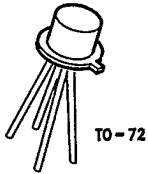


2N5179/PN5179/MMBT5179



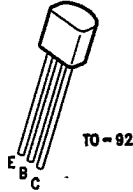
T-31-21

**2N5179**



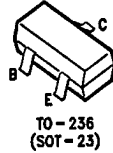
TL/G/10100-12

**PN5179**



TL/G/10100-1

**MMBT5179**



TL/G/10100-5

**NPN RF Transistor**

**Electrical Characteristics**  $T_A = 25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Min	Max	Units
<b>OFF CHARACTERISTICS</b>				
$V_{CE(sus)}$	Collector-Emitter Sustaining Voltage, (Note 2) ( $I_C = 30 \text{ mAdc}$ , $I_B = 0$ )	12		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_C = 0.001 \text{ mAdc}$ , $I_E = 0$ )	20		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_E = 0.01 \text{ mAdc}$ , $I_C = 0$ )	2.5		Vdc
$I_{CBO}$	Collector Cutoff Current ( $V_{CB} = 15 \text{ Vdc}$ , $I_E = 0$ ) ( $V_{CB} = 15 \text{ Vdc}$ , $I_E = 0$ , $T_A = 150^\circ\text{C}$ )		0.02 1.0	$\mu\text{Adc}$
<b>ON CHARACTERISTICS</b>				
$h_{FE}$	DC Current Gain ( $I_C = 3.0 \text{ mAdc}$ , $V_{CE} = 1.0 \text{ Vdc}$ )	25	250	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C = 10 \text{ mAdc}$ , $I_B = 1.0 \text{ mAdc}$ )		0.4	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ( $I_C = 10 \text{ mAdc}$ , $I_B = 1.0 \text{ mAdc}$ )		1.0	Vdc
<b>SMALL-SIGNAL CHARACTERISTICS</b>				
$f_T$	Current Gain—Bandwidth Product, (Note 1) ( $I_C = 5.0 \text{ mAdc}$ , $V_{CE} = 6.0 \text{ Vdc}$ , $f = 100 \text{ MHz}$ )	900	2000	MHz
$C_{cb}$	Collector-Base Capacitance ( $V_{CB} = 10 \text{ Vdc}$ , $I_E = 0$ , $f = 0.1$ to $1.0 \text{ MHz}$ )		1.0	pF
$h_{fe}$	Small-Signal Current Gain ( $I_C = 2.0 \text{ mAdc}$ , $V_{CE} = 6.0 \text{ Vdc}$ , $f = 1.0 \text{ kHz}$ )	25	300	
$rb'C_c$	Collector Base Time Constant ( $I_E = 2.0 \text{ mAdc}$ , $V_{CB} = 6.0 \text{ Vdc}$ , $f = 31.9 \text{ MHz}$ )	3.0	14	ps
NF	Noise Figure ( $I_C = 1.5 \text{ mAdc}$ , $V_{CE} = 6.0 \text{ Vdc}$ , $R_S = 50\Omega$ , $f = 200 \text{ MHz}$ )		4.5	dB

**NPN RF Transistor** (Continued)

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2N5179/PN5179/MMBT5179

**Electrical Characteristics**  $T_A = 25^\circ\text{C}$  unless otherwise noted (Continued)

Symbol	Parameter	Min	Max	Units
<b>FUNCTIONAL TEST</b>				
$G_{pe}$	Common-Emitter Amplifier Power Gain (Figure 1) ( $V_{CE} = 6.0\text{ Vdc}$ , $I_C = 5.0\text{ mAdc}$ , $f = 200\text{ MHz}$ )	15		dB
$P_{out}$	Power Output ( $V_{CB} = 10\text{ Vdc}$ , $I_E = 12\text{ mAdc}$ , $f \geq 500\text{ MHz}$ )	20		mW

**Note 1:**  $f_T$  is defined as the frequency at which  $|h_{fe}|$  extrapolates to unity.  
**Note 2:** Pulse Test: Pulse Width  $\leq 300\ \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .  
**Note 3:** For characteristics curves, see Process 40.

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