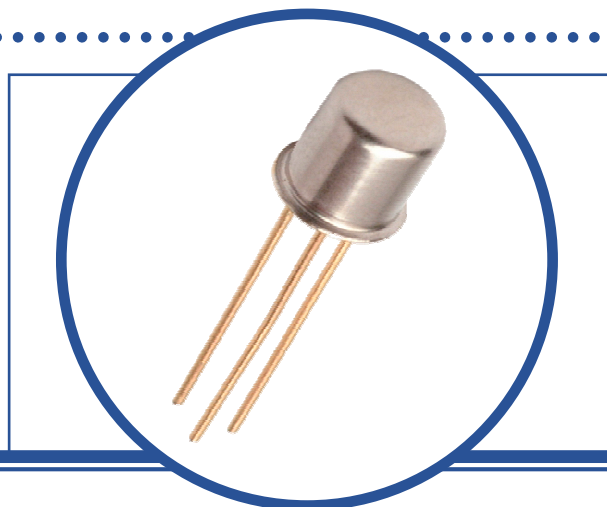


SILICON EPITAXIAL NPN TRANSISTOR

BSX52A

- Hermetic TO-18 Metal package.
- Designed For Low Frequency Amplifiers, and Low Current Switching Applications
- Screening Options Available



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

V_{CBO}	Collector – Base Voltage	50V
V_{CEO}	Collector – Emitter Voltage	50V
V_{EBO}	Emitter – Base Voltage	7V
I_C	Continuous Collector Current	200mA
P_D	Total Power Dissipation at $T_A = 25^\circ\text{C}$ Derate Above 25°C	300mW 2mW/ $^\circ\text{C}$
T_J	Junction Temperature Range	-65 to +175 $^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65 to +175 $^\circ\text{C}$

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	500	$^\circ\text{C}/\text{W}$

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.

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SILICON EPITAXIAL NPN TRANSISTOR BSX52A

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
I_{CBO}	Collector-Cut-Off Current	$V_{CB} = 50\text{V}$ $I_E = 0$			0.5	μA
		$T_A = 100^\circ\text{C}$			15	
I_{EBO}	Emitter-Cut-Off Current	$V_{EB} = 7\text{V}$ $I_C = 0$			0.5	
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $I_B = 0$	50			V
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 50\text{mA}$ $I_B = 3\text{mA}$			0.3	
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 50\text{mA}$ $I_B = 3\text{mA}$			1.3	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 2\text{mA}$ $V_{CE} = 4.5\text{V}$	180		540	

DYNAMIC CHARACTERISTICS

f_T	Transition Frequency	$I_C = 10\text{mA}$ $V_{CE} = 5\text{V}$ $f = 100\text{MHz}$	150			MHz
C_{obo}	Output Capacitance	$V_{CB} = 5\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			8	pF
t_d	Delay Time	$I_C = 50\text{mA}$ $V_{CC} = 5\text{V}$ $I_{B1} = 3.6\text{mA}$		20		ns
t_r	Rise Time			50		
t_s	Storage Time	$I_C = 50\text{mA}$ $V_{CC} = 5\text{V}$		200		
t_f	Fall Time	$I_{B1} = 3.6\text{mA}$ $I_{B2} = -2.5\text{mA}$		50		

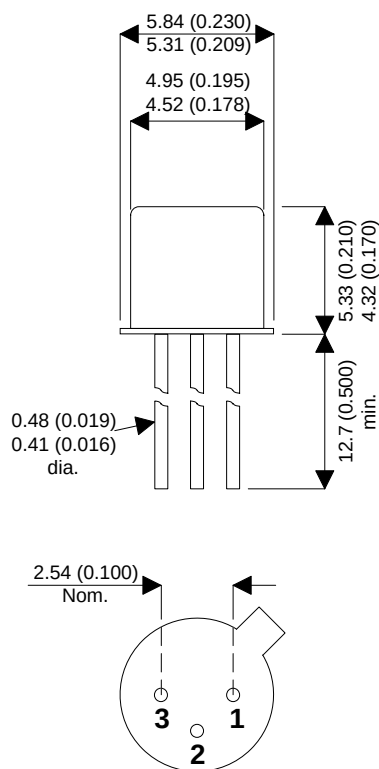
Notes

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

SILICON EPITAXIAL NPN TRANSISTOR BSX52A

MECHANICAL DATA

Dimensions in mm (inches)



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

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector