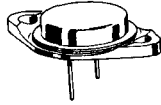




**2N1021 (GERMANIUM)**  
**2N1022**

**$V_{CB} = 100-120 \text{ V}$**   
 **$I_C = 5 \text{ A}$**   
 **$P_D = 85 \text{ W}$**



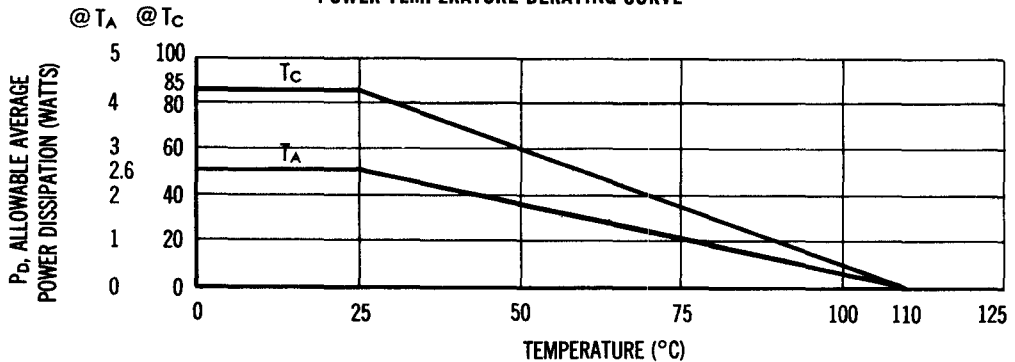
PNP germanium power transistor for industrial and general purpose power amplifier and switching applications.

**CASE 1**  
(TO-3)

**MAXIMUM RATINGS** ( $T_C = 25^\circ\text{C}$  unless otherwise noted)

Rating	Symbol	2N1021	2N1022	Unit
Collector-Base Voltage	$V_{CB}$	100	120	Volts
Collector-Emitter Voltage	$V_{CEX}$	100	120	Volts
Collector-Emitter Voltage	$V_{CEO}$	← 50 →		Volts
Emitter-Base Voltage	$V_{EB}$	← 30 →		Volts
Collector Current	$I_C$	← 5 →		Amp
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	← -65 to +110 →		$^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	← 85 →		Watts
		← 1 →		$\text{W}/^\circ\text{C}$

**POWER-TEMPERATURE DERATING CURVE**



**2N1021, 2N1022** (continued)

ELECTRICAL CHARACTERISTICS (T<sub>c</sub> = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
Collector-Base Cutoff Current (V <sub>CB</sub> = 50 Vdc)                      2N1021	I <sub>CBO</sub>	—	0.5	mAdc
(V <sub>CB</sub> = 60 Vdc)                      2N1022		—	0.5	
(V <sub>CB</sub> = 100 Vdc)                      2N1021		—	2	
(V <sub>CB</sub> = 120 Vdc)                      2N1022		—	2	
(V <sub>CB</sub> = 50 Vdc, T <sub>C</sub> = +55°C)                      2N1021		—	8	
(V <sub>CB</sub> = 60 Vdc, T <sub>C</sub> = +55°C)                      2N1022		—	8	
Collector-Emitter Breakdown Voltage* (I <sub>C</sub> = 200 mAdc)	BV <sub>CEO</sub> *	50	—	Vdc
Emitter-Base Cutoff Current (V <sub>EB</sub> = 10 Vdc)	I <sub>EBO</sub>	—	0.5	mAdc
(V <sub>EB</sub> = 30 Vdc)		—	2	
Base-Emitter Voltage (V <sub>CE</sub> = -1.5 Vdc, I <sub>C</sub> = 1.0 Adc)	V <sub>BE</sub>	—	3	Vdc
Collector-Emitter Saturation Voltage (I <sub>C</sub> = 5 Adc, I <sub>B</sub> = 500 mAdc)	V <sub>CE(sat)</sub>	—	0.5	Vdc
DC Current Gain (I <sub>C</sub> = 1 Adc, V <sub>CE</sub> = 1.5 Vdc)	h <sub>FE</sub>	40	—	—
(I <sub>C</sub> = 3 Adc, V <sub>CE</sub> = 1.5 Vdc)		35	—	
(I <sub>C</sub> = 5 Adc, V <sub>CE</sub> = 1.5 Vdc)		30	90	
(I <sub>C</sub> = 7 Adc, V <sub>CE</sub> = 1.5 Vdc)		22	—	
Input Impedance (I <sub>C</sub> = 1.0 Adc, V <sub>CE</sub> = 1.5 Vdc)	h <sub>ie</sub>	—	28	ohms
Current Gain-Bandwidth Product (I <sub>C</sub> = 1.0 Adc, V <sub>CE</sub> = 2 Vdc)	f <sub>T</sub>	200	—	kHz

\*Sweep Test: 1/2 sine wave, 60 Hz .