BSX32

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

SWITCHING TRANSISTOR

NPN SILICON

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Refer to 2N3725 for graphs.

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°C Derate above 25°C	P_D	0.8 4.6	Watt mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	3.5 2.0	Watt mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +200	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

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

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