BCX51
BCX52
BCX53

CASE 345-01, STYLE 1
SOT-89

GENERAL PURPOSE TRANSISTOR

PNP SILICON

3

MAXIMUM RATINGS

Rating	Symbol	BCX51	BCX52	BCX53	Unit
Collector-Emitter Voltage	V_{CEO}	45	60	80	V
Collector-Emitter Voltage	V_{CER}	45	60	100	V
Collector-Base Voltage	V_{CBO}	45	60	100	V
Emitter-Base Voltage	V_{EBO}	5.0	5.0	5.0	V
Base Current	I_B	0.1	0.1	0.1	A
Collector Current — Continuous	I_C	1.0	1.0	1.0	A
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−55 to +150			°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
*Total Device Dissipation, T_A = 25°C Derate above 25°C	P_D	1.0 8.0	Watt mW/°C
Storage Temperature	T_{stg}	150	°C
*Thermal Resistance Junction to Ambient	$R_{\theta JA}$	125	°C/W

*Package mounted on 99.5% alumina 10 x 12 x 0.6 mm.

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_C = 10 mA) (I_C = 10 mA)	 BCX51 BCX52 BCX53	$V_{(BR)CEO}$	 45 60 80	 — — —	V
Collector-Base Breakdown Voltage (I_C = 10 μA) (I_C = 10 μA) (I_C = 10 μA)	 BCX51 BCX52 BCX53	$V_{(BR)CBO}$	 45 60 100	 — — —	V
Emitter-Base Breakdown Voltage (I_E = 10 μA)		$V_{(BR)EBO}$	5.0	—	V
Collector Cutoff Current (V_{CB} = 30 V) (V_{CB} = 30 V, T_J = 125°C)		I_{CBO}	 — —	 100 10	 nA μA
Emitter Cutoff Current (V_{EB} = 3.0 V)		I_{EBO}	—	100	nA
ON CHARACTERISTICS					
DC Current Gain (I_C = 5.0 mA, V_{CE} = 2.0 V) (I_C = 150 mA, V_{CE} = 2.0 V) (I_C = 150 mA, V_{CE} = 2.0 V) (I_C = 500 mA, V_{CE} = 2.0 V)	 BCX51 BCX52,53	h_{FE}	 25 40 40 25	 — 250 160 —	—
Collector-Emitter Saturation Voltage (I_C = 500 mA, I_B = 50 mA)		$V_{CE(sat)}$	—	0.5	V
Base-Emitter On Voltage (I_C = 500 mA, V_{CE} = 2.0 V)		$V_{BE(on)}$	—	1.0	V
SMALL-SIGNAL CHARACTERISTICS					
Current-Gain — Bandwidth Product (V_{CE} = 5.0 V, I_C = 10 mA, f = 35 MHz)		f_T	50	—	MHz