

2N700, A (GERMANIUM)



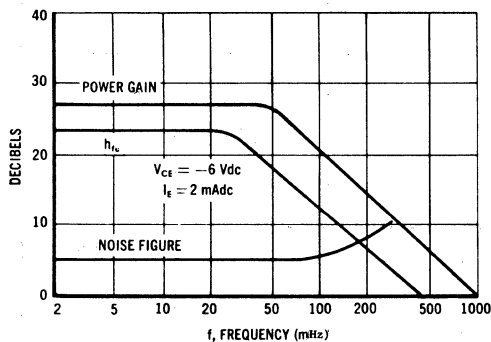
CASE 21
(TO-17)

PNP germanium mesa transistors for oscillator, frequency multiplier, wide-band mixer and wide-band amplifier applications.

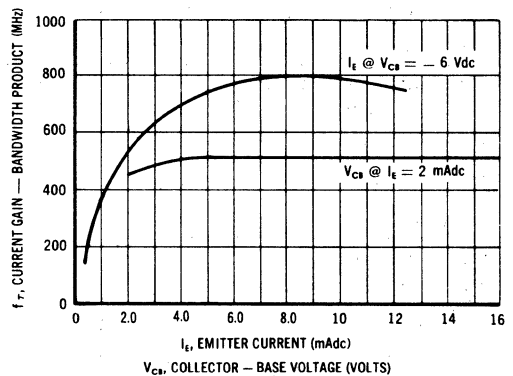
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CB}	25	Vdc
Collector-Emitter Voltage 2N700 2N700A	V_{CEO}	20 25	Vdc
Emitter-Base Voltage	V_{EB}	0.2	Vdc
Collector DC Current	I_C	50	mAdc
Junction Temperature	T_J	100	$^{\circ}C$
Storage Temperature	T_{stg}	-65 to +100	$^{\circ}C$
Total Device Dissipation at 25 $^{\circ}C$ Ambient Derate above 25 $^{\circ}C$	P_D	75 1.0	mW mW/ $^{\circ}C$

**POWER GAIN, CURRENT GAIN,
& NOISE FIGURE versus FREQUENCY**



**CURRENT-GAIN-BANDWIDTH PRODUCT
versus CURRENT AND VOLTAGE**



2N700,A (continued)

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

Characteristic	Sym	Test Conditions	Types	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = 100 \mu\text{Adc}, I_E = 0$	All Types	25	32	—	Vdc
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 100 \mu\text{Adc}, I_B = 0$	2N700 2N700A	20 25	— —	— —	Vdc
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = 100 \mu\text{Adc}, I_C = 0$	All Types	0.2	0.5	—	Vdc
Collector Cutoff Current	I_{CBO}	$V_{CB} = 6 \text{ Vdc}, I_E = 0$ $V_{CB} = 6 \text{ Vdc}, I_E = 0, T_A = 85^{\circ}\text{C}$	All Types 2N700 2N700A	— — —	0.4 60 —	2.0 150 50	μAdc
Small Signal Forward Current Transfer Ratio	h_{fe}	$I_E = 2 \text{ mAdc}, V_{CE} = 6 \text{ Vdc}, f = 1 \text{ kHz}$ $I_E = 5 \text{ mAdc}, V_{CE} = 6 \text{ Vdc}, f = 1 \text{ kHz}$ $I_E = 2 \text{ mAdc}, V_{CE} = 6 \text{ Vdc}, f = 200 \text{ MHz}$	All Types 2N700A 2N700 2N700A	4.0 — 2.5 5.0	10 — 7 —	— 50 — —	— — — —
Input Impedance	h_{ib}	$I_E = 2 \text{ mAdc}, V_{CB} = 6 \text{ Vdc}, f = 1 \text{ kHz}$	All Types	—	17	30	Ohms
Base Resistance	r'_b	$I_E = 2 \text{ mAdc}, V_{CB} = 6 \text{ Vdc}, f = 300 \text{ MHz}$	All Types	—	55	100	Ohms
Collector-Base Output Capacitance (case grounded)	C_{ob}	$V_{CB} = 6 \text{ Vdc}, I_E = 0, f = 100 \text{ kHz}$	2N700 2N700A	— —	1.1 —	1.5 1.4	pF
Power Gain	G_e	$I_E = 2 \text{ mAdc}, V_{CB} = 6 \text{ Vdc}, f = 70 \text{ MHz}$ (neutralized)	2N700 2N700A	20 22	23 —	— —	dB
Noise Figure	NF		All Types	—	6.0	10	dB
Power Gain	G_e	$I_E = 2 \text{ mAdc}, V_{CB} = 6 \text{ Vdc}, f = 30 \text{ MHz}$ (neutralized)	2N700A	26	—	—	dB