

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)

D-C CHARACTERISTICS

	Min.	Design Center	Max.	
Forward Current Transfer Ratio (I _C = 8 ma; V _{CE} = 1v)	17	30	90	
Base Input Voltage (I _B = .47 ma; I _C = 8 ma)	.3*	.41	.6*	* volts
Collector to Emitter Voltage (Base Open; I _C = .3 ma)	30			volts
Saturation Voltage (I _B = .8 ma; I _C = 8 ma)		.35		volts

CUTOFF CHARACTERISTICS

Collector Current (I _E = 0; V _{CE} = 15v; T _A = 25°C)	I _{CO}	.6	1.5	μA
Collector Current (I _E = 0; V _{CE} = 15v; T _A = 71°C)	I _{CO}	11	29	μA
Emitter Current (I _C = 0; V _{EB} = 5v; T _A = 25°C)	I _{EO}	.4	1.5	μA
Emitter Current (I _C = 0; V _{EB} = 5v; T _A = 71°C)	I _{EO}	8		μA

HIGH FREQUENCY CHARACTERISTICS (COMMON BASE)

(V _{CE} = 5v; I _B = 1 ma)				
Alpha Cutoff Frequency	f _α	5.0	9.0	mc
Collector Capacity (f = 1 mc)	C _{cb}		2.5	μμf
Voltage Feedback Ratio (f = 1 mc)	h _{rb}		7.3	x10 ⁻⁴

LOW FREQUENCY CHARACTERISTICS (COMMON BASE)

(V _{CE} = 5v; I _E = -1 ma; f = 270 cps)				
Forward Current Transfer Ratio	h _{fb}	.952	.985	.995*
Output Admittance	h _{ob}	.1*	.2	μmhos
Input Impedance	h _{ib}	25*	55	ohms
Reverse Voltage Transfer Ratio	h _{rb}		1.5	x10 ⁻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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