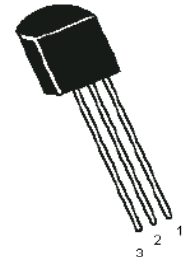


# Low Power Bipolar Transistor



**Pin Configuration:**

- 1. Collector
- 2. Base
- 3. Emitter

**Description:**

- PNP silicon planar epitaxial transistors
- Driver stages of audio amplifier application

**Absolute Maximum Ratings**

Description	Symbol	BC640	Unit
Collector-Base Voltage	$V_{CBO}$	80	V
Collector-Emitter Voltage	$V_{CEO}$		
Emitter-Base Voltage	$V_{EBO}$		
Collector Current Continuous	$I_C$	1	A
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$	$P_D$	800	mW
Power Dissipation at $T_C = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$		6.4	mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	-55 to +150	$^\circ\text{C}$

**Thermal Resistance**

From Junction to Case	$R_{th(j-c)}$	45	$^\circ\text{C/W}$
From Junction to Ambient	$R_{th(j-a)}$	156	

# Low Power Bipolar Transistor

## Electrical Characteristics ( $T_a = 25^\circ\text{C}$ unless otherwise specified)

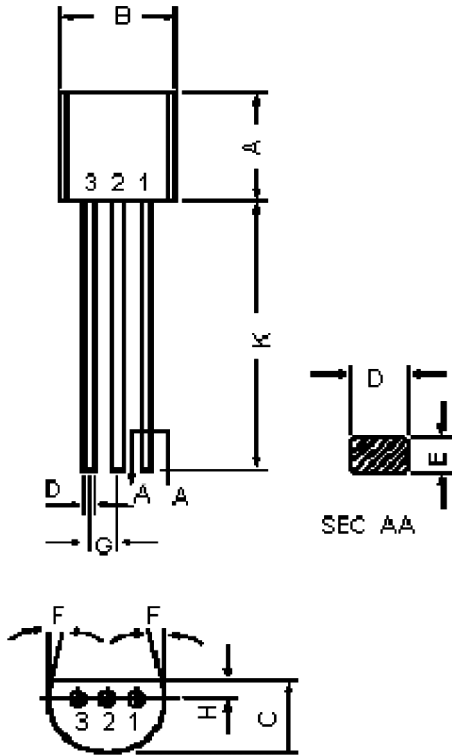
Description	Symbol	Test Condition	TBC635	Units
Collector-Emitter Voltage	$V_{CEO}^*$	$I_C = 10\text{mA}, I_B = 0$	>80	V
Collector-Base Voltage	$V_{CBO}$	$I_C = 100\mu\text{A}, I_E = 0$		
Emitter-Base Voltage	$V_{EBO}$	$I_E = 10\mu\text{A}, I_C = 0$		
Collector Cut off Current	$I_{CBO}$	$V_{CB} = 30\text{V}, I_E = 0$	<100	nA
		$T_a = 125^\circ\text{C}$ $V_{CB} = 30\text{V}, I_E = 0$	<10	$\mu\text{A}$
Base Emitter On Voltage	$V_{BE(on)}^*$	$I_C = 500\text{mA}, V_{CE} = 2\text{V}$	<1	V
Collector Emitter Saturation Voltage	$V_{CE(sat)}^*$	$I_C = 500\text{mA}, I_B = 50\text{mA}$	<0.5	
DC Current Gain	$h_{FE}^*$	$I_C = 5\text{mA}, V_{CE} = 2\text{V}$	>25	-
		$I_C = 150\text{mA}, V_{CE} = 2\text{V}$	40 - 160	
		Group-10	63 - 160	
		Group-16	100 - 250	
		$I_C = 500\text{mA}, V_{CE} = 2\text{V}$	>25	

## Dynamic Characteristics

Transistors Frequency	$f_T$	$I_C = 50\text{mA}, V_{CE} = 2\text{V},$ $f = 100\text{MHz}$	200 (Typical)	MHz
Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	7 (Typical)	$\mu\text{F}$
Input Capacitance	$C_{ib}$	$V_{BE} = 0.5\text{V}, I_C = 0,$ $f = 1\text{MHz}$	50 (Typical)	

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

# Low Power Bipolar Transistor



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

Dimensions : Millimetres

## Pin Configuration:

1. Collector
2. Base
3. Emitter

## Part Number Table

Description	Part Number
Transistor, PNP, TO-92	BC640

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