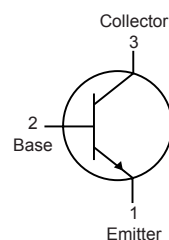
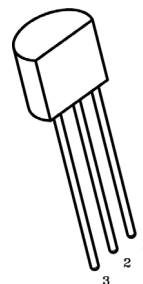


Bipolar Transistor



RoHS
Compliant



Maximum Ratings:

Characteristic	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	180	V
Collector - Emitter Voltage	V_{CEO}	160	
Emitter - Base Voltage	V_{EBO}	6	
Continuous Collector Current	I_C	600	A
Total Device Dissipation ($T_A = +25^\circ\text{C}$), Derate above 25°C	P_D	625 5	mW mW/ $^\circ\text{C}$
Total Device Dissipation ($T_C = +25^\circ\text{C}$), Derate above 25°C		1.5 12	W mW/ $^\circ\text{C}$
Operating Junction Temperature, Range	T_J	-55 to +150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}		
Thermal Resistance, Junction-to-Case	R_{thJC}	83.3	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Ambient (Note-1)		200	

Note:

1. R_{thJA} is measured with the device soldered into a typical printed circuit board.

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

Parameter	Symbol	Test Conditions	Min	Max	Unit
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OFF Characteristics

Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	180	-	V
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$, Note 2	160		
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6		
Collector Cut - Off Current	I_{CBO}	$V_{CB} = 120\text{V}, I_E = 0$	-	50	nA
		$V_{CB} = 120\text{V}, I_E = 0, T_A = +100^\circ\text{C}$			uA
Emitter Cut - Off Voltage	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$			nA

ON Characteristics (Note 2)

DC Current Gain	h_{FE}	$V_{CE} = 5V, I_C = 1mA$	80	-	-	
		$V_{CE} = 5V, I_C = 10mA$		250		
		$V_{CE} = 5V, I_C = 50mA$	30	-		
Collector - Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10mA, I_B = 1mA$	-	0.15	V	
		$I_C = 50mA, I_B = 5mA$		0.2		
Base - Emitter On Voltage	$V_{BE(sat)}$	$I_C = 10mA, I_B = 1mA$		1		
		$I_C = 50mA, I_B = 5mA$				

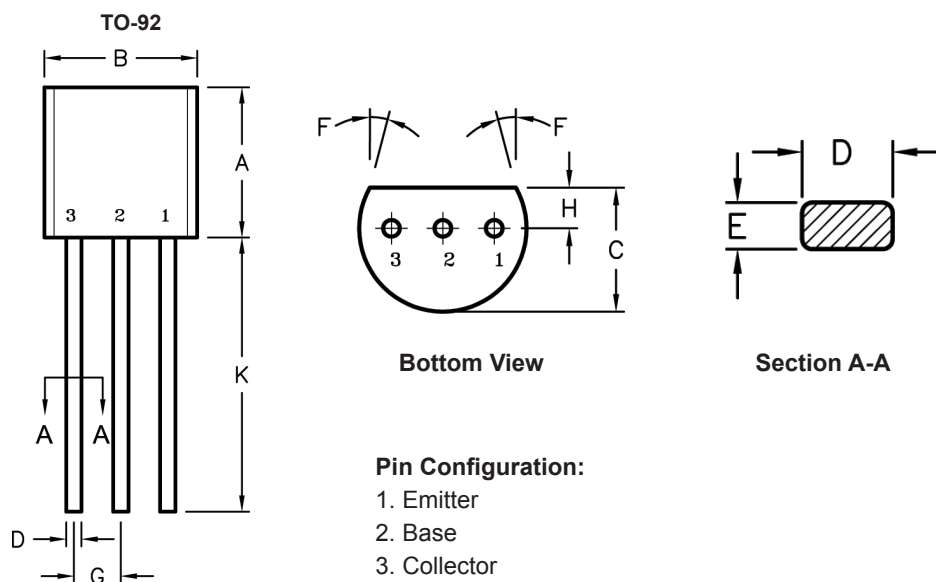
Small-Signal Characteristics

Current Gain Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$	100	300	MHz
Output Capacitance	C_{obo}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	-	6	pF
Input Capacitance	C_{ibo}	$V_{BE} = 0.5\text{V}, I_C = 0, f = 1\text{MHz}$		20	
Small-Signal Current Gain	h_{fe}	$V_{CE} = 10\text{V}, I_C = 1\text{mA}, f = 1\text{kHz}$	50	200	-
Noise Figure	NF	$V_{CE} = 5\text{V}, I_C = 250\mu\text{A}, f = 1\text{kHz}, R_s = 1\text{k}\Omega$	-	8	dB

Note:

2. Pulse Test : Pulse Width = 300 μs , Duty Cycle = 2%

Bipolar Transistor



Dimensions	A	B	C	D	E	F	G	H	K
Min.	4.32	4.45	3.18	0.41	0.35	5°	1.14	1.14	12.7
Max.	5.33	5.2	4.19	0.55	0.5		1.4	1.53	-

Dimensions : Millimetres

Part Number Table

Description	Part Number
Transistor, NPN, 0.6A, 160V, TO-92	2N5551

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