

2N319 thru 2N321 (Germanium)

CASE 31(1) (TO-5)



PNP germanium transistors for audio amplifier and low-frequency switching applications.

Base connected to case

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CB}	25	Vdc
Collector-Emitter Voltage	V_{CEO}	20	Vdc
Emitter-Base Voltage	V_{EB}	5.0	Vdc
Collector Current	I_C	500	mAdc
Junction and Storage Temperature	T_J, T_{stg}	-65 to + 100	°C
Power Dissipation at 25°C Ambient	P_D	225	mW

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

Characteristics	Symbol	Min	Max	Unit
Collector Cutoff Current $V_{CB} = -25 \text{ Vdc}, I_E = 0$	I_{CBO}	-	16	μAdc
Emitter Cutoff Current $V_{EB} = -15 \text{ Vdc}, I_C = 0$	I_{EBO}	-	10	μAdc
Collector-Emitter Voltage $I_C = 0.6 \text{ mAdc}, R_{BE} = 10 \text{ K}$	V_{CER}	20	-	Vdc
DC Current Gain $I_C = 20 \text{ mAdc}, V_{CE} = -1 \text{ Vdc}$	h_{FE}			
		25	42	-
		34	65	
		53	121	
DC Current Gain $I_C = 100 \text{ mAdc}, V_{CE} = -1 \text{ Vdc}$	h_{FE}			
		23	-	-
		30	-	
		47	-	
Base Input Voltage $V_{CE} = -1 \text{ Vdc}, I_C = 20 \text{ mAdc}$	V_{BE}	180	320	mVdc
Output Capacitance; Input AC Open Circuit $V_{CB} = -5 \text{ Vdc}, I_E = 1 \text{ mAdc}, f = 1 \text{ MHz}$	C_{ob}	-	35	pF
Frequency Cutoff $V_{CB} = -5 \text{ Vdc}, I_E = 1 \text{ mAdc}$	f_{ob}			
		1.0	-	MHz
		1.5	-	
		2.0	-	