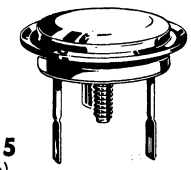
2N1970 (GERMANIUM)

2N1980 thru 2N1982



CASE 5
(TO-36)

PNP germanium power transistors for general purpose amplifier and switching applications.

MAXIMUM RATINGS

Rating	Symbol	2N1970	2N1980	2N1981	2N1982	Unit
Collector-Base Voltage	V_{CB}	100	50	70	90	Volts
Collector-Emitter Voltage	V_{CEO}	50	30	40	50	Volts
Emitter-Base Voltage	V_{EB}	40	20	20	20	Volts
Collector Current	I_C	15				Amp
Power Dissipation at $T_C = 25^oC$	P_D	170				Watts
Junction Temperature Range	T_J	-65 to +110				^oC

ELECTRICAL CHARACTERISTICS ($T_A = 25^oC$ unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
Collector-Base Cutoff Current		I_{CBO}			mAdc
(V_{CB} = -100 Vdc)	2N1970		—	4.0	
(V_{CB} = -50 Vdc)	2N1980		—	6.0	
(V_{CB} = -70 Vdc)	2N1981		—	6.0	
(V_{CB} = -90 Vdc)	2N1982		—	6.0	
(V_{CB} = -2 Vdc)	2N1980-2N1982		—	0.3	
Emitter-Base Cutoff Current		I_{EBO}			mAdc
(V_{EB} = -40 Vdc)	2N1970		—	4.0	
(V_{EB} = -20 Vdc)	2N1980-2N1982		—	5.0	
(V_{EB} = -2 Vdc)	2N1980-2N1982		—	0.3	
Collector-Emitter Breakdown Voltage		BV_{CEO}			Vdc
(I_C = 1 Adc, I_B = 0)	2N1970		50	—	
	2N1980		30	—	
	2N1981		40	—	
	2N1982		50	—	
Base-Emitter Voltage		V_{BE}			Vdc
(V_{CE} = -2 Vdc, I_C = 5 Adc)	2N1970		—	0.9	
Emitter Floating Potential		V_{EBF}			Vdc
(V_{CB} = -50 Vdc)	2N1980		—	1.0	
(V_{CB} = -70 Vdc)	2N1981		—	1.0	
(V_{CB} = -90 Vdc)	2N1982		—	1.0	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$			Vdc
(I_C = 12 Adc, I_B = 2 Adc)	2N1970		—	1.0	
(I_C = 5 Adc, I_B = 0.5 Adc)	2N1980-2N1982		—	0.5	
DC Current Gain		h_{FE}			—
(I_C = 5 Adc, V_{CE} = -2 Vdc)	2N1970		17	40	
	2N1980-2N1982		50	100	
(I_C = 12 Adc, V_{CE} = -2 Vdc)	2N1970		10	—	
Common Emitter Cutoff Frequency		$f_{\alpha e}$			kHz
(V_{CE} = -4 V, I_C = 5 A)	2N1970		5.0	—	
(V_{CE} = -5 V, I_C = 2 A)	2N1980-2N1982		3.0	—	