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2N 3108

GENERAL PURPOSE AMPLIFIER AND SWITCH

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 $T_{amb} \leq 25$ °C	0.8 W
	at $T_{case} \leq 25$ °C	5 W
T_{stg}, T_j	Storage and junction temperature	-65 to 200 °C

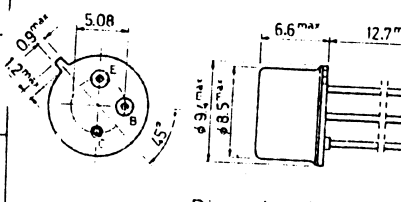
ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

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

* Pulsed: pulse duration = 300 μs, duty cycle = 1%

MECHANICAL DATA

Collector connected to case



Dimensions in mm

TO-39