

**2N499**

(2N499 JAN AVAILABLE)

Germanium PNP high frequency transistors designed for driver applications, small-signal amplification, wide band video amplifiers, and VHF/UHF oscillators.

**2N499A**

(2N499A JAN AVAILABLE)

**2N502**

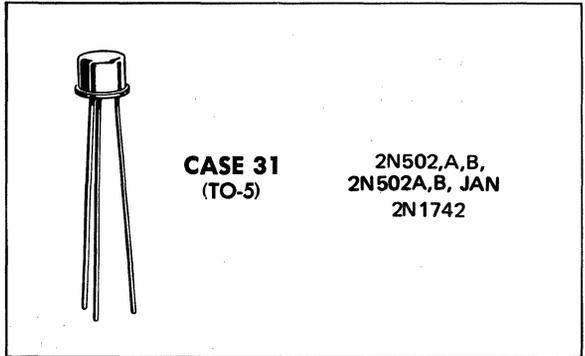
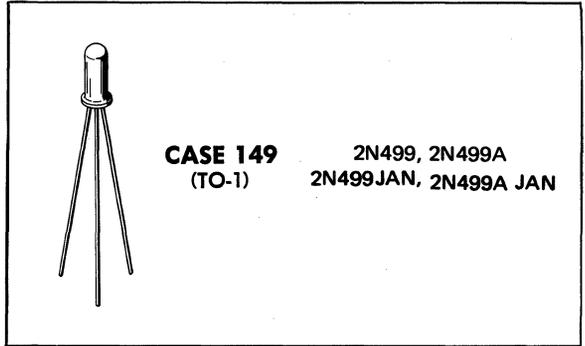
**2N502A**

(2N502A JAN AVAILABLE)

**2N502B**

(2N502B JAN AVAILABLE)

**2N1742**



**MAXIMUM RATINGS**

Rating	Symbol	2N499 2N499 JAN 2N499A 2N499A JAN	2N502	2N502A, B 2N502A JAN 2N502B JAN	2N1742	Unit
Collector-Base Voltage	$V_{CB}$	30	20	30	20	Vdc
Emitter-Base Voltage	$V_{EB}$	0.5	0.5	0.5	0.5	Vdc
Collector Current	$I_C$	50	50	50	50	mAdc
Total Device Dissipation	$P_D$	60	60	75	60	mW
Operating Junction Temperature Range	$T_J$	100	100	100	125	°C

**2N499, A/2N499JAN, A/2N502, A, B/2N502 JAN, A, B/2N1742** (continued)

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

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector Cutoff Current ( $V_{CB} = 10\text{ Vdc}, I_E = 0$ )	$I_{CBO}$	-	5.0	$\mu\text{Adc}$
( $V_{CB} = 15\text{ Vdc}, I_E = 0$ )		-	10	
		-	4.0	
		-	10	
		-	10	
<b>DYNAMIC CHARACTERISTICS</b>				
Current-Gain-Bandwidth Product ( $I_C = 2.0\text{ mAdc}, V_{CE} = 10\text{ Vdc}, f = 20\text{ MHz}$ )	$f_T$	120	-	MHz
( $I_C = 2.0\text{ mAdc}, V_{CE} = 10\text{ Vdc}, f = 100\text{ MHz}$ )		150	600	
Output Capacitance ( $V_{CB} = 10\text{ Vdc}, I_E = 0, f = 4.0\text{ MHz}$ )	$C_{ob}$	-	2.5	pF
		-	2.0	
		-	1.6	
		-	1.6	
Small-Signal Current Gain ( $I_C = 1.0\text{ mAdc}, V_{CE} = 9.0\text{ Vdc}, f = 1.0\text{ kHz}$ )	$h_{fe}$	20	80	-
( $I_C = 2.0\text{ mAdc}, V_{CE} = 10\text{ Vdc}, f = 1.0\text{ kHz}$ )		9.0	-	
		15	-	
		20	80	
		15	200	
		25	80	
Collector-Base Time Constant ( $I_E = 2.0\text{ mAdc}, V_{CB} = 10\text{ Vdc}, f = 46\text{ MHz}$ )	$r_b' C_c$	5.0	50	ps
		-	250	
		5.0	250	
		-	120	
		5.0	50	
		5.0	25	
Noise Figure ( $V_{CB} = 10\text{ Vdc}, I_E = 2.0\text{ mAdc}, f = 200\text{ MHz}$ )	NF	-	7.0	dB
( $V_{CC} = 12\text{ Vdc}, I_E = 2.5\text{ mAdc}, f = 200\text{ MHz}$ )		-	7.0	
		-	5.5	
<b>FUNCTIONAL TESTS</b>				
Power Gain ( $V_{CB} = 10\text{ Vdc}, I_E = 2.0\text{ mAdc}, f = 100\text{ MHz}$ )	$P_G$	7.5	-	dB
( $V_{CB} = 10\text{ Vdc}, I_E = 2.0\text{ mAdc}, f = 200\text{ MHz}$ )		8.0	-	
		10	-	
		10	-	
		10	20	
		14	19	

**2N508 (GERMANIUM)**

FOR SPECIFICATIONS, SEE 2N322 DATA.