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# PMD 18D, 19D SERIES

## 300 WATT (50 AMP CONTINUOUS, 100 AMP PEAK)

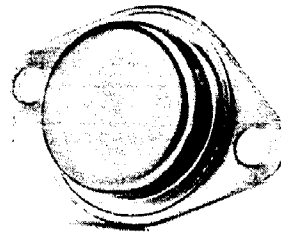
### DEVICE SELECTION GUIDE

DEVICE	VOLTAGE RATING	POLARITY
PMD18D80	80V	NPN
PMD18D100	100V	NPN
PMD19D80	80V	PNP
PMD19D100	100V	PNP

### ABSOLUTE MAXIMUM RATINGS

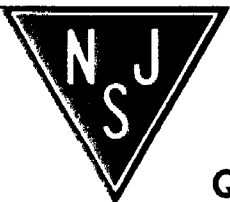
PARAMETER	SYMBOL	MAXIMUM	UNITS
Collector Emitter Voltage PMD18D, PMD19D80 PMD18D, PMD19D100	$V_{CE0}$	80 100	Vdc
Collector Base Voltage PMD18D, PMD19D80 PMD18D, PMD19D100	$V_{CB0}$	80 100	Vdc
Emitter Base Voltage	$V_{EB0}$	5	Vdc
Collector Current Continuous Peak	$I_C$	50 100	Adc
Base Current	$I_B$	1.5	Adc
Thermal Resistance	$\theta_{JC}$	0.4	$^{\circ}\text{C}/\text{Watt}$
Total Internal Power Dissipation @ $T_C = 50^{\circ}\text{C}$ <sup>(1)</sup>	$P_D$	300	Watts
Operating Junction and Storage Temperature	$T_J$ $T_{STG}$	-65 to +200	$^{\circ}\text{C}$

<sup>(1)</sup> For operation above  $T_C = 80^{\circ}\text{C}$ , derate @ 2.5 W/ $^{\circ}\text{C}$ .



### FEATURES

- Electrical specifications guaranteed for operating junction temperature range of 0 - 200°C
- Guaranteed and 100% tested for  $I_{SB}$  (Secondary Breakdown Current) insuring maximum performance at high energy levels
- Low thermal resistance for more useable power and lower operating temperatures
- Hermetically sealed



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.

Quality Semi-Conductors

## ELECTRICAL CHARACTERISTICS

All parameters are guaranteed at  $T_J = 0$  to  $200^\circ\text{C}$ , unless otherwise specified.

Parameter	Symbol	Test Conditions	Minimum	Maximum	Units
<b>ON CHARACTERISTICS</b>					
Collector Emitter Saturation Voltage <sup>1</sup>	$V_{CE(sat)}$	$I_C = 30 \text{ Adc}; I_B = 120 \text{ mAdc}$		2.0	Vdc
Base Emitter Turn-on Voltage <sup>1</sup>	$V_{BE(on)}$	$I_C = 30 \text{ Adc}; V_{CE} = 3 \text{ Vdc}$		2.8	Vdc
Base Emitter Saturation <sup>1</sup>	$V_{BE(sat)}$	$I_C = 30 \text{ Adc}; I_B = 120 \text{ mAdc}$		2.8	Vdc
DC Current Gain <sup>1</sup> PMD18D80, 100 PMD19D80, 100	$h_{FE}$	$I_C = 30 \text{ Adc}; V_{CE} = 3 \text{ Vdc}$ $T_J = 25^\circ\text{C}$	1000 800	20,000 20,000	
Forward Bias Secondary Breakdown Current	$I_{s/b}$	$V_{CE} = 30 \text{ Vdc}; T_A = 25^\circ\text{C}$ 1 sec non-repetitive pulse	10.0		Adc
<b>OFF CHARACTERISTICS</b>					
Collector Emitter Breakdown Voltage <sup>1</sup> (Base Open) PMD18D, 19D80 PMD18D, 19D100	$V_{(BR)CEO}$	$I_{CE} = 100 \text{ mAdc}; T_J = 25^\circ\text{C}$	80 100		Vdc
Collector Emitter Sustaining Voltage <sup>1</sup> PMD18D, 19D80 PMD18D, 19D100	$V_{(SUS)CEO}$	$I_{CE} = 100 \text{ mAdc}; R_{BE} = 2.2\text{k}\Omega$	80 100		Vdc
Emitter Base Leakage Current	$I_{EBO}$	$V_{EB} = 5 \text{ Vdc}; I_C = 0\text{A}$		6.0	mAdc
Collector Emitter Leakage Current PMD18D, 19D80 PMD18D, 19D100	$I_{CER}$	$V_{CE} = 54 \text{ Vdc}; R_{BE} = 2.2\text{k}\Omega$ $V_{CE} = 67 \text{ Vdc}; R_{BE} = 2.2\text{k}\Omega$		15.0 15.0	mAdc
<b>DYNAMIC CHARACTERISTICS</b>					
Output Capacitance	$C_{ob}$	$V_{CB} = 10 \text{ Vdc}; I_E = 0 \text{ Adc}$ $f = 1 \text{ MHz}; T_J = 25^\circ\text{C}$		1200	pF
Small Signal Current Gain	$h_{fe}$	$I_C = 18 \text{ Adc}; V_{CE} = 3 \text{ Vdc}$ $f = 1 \text{ kHz}; T_J = 25^\circ\text{C}$	300		
Common Emitter Short Circuit Forward Transfer Ratio	$h_{fe}$	$I_C = 18 \text{ Adc}; V_{CE} = 3 \text{ Vdc}$ $f = 1 \text{ MHz}; T_J = 25^\circ\text{C}$	4		