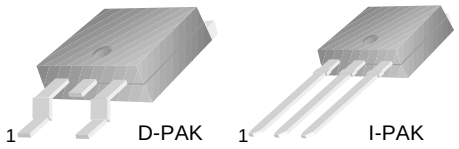
FAIRCHILD
SEMICONDUCTOR®

MJD112

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)
- Electrically Similar to Popular TIP112



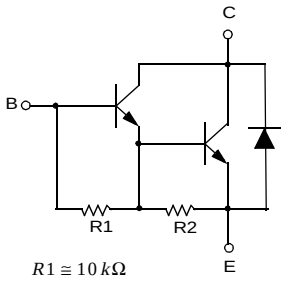
1.Base 2.Collector 3.Emitter

NPN Silicon Darlington Transistor

Absolute Maximum Ratings T_C=25°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)	2	A
I_{CP}	Collector Current (Pulse)	4	A
I_B	Base Current	50	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 ~ 150	°C

Equivalent Circuit



$R1 \cong 10\,k\Omega$
$R2 \cong 0.6\,k\Omega$

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
V_{CEO}(sus)	Collector-Emitter Sustaining Voltage	I_C = 30mA, I_B = 0	100		V
I_{CEO}	Collector Cut-off Current	V_{CE} = 50V, I_B = 0		20	μA
I_{CBO}	Collector Cut-off Current	V_{CB} = 100V, I_B = 0		20	μA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5V, I_C = 0		2	mA
h_{FE}	* DC Current Gain	V_{CE} = 3V, I_C = 0.5A V_{CE} = 3V, I_C = 2A V_{CE} = 3V, I_C = 4A	500 1000 200	12K	
V_{CE}(sat)	* Collector-Emitter Saturation Voltage	I_C = 2A, I_B = 8mA I_C = 4A, I_B = 40mA		2 3	V V
V_{BE}(sat)	* Base-Emitter Saturation Voltage	I_C = 4A, I_B = 40mA		4	V
V_{BE}(on)	* Base-Emitter ON Voltage	V_{CE} = 3A, I_C = 2A		2.8	V
f_T	Current Gain Bandwidth Product	V_{CE} = 10V, I_C = 0.75A	25		MHz
C_{ob}	Output Capacitance	V_{CB} = 10V, I_E = 0 f = 0.1MHz		100	pF

* Pulse Test: PW≤300μs, Duty Cycle≤2%

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Typical Characteristics

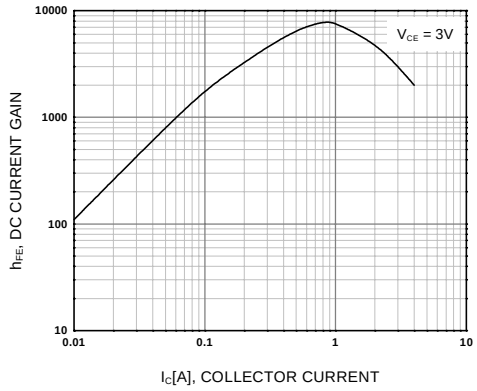

Figure 1. DC current Gain

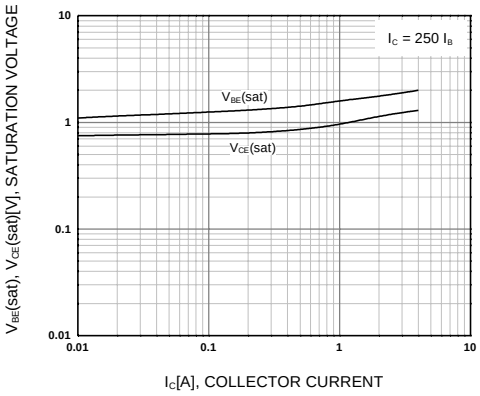

Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

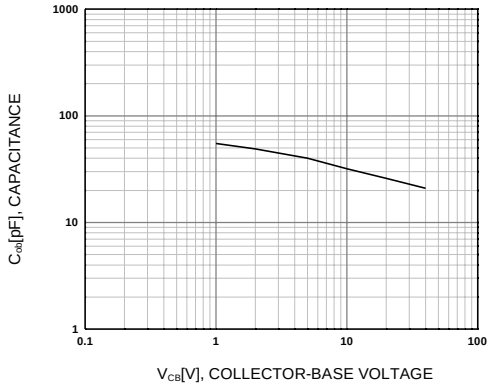

Figure 3. Collector Output Capacitance

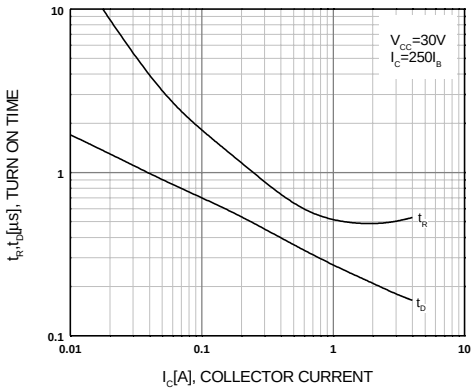

Figure 4. Turn On Time

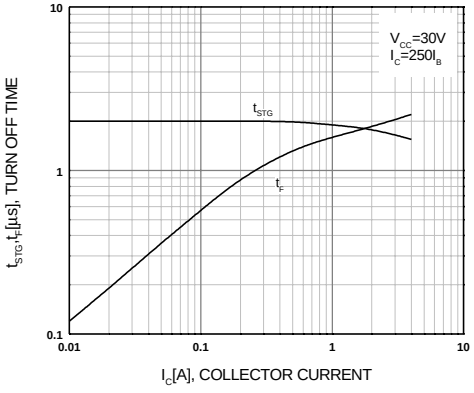

Figure 5. Turn Off Time

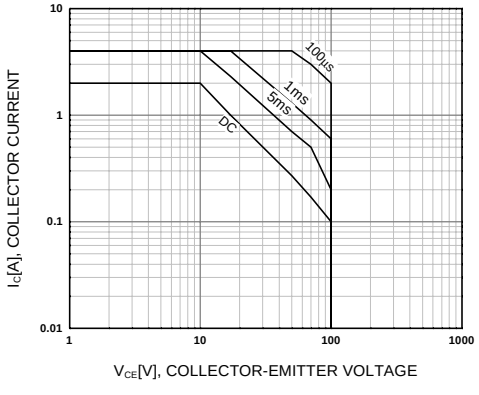

Figure 6. Safe Operating Area

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Typical Characteristics (Continued)

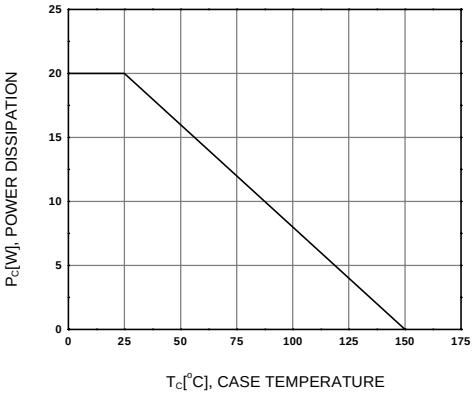

Figure 7. Power Derating

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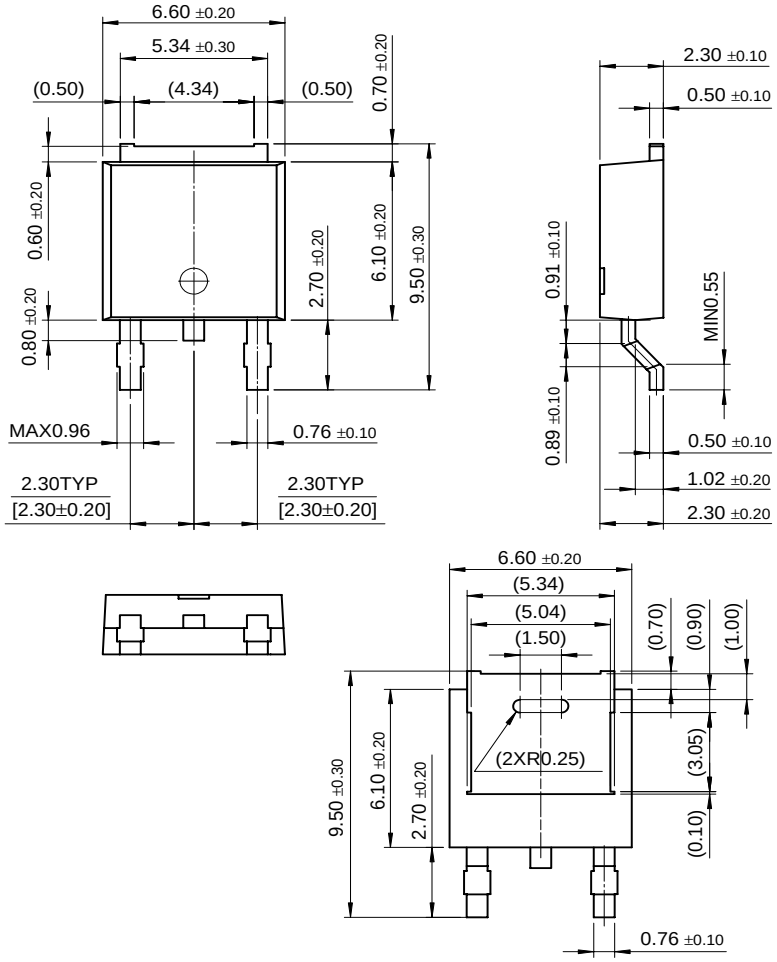
Package Demensions

D-PAK



Dimensions in Millimeters

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