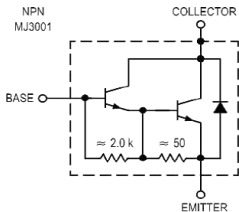


NPN Silicon Darlington Medium Power Transistor
V_{CEO} 80V, I_C 10A, 150W, TO-3

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**RoHS
Compliant**



Features

- 1. High DC Current Gain - $h_{FE} = 4000$ (Typ.) @ $I_C = 25A$ DC
 $h_{FE} = 400$ (Min) @ $I_C = 5$ Adc
- 2. Monolithic Construction with Built-In Base-Emitter Shunt Resistor

APPLICATIONS: For use as output devices in complementary general purpose amplifier applications.

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^{\circ}C$)

Rating	Symbol	Max	Units
Collector-Emitter Voltage	V_{CEO}	80	V DC
Collector-Base Voltage	V_{CB}	80	V DC
Emitter Base Voltage	V_{EB}	5	V DC
Collector Current	I_C	10	A _{DC}
Base Current	I_B	0.2	A _{DC}
Total Device Dissipation @ TC 25°C Derate above 25°C	P_D	150 0.857	Watts W/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55°C to +200°C	°C

Thermal Characteristics

Characteristic	Symbol	Rating	Unit
Thermal Resistance, Junction to case	JC	1.17	°C/W

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Electrical Characteristics at $T_A = 25^\circ\text{C}$ unless otherwise specified)

Description	Symbol	Min	Max	Units
Off Characteristics				
Collector-Emitter Breakdown Voltage (1) ($I_C = 100\text{mA DC}$, $I_B = 0$)	$V_{(BR)CEO}$	80	-	V DC
Collector-Emitter Leakage Current ($V_{CE} = 80\text{V DC}$, $R_{BE} = 1\text{k}\Omega$ ($V_{CE} = 80\text{V DC}$, $R_{BE} = 1\text{k}\Omega$, $T_C = 150^\circ\text{C}$)	I_{CER}	-	1 5	mA DC
Emitter Cut Off Current ($V_{BE} = 5\text{V DC}$, $I_C = 0$)	I_{EBO}	-	5	mA DC
Collector-Emitter Leakage Current ($V_{CE} = 40\text{V DC}$, $I_B = 0$)	I_{CEO}	-	1	mA DC
On Characteristics (1)				
DC Current Gain ($I_C = 5\text{A DC}$, $V_{CE} = 3\text{V DC}$)	h_{FE}	1000	-	-
Collector-Emitter Saturation Voltage ($I_C = 5\text{A DC}$, $I_B = 20\text{mA DC}$ ($I_C = 10\text{A DC}$, $I_B = 50\text{mA DC}$)	$V_{CE(sat)}$	-	2 4	V DC
Base-Emitter Voltage ($I_C = 5\text{A DC}$, $V_{CE} = 3\text{V DC}$)	$V_{BE(on)}$	-	3	V DC

(1) Pulse Test: Pulse Width = 300 μ s, Duty Cycle = 2%

Typical Characteristics Curves

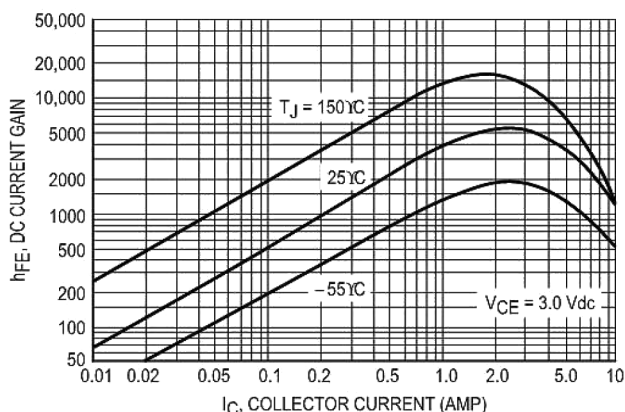


Figure 2. DC Current Gain

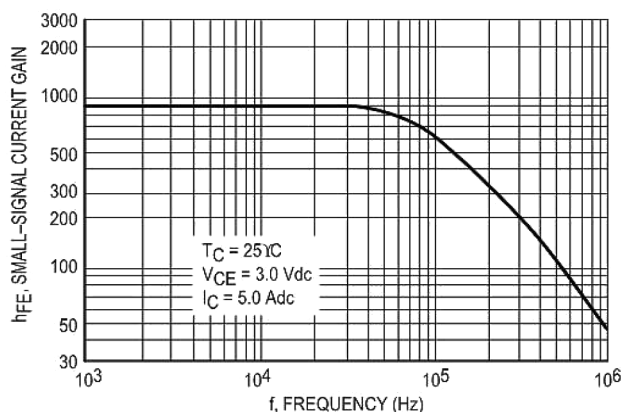


Figure 3. Small-Signal Current Gain

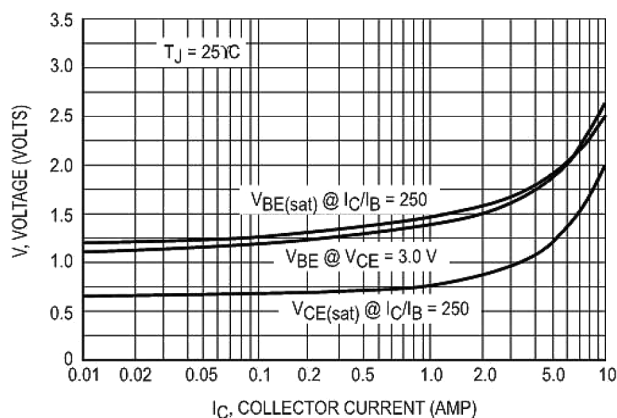


Figure 4. "On" Voltages

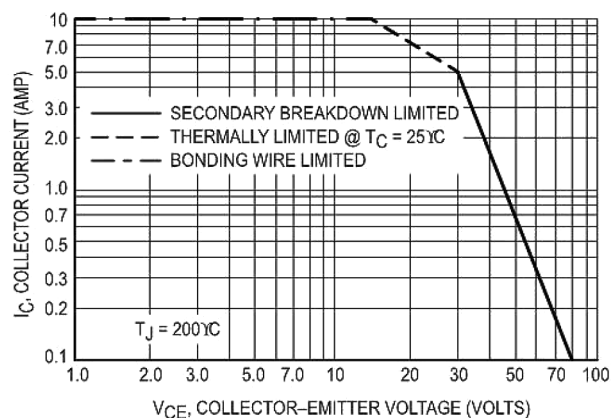


Figure 5. DC Safe Operating Area

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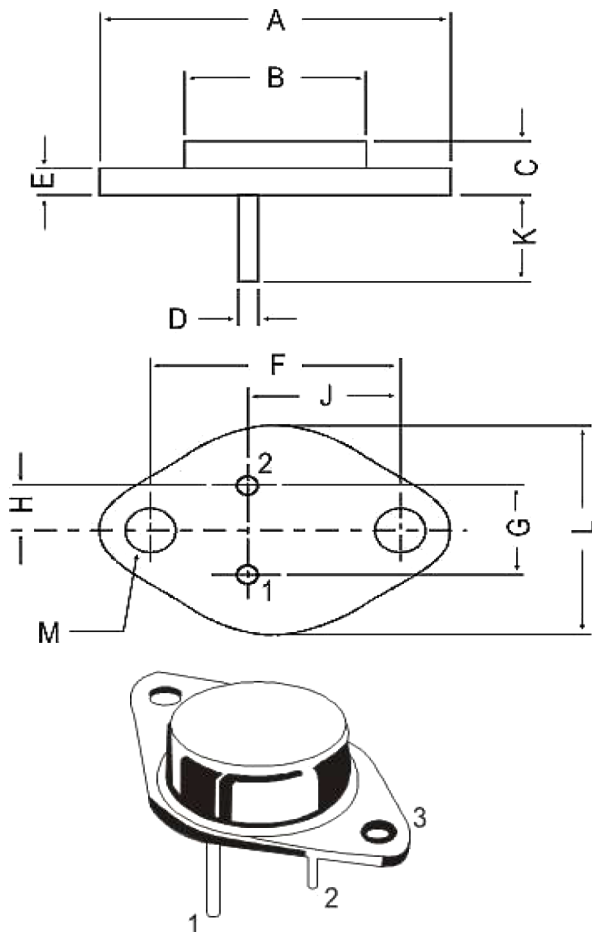
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V_{CEO} 80V, I_C 10A, 150W, TO-3

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Package Details



Dimensions : Millimetres

PIN CONFIGURATION

1. BASE
2. EMITTER
3. COLLECTOR

Dim	Min.	Max.
A	-	39.37
B	-	22.22
C	6.35	8.5
D	0.96	1.09
E	-	1.77
F	29.9	30.4
G	10.69	11.18
H	5.2	5.72
J	16.64	17.15
K	11.15	12.25
L	-	26.67
M	3.84	4.19

Part Number Table

Description	Part Number
Silicon Darlington Medium Power Transistor, NPN 80V, 10A, TO-3	MJ3001

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