

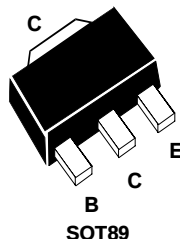
SOT89 PNP SILICON PLANAR MEDIUM POWER TRANSISTORS

ISSUE 3 – FEBRUARY 1996

**BSR31
BSR33**

COMPLEMENTARY TYPE – BSR31 – BSR41
BSR33 – BSR43

PARTMARKING DETAILS – BSR31 – BR2
BSR33 – BR4



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	BSR31	BSR33	UNIT
Collector-Base Voltage	V_{CBO}	-70	-90	V
Collector-Emitter Voltage	V_{CEO}	-60	-80	V
Emitter-Base Voltage	V_{EBO}	-5		V
Peak Pulse Current	I_{CM}	-2		A
Continuous Collector Current	I_C	-1		A
Power Dissipation at $T_{amb}=25^{\circ}C$	P_{TOT}	1		W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-65 to +150		$^{\circ}C$

ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage BSR31 BSR33	$V_{(BR)CBO}$	-70 -90		V V	$I_C = -100\mu A$ $I_C = -100\mu A$
Collector-Emitter Breakdown Voltage BSR31 BSR33	$V_{(BR)CEO}$	-60 -80		V	$I_C = -10mA$ $I_C = -10mA$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5		V	$I_E = -10mA$
Collector Cut-Off Current	I_{CBO}		-100 -50	nA μA	$V_{CB} = -60V$ $V_{CB} = -60V, T_{amb} = 125^{\circ}C$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-0.25 -0.5	V V	$I_C = -150mA, I_B = -15mA^*$ $I_C = -500mA, I_B = -50mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-1.0 -1.2	V V	$I_C = -150mA, I_B = -15mA^*$ $I_C = -500mA, I_B = -50mA^*$
Static Forward Current Transfer Ratio	h_{FE}	30 100 50	300		$I_C = -100\mu A, V_{CE} = -5V^*$ $I_C = -100mA, V_{CE} = -5V^*$ $I_C = -500mA, V_{CE} = -5V^*$
Collector Capacitance	C_c		20	pF	$V_{CB} = -10V, f = 1MHz$
Emitter Capacitance	C_e		120	pF	$V_{EB} = -0.5V, f = 1MHz$
Transition Frequency	f_T	100		MHz	$I_C = -50mA, V_{CE} = -10V$ $f = 35MHz$
Turn-On Time	T_{on}		500	ns	$V_{CC} = -20V, I_C = -100mA$
Turn-Off Time	T_{off}		650	ns	$I_{B1} = -I_{B2} = -5mA$

* Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$
Spice parameter data is available upon request for this device