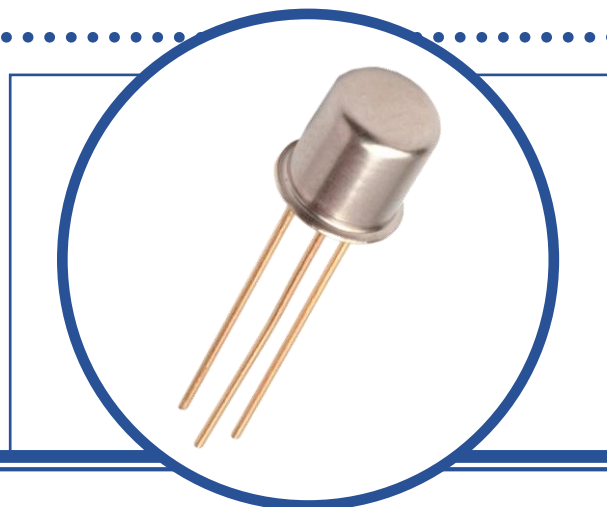


NPN SILICON PLANAR EPITAXIAL TRANSISTOR

BCW34

- Silicon Planer Epitaxial NPN Transistor
- Hermetic TO18 Metal Package
- Screening Options Available



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise stated)

V _{CBO}	Collector – Base Voltage	60V
V _{CEO}	Collector – Emitter Voltage	45V
V _{EBO}	Emitter – Base Voltage	5V
I _C	Continuous Collector Current	600mA
I _B	Continuous Base Current	150mA
P _D	Total Power Dissipation at T _A = 25°C Derate Above 25°C	350mW 2.0mW/°C
T _J	Junction Temperature Range	-55 to +200°C
T _{stg}	Storage Temperature Range	-65 to +200°C

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
R _{θJA}	Thermal Resistance, Junction To Ambient	500	°C/W

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

NPN SILICON PLANAR EPITAXIAL TRANSISTOR BCW34

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 1.0\mu\text{A}$ $I_E = 0$	60			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_C = 0$ $I_E = 1.0\mu\text{A}$	5.0			
I_{CBO}	Collector-Base Cut-Off Current	$V_{CB} = 50\text{V}$ $I_E = 0$			10	nA
		$T_A = 150^\circ\text{C}$			10	μA
I_{EBO}	Emitter-Base Cut-Off Current	$V_{EB} = 5\text{V}$ $I_C = 0$			10	nA
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 1.0\mu\text{A}$ $V_{CE} = 5.0\text{V}$	20			V
		$I_C = 10\mu\text{A}$ $V_{CE} = 5.0\text{V}$	50		250	
		$I_C = 100\mu\text{A}$ $V_{CE} = 5.0\text{V}$	60		280	
		$T_A = -55^\circ\text{C}$	25			
		$I_C = 1.0\text{mA}$ $V_{CE} = 5.0\text{V}$	80		350	
		$I_C = 10\text{mA}$ $V_{CE} = 5.0\text{V}$	100		350	
		$T_A = -55^\circ\text{C}$	40			
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 1.0\text{mA}$ $I_B = 100\mu\text{A}$			0.1	V
		$I_C = 10\text{mA}$ $I_B = 1.0\text{mA}$			0.1	
		$I_C = 100\text{mA}$ $I_B = 10.0\text{mA}$			0.25	
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 1.0\text{mA}$ $I_B = 100\mu\text{A}$	0.6		0.7	V
		$I_C = 10\text{mA}$ $I_B = 1.0\text{mA}$	0.6		0.8	
		$I_C = 100\text{mA}$ $I_B = 10\text{mA}$			1.0	

Notes

(1) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

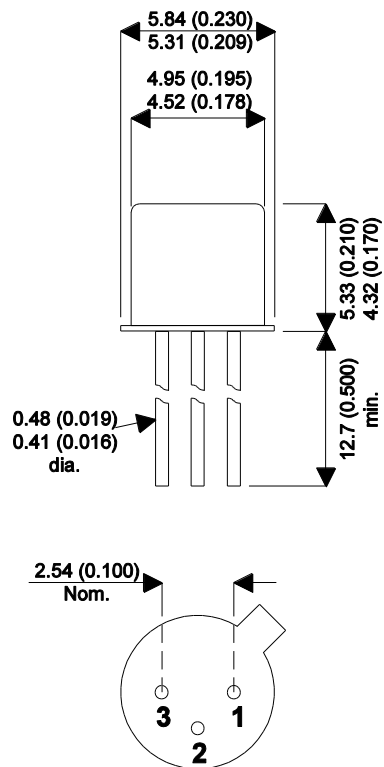
NPN SILICON PLANAR EPITAXIAL TRANSISTOR BCW34

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$h_{fe}^{(1)}$	Small Signal Current Gain	$I_C = 100\mu A$ $V_{CE} = 5V$ $f = 1.0kHz$	100		400	
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

MECHANICAL DATA

Dimensions in mm (inches)



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

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector