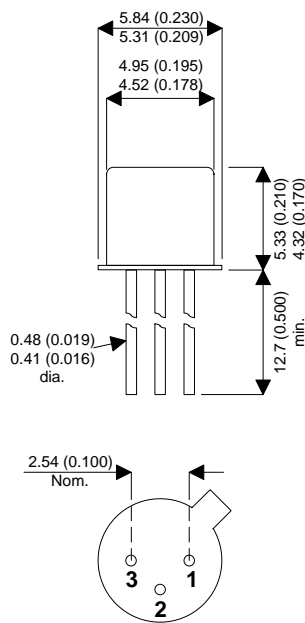


MECHANICAL DATA

Dimensions in mm (inches)



TO-18 METAL PACKAGE

Underside View

PIN 1 – Emitter PIN 2 – Base PIN 3 – Collector

GENERAL PURPOSE SMALL SIGNAL NPN BIPOLAR TRANSISTOR

FEATURES

- SILICON NPN
- HERMETICALLY SEALED TO18
- SCREENING OPTIONS AVAILABLE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

V_{CBO}	Collector – Base Continuous Voltage	BC017	50V
		BC108, BC109	30V
V_{CEO}	Collector – Emitter Continuous Voltage With Zero Base Current	BC107	45V
		BC108, BC109	20V
V_{CES}	Collector – Emitter Continuous Voltage With Base Shortcircuited to Emitter	BC107	50V
		BC108, BC109	30V
V_{EBO}	Emitter – Base Continuous Voltage Reverse Voltage	BC107	6V
		BC108, BC109	5V
I_C	Continuous Collector Current		100mA
I_{CM}	Peak Collector Current		200mA
P_{tot}	Power Dissipation @ $T_{amb} = 25^\circ\text{C}$		300mW
T_{amb}	Ambient Operating Temperature Range		-65 to +175°C
T_{stg}	Storage Temperature Range		-65 to +175°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO(1)} Collector-Base Leakage Current	V _{CB} = 45V BC107 V _{CB} = 25V BC108, BC109			15 15	nA
I _{CBO(1)} Collector-Emitter Leakage Current @T _{amb} =125°C	V _{CB} = 45V BC107 V _{CB} = 25V BC108, BC109			4 4	μA
I _{EBO} Emitter Cut-off Current	V _{EB} = 4V I _C = 0			1	μA
h _{21E} Static Forward Current Transfer Ratio	V _{CE} = 5V I _C = 2mA Group A BC107, BC108	110		220	
	Group B All Types	180		460	
	Group C BC108, BC109	380		800	
	BC107	110		460	
	BC108	110		800	
	BC109	180		800	
V _{BE} Base – Emitter Breakdown	V _{CE} = 5V I _C = 2mA			0.7	V
V _{BE(sat)(1)} Base – Emitter Saturation Voltage	I _B = 0.5mA I _C = 10mA			0.83	V
V _{CE(sat)(1)} Collector – Emitter Saturation Voltage	I _B = 0.5mA I _C = 10mA			0.25	V
f _T Transition Frequency	V _{CE} = 5V I _C = 10mA f = 100MHz	150			MHz
F Noise Factor	V _{CE} = 5V I _C = 0.2mA R = 2kΩ f = 1kHz ΔF = 200Hz			4 10	dB
	BC109 BC107, BC108				
h _{21e} Small Signal Forward Current Transfer Ratio	V _{CE} = 5V I _C = 2mA f = 100kHz				
	Group A BC107, BC108	125		260	
	Group B All Types	240		500	
	Group C BC108, BC109	450		900	
	BC107	125		500	
	BC108	125		900	
h _{11e} Common Emitter Input Impedance	BC109	240		900	
	V _{CE} = 5V I _C = 2mA f = 1kHz				
	Group A BC107, BC108	1.6		4.5	
	Group B All Types	3.2		8.5	
h _{22e} Common Emitter Output Admittance	Group C BC108, BC109	6.0		15	
	BC107, BC108			30	
	BC108, BC109			110	
C _{22b} Common Base Output Capacitance	V _{CB} = 10V f = 1MHz			6	pF
R _{th(j-amb)} Thermal Resistance: Junction to Ambient				500	°C/W