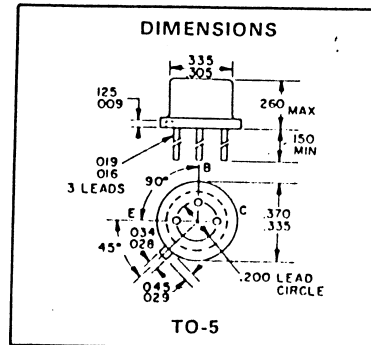


HIGH-SPEED NPN SILICON, HIGH-CURRENT SWITCHING TRANSISTORS

ABSOLUTE MAXIMUM RATINGS (Note 1)

Characteristics	Unit
Collector-Base Voltage	45 Volts
Collector-Emitter Voltage (Note 4)	25 Volts
Emitter-Base Voltage	5.0 Volts
Collector Current	1.0 Amp
Total Dissipation @:	
$T_C = 25^\circ\text{C}$ (Notes 2 and 3)	2.8 Watts
$T_C = 100^\circ\text{C}$ (Notes 2 and 3)	1.6 Watts
$T_A = 25^\circ\text{C}$ (Notes 2 and 3)	0.6 Watt
Storage Temperature	-65°C to $+300^\circ\text{C}$
Operating Junction Temperature	-65 to $+200^\circ\text{C}$
Lead Temperature	
(Soldering, No Time Limit)	300°C Maximum

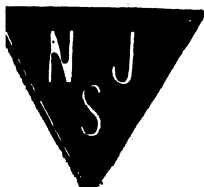


ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Min	Max	Unit	Conditions
h_{FE}	20	-	-	$I_C = 150\text{ mA}$, $V_{CE} = 10\text{ Volts}$
h_{FE}	10	-	-	$I_C = 150\text{ mA}$, $V_{CE} = 1.0\text{ Volt}$
$V_{CE(sat)}$	-	0.35	Volt	$I_C = 150\text{ mA}$, $I_B = 15\text{ mA}$
$V_{BE(sat)}$	-	1.3	Volts	$I_C = 150\text{ mA}$, $I_B = 15\text{ mA}$
h_{fe}	2.5	-	-	$I_C = 50\text{ mA}$, $V_{CE} = 10\text{ Volts}$
C_{ob}	-	20	pF	$I_E = 0$, $V_{CB} = 10\text{ Volts}$
I_{CBO}	-	100	nA	$I_E = 0$, $V_{CB} = 30\text{ Volts}$
$I_{CBO(150^\circ\text{C})}$	-	50	μA	$I_E = 0$, $V_{CB} = 30\text{ Volts}$
I_{EBO}	-	100	nA	$I_C = 0$, $V_{EB} = 3.0\text{ Volts}$
BV_{CBO}	45	-	Volts	$I_C = 100\mu\text{A}$, $I_E = 0$
$V_{CEO(sust)}$	25	-	Volts	$I_C = 25\text{ mA}$ (pulsed), $I_B = 0$ (Notes 4 and 5)
BV_{EBO}	5.0	-	Volts	$I_E = 100\mu\text{A}$, $I_C = 0$

NOTES:

- (1) These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
- (2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
- (3) These ratings give a maximum junction temperature of 200°C and junction-to-case thermal resistance of 62.5°C/watt (derating factor of $16\text{ mW}/^\circ\text{C}$); junction-to-ambient thermal resistance of 292°C/watt (derating factor of $3.42\text{ mW}/^\circ\text{C}$).
- (4) Rating refers to a high-current point where collector-to-emitter voltage is lowest.
- (5) Pulse Conditions: length $\leq 300\mu\text{sec}$, duty cycle $\leq 2\%$



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