

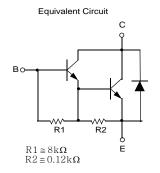
December 2009

MJD122 NPN Silicon Darlington Transistor

Features

- D-PAK for Surface Mount Applications
- High DC Current Gain
- Built-in a Damper Diode at E-C
- Lead Formed for Surface Mount Applications
- Electrically Similar to Popular TIP122
- Complement to MJD127





$\textbf{Absolute Maximum Ratings} \quad T_A = 25 ^{\circ}\text{C unless otherwise noted}$

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	100	V
V _{CEO}	Collector-Emitter Voltage	100	V
V _{EBO}	Emitter-Base Voltage	5	V
I _C	Collector Current (DC)	8	Α
I _{CP}	Collector Current (Pulse)	16	Α
I _B	Base Current	120	mA
P _C	Collector Dissipation (T _C =25°C)	20	W
	Collector Dissipation (T _A =25°C)	1.75	W
T _J	Junction Temperature	150	°C
T _{STG}	Storage Temperature	- 65 to 150	°C

Electrical Characteristics $T_A=25^{\circ}C$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
V _{CEO} (sus)	*Collector-Emitter Sustaining Voltage	$I_C = 30 \text{mA}, I_B = 0$	100		V
I _{CEO}	Collector Cut-off Current	$V_{CE} = 50V, I_{B} = 0$		10	μΑ
I _{CBO}	Collector Cut-off Current	$V_{CB} = 100V, I_{E} = 0$		10	μΑ
I _{EBO}	Emitter Cut-off Current	$V_{EB} = 5V, I_{C} = 0$		2	mA
h _{FE}	*DC Current Gain	$V_{CE} = 4V$, $I_C = 4A$ $V_{CE} = 4V$, $V_{EB} = 8A$	1000 100	12K	
V _{CE} (sat)	*Collector-Emitter Saturation Voltage	I _C = 4A, I _B = 16mA I _C = 8A, I _B = 80mA		2 4	V V
V _{BE} (sat)	*Base-Emitter Saturation Voltage	$I_C = 8A, I_B = 80mA$		4.5	V
V _{BE} (on)	*Base-Emitter On Voltage	$V_{CE} = 4V$, $I_{C} = 4A$		2.8	V
C _{ob}	Output Capacitance	$V_{CB} = 10V, I_{E} = 0$ f= 0.1MHz		200	pF

^{*} Pulse Test: PW≤300μs, Duty Cycle≤2%

Typical Performance Characteristics

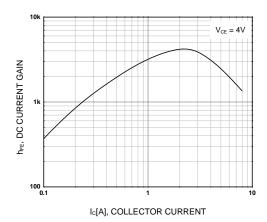


Figure 1. DC current Gain

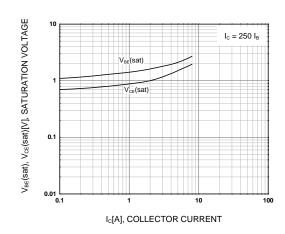


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

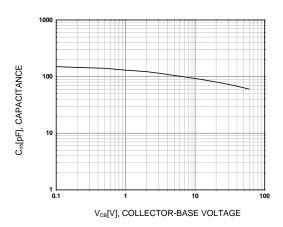


Figure 3. Collector Output Capacitance

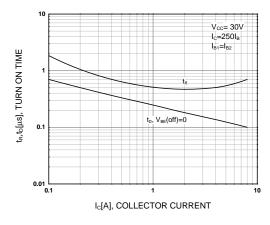


Figure 4. Turn On Time

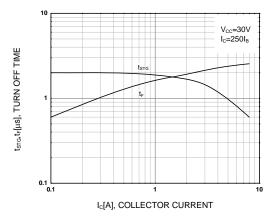


Figure 5. Turn Off Time

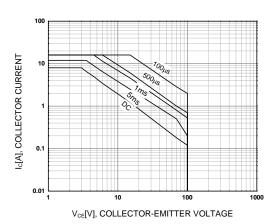


Figure 6. Safe Operating Area

Typical Performance Characteristics (Continued)

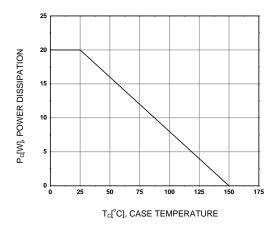
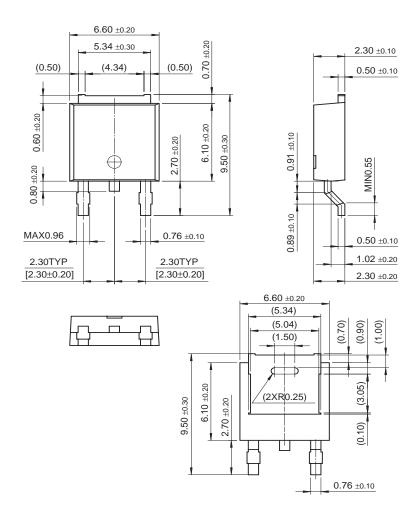


Figure 1. Power Derating

Mechanical Dimensions

D-PAK



Dimensions in Millimeters





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