

## 6-A, 4.5-V to 14-V INPUT, NON-ISOLATED, WIDE-OUTPUT, ADJUSTABLE POWER MODULE WITH *TurboTrans*<sup>™</sup>

### FEATURES

- Up to 6-A Output Current
- 4.5-V to 14-V Input Voltage
- Wide-Output Voltage Adjust (0.7 V to 5.5 V)
- ±1.5% Total Output Voltage Variation
- Efficiencies up to 96%
- Output Overcurrent Protection (Nonlatching, Auto-Reset)
- Operating Temperature: –40°C to 85°C
- Safety Agency Approvals:
  - UL 1950, CSA 22.2 950, EN60950 VDE (Pending)
- Prebias Startup
- On/Off Inhibit
- Differential Output Voltage Remote Sense
- Adjustable Undervoltage Lockout
- TurboTrans<sup>™</sup> Technology
- SmartSync Technology
- Auto-Track<sup>™</sup> Sequencing

### APPLICATIONS

- Complex Multi-Voltage Systems
- Microprocessors
- Bus Drivers

### DESCRIPTION

The PTH08T230W is a high-performance 6-A rated, non-isolated power module. This regulator represents the 2<sup>nd</sup> generation of the popular PTH series of power modules.

Operating from an input voltage range of 4.5 V to 14 V, the PTH08T230W requires a single resistor to set the output voltage to any value over the range, 0.7 V to 5.5 V. The wide input voltage range makes the PTH08T230W particularly suitable for advanced computing and server applications that utilize a loosely regulated 8-V to 12-V intermediate distribution bus. Additionally, the wide input voltage range increases design flexibility by supporting operation with tightly regulated 5-V, 8-V, or 12-V intermediate bus architectures.

The module incorporates a comprehensive list of features. Output over-current and over-temperature shutdown protects against most load faults. A differential remote sense ensures tight load regulation. An adjustable under-voltage lockout allows the turn-on voltage threshold to be customized. Auto-Track<sup>™</sup> sequencing is a popular feature that greatly simplifies the simultaneous power-up and power-down of multiple modules in a power system.

The PTH08T230W includes new patent pending technologies, *TurboTrans*<sup>™</sup> and *SmartSync*. The *TurboTrans* feature optimizes the transient response of the regulator while simultaneously reducing the quantity of external output capacitors required to meet a target voltage deviation specification. Additionally, for a target output capacitor bank, *TurboTrans* can be used to significantly improve the regulators transient response by reducing the peak voltage deviation. *SmartSync* allows for switching frequency synchronization of multiple modules, thus simplifying EMI noise suppression tasks and/or reducing input capacitor RMS current requirements.

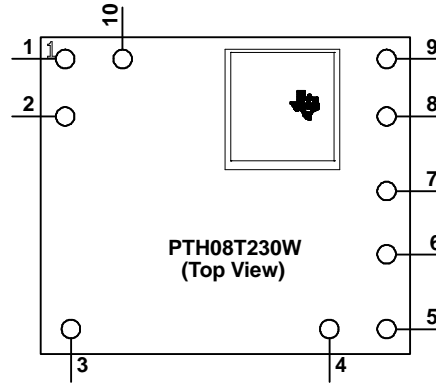
The module uses double-sided surface mount construction to provide a low profile and compact footprint. Package options include both through-hole and surface mount configurations that are lead (Pb) - free and RoHS compatible.

PRODUCT PREVIEW



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**ENVIRONMENTAL AND ABSOLUTE MAXIMUM RATINGS**

(Voltages are with respect to GND)

|              |                             |   |                  | UNIT                     |
|--------------|-----------------------------|---|------------------|--------------------------|
| $V_I$        | Input voltage               | Track   |                  | -0.3 to $V_I + 0.3$<br>V |
| $T_A$        | Operating temperature range | Over $V_I$ range  |                  | -40 to 85                |
| $T_{wave}$   | Wave soldering temperature  | Surface temperature of module body or pins for 5 seconds maximum. | PTH08T230WAD     | 260                      |
| $T_{reflow}$ | Solder reflow temperature   | Surface temperature of module body or pins                        | PTH08T230WAS     | 235 <sup>(1)</sup>       |
|              |                             |   | PTH08T230WAZ     | 260 <sup>(1)</sup>       |
| $T_{stg}$    | Storage temperature         |   |                  | -40 to 125               |
|              | Mechanical shock            | Per Mil-STD-883D, Method 2002.3 1 mssec, 1/2 sine, mounted        |                  | TBD                      |
|              | Mechanical vibration        | Mil-STD-883D, Method 2007.2 20-2000 Hz                            | Suffix AH        | TBD                      |
|              |                             |   | Suffix AS and AZ | TBD                      |
|              | Weight                      |   |                  | TBD                      |
|              | Flammability                | Meets UL94V-O   |                  | grams                    |

(1) During reflow of surface mount package version do not elevate peak temperature of the module, pins or internal components above the stated maximum.

PRODUCT PREVIEW

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