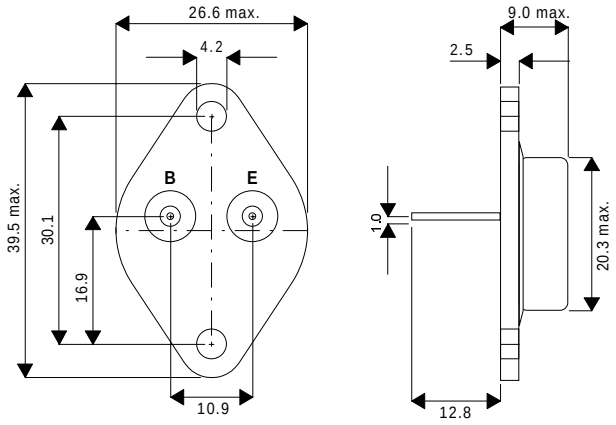
# PMD18K100

**MECHANICAL DATA**
Dimensions in mm

## NPN DARLINGTON POWER TRANSISTOR




**TO3 Package.**
Case is collector.

## FEATURES

- **TO3 PACKAGE**
- **100V**
- **60A PEAK**
- **240 WATTS**

## DESCRIPTION

The PMD18K100 is an NPN Darlington Power Transistor in a hermetic TO3 package. The device is a monolothic epitaxial structure with built in base-emitter shunt resistor

## ABSOLUTE MAXIMUM RATINGS ($T_{case}$ = 25°C unless otherwise stated)

| | | |
|---|---|---|
| $V_{CBO}$ | Collector – Base Voltage (Open Emitter) | 100V |
| $V_{CEO}$ | Collector – Emitter Voltage (Open Base) | 100V |
| $V_{EBO}$ | Emitter – Base Voltage (Open Collector) | 5V |
| $I_C$ | Collector Current Continuous | 30A |
| | Peak | 60A |
| $I_B$ | Base Current | 0.75A |
| $P_D$ | Total Power Dissipation at $T_{case}$= 50°C | 240W |
| $T_J, T_{STG}$ | Operating Junction and Storage Temperature | -65 to +200°C |
| $\theta_{JC}$ | Thermal Resistance | 0.625°C/W |

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SEME LAB

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## ELECTRICAL CHARACTERISTICS ($T_J$ = 0 to 200°C, unless otherwise stated)

| Parameter | | Test Conditions | | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|---|
| | **ON CHARACTERISTICS** | | | | | | |
| $V_{CE(sat)}$ | Collector - Emitter Saturation Voltage* | $I_C$ = 15A | $I_B$ = 60mA | | | 2 | V |
| $V_{BE(on)}$ | Base - Emitter Turn-on Voltage* | $I_C$ = 15A | $V_{CE}$ = 3V | | | 2.8 | V |
| $V_{BE(sat)}$ | Base - Emitter Saturation* | $I_C$ = 15A | $I_B$ = 60mA | | | 2.8 | V |
| $h_{FE}$ | DC Current Gain* | $I_C$ = 15A | $V_{CE}$ = 3V<br>$T_j$ = 25°C | 1000 | | 20000 | |
| $I_{s/b}$ | Forward Bias Secondary Breakdown Current | $V_{CE}$ = 30V<br>1 sec non-repetitive pulse | $T_A$ = 25°C | 8.0 | | | A |
| | **OFF CHARACTERISTICS** | | | | | | |
| $V_{(BR)CEO}$ | Collector Emitter Breakdown Voltage (Base Open)* | $I_{CE}$ = 100mA | $T_j$ = 25°C | 100 | | | V |
| $V_{(SUS)CER}$ | Collector Emitter Sustaining Voltage* | $I_{CE}$ = 100mA | $R_{BE}$ = 2.2KΩ | 100 | | | V |
| $I_{EBO}$ | Emitter Base Leakage Current | $V_{EB}$ = 5V | $I_C$ = 0A | | | 3.0 | mA |
| $I_{CER}$ | Collector Emitter Leakage Current | $V_{CE}$ = 67V | $R_{BE}$ = 2.2KΩ | | | 10.0 | mA |
| | **DYNAMIC CHARACTERISTICS** | | | | | | |
| $C_{ob}$ | Output Capacitance | $V_{CB}$ = 10V<br>f = 1MHz | $I_E$ = 0A<br>$T_j$ = 25°C | | | 600 | pF |
| $h_{fe}$ | Small Signal Current Gain | $I_C$ = 9A<br>f = 1KHz | $V_{CE}$ = 3V<br>$T_j$ = 25°C | 300 | | | |
| $h_{fe}$ | Common Emitter Short Circuit Forward Transfer Ratio | $I_C$ = 9A<br>f = 1MHz | $V_{CE}$ = 3V<br>$T_j$ = 25°C | 4 | | | |

* Pulse Tested with pulse width ≤ 300μs, and duty cycle < 2%