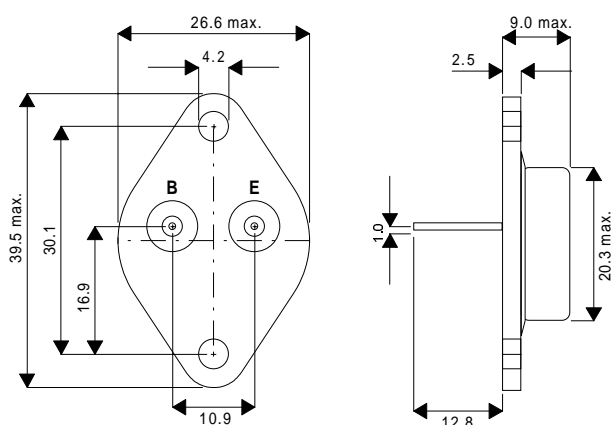


**MECHANICAL DATA**

Dimensions in mm

**NPN DARLINGTON  
POWER TRANSISTOR**



**TO3 Package.**  
Case is collector.

**FEATURES**

- TO3 PACKAGE
- 100V
- 100A PEAK
- 300 WATTS

**DESCRIPTION**

The PMD18D100 is an NPN Darlington Power Transistor in a hermetic TO3 package. The device is a monolithic epitaxial structure with built in base-emitter shunt resistor

**ABSOLUTE MAXIMUM RATINGS** ( $T_{case} = 25^{\circ}C$  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	50A
	Peak	100A
$I_B$	Base Current	1.5A
$P_D$	Total Power Dissipation at $T_{case} = 50^{\circ}C$	300W
$T_J, T_{STG}$	Operating Junction and Storage Temperature	-65 to 200°C
$\theta_{JC}$	Thermal Resistance	0.4°C/W

**ELECTRICAL CHARACTERISTICS** ( $T_J = 0$  to  $200^\circ\text{C}$ , unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Units
<b>ON CHARACTERISTICS</b>					
$V_{CE(sat)}$	Collector - Emitter Saturation Voltage*	$I_C = 30\text{A}$	$I_B = 120\text{mA}$	2	V
$V_{BE(on)}$	Base - Emitter Turn-on Voltage*	$I_C = 30\text{A}$	$V_{CE} = 3\text{V}$	2.8	V
$V_{BE(sat)}$	Base - Emitter Saturation*	$I_C = 30\text{A}$	$I_B = 120\text{mA}$	2.8	V
$h_{FE}$	DC Current Gain*	$I_C = 30\text{A}$	$V_{CE} = 3\text{V}$ $T_j = 25^\circ\text{C}$	1000	20000
$I_{s/b}$	Forward Bias Secondary Breakdown Current	$V_{CE} = 30\text{V}$ 1 sec non-repetitive pulse	$T_A = 25^\circ\text{C}$	10.0	A
<b>OFF CHARACTERISTICS</b>					
$V_{(BR)CEO}$	Collector Emitter Breakdown Voltage (Base Open)*	$I_{CE} = 100\text{mA}$	$T_j = 25^\circ\text{C}$	100	V
$V_{(SUS)CER}$	Collector Emitter Sustaining Voltage*	$I_{CE} = 100\text{mA}$	$R_{BE} = 2.2\text{K}\Omega$	100	V
$I_{EBO}$	Emitter Base Leakage Current	$V_{EB} = 5\text{V}$	$I_C = 0\text{A}$	6.0	mA
$I_{CER}$	Collector Emitter Leakage Current	$V_{CE} = 67\text{V}$	$R_{BE} = 2.2\text{K}\Omega$	15.0	mA
<b>DYNAMIC CHARACTERISTICS</b>					
$C_{ob}$	Output Capacitance	$V_{CB} = 10\text{V}$ $f = 1\text{MHz}$	$I_E = 0\text{A}$ $T_j = 25^\circ\text{C}$	1200	pF
$h_{fe}$	Small Signal Current Gain	$I_C = 18\text{A}$ $f = 1\text{KHz}$	$V_{CE} = 3\text{V}$ $T_j = 25^\circ\text{C}$	300	
$h_{fe}$	Common Emitter Short Circuit Forward Transfer Ratio	$I_C = 18\text{A}$ $f = 1\text{MHz}$	$V_{CE} = 3\text{V}$ $T_j = 25^\circ\text{C}$	4	

\* Pulse Tested with pulse width  $\leq 300\mu\text{s}$ , and duty cycle  $< 2\%$