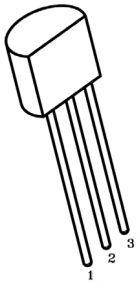
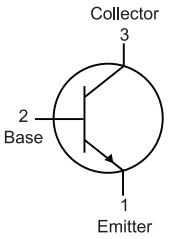
Bipolar Transistor

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°C), Derate above 25°C	P_D	625 5	mW mW/°C
Total Device Dissipation(T_C = +25°C), Derate above 25°C		1.5 12	W mW/°C
Operating Junction Temperature, Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{stg}		
Thermal Resistance, Junction-to-Case	R_{thJC}	83.3	°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.

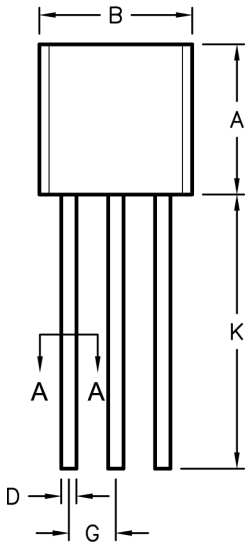
Electrical Characteristics: (T_A = +25°C Unless otherwise specified)

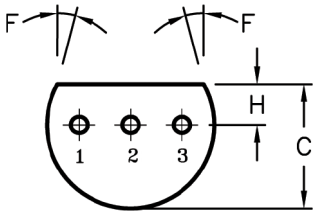
Parameter	Symbol	Test Conditions	Min	Max	Unit
OFF Characteristics					
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 100µA, I_E = 0	180	-	V
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0, Note 2	160		
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10µA, I_C = 0	6		
Collector Cut - Off Current	I_{CBO}	V_{CB} = 120V, I_E = 0	-	50	nA
		V_{CB} = 120V, I_E = 0, TA = +100°C			uA
Emitter Cut - Off Voltage	I_{EBO}	V_{EB} = 4V, 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} = 10V, I_C = 10mA, f = 100MHz	100	300	MHz
Output Capacitance	C_{obo}	V_{CB} = 10V, I_E = 0, f = 1MHz	-	6	pF
Input Capacitance	C_{ibo}	V_{BE} = 0.5V, I_C = 0, f = 1MHz		20	
Small-Signal Current Gain	h_{fe}	V_{CE} = 10V, I_C = 1mA, f = 1kHz	50	200	-
Noise Figure	NF	V_{CE} = 5V, I_C = 250µA, f = 1kHz, R_S = 1kΩ	-	8	dB

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

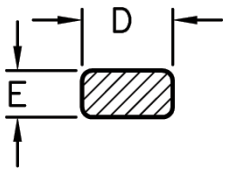
Bipolar Transistor

TO-92





Bottom View



Section A-A

Pin Configuration:

1. Emitter
2. Base
3. Collector

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