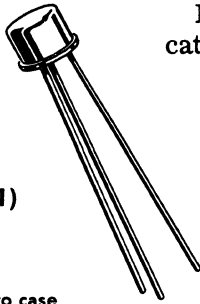


# 2N1692, 2N1693

For Specifications, See 2N1561 Data.

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## 2N1705 thru 2N1707 (GERMANIUM)



**CASE 31(1)**  
(TO-5)

Base connected to case

PNP germanium transistors for audio driver applications in transistorized radio receivers.

### MAXIMUM RATINGS

Rating	Symbol	2N1705	2N1706	2N1707	Unit
Collector-Base Voltage	$V_{CB}$	18	25	30	Vdc
Collector-Emitter Voltage ( $R_{BE} = 1 \text{ K}$ )	$V_{CER}$	12	18	25	Vdc
Emitter-Base Voltage	$V_{EB}$	5.0	5.0	10	Vdc
Collector Current	$I_C$	400			mA
Collector Dissipation at $T_C = 25^\circ\text{C}$	$P_D$	200			mW
Junction Temperature Range	$T_J$	-65 to +100			$^\circ\text{C}$

**2N1705 thru 2N1707 (continued)**
**ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$  unless otherwise noted)**

Characteristic		Symbol	Min	Typ	Max	Unit
Collector-Base Cutoff Current ( $V_{CB} = -10 \text{ Vdc}$ ) ( $V_{CB} = -25 \text{ Vdc}$ )	2N1705 2N1706 2N1707	$I_{CBO}$	---	5.0 --- ---	10 10 15	$\mu\text{Adc}$
Emitter-Base Cutoff Current ( $V_{EB} = -5 \text{ Vdc}$ ) ( $V_{EB} = -10 \text{ Vdc}$ )	2N1705 2N1706 2N1707	$I_{EBO}$	---	4.0 --- ---	20 20 10	$\mu\text{Adc}$
Collector-Emitter Voltage ( $I_C = 1 \text{ mA}$ , $R_{BE} = 1 \text{ K}$ )	2N1705 2N1706 2N1707	$V_{CER}$	12 18 25	---	---	Vdc
Base-Emitter Voltage ( $I_C = 10 \text{ mA}$ , $V_{CE} = 5 \text{ V}$ ) ( $I_C = 20 \text{ mA}$ , $V_{CE} = 1 \text{ V}$ )	2N1706 2N1705	$V_{BE}$	0.15 0.2	---	0.35 0.4	Vdc
DC Current Gain ( $I_C = 10 \text{ mA}$ , $V_{CE} = -5 \text{ V}$ ) ( $I_C = 20 \text{ mA}$ , $V_{CE} = -1 \text{ V}$ )	2N1707 2N1706	$h_{FE}$	40 60	90 ---	150 120	---
Small Signal Current Gain ( $I_C = 1 \text{ mA}$ , $V_{CE} = -6 \text{ V}$ , $f = 1 \text{ kHz}$ ) ( $I_C = 10 \text{ mA}$ , $V_{CE} = -5 \text{ V}$ , $f = 1 \text{ kHz}$ )	2N1705 2N1706 2N1707	$h_{fe}$	70 50 30	110 90 ---	150 150 150	---
Output Admittance Conductance ( $I_C = 1 \text{ mA}$ , $V_{CB} = -6 \text{ V}$ , $f = 1 \text{ kHz}$ ) ( $I_C = 10 \text{ mA}$ , $V_{CE} = -5 \text{ V}$ , $f = 1 \text{ kHz}$ )	2N1705 2N1706, 2N1707	$h_{ob}$	---	0.5 3.0	---	$\mu\text{mhos}$
Input Impedance ( $I_C = 1 \text{ mA}$ , $V_{CE} = -6 \text{ V}$ , $f = 1 \text{ kHz}$ ) ( $I_C = 10 \text{ mA}$ , $V_{CE} = -5 \text{ V}$ , $f = 1 \text{ kHz}$ )	2N1705 2N1706, 2N1707	$h_{ib}$	---	30 4.0	---	ohms
Voltage Feedback Ratio ( $I_C = 1 \text{ mA}$ , $V_{CB} = -6 \text{ V}$ , $f = 1 \text{ kHz}$ ) ( $I_C = 10 \text{ mA}$ , $V_C = -5 \text{ V}$ , $f = 1 \text{ kHz}$ )	2N1705 2N1706 2N1707	$h_{rb}$ $h_{re}$ $h_{rb}$	---	3.0 0.69 4.5	---	$\times 10^{-4}$ $\times 10^{-3}$ $\times 10^{-4}$
Frequency Cutoff ( $I_C = 1 \text{ mA}$ , $V_C = -6 \text{ V}$ )	2N1706, 2N1707 2N1705	$f_{ob}$	---	3.0 4.0	---	MHz
Output Capacitance ( $I_C = 1 \text{ mA}$ , $V_{CB} = -6 \text{ V}$ , $f = 1 \text{ MHz}$ )		$C_{ob}$	---	20	---	pF
Noise Figure ( $I_C = 1 \text{ mA}$ , $V_{CB} = -6 \text{ V}$ , $R_s = 1 \text{ K}$ , $f = 1 \text{ kHz}$ )	2N1705	NF	---	6.0	---	dB