

2N5208

CASE 29-02, STYLE 2
TO-92 (TQ-226AA)

GENERAL PURPOSE
TRANSISTOR

PNP SILICON

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V _{CEO}	25	Vdc
Collector-Base Voltage	V _{CB0}	30	Vdc
Emitter-Base Voltage	V _{EBO}	3.0	Vdc
Collector Current — Continuous	I _C	50	mA _{dc}
Total Device Dissipation @ T _A = 25°C	P _D	350	mW
Derate above 25°C		2.8	mW/°C
Total Device Dissipation @ T _C = 25°C	P _D	1.0	Watt
Derate above 25°C		8.0	mW/°C
Operating and Storage Junction Temperature Range	T _J , T _{stg}	-55 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	R _{θJC}	125	°C/W
Thermal Resistance, Junction to Ambient	R _{θJA} (1)	357	°C/W

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage (I _C = 1.0 mA _{dc} , I _B = 0)	V(BR)CEO	25	—	Vdc
Collector-Base Breakdown Voltage (I _C = 0.1 mA _{dc} , I _E = 0)	V(BR)CBO	30	—	Vdc
Emitter-Base Breakdown Voltage (I _E = 10 μA _{dc} , I _C = 0)	V(BR)EBO	3.0	—	Vdc
Collector Cutoff Current (V _{CB} = 10 Vdc, I _E = 0)	I _{CBO}	—	10	nA _{dc}
Emitter Cutoff Current (V _{BE} = 2.0 Vdc, I _C = 0)	I _{EBO}	—	100	nA _{dc}
ON CHARACTERISTICS				
DC Current Gain (I _C = 2.0 mA _{dc} , V _{CE} = 10 Vdc)	h _{FE}	20	120	—
Base-Emitter On Voltage (I _C = 2.0 mA _{dc} , V _{CE} = 10 Vdc)	V _{BE(on)}	—	0.85	Vdc
SMALL-SIGNAL CHARACTERISTICS				
Current-Gain — Bandwidth Product (I _C = 2.0 mA _{dc} , V _{CE} = 10 Vdc, f = 100 MHz)	f _T	300	1200	MHz
Input Capacitance (V _{BE} = 2.0 Vdc, I _C = 0, f = 1.0 MHz)	C _{ibo}	—	4.0	pF
Collector-Base Capacitance (V _{CB} = 10 Vdc, I _E = 0, f = 1.0 MHz)	C _{cb}	—	1.0	pF
Collector Base Time Constant (I _E = 2.0 mA _{dc} , V _{CB} = 10 Vdc, f = 31.8 MHz)	rb'C _c	—	10	ps
Noise Figure (I _C = 2.0 mA _{dc} , V _{CE} = 10 Vdc, R _S = 75 ohms, f = 100 MHz, BW = 1.0 MHz)	NF	—	3.0	dB
FUNCTIONAL TEST				
Amplifier Power Gain (I _C = 2.0 mA _{dc} , V _{CE} = 10 Vdc, f = 100 MHz)	G _{pe}	22	—	dB

(1) R_{θJA} is measured with the device soldered into a typical printed circuit board.

