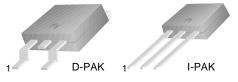


## **MJD200**

### **D-PAK for Surface Mount Applications**

- High DC Current Gain
- Built-in a Damper Diode at E-C
- Lead Formed for Surface Mount Applications (No Suffix)
- Straight Lead (I-PAK, " I " Suffix)



1.Base 2.Collector 3.Emitter

### **NPN Epitaxial Silicon Transistor**

### Absolute Maximum Ratings T<sub>C</sub>=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	40	V
V <sub>CEO</sub>	Collector-Emitter Voltage	25	V
V <sub>EBO</sub>	Emitter-Base Voltage	8	V
I <sub>B</sub>	Base Current	1	А
I <sub>C</sub>	Collector Current (DC)	5	Α
I <sub>CP</sub>	Collector Current (Pulse)	10	А
P <sub>C</sub>	Collector Dissipation (T <sub>C</sub> = 25°C)	12.5	W
	Collector Dissipation (T <sub>a</sub> = 25°C)	1.4	W
TJ	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	- 55 ~ 150	°C

### Electrical Characteristics T<sub>C</sub>=25°C unless otherwise noted

ů .					
Symbol	Parameter	Test Condition	Min.	Max.	Units
V <sub>CBO</sub> (sus)	* Collector Emitter Sustaining Voltage	I <sub>C</sub> =100mA, I <sub>B</sub> =0	25		V
I <sub>CEO</sub>	Collector Cut-off Current	$V_{CB}$ =40V, $I_E$ =0		100	nA
I <sub>CBO</sub>	Collector Cut-off Current	V <sub>EBO</sub> =8V, I <sub>C</sub> =0		100	nA
I <sub>EBO</sub>	Emitter Cut-off Current	V <sub>CE</sub> =1V, I <sub>C</sub> =500mA	70		
h <sub>FE</sub>	* DC Current Gain	V <sub>CE</sub> =1V, I <sub>C</sub> =2A V <sub>CE</sub> =2V, I <sub>C</sub> =5A	45 10	180	
V <sub>CE</sub> (sat)	* Collector-Emitter Saturation Voltage	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA I <sub>C</sub> =2A, I <sub>B</sub> =200mA I <sub>C</sub> =5A, I <sub>B</sub> =1A		0.3 0.75 1.8	V V V
V <sub>BE</sub> (sat)	* Base-Emitter Saturation Voltage	I <sub>C</sub> =5A, I <sub>B</sub> =2A		2.5	V
V <sub>BE</sub> (on)	* Base-Emitter ON Voltage	V <sub>CE</sub> =1V, I <sub>C</sub> =2A		1.6	V
f <sub>T</sub>	Current Gain Bandwidth Product	V <sub>CE</sub> =10V, I <sub>C</sub> =100mA	65		MHz
C <sub>ob</sub>	Output Capacitance	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=0.1MHz		80	pF

<sup>\*</sup> Pulse Test: PW≤300μs, Duty Cycle≤2%

## **Typical Characteristics**

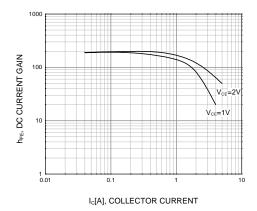


Figure 1. DC current Gain

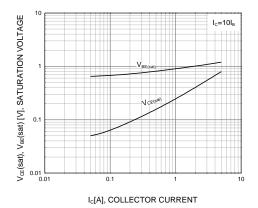


Figure 2. Base-Emitter Saturation Voltage

Collector-Emitter Saturation Voltage

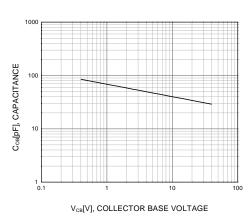


Figure 3. Collector Output Capacitance

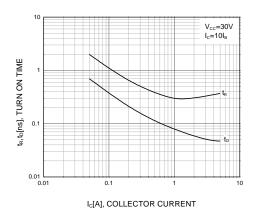


Figure 4. Turn On Time

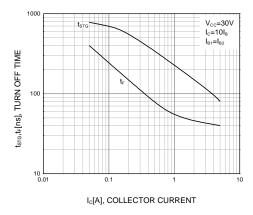
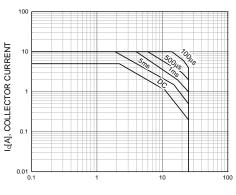


Figure 5. Turn Off Time



 $V_{\text{CE}}[V]$ , COLLECTOR-EMITTER VOLTAGE

Figure 6. Safe Operating Area

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# Typical Characteristics (Continued)

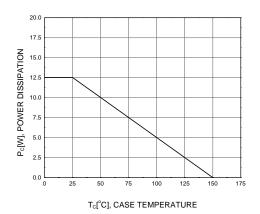
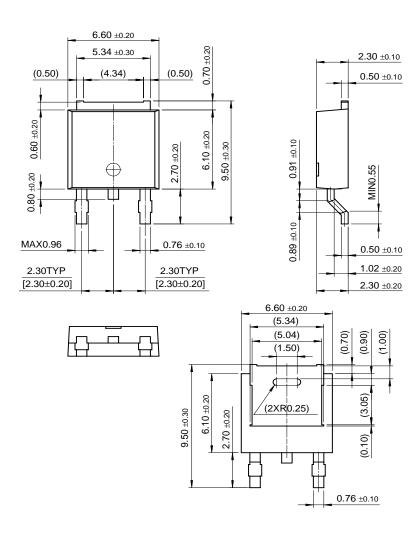


Figure 7. Power Derating

## **Package Demensions**

## D-PAK



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