

Bipolar Transistor

Low Power



Features:

- PNP Silicon Planar switching Transistors
- General Purpose Transistor

Pin Configuration

1. Emitter
2. Base
3. Collector



Absolute Maximum Ratings

Description	Symbol	Value	Units
Collector Emitter Voltage	V_{CEO}	40	V
Collector Base Voltage	V_{CBO}	60	
Emitter Base Voltage	V_{EBO}	5	
Collector Current Continuous	I_C	600	mA
Power Dissipation at $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	600	W
		3.43	
Power Dissipation at $T_c = 25^\circ\text{C}$ Derate above 25°C		3 17	
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +200	$^\circ\text{C}$

Electrical Characteristics: ($T_c = +25^\circ\text{C}$ unless specified otherwise)

Description	Symbol	Test Condition	Min.	Max.	Units
Collector Emitter Voltage	$*V_{CEO}$	$I_C = 10\text{mA}, I_B = 0$	40	-	V
Collector Base Voltage	V_{CBO}	$I_C = 10\mu\text{A}, I_E = 0$	60	-	
Emmitter Base Voltage	V_{EBO}	$I_E = 10\mu\text{A}, I_C = 0$	5	-	
Collector Cut off Current	I_{CEX}	$V_{CE} = 30\text{V}, V_{BE} = 0.5\text{V}$	-	50	nA
Collector Cut off Current	I_{CBO}	$V_{CB} = 50\text{V}, I_E = 0$	-	20	nA
		$V_{CB} = 50\text{V}, I_E = 0,$ $T_A = 150^\circ\text{C}$	-		μA
Base Current	I_B	$V_{CE} = 30\text{V}, V_{BE} = 0.5\text{V}$	-	50	nA
DC Current Gain	h_{FE}	$I_C = 0.1\text{mA}, V_{CE} = 10\text{V}$ $I_C = 1\text{mA}, V_{CE} = 10\text{V}$ $I_C = 10\text{mA}, V_{CE} = 10\text{V}$ $*I_C = 150\text{mA}, V_{CE} = 10\text{V}$ $*I_C = 500\text{mA}, V_{CE} = 10\text{V}$	-	>35 >50 >75 100 - 300 >30	-

*Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

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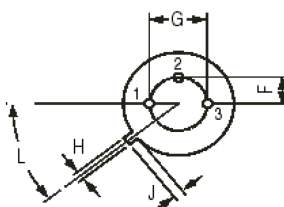
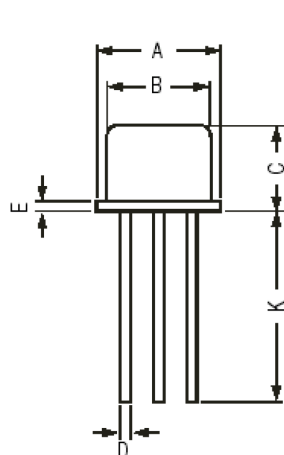


Description	Symbol	Test Condition	Min.	Max.	Units
Small Signal Characteristics					
Collector Emitter Saturation Voltage	*V _{CE(SAT)}	I _C = 150mA, I _B = 15mA I _C = 500mA, I _B = 50mA	-	0.4 1.6	V
Base Emitter Saturation Voltage	*V _{BE(SAT)}	I _C = 150mA, I _B = 15mA I _C = 500mA, I _B = 50mA	-	1.3 2.6	
Transition Frequency	**f _T	I _C = 50mA, V _{CE} = 20V f = 100MHz	200	-	MHz
Output Capacitance	C _{OBO}	V _{CB} = 10V, I _E = 0 f = 100KHz	-	8	pF
Input Capacitance	C _{IBO}	V _{BE} = 2V, I _C = 0 f = 100KHz	-	30	

*Pulse Test: Pulse Width ≤300μs, Duty Cycle ≤2%

**f_T is defined as the frequency at which /h_{FE}/ extrapolates to unity

Description	Symbol	Test Condition	Min.	Max.	Units
Switching Time					
Delay Time	t _d	I _C = 150mA, I _{B1} = 15mA, V _{CC} = 30V	-	10	nS
Rise Time	t _r		-	40	
Turn on Time	t _{on}		-	45	
Storage Time	t _s	I _C = 150mA, I _{B1} = I _{B2} = 15mA, V _{CC} = 6V	-	80	
Fall Time	t _f		-	30	
Turn off Time	t _{off}		-	100	



Dim.	A	B	C	D	E	F	G	H	J	K	L
Min.	8.5	7.74	6.09	0.4	-	2.41	4.82	0.71	0.73	12.7	42°
Max.	9.39	8.5	6.6	0.53	0.88	2.66	5.33	0.86	1.02	-	48°

Dimensions : Millimetres

Part Number Table

Description	Part Number
Transistor, PNP, TO-39	2N2905

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