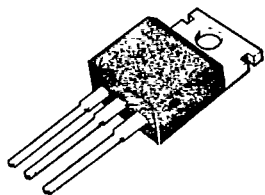


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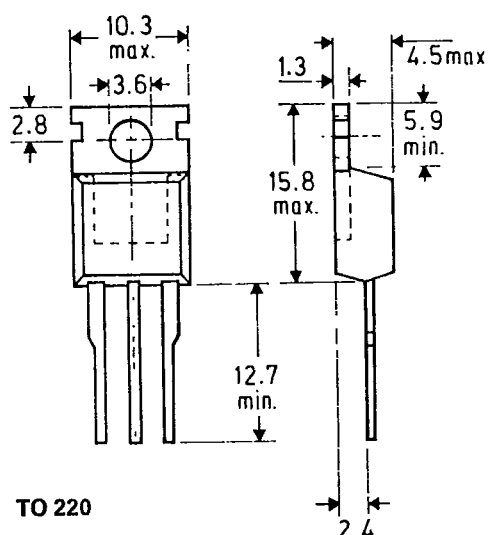
SMLB In


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SILICON NPN EPITAXIAL PLANAR

MECHANICAL DATA

Dimensions in mm



TO 220

FEATURES

- VERY LOW $V_{CE SAT}$
- HIGH GAIN AT HIGH CURRENT
- VERY FAST SWITCHING
- PNP COMPLEMENT BUP 31

ABSOLUTE MAXIMUM RATINGS

V_{CBO}	Collector-base voltage ($I_E = 0$)	60V
V_{CEO}	Collector-emitter voltage ($I_B = 0$)	30V
V_{EBO}	Emitter-base voltage ($I_C = 0$)	6V
I_C	Collector current	20A
P_{tot}	Total power dissipation at $T_{CASE} \leq 25^\circ C$	35W
T_{sto}	Storage temperature	-55 to 150°C
T_J	Junction temperature	150°C

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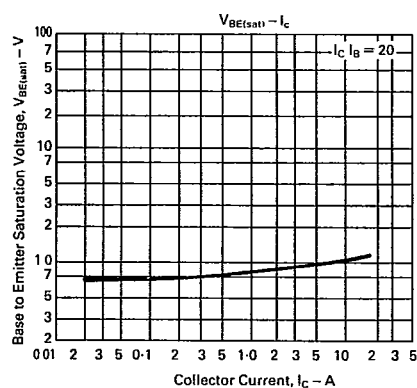
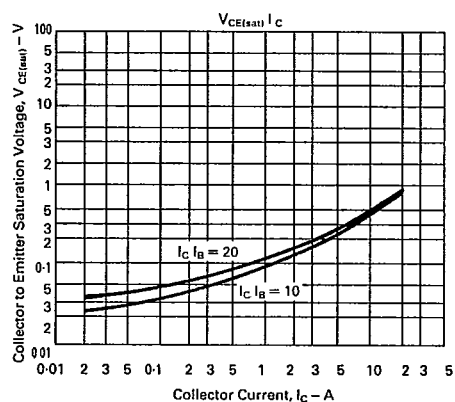
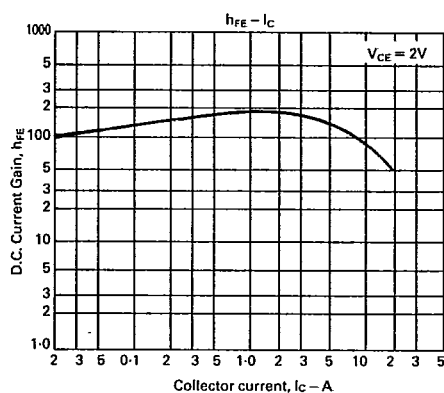
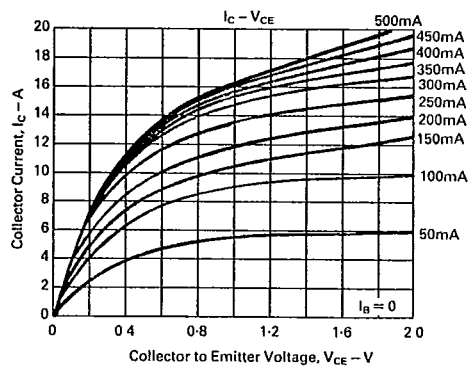
ELECTRICAL CHARACTERISTICS ($T_{CASE} = 25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Test Conditions	Min.	Typ.	Max	Unit
I_{CBO} Collector cutoff current ($I_E = 0$)	$V_{CB} = 40\text{V}$			100	μA
I_{EBO} Emitter cutoff current ($I_C = 0$)	$V_{EB} = 4\text{V}$			100	μA
$V_{CE(sat)}^*$ Collector-emitter saturation voltage	$I_C = 20\text{A}$ $I_B = 1\text{A}$			1	V
$V_{BE(sat)}^*$ Base emitter voltage	$I_C = 10\text{A}$ $I_B = 500\text{mA}$			1.2	V
h_{FE1}^* DC Current gain	$I_C = 1\text{A}$ $V_{CE} = 2\text{V}$	70	150	300	—
h_{FE2}^*	$I_C = 10\text{A}$ $V_{CE} = 2\text{V}$	30			—
f_T Transition frequency	$I_C = 1\text{A}$ $V_{CE} = 5\text{V}$			120	MHz
I_{SB} Second Breakdown Collector current	$V_{CE} = 10\text{V}$ $t = 1\text{ m sec}$	20			A

* Pulsed: pulse duration = $300\mu\text{s}$, duty cycle = 1.5%

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T-33-11



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