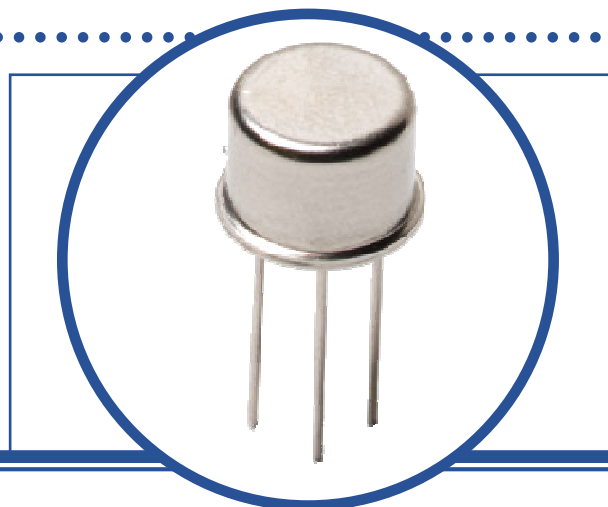


SILICON PLANAR EPITAXIAL NPN TRANSISTOR

BSW68

- Hermetic TO-39 Metal package.
- Ideally suited for Switching and General Purpose Applications
- Screening Options Available



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

V_{CBO}	Collector – Base Voltage	150V
V_{CEO}	Collector – Emitter Voltage	150V
V_{EBO}	Emitter – Base Voltage	6V
I_C	Continuous Collector Current	1.0A
I_{CM}	Peak Collector Current	2A
P_D	Total Power Dissipation at $T_A = 25^\circ\text{C}$	0.795W
	Derate Above 25°C	4.5mW/ $^\circ\text{C}$
P_D	Total Power Dissipation at $T_C = 25^\circ\text{C}$	5W
	Derate Above 25°C	28.6mW/ $^\circ\text{C}$
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	220	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance, Junction To Case	35	$^\circ\text{C/W}$

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.

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Issue 3

Page 1 of 3

SILICON PLANAR EPITAXIAL NPN TRANSISTOR BSW68

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	$I_C = 10\text{mA}$ $I_B = 0$	150			V
I_{CBO}	Collector Cut-Off Current	$V_{CB} = 75\text{V}$ $I_E = 0$ $T_A = 150^\circ\text{C}$			0.1 50	μA
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 0.1\text{A}$ $I_B = 0.01\text{A}$			0.15	V
		$I_C = 0.5\text{A}$ $I_B = 0.05\text{A}$			0.5	
		$I_C = 1.0\text{A}$ $I_B = 0.15\text{A}$			1.0	
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 0.1\text{A}$ $I_B = 0.01\text{A}$			0.9	V
		$I_C = 0.5\text{A}$ $I_B = 0.05\text{A}$			1.1	
		$I_C = 1.0\text{A}$ $I_B = 0.15\text{A}$			1.2	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 0.1\text{A}$ $V_{CE} = 5\text{V}$	40			
		$I_C = 0.5\text{A}$ $V_{CE} = 5\text{V}$	30			
		$I_C = 1.0\text{A}$ $V_{CE} = 5\text{V}$	15			

DYNAMIC CHARACTERISTICS

f_T	Transition Frequency	$I_C = 100\text{mA}$ $V_{CE} = 20\text{V}$ $f = 1.0\text{MHz}$	30			MHz
C_{obo}	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			35	pF
C_{ibo}	Input Capacitance	$V_{EB} = 0\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$			1000	
t_{on}	Turn-On Time	$I_C = 0.5\text{A}$ $V_{CC} = 50\text{V}$ $I_{B1} = 0.05\text{A}$		0.1	1.0	μs
t_{off}	Turn-Off Time	$I_C = 0.5\text{A}$ $V_{CC} = 50\text{V}$ $I_{B1} = -I_{B2} = 0.05\text{A}$		1.6	3	

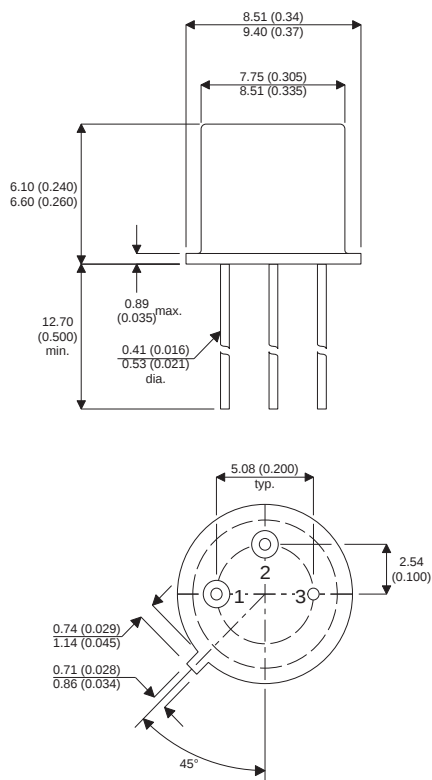
Notes

(1) Pulse Width $\leq 380\mu\text{s}$, $\delta \leq 2\%$

SILICON PLANAR EPITAXIAL NPN TRANSISTOR BSW68

MECHANICAL DATA

Dimensions in mm (inches)



TO-39 (TO-205AD) METAL PACKAGE Underside View

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector