

TBC640

Low Power Bipolar Transistors



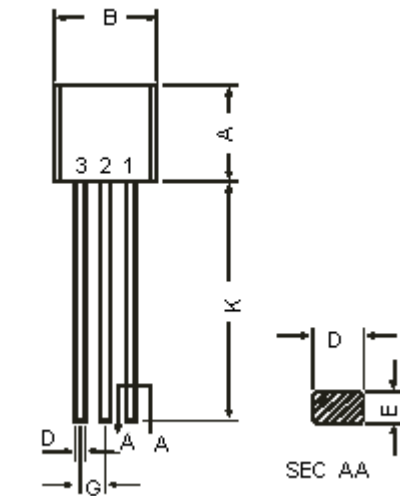
TO-92 General Purpose Amplifiers/Switches

General Description:

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

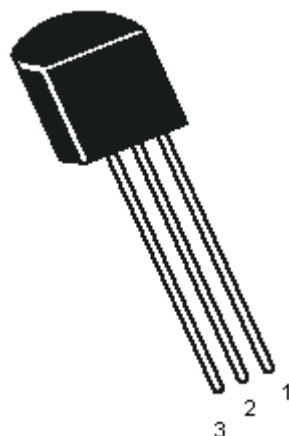
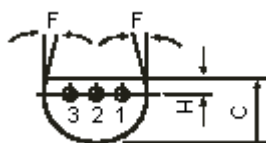


TO-92 Plastic Package



Dimensions	Minimum	Maximum
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5°	
G	1.14	1.40
H		1.53
K	12.70	-

Dimensions : Millimetres



Pin Configuration

1. Base
2. Collector
3. Emitter



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Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Description	Symbol	TBC640	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}		
Emitter-Base Voltage	V_{EBO}		
Collector Current Continuous	I_C	1.0	A
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate Above 25°C	P_D	800	mW
Power Dissipation at $T_C = 25^\circ\text{C}$ Derate Above 25°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	

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

Description	Symbol	Test Condition	TBC640	Unit
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	μA
Base Emitter On Voltage	$V_{BE(on)}^*$	$I_C = 500\text{mA}, V_{CE} = 2\text{V}$	<1.0	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}^*	$I_C = 5\text{mA}, V_{CE} = 2\text{V}$ $I_C = 150\text{mA}, V_{CE} = 2\text{V}$ Group-10 Group-16 $I_C = 500\text{mA}, V_{CE} = 2\text{V}$	>25	-
			40 - 160	
			63 - 160	
			100 - 250	
			>25	
Dynamic Characteristics				
Transistors Frequency	f_T	$I_C = 50\text{mA}, V_{CE} = 2\text{V}, f = 100\text{MHz}$	150 (Typical)	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	9.0 (Typical)	pF
Input Capacitance	C_{ib}	$V_{BE} = 0.5\text{V}, I_C = 0, f = 1\text{MHz}$	110 (Typical)	

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



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Specifications

V_{CE0} maximum (V)	V_{CBO} maximum (V)	I_C (A)	h_{FE} minimum at $I_C = 150\text{mA}$	f_T minimum (MHz)	P_{tot} (mW)	Package (Pin out)	Part Number
80	100	1.5	40	130	625	TO-92 (a)	TBC640

Notes:

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