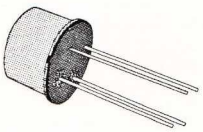
SGS-THOMSON
MICROELECTRONICS

2N5179

VHF/UHF AMPLIFIER

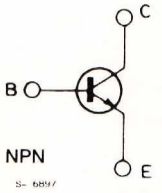
DESCRIPTION

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.



TO-72

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage (I_E = 0)	20	V
V_{CEO}	Collector-ermitter 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 $T_{amb} \leq 25$ °C at $T_{case} \leq 25$ °C	200 300	mW mW
T_{stg}, T_j	Storage and Junction Temperature	– 65 to 200	°C

THERMAL DATA

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

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

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