

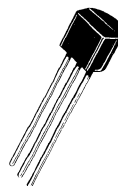
2N5219 (SILICON)

NPN SILICON ANNULAR TRANSISTOR

... designed for general-purpose amplifier applications.

- Low Collector-Emitter Saturation Voltage
 $V_{CE(sat)} = 0.4 \text{ Vdc (Max) @ } I_C = 10 \text{ mAdc}$
- High Current-Gain-Bandwidth Product
 $f_T = 150 \text{ MHz (Min) @ } I_C = 10 \text{ mAdc}$
- Low Collector-Base Capacitance
 $C_{cb} = 4.0 \text{ pF (Max) @ } V_{CE} = 10 \text{ Vdc}$

NPN SILICON AMPLIFIER TRANSISTOR



*MAXIMUM RATINGS

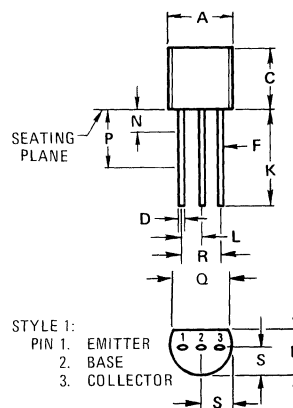
Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	15	Vdc
Collector-Base Voltage	V_{CB}	20	Vdc
Emitter-Base Voltage	V_{EB}	3.0	Vdc
Collector Current — Continuous	I_C	100	mAdc
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	350 2.8	mW mW/ $^\circ\text{C}$
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.0 8.0	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 Ambient	$R_{\theta JA}(1)$	357	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	125	$^\circ\text{C/W}$

*Indicates JEDEC Registered Data.

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



	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	4.450	5.200	0.175	0.205
B	3.180	4.190	0.125	0.165
C	4.320	5.330	0.170	0.210
D	0.407	0.533	0.016	0.021
E	0.407	0.482	0.016	0.019
F	12.700	—	0.500	—
G	1.150	1.390	0.045	0.055
H	—	1.270	—	0.050
I	6.350	—	0.250	—
J	3.430	—	0.135	—
K	2.410	2.670	0.095	0.105
L	2.030	2.670	0.080	0.105

CASE 29-02
TO-92

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage ($I_C = 1.0 \text{ mAdc}$, $I_B = 0$)	BV_{CEO}	15	-	Vdc
Collector-Base Breakdown Voltage ($I_C = 100 \text{ } \mu\text{Adc}$, $I_E = 0$)	BV_{CBO}	20	-	Vdc
Emitter-Base Breakdown Voltage ($I_E = 100 \text{ } \mu\text{Adc}$, $I_C = 0$)	BV_{EBO}	3.0	-	Vdc
Collector Cutoff Current ($V_{CB} = 10 \text{ Vdc}$, $I_E = 0$)	I_{CBO}	-	100	nAdc
Emitter Cutoff Current ($V_{BE} = 2.0 \text{ Vdc}$, $I_C = 0$)	I_{EBO}	-	500	nAdc

ON CHARACTERISTICS

DC Current Gain ($I_C = 2.0 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$)	h_{FE}	35	500	-
Collector-Emitter Saturation Voltage ($I_C = 10 \text{ mAdc}$, $I_B = 1.0 \text{ mAdc}$)	$V_{CE(sat)}$	-	0.4	Vdc
Base-Emitter Saturation Voltage ($I_C = 10 \text{ mAdc}$, $I_B = 1.0 \text{ mAdc}$)	$V_{BE(sat)}$	-	1.0	Vdc

DYNAMIC CHARACTERISTICS

Current-Gain-Bandwidth Product ($I_C = 10 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 20 \text{ MHz}$)	f_T	150	-	MHz
Collector-Base Capacitance ($V_{CB} = 10 \text{ Vdc}$, $I_E = 0$, $f = 1.0 \text{ MHz}$)	C_{cb}	-	4.0	pF
Small-Signal Current Gain ($I_C = 2.0 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 1.0 \text{ kHz}$)	h_{fe}	35	1500	-

* Indicates JEDEC Registered Data