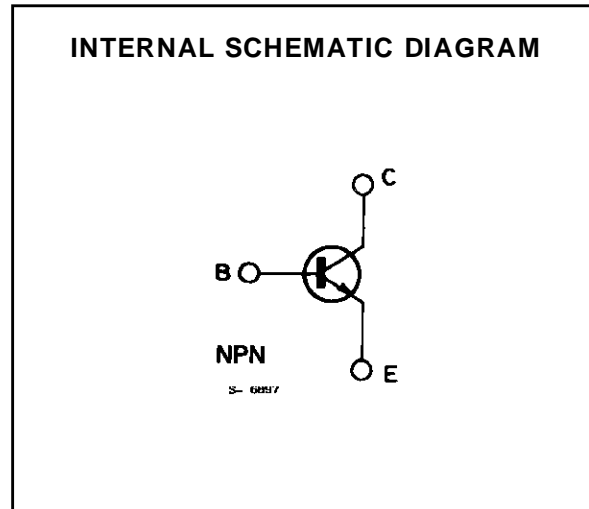
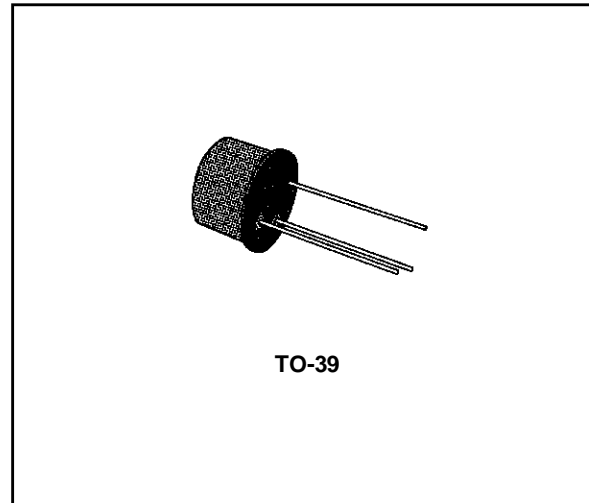


HIGH-VOLTAGE, HIGH-CURRENT SWITCH

DESCRIPTION

The BSX32 is a silicon planar epitaxial NPN transistor in Jedec TO-39 metal case. It is designed for high voltage, high current switching applications.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	65	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	40	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	6	V
I_C	Collector Current	1	mA
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_{case} \leq 25\text{ }^\circ\text{C}$	0.8	W
		3.5	W
T_{stg}, T_j	Storage and Junction Temperature	- 55 to 200	$^\circ\text{C}$

BSX32

THERMAL DATA

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	50	°C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	219	°C/W

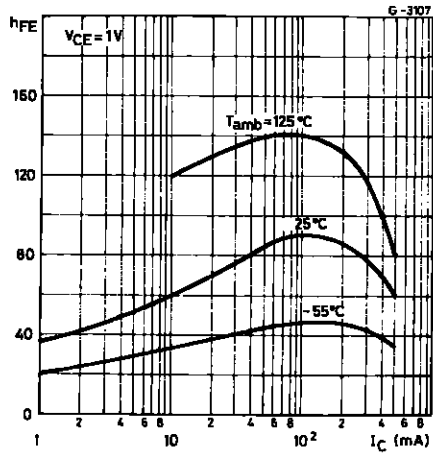
ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ °C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = 50\text{ V}$		0.25	4	μA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = 100\ \mu\text{A}$	65			V
$V_{(BR)CEO}^*$	Collector-emitter Breakdown Voltage ($I_B = 0$)	$I_C = 10\text{ mA}$	40			V
$V_{(BR)EBO}$	Emitter-base Breakdown Voltage ($I_C = 0$)	$I_E = 100\ \mu\text{A}$	6			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 100\text{ mA}$ $I_B = 10\text{ mA}$ $I_C = 500\text{ mA}$ $I_B = 50\text{ mA}$ $I_C = 1\text{ A}$ $I_B = 100\text{ mA}$		0.17 0.36 0.6	0.25 0.5 0.85	V V V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 100\text{ mA}$ $I_B = 10\text{ mA}$ $I_C = 500\text{ mA}$ $I_B = 50\text{ mA}$ $I_C = 1\text{ A}$ $I_B = 100\text{ mA}$		0.8	0.9 1.5 2	V V V
h_{FE}^*	DC Current Gain	$I_C = 10\text{ mA}$ $V_{CE} = 1\text{ V}$ $I_C = 100\text{ mA}$ $V_{CE} = 1\text{ V}$ $I_C = 500\text{ mA}$ $V_{CE} = 1\text{ V}$ $I_C = 1\text{ A}$ $V_{CE} = 5\text{ V}$ $V_{CE} = 1\text{ V}$ $T_{amb} = -55\text{ °C}$ $I_C = 100\text{ mA}$ $I_C = 500\text{ mA}$	30 60 25 20 30 15	60 90 60 60 45 35	150	
f_T	Transition Frequency	$I_C = 50\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 100\text{ MHz}$		400		MHz
C_{EBO}	Emitter-base Capacitance	$I_C = 0$ $V_{EB} = 0.5\text{ V}$ $f = 1\text{ MHz}$		40	55	pF
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $V_{CB} = 10\text{ V}$ $f = 1\text{ MHz}$		6	10	pF
t_{on}^{**}	Turn-on Time	$I_C = 500\text{ mA}$ $V_{CC} = 30\text{ V}$ $I_{B1} = 50\text{ mA}$		22	35	ns
t_{off}^{**}	Turn-off Time	$I_C = 500\text{ mA}$ $V_{CC} = 30\text{ V}$ $I_{B1} = - I_{B2} = 50\text{ mA}$		40	60	ns

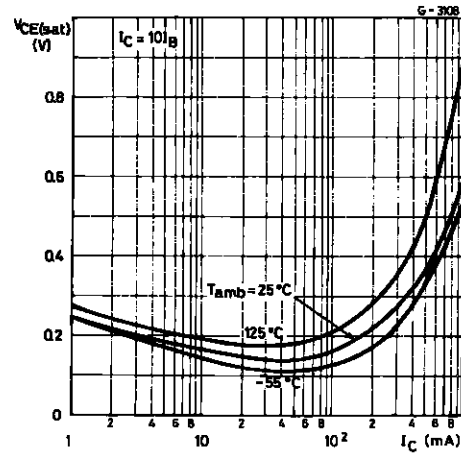
* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.

** See test circuit.

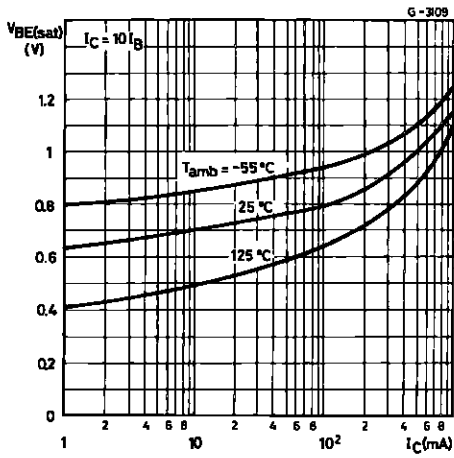
DC Current Gain.



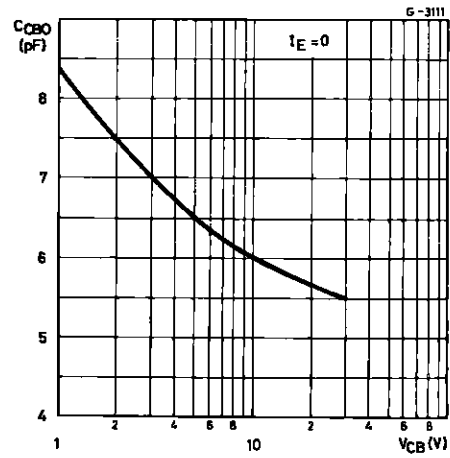
Collector-emitter Saturation Voltage.



Base-emitter Saturation Voltage.

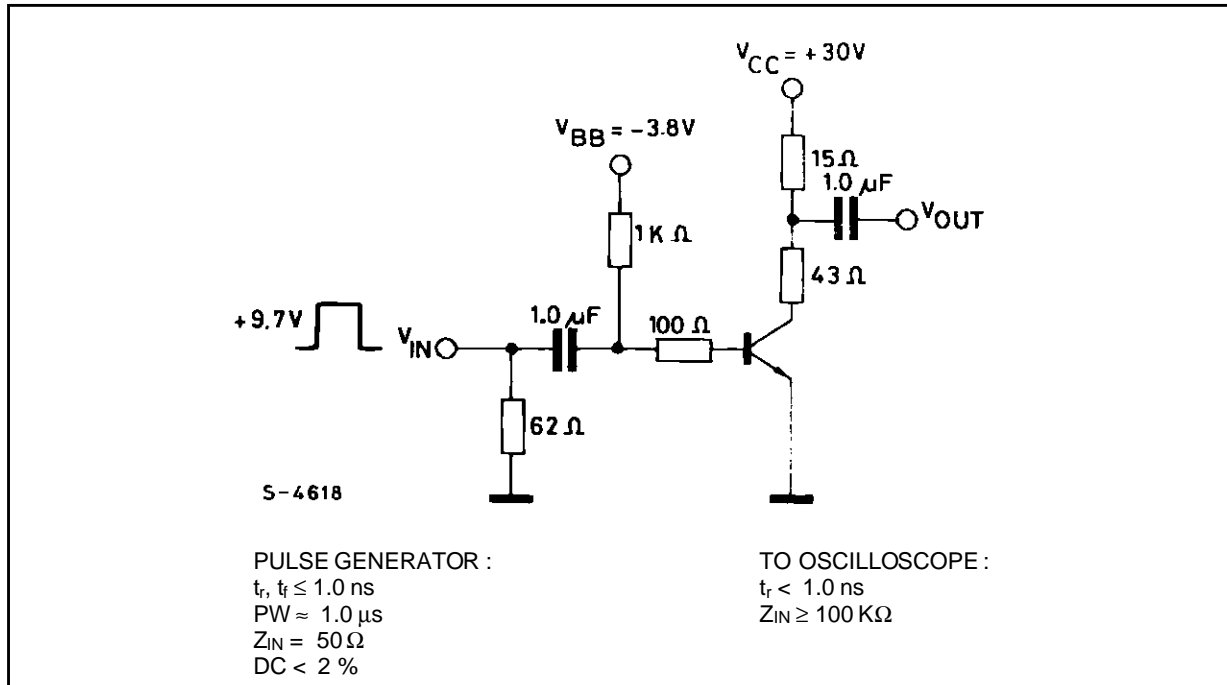


Collector-base Capacitance.



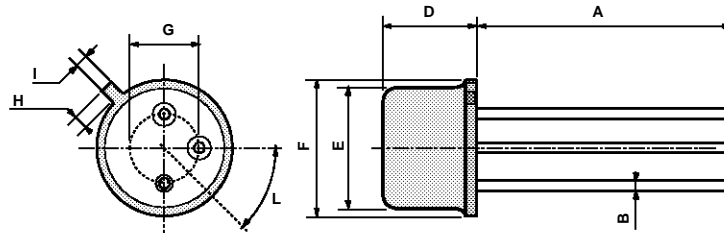
BSX32

Test circuit for t_{on} , t_{off} .



TO39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



P008B

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