

BSX32

CASE 79, STYLE 1
TO-39 (TO-205AD)

SWITCHING TRANSISTOR

NPN SILICON

4

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	40	Vdc
Collector-Base Voltage	V_{CBO}	65	Vdc
Emitter-Base Voltage	V_{EBO}	6	Vdc
Collector Current - Continuous	I_C	1	Adc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	0.8 4.6	Watt mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	3.5 2.0	Watt mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$

Refer to 2N3725 for graphs.

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage ($I_C = 10\text{ mA}, I_B = 0$)(1)	$V_{(BR)CEO}$	40		V
Collector-Base Breakdown Voltage ($I_C = 100\text{ }\mu\text{A}, I_E = 0$)	$V_{(BR)CBO}$	65		V
Emitter-Base Breakdown Voltage ($I_E = 100\text{ }\mu\text{A}, I_C = 0$)	$V_{(BR)EBO}$	6		V
Collector Cutoff Current ($V_{CB} = 50\text{ V}, I_E = 0$)	I_{CBO}		4	μA
ON CHARACTERISTICS				
DC Current Gain ($V_{CE} = 1\text{ V}, I_C = 10\text{ mA}$)(1) ($V_{CE} = 1\text{ V}, I_C = 100\text{ mA}$)(1) ($V_{CE} = 1\text{ V}, I_C = 500\text{ mA}$)(1) ($V_{CE} = 5\text{ V}, I_C = 1\text{ A}$)(1) ($V_{CE} = 1\text{ V}, I_C = 100\text{ mA}, T_A = -55^\circ\text{C}$)(1) ($V_{CE} = 1\text{ V}, I_C = 500\text{ mA}$)(1)	h_{FE}	30 60 25 20 30 15	150	
Collector-Emitter Saturation Voltage ($I_C = 100\text{ mA}, I_B = 10\text{ mA}$)(1) ($I_C = 500\text{ mA}, I_B = 50\text{ mA}$)(1) ($I_C = 1\text{ A}, I_B = 100\text{ mA}$)(1)	$V_{CE(sat)}$		0.25 0.5 0.85	V
Base-Emitter Saturation Voltage ($I_C = 100\text{ mA}, I_B = 10\text{ mA}$)(1) ($I_C = 500\text{ mA}, I_B = 50\text{ mA}$)(1) ($I_C = 1\text{ A}, I_B = 100\text{ mA}$)(1)	$V_{BE(sat)}$		0.9 1.5 2	V
SMALL SIGNAL CHARACTERISTICS				
Small Signal Current Gain ($I_C = 50\text{ mA}, V_{CE} = 10\text{ V}, f = 100\text{ MHz}$)	h_{fe}	3		
Output Capacitance ($V_{CB} = 10\text{ V}$)	C_{ob}		10	pF
Input Capacitance ($V_{EB} = 0.5\text{ V}$)	C_{ib}		60	pF
Turn On Time ($I_C = 500\text{ mA}, I_{B1} = 50\text{ mA}$)	t_{on}		60	ns
Turn Off Time ($I_C = 500\text{ mA}, I_{B1} = I_{B2} = 50\text{ mA}$)	t_{off}		60	ns

* Pulsed: Pulse Duration = 300 μs , Duty Cycle = 1%.