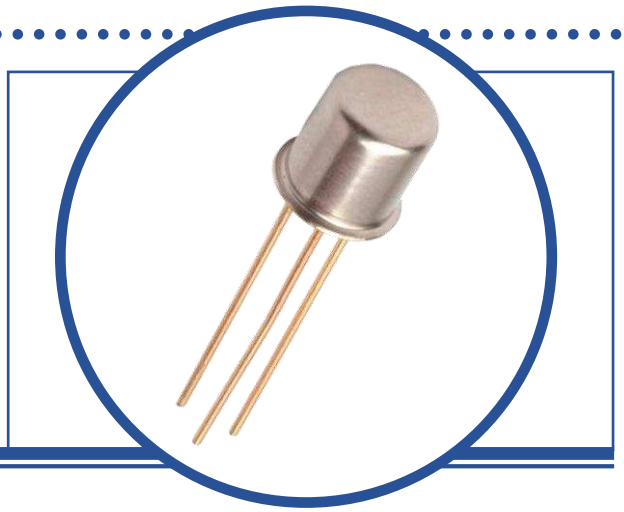
NPN SILICON PLANAR EPITAXIAL TRANSISTOR

TT electronics
Semelab Limited

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	350mW
		Derate Above 25°C	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
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	500	°C/W

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

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 1.0μA	I_E = 0	60			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_C = 0	I_E = 1.0μA	5.0			
I_{CBO}	Collector-Base Cut-Off Current	V_{CB} = 50V	I_E = 0			10	nA
			T_A = 150°C			10	μA
I_{EBO}	Emitter-Base Cut-Off Current	V_{EB} = 5V	I_C = 0			10	nA
h_{FE}(1)	Forward-current transfer ratio	I_C = 1.0 μA	V_{CE} = 5.0V	20			
		I_C = 10 μA	V_{CE} = 5.0V	50		250	
		I_C = 100 μA	V_{CE} = 5.0V	60		280	
			T_A = -55°C	25			
		I_C = 1.0mA	V_{CE} = 5.0V	80		350	
		I_C = 10mA	V_{CE} = 5.0V	100		350	
			T_A = -55°C	40			
		I_C = 100mA	V_{CE} = 5.0V	80		300	
		I_C = 500mA	V_{CE} = 5.0V	15			
$V_{CE(sat)}$(1)	Collector-Emitter Saturation Voltage	I_C = 1.0mA	I_B = 100μA			0.1	V
		I_C = 10mA	I_B = 1.0mA			0.1	
		I_C = 100mA	I_B = 10.0mA			0.25	
$V_{BE(sat)}$(1)	Base-Emitter Saturation Voltage	I_C = 1.0mA	I_B = 100μA	0.6		0.7	
		I_C = 10mA	I_B = 1.0mA	0.6		0.8	
		I_C = 100mA	I_B = 10mA			1.0	

Notes
(1) Pulse Width ≤ 300us, δ ≤ 2%

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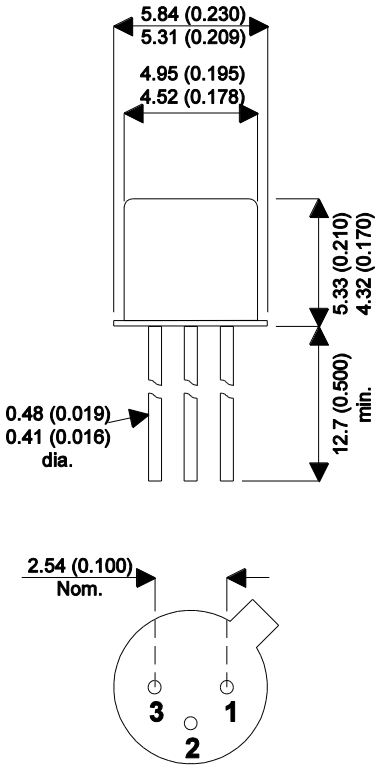
DYNAMIC CHARACTERISTICS (T_A = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
h_{fe} (1)	Small Signal Current Gain	I_C = 100µA 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