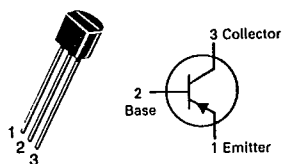


T-29-21

2N5227CASE 29-04, STYLE 1
TO-92 (TO-226AA)**AMPLIFIER TRANSISTOR**

PNP SILICON

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CE0}	30	Vdc
Collector-Base Voltage	V_{CBO}	30	Vdc
Emitter-Base Voltage	V_{EBO}	3.0	Vdc
Collector Current — Continuous	I_C	50	mA dc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	625 5.0	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.5 12.0	Watt mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	$^\circ\text{C/W}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}(1)$	200	$^\circ\text{C/W}$

(1) $R_{\theta JA}$ is measured with the device soldered into a typical printed circuit board.

Refer to 2N3905 for graphs.

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage ($I_C = 1.0 \text{ mA dc}, I_B = 0$)	$V_{(BR)CEO}$	30	—	Vdc
Collector-Base Breakdown Voltage ($I_C = 100 \mu\text{A dc}, I_E = 0$)	$V_{(BR)CBO}$	30	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 100 \mu\text{A dc}, I_C = 0$)	$V_{(BR)EBO}$	3.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 10 \text{ Vdc}, I_E = 0$)	I_{CBO}	—	100	nA dc
Emitter Cutoff Current ($V_{BE} = 2.0 \text{ Vdc}, I_C = 0$)	I_{EBO}	—	500	nA dc
ON CHARACTERISTICS				
DC Current Gain ($I_C = 100 \mu\text{A dc}, V_{CE} = 10 \text{ Vdc}$) ($I_C = 2.0 \text{ mA dc}, V_{CE} = 10 \text{ Vdc}$)	h_{FE}	30 50	— 700	—
Collector-Emitter Saturation Voltage ($I_C = 10 \text{ mA dc}, I_B = 1.0 \text{ mA dc}$)	$V_{CE(sat)}$	—	0.4	Vdc
Base-Emitter Saturation Voltage ($I_C = 10 \text{ mA dc}, I_B = 1.0 \text{ mA dc}$)	$V_{BE(sat)}$	—	1.0	Vdc
SMALL-SIGNAL CHARACTERISTICS				
Current-Gain — Bandwidth Product ($I_C = 10 \text{ mA dc}, V_{CE} = 10 \text{ Vdc}, f = 20 \text{ MHz}$)	f_T	100	—	MHz
Collector-Base Capacitance ($V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 1.0 \text{ MHz}$)	C_{cb}	—	5.0	pF
Small-Signal Current Gain ($I_C = 2.0 \text{ mA dc}, V_{CE} = 10 \text{ Vdc}, f = 1.0 \text{ kHz}$)	h_{fe}	50	1500	—