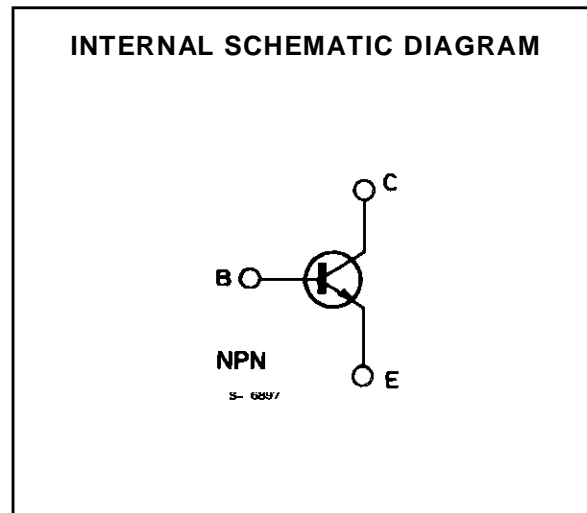
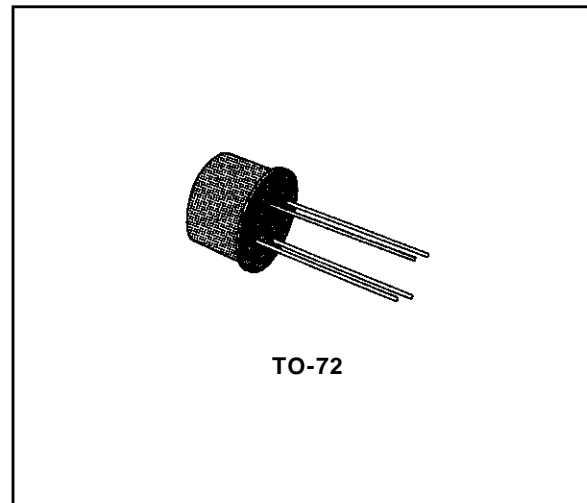


VHF/UHF AMPLIFIER

DESCRIPTION

The 2N5179 is a silicon planar epitaxial NPN transistor in Jedec TO-72 metal case, intended for low-noise tuned-amplifier and converter applications up to 500 MHz.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	20	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	12	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	2.5	V
I_C	Collector Current	50	mA
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_{case} \leq 25\text{ }^\circ\text{C}$	200 300	mW mW
T_{stg}, T_j	Storage and Junction Temperature	- 65 to 200	$^\circ\text{C}$

THERMAL DATA

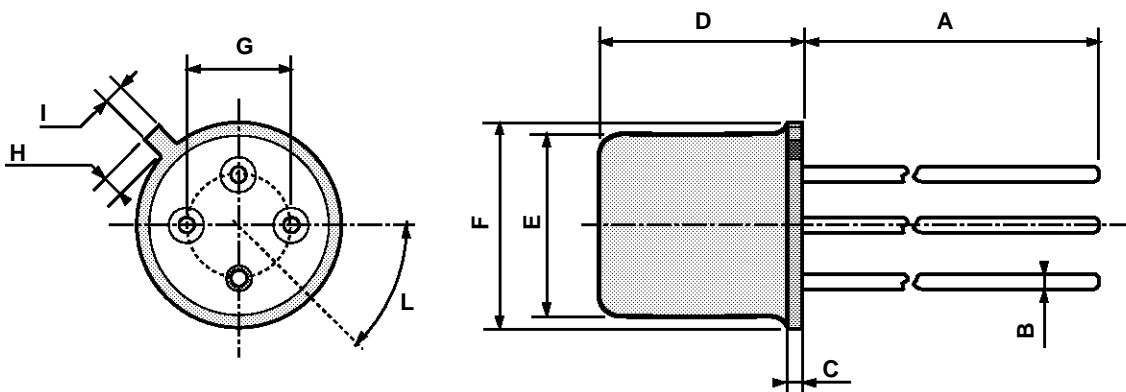
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	583	°C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	875	°C/W

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ °C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = 15\text{ V}$ $V_{CB} = 15\text{ V}$ $T_{amb} = 150\text{ °C}$			20 1	nA μA
$V_{(BR)\ CBO}$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = 1\text{ μA}$	20			V
$V_{CEO(sus)}$	Collector-emitter Sustaining Voltage ($I_B = 0$)	$I_C = 3\text{ mA}$	12			V
$V_{(BR)EBO}^*$	Emitter-base Breakdown Voltage ($I_C = 0$)	$I_E = 10\text{ μA}$	2.5			V
$V_{CE(sat)}$	Collector-emitter Saturation Voltage	$I_C = 10\text{ mA}$ $I_B = 1\text{ mA}$			0.4	V
$V_{BE(sat)}$	Base-emitter Saturation Voltage	$I_C = 10\text{ mA}$ $I_B = 1\text{ mA}$			1	V
h_{FE}	DC Current Gain	$I_C = 3\text{ mA}$ $V_{CE} = 1\text{ V}$	25	70	250	
h_{fe}	Small Signal Current Gain	$I_C = 2\text{ mA}$ $V_{CE} = 6\text{ V}$ $f = 1\text{ kHz}$	25	90	300	
f_T	Transition Frequency	$I_C = 5\text{ mA}$ $V_{CE} = 6\text{ V}$ $f = 100\text{ MHz}$	0.9	1.4	2	GHz
C_{re}	Reverse Capacitance	$I_C = 0$ $V_{CE} = 6\text{ V}$ $f = 1\text{ MHz}$		0.7	1	pF
NF	Noise Figure	$I_C = 1.5\text{ mA}$ $V_{CE} = 6\text{ V}$ $f = 200\text{ MHz}$ $R_g = 125\text{ Ω}$		3	4.5	dB
G_{pe}	Power Gain (neutralized)	$I_C = 5\text{ mA}$ $V_{CE} = 12\text{ V}$ $f = 200\text{ MHz}$ $R_g = 50\text{ Ω}$	15	21		dB
P_o	Oscillator Power Output	$I_C = 12\text{ mA}$ $V_{CB} = 10\text{ V}$ $f = 500\text{ MHz}$	20			mW
$r_{bb} \cdot C_{b'c}$	Feedback Time Constant	$I_C = 2\text{ mA}$ $V_{CB} = 6\text{ V}$ $f = 31.9\text{ MHz}$	3	7	14	ps

TO-72 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		12.7			0.500	
B			0.49			0.019
D			5.3			0.208
E			4.9			0.193
F			5.8			0.228
G	2.54			0.100		
H			1.2			0.047
I			1.16			0.045
L	45°			45°		



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