

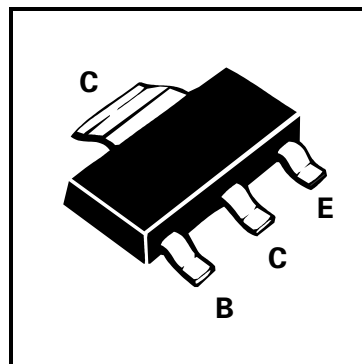
# SOT223 PNP SILICON PLANAR MEDIUM POWER TRANSISTORS

ISSUE 3 – FEBRUARY 1996

## BSP31 BSP33

COMPLEMENTARY TYPE – BSP31 – BSP41  
BSP33 – BSP43

PARTMARKING DETAIL – Device type in full



### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	BSP31	BSP33	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 $T_{amb}=25^{\circ}C$	$P_{TOT}$	2		W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 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	$V_{(BR)CBO}$	-70 -90		V V	$I_C = -100\mu A$ $I_C = -100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-60 -80		V	$I_C = -10mA$ $I_C = -10mA$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5		V	$I_E = -10\mu A$
Collector Cut-Off Current	$I_{CBO}$		-100 -50	nA $\mu A$	$V_{CB} = -60V$ $V_{CB} = -60V, T_{amb} = 125^{\circ}C$
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 $\mu s$ . Duty cycle  $\leq 2\%$   
Spice parameter data is available upon request for this device