SGS-THOMSON MICROELECTRONICS

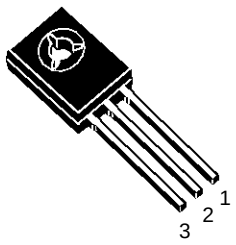
BD179

NPN SILICON TRANSISTOR

- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR

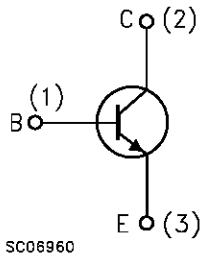
APPLICATION
- GENERAL PURPOSE SWITCHING

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



SOT-32

INTERNAL SCHEMATIC DIAGRAM



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 $T_c \leq 25\ ^oC$	30	W
T_{stg}	Storage Temperature	-65 to 150	^oC
T_j	Max. Operating Junction Temperature	150	^oC

THERMAL DATA

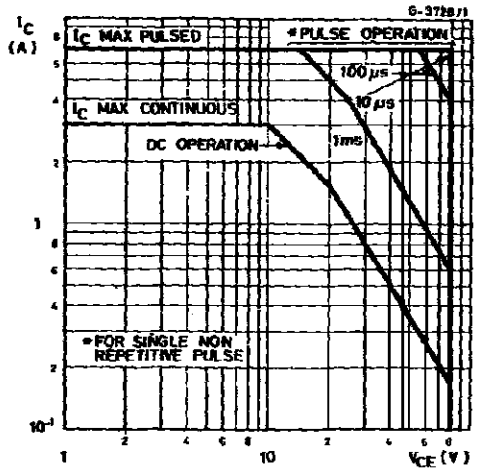
$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	4.16	$^oC/W$

ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

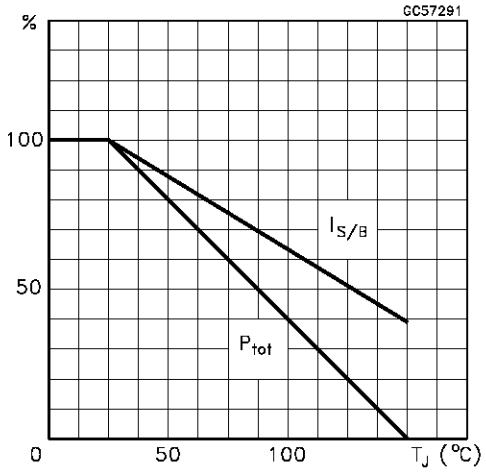
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (I_E = 0)	V_{CB} = 80 V			100	µA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 5 V			1	mA
$V_{CEO(sus)}$*	Collector-Emitter Sustaining Voltage	I_C = 100 mA	80			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 1 A I_B = 0.1 A			0.8	V
V_{BE}*	Base-Emitter Voltage	I_C = 1 A V_{CE} = 2 V			1.3	V
h_{FE}*	DC Current Gain	I_C = 150 mA V_{CE} = 2 V I_C = 1 A V_{CE} = 2 V	40 15			
h_{FE}	h_{FE} Groups	I_C = 150 mA V_{CE} = 2 V group 16	100		250	
f_T	Transition Frequency	I_C = 250 mA V_{CE} = 10 V	3			MHz

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

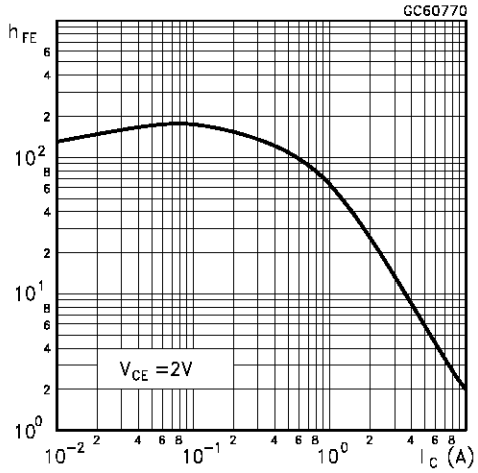
Safe Operating Area



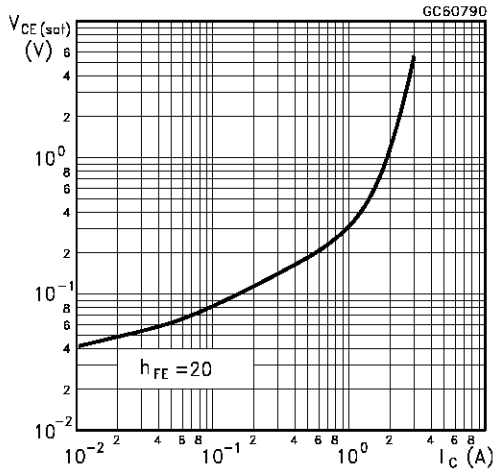
Derating Curves



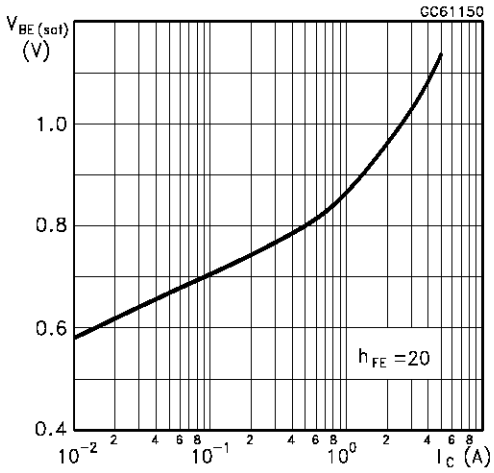
DC Current Gain



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