

ABSOLUTE MAXIMUM RATINGS

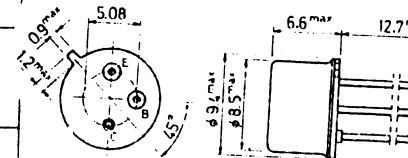
$V_{CBO}$	Collector-base voltage ( $I_E = 0$ )	100 V
$V_{CEO}$	Collector-emitter voltage ( $I_B = 0$ )	60 V
$V_{EBO}$	Emitter-base voltage ( $I_C = 0$ )	7 V
$I_C$	Collector current	1 A
$P_{tot}$	Total power dissipation at $T_{amb} \leq 25^\circ C$ at $T_{case} \leq 25^\circ C$	0.8 W 5 W
$T_{stg}, T_J$	Storage and junction temperature	-65 to 200 °C

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

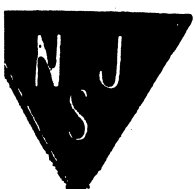
Parameter	Test conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector cutoff current ( $I_E = 0$ )	$V_{CB} = 60V$	$T_{amb} = 150^\circ C$	10	$\mu A$
$I_{CES}$	Collector cutoff current ( $V_{BE} = 0$ )	$V_{CE} = 60V$		10	nA
$I_{EBO}$	Emitter cutoff current ( $I_C = 0$ )	$V_{EB} = 5V$		10	nA
$V_{(BR)CBO}$	Collector-base breakdown voltage ( $I_E = 0$ )	$I_C = 100 \mu A$		100	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage ( $I_B = 0$ )	$I_C = 30 mA$		60	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage ( $I_C = 0$ )	$I_E = 100 \mu A$		7	V
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C = 150 mA$ $I_C = 1A$	$I_B = 15 mA$ $I_B = 100 mA$	0.25 1	V
$V_{BE(sat)}$	Base-emitter saturation voltage	$I_C = 150 mA$ $I_C = 1A$	$I_B = 15 mA$ $I_B = 100 mA$	1.1 2	V
$h_{FE}$	DC current gain	$I_C = 150 mA$ $I_C = 0.1 mA$ $I_C = 500 mA$ $I_C = 150 mA$ $T_{amb} = -55^\circ C$	$V_{CE} = 1V$ $V_{CE} = 10V$ $V_{CE} = 10V$ $V_{CE} = 10V$	40 20 25 15	120 — — —
$f_T$	Transition frequency	$I_C = 50 mA$ $f = 20 MHz$	$V_{CE} = 10V$	60	MHz
$C_{EBO}$	Emitter-base capacitance	$I_C = 0$ $f = 1 MHz$	$V_{EB} = 0.5V$	80	pF
$C_{CBO}$	Collector-base capacitance	$I_E = 0$ $f = 1 MHz$	$V_{CB} = 10V$	20	pF
NF	Noise figure	$I_C = 30 \mu A$ $f = 1 kHz$	$V_{CE} = 10V$ $R_g = 1 k\Omega$	8	dB
$t_{on}$	Turn-on time	$I_C = 150 mA$ $I_{B1} = 7.5 mA$	$V_{CC} = 20V$	200	ns
$t_{off}$	Turn-off time	$I_C = 150 mA$ $I_{B1} = -I_{B2} = 7.5 mA$	$V_{CC} = 20V$	1000	ns

MECHANICAL DATA

Collector connected to case



Dimensions in mm  
TO-39



\* Pulsed: pulse duration = 300  $\mu s$ , duty cycle = 1%

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