

NPN Silicon Planar Power Transistor

100V_{CB0}, 15A I_c, TO-3

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**RoHS
Compliant**



Applications

General Purpose Switching and Amplifier applications

Absolute Maximum Ratings (T_A = 25 °C)

Description	Symbol	Value	Units
Collector Base Voltage	V _{CB0}	100	V
Collector Emitter Voltage	V _{CEO}	60	
Collector Emitter Voltage(R _{BE} =100Ω)	V _{CER}	70	
Emitter Base Voltage	V _{EBO}	7	
Collector Current Continuous	I _c	15	A
Base Current	I _B	7	
Power Dissipation @ T _c =25°C Derate Above 25°C	P _{TOT}	115 0.657	W W/°C
Operating and Storage Junction Temperature Range	T _J , T _{STG}	- 65 to +200	°C

Thermal Characteristics

Characteristics	Symbol	Value	Unit
Junction-to-Case	R _{th(j-c)}	1.52	°C/W

Electrical Characteristics (T_C=25°C unless specified otherwise)

Description	Symbol	Test Condition	Min.	Max.	Units
Collector Emitter Sustaining Voltage	V _{CEO(sus)} *	I _c =200mA, I _B =0	60	-	V
Collector Emitter Sustaining Voltage	V _{CER(sus)} *	I _c =200mA, R _{BE} =100Ω	70	-	
Collector Cut off Current	I _{CEx}	V _{CE} =100V, V _{BE} =(off)=1.5V T _c =150°C V _{CE} =100V, V _{BE} =(off)=1.5V	-	1 5	mA
Collector Cut off Current	I _{CEO}	V _{CE} =30V, I _B =0	-	0.7	
Emitter Cut off Current	I _{EBO}	V _{BE} =7V, I _c =0	-	5	
Collector Emitter Saturation Voltage	V _{CE(Sat)} *	I _c =4A, I _B =400mA I _c =10A, I _B =3.3A	-	1.1 3	V
Base Emitter on Voltage	V _{BE(on)} *	I _c =4A, V _{CE} =4V	-	1.5	
DC Current Gain	h _{FE} *	I _c =4A, V _{CE} =4V I _c =10A, V _{CE} =4V	20 5	80	-

*Pulse Test: Pulse Width ≤300μs, Duty Cycle ≤2%

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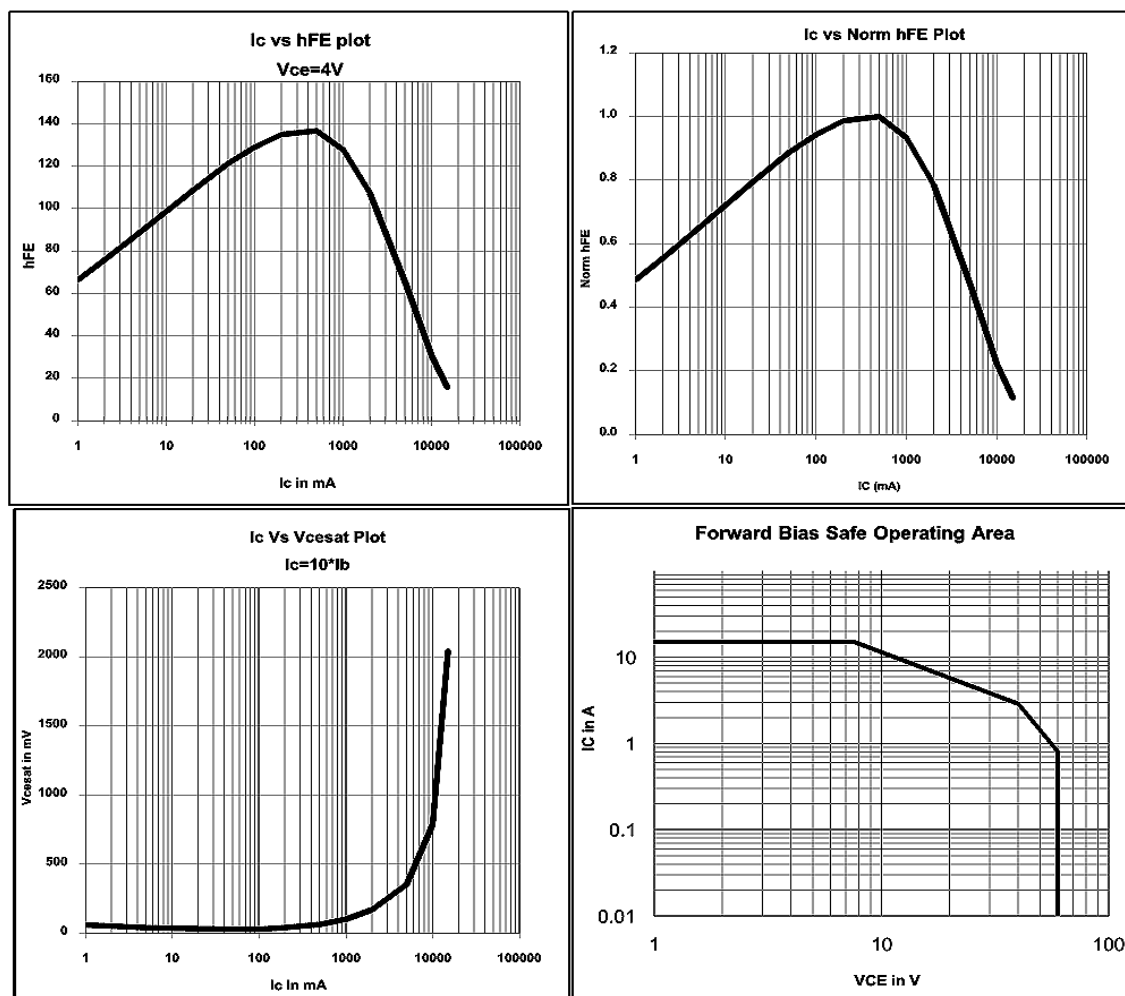
Second Breakdown

Description	Symbol	Test Condition	Min.	Max.	Units
Second Breakdown Collector Current with Base Forward Biased	I _{S/b}	V _{CE} =40V, t=1s, Nonrepetitive	2.87	-	A

Dynamic Characteristics

Description	Symbol	Test Condition	Min.	Max.	Units
Current Gain - Bandwidth Product	f _T	I _C =0.5A, V _{CE} =10V, f=1MHz	2.5	-	MHz
Small Signal Current Gain	h _{FE}	I _C =1A, V _{CE} =4V, f=1kHz	15	120	-
Small Signal Current Gain Cutoff Frequency	f _{HFE}	I _C =1A, V _{CE} =4V, f=1kHz	10	-	kHz

Typical Characteristics Curves



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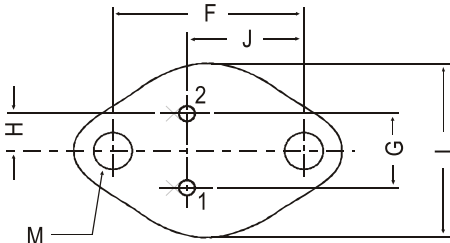
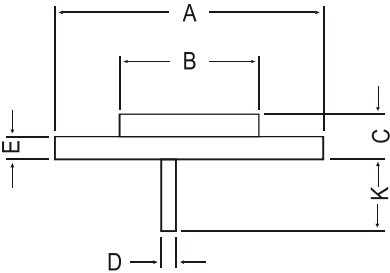
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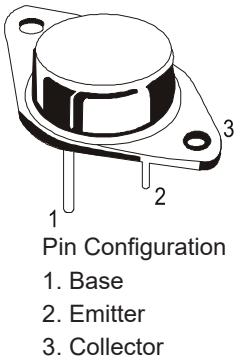


Diagram

TO-3 Metal Can Package



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



Pin Configuration
1. Base
2. Emitter
3. Collector

Part Number Table

Description	Part Number
NPN Silicon Planar Power Transistor, 15A, 100V, 115W	2N3055

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