

**NPN SILICON TRANSISTOR**

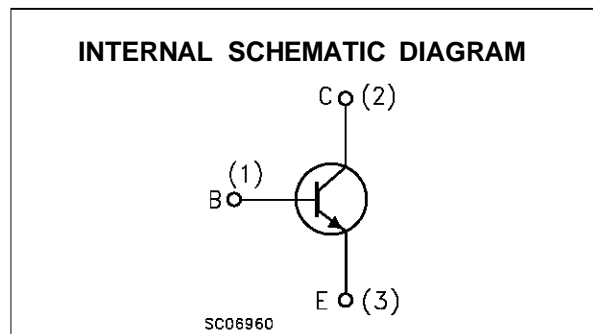
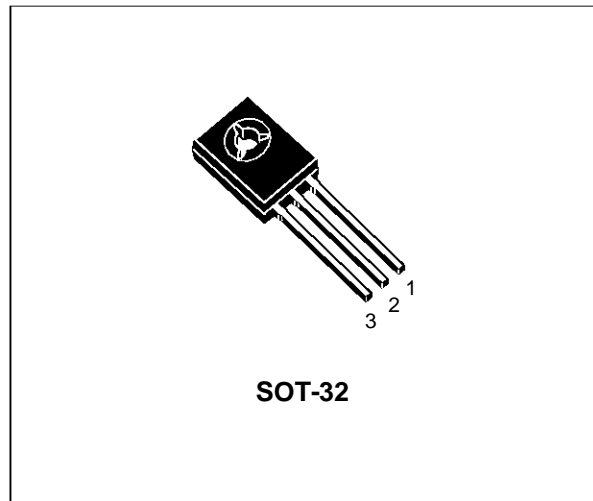
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR

**APPLICATION**

- GENERAL PURPOSE SWITCHING

**DESCRIPTION**

The BD179 is a silicon epitaxial planar NPN transistor in Jedec SOT-32 plastic package, designed for medium power linear and switching applications.



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	80	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	80	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	5	V
$I_C$	Collector Current	3	A
$I_B$	Base Current	7	A
$P_{tot}$	Total Dissipation at $T_c \leq 25^\circ\text{C}$	30	W
$T_{stg}$	Storage Temperature	-65 to 150	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	150	$^\circ\text{C}$

**THERMAL DATA**

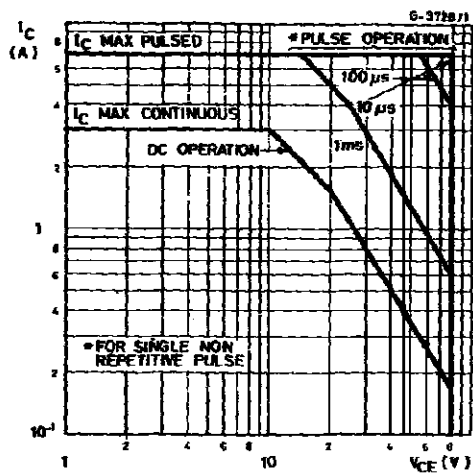
R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	4.16	°C/W
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**ELECTRICAL CHARACTERISTICS** (T<sub>case</sub> = 25 °C unless otherwise specified)

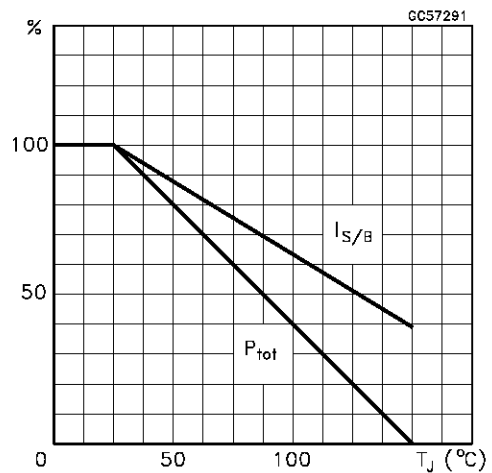
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CBO</sub>	Collector Cut-off Current (I <sub>E</sub> = 0)	V <sub>CB</sub> = 80 V			100	μA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 5 V			1	mA
V <sub>CEO(sus)*</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 100 mA	80			V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 1 A I <sub>B</sub> = 0.1 A			0.8	V
V <sub>BE*</sub>	Base-Emitter Voltage	I <sub>C</sub> = 1 A V <sub>CE</sub> = 2 V			1.3	V
h <sub>FE*</sub>	DC Current Gain	I <sub>C</sub> = 150 mA V <sub>CE</sub> = 2 V I <sub>C</sub> = 1 A V <sub>CE</sub> = 2 V	40 15			
h <sub>FE</sub>	h <sub>FE</sub> Groups	I <sub>C</sub> = 150 mA V <sub>CE</sub> = 2 V group 16	100		250	
f <sub>T</sub>	Transition Frequency	I <sub>C</sub> = 250 mA V <sub>CE</sub> = 10 V	3			MHz

\* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

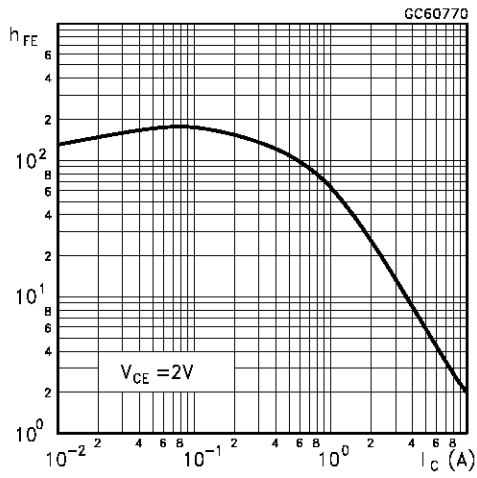
Safe Operating Area



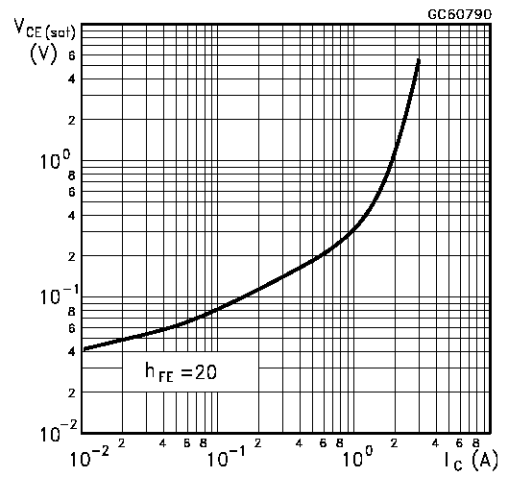
Derating Curves



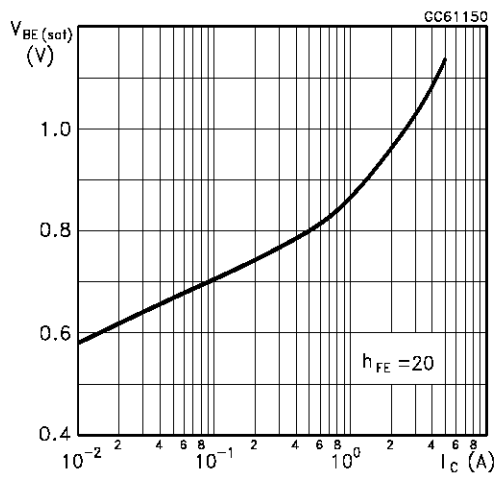
DC Current Gain



Collector-Emitter Saturation Voltage

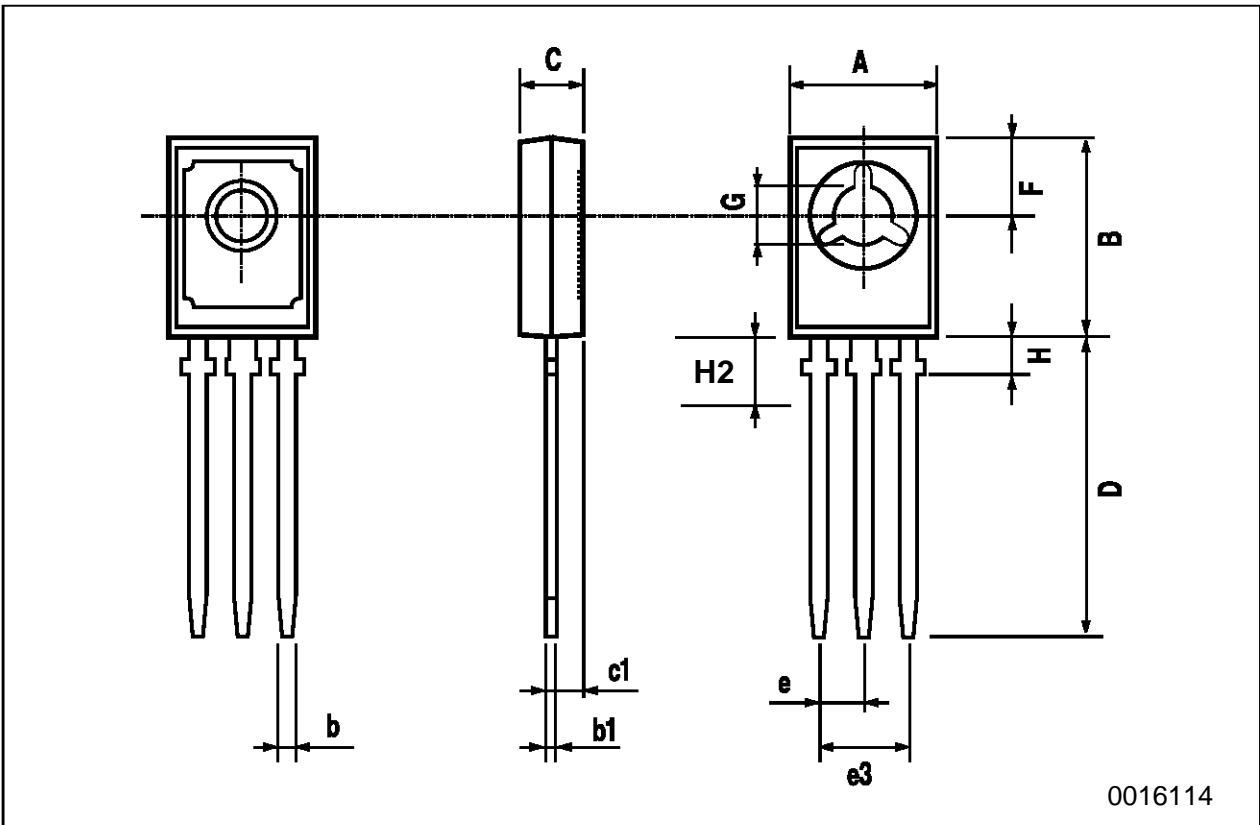


Base-Emitter Saturation Voltage



**SOT-32 (TO-126) MECHANICAL DATA**

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	7.4		7.8	0.291		0.307
B	10.5		10.8	0.413		0.445
b	0.7		0.9	0.028		0.035
b1	0.49		0.75	0.019		0.030
C	2.4		2.7	0.040		0.106
c1	1.0		1.3	0.039		0.050
D	15.4		16.0	0.606		0.629
e		2.2			0.087	
e3	4.15		4.65	0.163		0.183
F		3.8			0.150	
G	3		3.2	0.118		0.126
H			2.54			0.100
H2		2.15			0.084	



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