# **Bipolar Transistor**







#### Pin Configuration:

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

#### **General Description:**

- Silicon Planar Epitaxial Transistors
- General Purpose Transistors Best Suited for use in Driver and Output Stages of Audio Amplifier

## Absolute Maximum Ratings ( $T_a = 25$ °C unless specified otherwise):

Description	Symbol	Value	Unit	
Collector Emitter Voltage	V <sub>CEO</sub>	45		
Collector Emitter Voltage	V <sub>CES</sub>	50	V	
Emitter Base Voltage	V <sub>EBO</sub>	5		
Collector Current Continuous	I <sub>C</sub>	800		
Collector Current Peak	I <sub>CM</sub>	1,000		
Base Current Peak	I <sub>BM</sub>	200	mA	
Base Current Continuous	I <sub>B</sub>	100		
Base Current Peak	I <sub>BM</sub>	200		
Power Dissipation at T <sub>a</sub> = 25°C Derate Above 25°C	P <sub>D</sub>	625 5	mW mW/°C	
Operating and Storage Junction Temperature Range	$T_j$ , $T_{stg}$	-65 to +150	°C	
Thormal Posistanco				

**Thermal Resistance** 

Junction to Ambient in Free Air	R <sub>th (j-a)</sub>	200	°C/W

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### Electrical Characteristics ( $T_a = 25$ °C unless specified otherwise):

Description	Symbol	Test Condition	Min.	Max.	Unit
Collector Emitter Voltage	$V_{CEO}$	$I_C = 1mA, I_B = 0$	45	-	
Collector Emitter Voltage	V <sub>CES</sub>	$I_{\rm C} = 100 \mu A, I_{\rm E} = 0$	50	-	V
Emitter Base Voltage	$V_{EBO}$	$I_{E} = 10 \mu A, I_{C} = 0$	5	-	
Collector Cut off Current	I <sub>CBO</sub>	$V_{CB} = 20V, I_{E} = 0$ $V_{CB} = 20V, I_{E} = 0, T_{i} = 150^{\circ}C$	1	100 5	nΑ μΑ
Emitter Cut off Current	I <sub>EBO</sub>	$V_{EB} = 5V, I_{C} = 0$	-	10	μΑ
Collector Emitter Saturation Voltage	*V <sub>CE (sat)</sub>	I <sub>C</sub> = 500mA, I <sub>B</sub> = 50mA	-	0.7	V
Base Emitter On Voltage	*V <sub>BE (on)</sub>	I <sub>C</sub> = 500mA, V <sub>CE</sub> = 1V	-	1.2	V

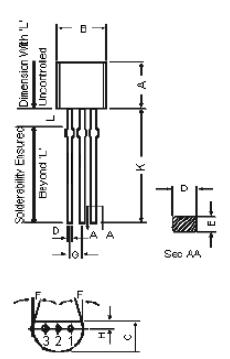
<sup>\*</sup>Pulse Test: Pulse Width ≤300µs, Duty Cycle ≤2%.

### Electrical Characteristics ( $T_a = 25$ °C unless specified otherwise):

Description	Symbol	Test Condition	Min.	Тур.	Max.	Unit
DC Current Gain	h <sub>FE</sub>	I <sub>C</sub> = 100mA, V <sub>CE</sub> = 1V	100	400	-	-
Small Signal Characteristics						
Transistors Frequency	f <sub>T</sub>	$I_C$ = 10mA, $V_{CE}$ = 5V, f = 35MHz NPN	-	200	-	MHz
Input Capacitance	C <sub>ib</sub>	V <sub>BE</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz NPN	-	5	-	pF

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Dimensions	Minimum	Maximum	
А	4.32	5.33	
В	4.45	5.2	
С	3.18	4.19	
D	0.41	0.55	
E	0.35	0.5	
F	5°		
G	1.14	1.4	
Н	1.2	1.53	
K	12.7	-	
L	1.982	2.082	

Dimensions: Millimetres

#### **Part Number Table**

Description	Part Number
Transistor, NPN, TO-92	BC337.25

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