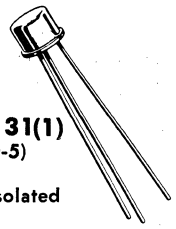
2N1191 thru 2N1194 (GERMANIUM)



CASE 31(1)
(TO-5)

All leads isolated

PNP germanium transistors for high-gain audio amplifier and switching applications.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CB}	40	Vdc
Collector-Emitter Voltage	V_{CER}	25	Vdc
Emitter-Base Voltage	V_{EB}	25	Vdc
Collector Current (Continuous)	I_C	200	mAdc
Storage and Operating Temperature	T_{stg}, T_J	-65 to +100	°C
Collector Dissipation in Ambient (Derate 2.67 mW/°C above 25°C)	P_D	200	mW
Thermal Resistance (Junction to Ambient)	θ_{JA}	0.375	°C/mW
Thermal Resistance (Junction to Case)	θ_{JC}	0.250	°C/mW

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

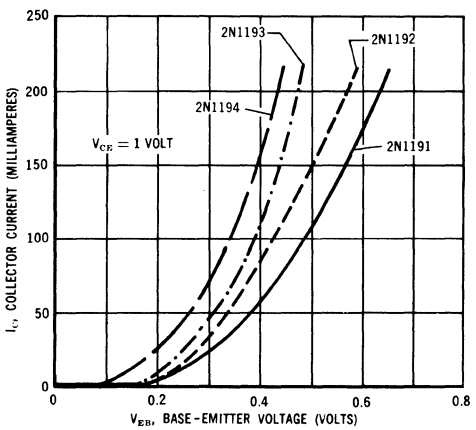
Characteristic		Symbol	Min	Typ	Max	Unit
Collector-Base Cutoff Current (V_{CB} = 25 V, I_E = 0)		I_{CBO}	–	–	15	μAdc
(V_{CB} = 1.0 V, I_E = 0)			–	2.0	–	μAdc
Emitter-Base Cutoff Current (V_{EB} = 25 V, I_C = 0)		I_{EBO}	–	–	15	μAdc
Collector-Emitter Leakage Current (V_{CB} = 25 V, R_{BE} = 10 K)		I_{CER}	–	–	600	μAdc
Output Capacitance (V_{CE} = 6 V, I_E = 1.0 mA)		C_{ob}	–	20	–	pF
Noise Figure (V_{CE} = 4.5 V, I_E = 0.5 mA, f = 1 kHz, R_S = 100 ohms)		NF	–	10	–	dB
Small Signal Current Gain Cutoff Frequency (V_{CB} = 6 V, I_E = 1.0 mA)	2N1191	$f_{\alpha b}$	–	1.5	–	MHz
	2N1192		–	2.0	–	
	2N1193		–	2.5	–	
	2N1194		–	3.0	–	

2N1191 thru 2N1194 (continued)

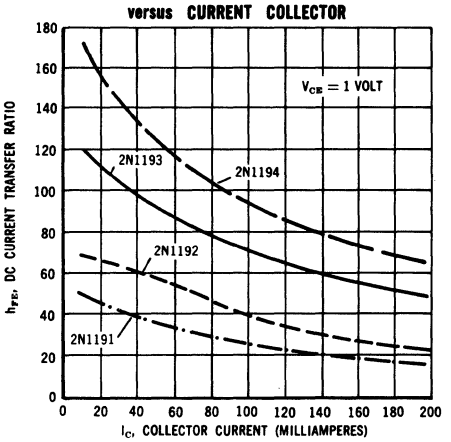
ELECTRICAL CHARACTERISTICS (continued)

Characteristic		Symbol	Min	Typ	Max	Unit
Small Signal Current Gain (V_{CE} = 6 V, I_E = 1.0 mA, f = 1 kHz)	2N1191	h_{fe}	30	40	70	–
	2N1192		50	75	125	
	2N1193		100	160	250	
	2N1194		190	280	500	
DC Current Gain (V_{CE} = 1 V, I_C = 10 mA)	2N1191	h_{FE}	20	–	80	–
	2N1192		40	–	135	
	2N1193		70	–	300	
	2N1194		125	–	600	
Small Signal Power Gain (V_{CE} = 6 V, I_E = 1.0 mA, f = 1 kHz, matched)	2N1191	G_e	–	42	–	dB
	2N1192		–	44	–	
	2N1193		–	46	–	
	2N1194		–	48	–	
Base-Emitter Input Voltage (V_{CE} = 6 V, I_C = 1.0 mA)		V_{BE}	–	–	0.3	Vdc

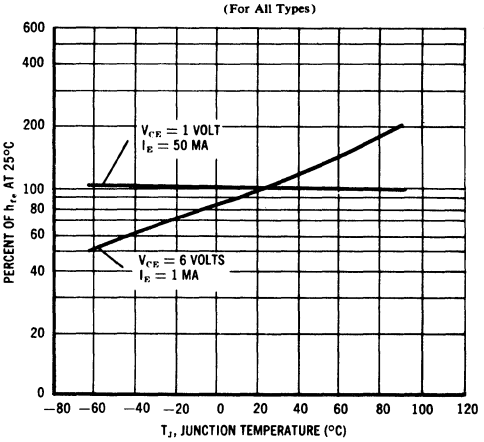
OUTPUT CURRENT versus BASE DRIVE VOLTAGE



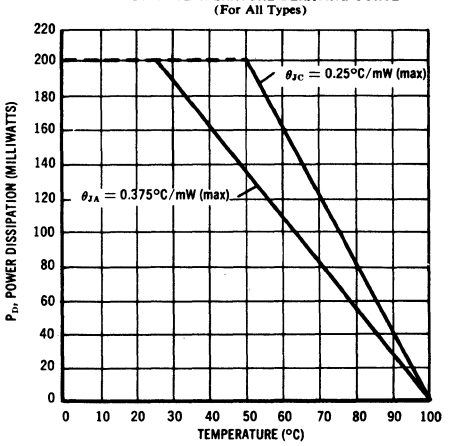
DC CURRENT TRANSFER RATIO versus CURRENT COLLECTOR



SMALL SIGNAL CURRENT GAIN versus TEMPERATURE
(For All Types)



POWER-TEMPERATURE DERATING CURVE
(For All Types)



2N1195

FOR SPECIFICATIONS, SEE 2N1141 DATA.