

2N167A

NPN GERMANIUM TRANSISTOR

absolute maximum ratings: (25°C)

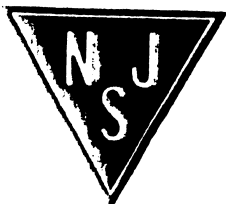
Voltages		
Collector to Base	V_{CB}	30 volts
Collector to Emitter	V_{CE}	30 volts
Emitter to Base	V_{EB}	5 volts
Current		
Collector	I_C	75 ma
Emitter	I_E	-75 ma
Dissipation		
Collector (25°C)*	P_C	65 mw
Total Transistor (25°C)**	P_M	75 mw
Temperature		
Storage	T_{STG}	85°C

*Derate 1.1 mw/°C increase in ambient temperature.
**Derate 1.25 mw/°C increase in ambient temperature.

electrical characteristics: (25°C—unless otherwise specified)

		Min.	Design Center	Max.	
D-C CHARACTERISTICS					
Forward Current Transfer Ratio ($I_C = 8$ ma; $V_{CE} = 1$ v)	h_{FE}	17	30	90	
Base Input Voltage ($I_B = .47$ ma; $I_C = 8$ ma)	V_{BE}	.3*	.41	.6*	* volts
Collector to Emitter Voltage (Base Open; $I_C = .3$ ma)	V_{CE}	30			volts
Saturation Voltage ($I_B = .8$ ma; $I_C = 8$ ma)	$V_{CE}(SAT)$.35		volts
CUTOFF CHARACTERISTICS					
Collector Current ($I_E = 0$; $V_{CE} = 15$ v; $T_A = 25^\circ C$)	I_{CO}		.6	1.5	μA
Collector Current ($I_E = 0$; $V_{CE} = 15$ v; $T_A = 71^\circ C$)	I_{CO}		11	29	μA
Emitter Current ($I_C = 0$; $V_{EB} = 5$ v; $T_A = 25^\circ C$)	I_{EO}		.4	1.5	μA
Emitter Current ($I_C = 0$; $V_{EB} = 5$ v; $T_A = 71^\circ C$)	I_{EO}		8		μA
HIGH FREQUENCY CHARACTERISTICS (COMMON BASE)					
(V _{CB} = 5v; I _B = 1 ma)					
Alpha Cutoff Frequency	f_{cb}	5.0	9.0		mc
Collector Capacity (f = 1 mc)	C_{cb}		2.5	6	μf
Voltage Feedback Ratio (f = 1 mc)	h_{rb}		7.3		$\times 10^{-4}$
LOW FREQUENCY CHARACTERISTICS (COMMON BASE)					
(V _{CB} = 5v; I _E = -1 ma; f = 270 cps)					
Forward Current Transfer Ratio	h_{fb}	.952	.985	.995*	
Output Admittance	h_{ob}	.1*	.2	.7*	$\mu mhos$
Input Impedance	h_{ib}	25*	55	82*	ohms
Reverse Voltage Transfer Ratio	h_{rb}		1.5		$\times 10^{-4}$
SWITCHING CHARACTERISTICS. (See circuit)					
(I _C = 8 ma; I _{B1} = .8 ma; I _{B2} = .8 ma)					
Turn-on Time	t_o		.4		μsec
Storage Time	t_s		.7		μsec
Fall Time	t_f		.2		μsec

*These limits are design limits within which 98% of production normally fall.



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