

GENERAL PURPOSE NPN SMALL SIGNAL TRANSISTOR BC107

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions		BC107	BC108	BC109	Units
V _{CEO}	Collector Emitter	I _C = 2mA	I _B = 0	>45	>25	>25	V
V _{EBO}	Emitter Base	I _E = 10μA	I _C = 0	>6	>5	5	
I _{CBO}	Collector-Cut-Off Current	V _{CB} = 45V	I _E = 0	<15			nA
		V _{CB} = 25V	I _E = 0		<15	<15	
		V _{CB} = 45V	I _E = 0	<4			μA
		V _{CB} = 25V	I _E = 0		<4	<4	
h _{FE}	DC Current Gain	I _C = 10μA V _{CE} = 5V					-
		B Group			>40		
		C Group			>100		
		I _C = 2mA V _{CE} = 5V					-
		BC107		110-450			
		BC108		110-800			
		BC109		200-800			
		A Group		110-220			
		B Group		200-450			
		C Group		420-800			

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	MIN.	TYP.	Max	Units
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{mA}$ $I_B = 0.5\text{mA}$			0.25	V
		$I_C = 100\text{mA}$ $I_B = 5\text{mA}$			0.60	
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 10\text{mA}$ $I_B = 0.5\text{mA}$			0.83	
		$I_C = 100\text{mA}$ $I_B = 5\text{mA}$			1.05	
$V_{BE(on)}^{(1)}$	Base Emitter On Voltage	$I_C = 2\text{mA}$ $V_{CE} = 5\text{V}$	0.55		0.70	
		$I_C = 10\text{mA}$ $V_{CE} = 5\text{V}$			0.77	

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DYNAMIC CHARACTERISTICS

h_{fe}	Small-Signal Current Gain	$I_C = 2mA$ $f = 1KHz$ $V_{CE} = 5V$ BC107 BC108 BC109 A Group B Group C Group				-
			125		500	
			125		900	
			240		900	
			125		260	
			240		500	
			450		900	
f_T	Transition Frequency	$I_C = 10mA$ $V_{CE} = 5V$ $f = 100MHz$	150			MHz
C_{obo}	Output Capacitance	$V_{CB} = 10V$ $I_E = 0$ $f = 1.0MHz$			6	pF
$N_F^{(2)}$	Noise Figure	$I_C = 0.2mA$ $V_{CE} = 5V$ $R_G = 2K\Omega$ $f = 30Hz-15.0KHz$ BC109 $f = 1KHz, \Delta f = 200Hz$ BC109 BC107/108			4.0	dB
					4.0	
					10	

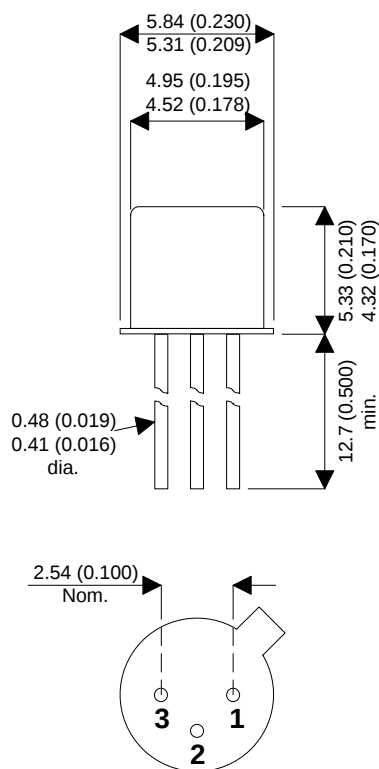
Notes

- (1) Pulse Width $\leq 300\mu s$, $\delta \leq 2\%$
(2) By design only, not a production test.

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MECHANICAL DATA

Dimensions in mm (inches)



TO-18 (TO-206AA) METAL PACKAGE Underside View

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector