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PMD 18D, 19D SERIES

300 WATT (50 AMP CONTINUOUS, 100 AMP PEAK)

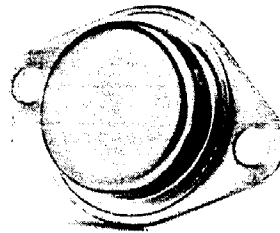
DEVICE SELECTION GUIDE

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	θ_{JC}	0.4	$^{\circ}\text{C}/\text{Watt}$
Total Internal Power Dissipation @ $T_C = 50^{\circ}\text{C}$ ⁽¹⁾	P_D	300	Watts
Operating Junction and Storage Temperature	T_J T_{STG}	-65 to +200	$^{\circ}\text{C}$

⁽¹⁾ 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°C , unless otherwise specified.

Parameter	Symbol	Test Conditions	Minimum	Maximum	Units
ON CHARACTERISTICS					
Collector Emitter Saturation Voltage ¹	$V_{CE(sat)}$	$I_C = 30 \text{ Adc}; I_B = 120 \text{ mAdc}$		2.0	Vdc
Base Emitter Turn-on Voltage ¹	$V_{BE(on)}$	$I_C = 30 \text{ Adc}; V_{CE} = 3 \text{ Vdc}$		2.8	Vdc
Base Emitter Saturation ¹	$V_{BE(sat)}$	$I_C = 30 \text{ Adc}; I_B = 120 \text{ mAdc}$		2.8	Vdc
DC Current Gain ¹ 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
OFF CHARACTERISTICS					
Collector Emitter Breakdown Voltage ¹ (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 ¹ 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
DYNAMIC CHARACTERISTICS					
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		