045 | 0.45A    | +12.0V | 0.51A | 0.45A | -12.0V | 0.51A |
| TPAM10D-150035 | 0.35A    | +15.0V | 0.40A | 0.35A | -15.0V | 0.40A |

Symbols: "★" OVP built-in. "@" Adjustable. "||" Double Feedback.

Note: (1) Max. (maximum load) is the continuous operating load of each rail, but the max. load of each rail can not be drawn from all outputs at the same time.  
(2) Peak output, less than 60 Sec. with duty cycle <10%.

MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: 120.0g (4.23 Oz.)



### PIN ASSIGNMENT

| PIN NO. | SINGLE     | DUAL       |
|---------|------------|------------|
| PIN #1. | AC-GROUND  | AC-GROUND  |
| PIN #2. | AC-NEUTRAL | AC-NEUTRAL |
| PIN #3. | AC-LINE    | AC-LINE    |
| PIN #4. | + VO1      | + VO1      |
| PIN #5. | NO PIN     | DC-COM     |
| PIN #6. | DC-COM     | -VO2       |

### DERATING CHART

