

NPN High Voltage Medium Power Transistor

V_{CE0} 100V, I_c 16A, 150W

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**RoHS
Compliant**



TO-3

Description

This is a medium power silicon transistor use as output devices in for general purpose amplifier applications.

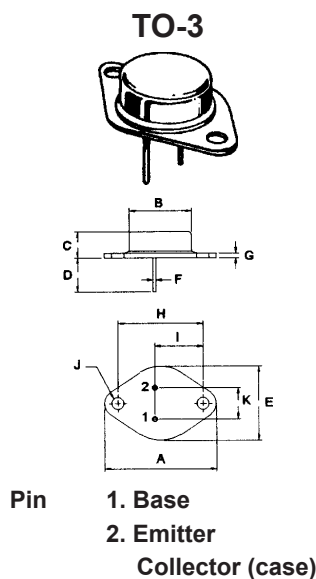
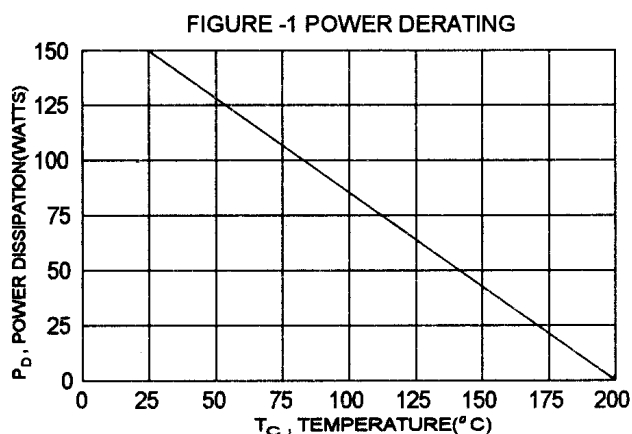
Features

- High Gain Darlington Performance
- DC Current Gain $h_{FE} = 3500$ (Typ) @ $I_c = 10A$
- Monolithic Construction with Built-in Base-Emitter Shunt Resistor

Maximum Ratings and Thermal Characteristics

Characteristics	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEV}	100	V
Collector-Emitter Voltage	V_{CEO}	100	
Emitter-Base Voltage	V_{EBO}	5	
Collector Current-Continuous -Peak	I_c I_{CM}	16 20	A
Base Current	I_B	0.5	A
Total Power Dissipation @ $T_c = 25^\circ C$ Derate above $25^\circ C$	P_D	150 0.857	W W/ $^\circ C$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +200	$^\circ C$
Thermal Resistance Junction to Case	$R_{\theta JC}$	1.17	$^\circ C/W$

Thermal Characteristics



Dim.	MILLIMETRES	
	Min.	Max.
A	38.75	39.96
B	19.28	22.23
C	7.96	9.28
D	11.18	12.19
E	25.2	26.67
F	0.92	1.09
G	1.38	1.62
H	29.9	30.4
I	16.64	17.3
J	3.88	4.36
K	10.67	11.18

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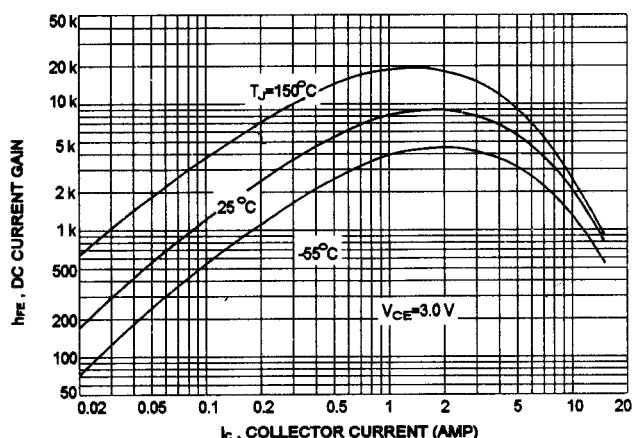
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Electrical Characteristics ($T_C = 25^\circ\text{C}$ Unless otherwise noted)

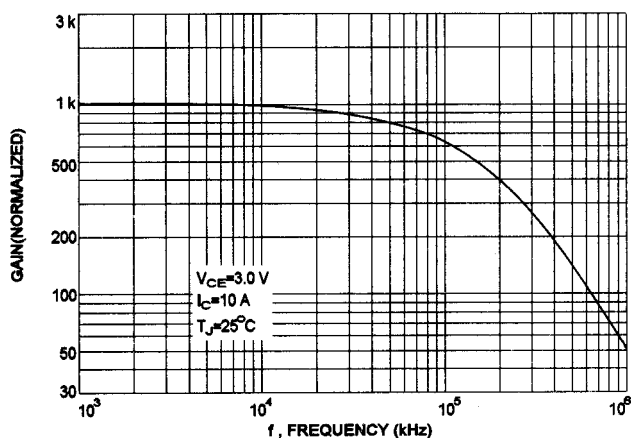
Characteristics	Symbol	Min	Max	Unit
Off Characteristics				
Collector - Emitter Sustaining Voltage* (I _C = 100mA, I _B = 0)	V _{CEO(SUS)}	100	-	V
Collector Cutoff Current (V _{CE} = 50V, I _B = 0)	I _{CEO}	-	3	mA
Collector-Emitter Leakage Current (V _{CE} = 100V, R _{BE} = 1kΩ) (V _{CE} = 100V, R _{BE} = 1kΩ, T _C = 150°C)	I _{CER}	-	1 5	
Emitter Cutoff Current (V _{EB} = 5V, I _C = 0)	I _{EBO}	-	5	
On Characteristics*				
DC Current Gain (I _C = 10A, V _{CE} = 3V)	hFE	1000	-	-
Collector - Emitter Saturation Voltage (I _C = 10A, I _B = 40mA) (I _C = 16A, I _B = 80mA)	V _{CE(sat)}	-	2.5 4	V
Base - Emitter Saturation Voltage (I _C = 10A, V _{CE} = 3V)	V _{BE(on)}	-	3	

Note: *Pulse Test - Pulse width = 300 μs , Duty Cycle $\leq 2\%$

DC CURRENT GAIN



SMALL-SIGNAL CURRENT GAIN

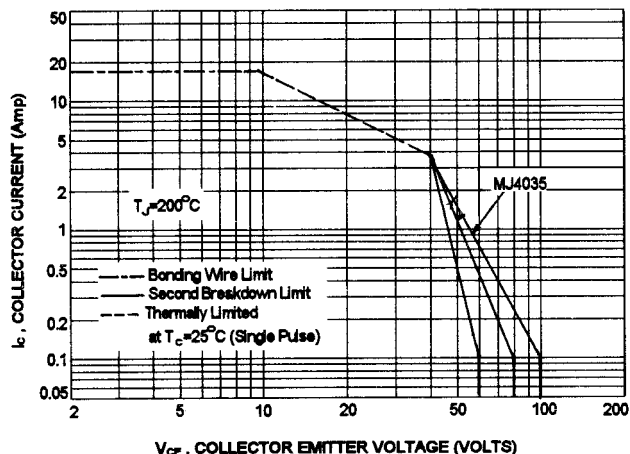


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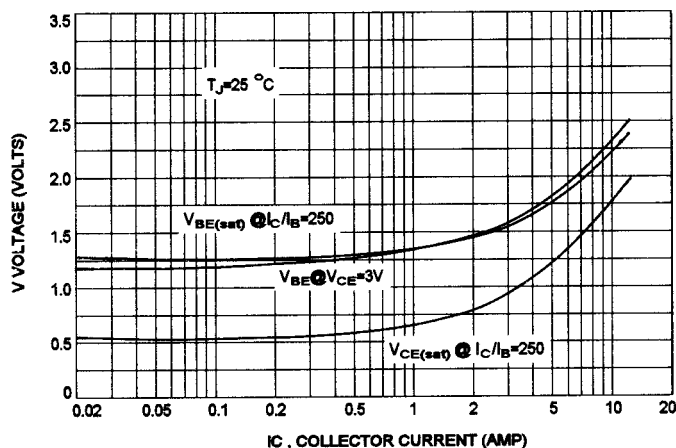
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ACTIVE-REGION SAFE OPERATING AREA (SOA)



There are two limitation on the power handling ability of a transistor; average junction temperature and second breakdown safe operating area curves indicate I_C - V_{CE} limits of the transistor that must be observed for reliable operation i.e., the must not be subjected to greater dissipation than curves indicate. At high case temperatures, thermal limitation will reduce the power that can be handle to values less than the limitations imposed by second breakdown

"ON" VOLTAGE



Part Number Table

Description	Part Number
NPN Transistor, 100V, 16A, 150W, TO-3	MJ4035

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