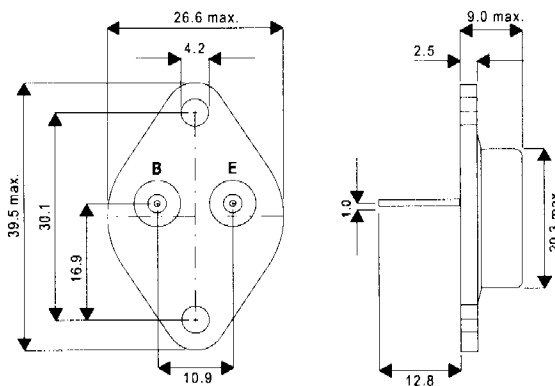


MECHANICAL DATA

Dimensions in mm



TO3 Package.

Case is collector.

**NPN DARLINGTON
 POWER TRANSISTOR**

FEATURES

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

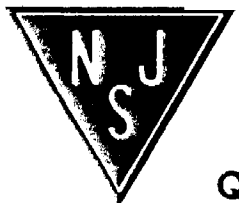
DESCRIPTION

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
θ_{JC}	Thermal Resistance	0.4°C/W

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.



PMD18D100

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*	$I_C = 30\text{A}$	$I_B = 120\text{mA}$	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	$V_{CE} = 30\text{V}$	$T_A = 25^\circ\text{C}$ 1 sec non-repetitive pulse	10.0	A
OFF CHARACTERISTICS					
$V_{(BR)CEO}$	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
DYNAMIC CHARACTERISTICS					
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 $< 2\%$