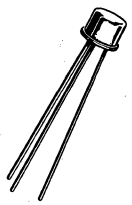
2N508A (GERMANIUM)



CASE 31 (1)
(TO-5)
Base connected to case

PNP Germanium Milliwatt transistor designed for low noise audio and switching applications.

- Small-Signal Current Gain –
  h_{fe} = 180 (Max) @ I_E = 1.0 mAdc
- Low Noise Figure Applications –
  NF = 5.0 dB (Max) @ I_C = 1.0 mAdc

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
*Collector-Emitter Voltage (R_{BE} = 10 kohms)	V_{CER}	25	Vdc
*Collector-Emitter Voltage	V_{CES}	30	Vdc
*Collector-Base Voltage	V_{CB}	30	Vdc
*Emitter-Base Voltage	V_{EB}	10	Vdc
*Collector Current	I_C	200	mAdc
*Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	200 2.67	mW mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +100	°C

*Indicates JEDEC Registered Data

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
*Collector-Emitter Breakdown Voltage (I_C = 600 μAdc, R_{BE} = 10 k ohms)	BV_{CER}	25	-	Vdc
*Collector Cutoff Current (V_{CB} = 25 Vdc, I_E = 0)	I_{CBO}	-	7.0	μAdc
*Emitter Cutoff Current (V_{BE} = 10 Vdc, I_C = 0)	I_{EBO}	-	7.0	μAdc
ON CHARACTERISTICS				
*DC Current Gain (I_C = 20 mAdc, V_{CE} = 1.0 Vdc)	h_{FE}	100	200	-
*Base-Emitter Voltage (I_C = 20 mAdc, V_{CE} = 1.0 Vdc)	V_{BE}	0.18	0.32	Vdc
SMALL-SIGNAL CHARACTERISTICS				
*Cutoff Frequency (I_E = 1.0 mAdc, V_{CB} = 5.0 Vdc, f = 1.0 kHz)	$f_{\alpha b}$	2.5	-	MHz
*Output Capacitance (V_{CB} = 5.0 Vdc, I_E = 1.0 mAdc, f = 1.0 MHz)	C_{ob}	-	35	pF
*Input Impedance (I_E = 1.0 mAdc, V_{CB} = 5.0 Vdc, f = 1.0 kHz)	h_{ib}	26	31	Ohms
*Voltage Feedback Ratio (I_E = 1.0 mAdc, V_{CB} = 5.0 Vdc, f = 1.0 kHz)	h_{rb}	1.0	17	x 10^{-4}
*Small-Signal Current Gain (I_E = 1.0 mAdc, V_{CB} = 5.0 Vdc, f = 1.0 kHz)	h_{fe}	75	180	-
*Output Admittance (I_E = 1.0 mAdc, V_{CB} = 5.0 Vdc, f = 1.0 kHz)	h_{ob}	0.1	0.9	μmhos
Noise Figure (I_C = 1.0 mAdc, V_{CB} = 5.0 Vdc, R_S = 500 ohms, f = 1.0 kHz, Δf = 1.0 Hz)	NF	-	5.0	dB

*Indicates JEDEC Registered Data.