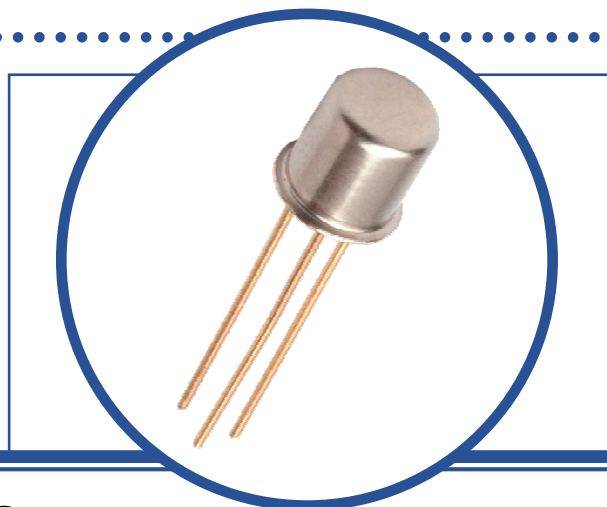


SILICON PLANAR EPITAXIAL NPN TRANSISTOR

BSS71

- High Voltage
- Hermetic TO-18 Metal package.
- Ideally suited for High Voltage Amplifier and Switching Applications
- Screening Options Available



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

V_{CBO}	Collector – Base Voltage	200V
V_{CEO}	Collector – Emitter Voltage	200V
V_{EBO}	Emitter – Base Voltage	6V
I_C	Continuous Collector Current	500mA
P_D	Total Power Dissipation at $T_A = 25^\circ\text{C}$ Derate Above 25°C	500mW 2.86mW/ $^\circ\text{C}$
T_J	Junction Temperature Range	-65 to $+200^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65 to $+200^\circ\text{C}$

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	350	$^\circ\text{C/W}$

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.

SILICON PLANAR EPITAXIAL NPN TRANSISTOR BSS71

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $I_B = 0$	200			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100\mu\text{A}$ $I_E = 0$	200			
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 100\mu\text{A}$ $I_C = 0$	6			
I_{CBO}	Collector Cut-Off Current	$V_{CB} = 150\text{V}$ $I_E = 0$			50	nA
I_{CEO}	Collector Cut-Off Current	$V_{CE} = 150\text{V}$ $I_B = 0$			500	
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 5\text{V}$ $I_C = 0$			50	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 0.1\text{mA}$ $V_{CE} = 1.0\text{V}$	20			
		$I_C = 1.0\text{mA}$ $V_{CE} = 10\text{V}$	30			
		$I_C = 10\text{mA}$ $V_{CE} = 10\text{V}$	50			
		$I_C = 30\text{mA}$ $V_{CE} = 10\text{V}$	40		250	
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{mA}$ $I_B = 1.0\text{mA}$			0.3	V
		$I_C = 30\text{mA}$ $I_B = 3\text{mA}$			0.4	
		$I_C = 50\text{mA}$ $I_B = 5\text{mA}$			0.5	
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 10\text{mA}$ $I_B = 1.0\text{mA}$			0.8	
		$I_C = 30\text{mA}$ $I_B = 3\text{mA}$			0.9	
		$I_C = 50\text{mA}$ $I_B = 5\text{mA}$			1.0	

DYNAMIC CHARACTERISTICS

f_T	Transition Frequency	$I_C = 20\text{mA}$ $V_{CE} = 20\text{V}$ $f = 20\text{MHz}$	50		200	MHz
C_{obo}	Output Capacitance	$V_{CB} = 20\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$		5		pF
C_{ibo}	Input Capacitance	$V_{EB} = 0.5\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$		35		
t_{on}	Turn-On Time	$I_C = 50\text{mA}$ $V_{CC} = 100\text{V}$ $I_{B1} = 10\text{mA}$		100		ns
t_{off}	Turn-Off Time	$I_C = 50\text{mA}$ $V_{CC} = 100\text{V}$ $I_{B1} = -I_{B2} = 10\text{mA}$		2.3		μs

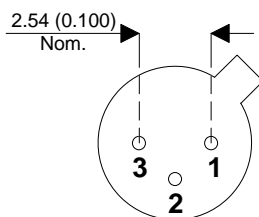
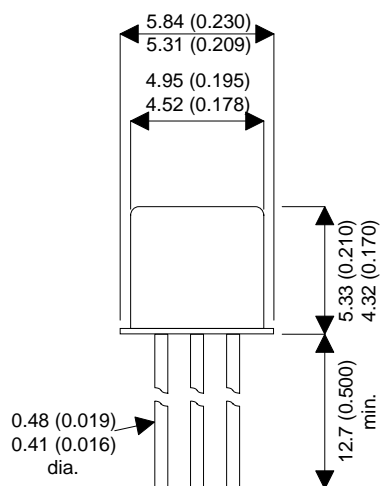
Notes

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

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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