BSP31
BSP33

SMALL SIGNAL PNP TRANSISTORS

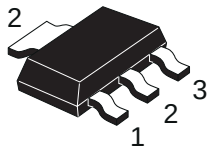
PRELIMINARY DATA

Ordering Code	Marking
BSP31	P31
BSP33	P33

- SILICON EPITAXIAL PLANAR PNP MEDIUM VOLTAGE TRANSISTORS
- SOT-223 PLASTIC PACKAGE FOR SURFACE MOUNTING CIRCUITS
- TAPE AND REEL PACKING
- THE NPN COMPLEMENTARY TYPES ARE BSP41 AND BSP43 RESPECTIVELY

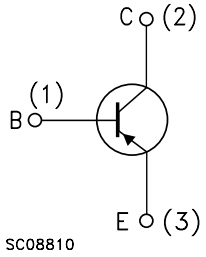
APPLICATIONS

- MEDIUM VOLTAGE LOAD SWITCH TRANSISTORS
- OUTPUT STAGE FOR AUDIO AMPLIFIERS CIRCUITS
- AUTOMOTIVE POST-VOLTAGE REGULATION



SOT-223

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		BSP31	BSP33	
V_{CBO}	Collector-Base Voltage (I_E = 0)	-70	-90	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)	-60	-80	V
V_{EBO}	Emitter-Base Voltage (I_C = 0)	-5		V
I_C	Collector Current	-1		A
I_{CM}	Collector Peak Current (t_p < 5 ms)	-2		A
I_B	Base Current	-0.1		A
I_{BM}	Base Peak Current (t_p < 5 ms)	-0.2		A
P_{tot}	Total Dissipation at T_{amb} = 25 °C	1.3		W
T_{stg}	Storage Temperature	-65 to 150		°C
T_j	Max. Operating Junction Temperature	150		°C

THERMAL DATA

$R_{thj\text{-}amb}$ •	Thermal Resistance Junction-Ambient	Max	96.1	$^oC/W$

• Device mounted on a PCB area of 1 cm^2

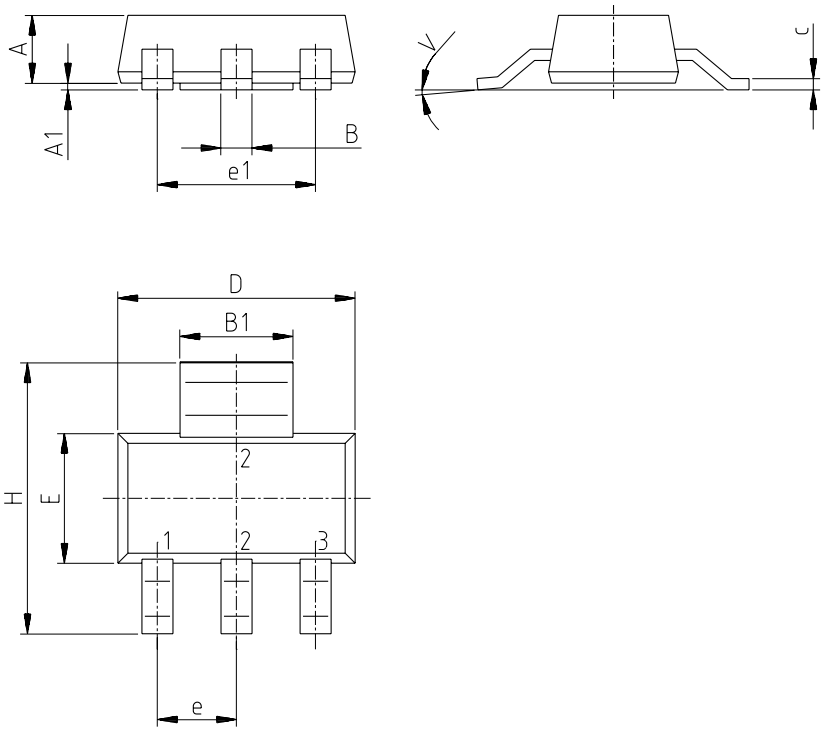
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (I_E = 0)	V_{CB} = -60 V V_{CB} = -60 V T_j = 150 ^oC			-100 -50	nA µA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = -5 V			-100	nA
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (I_E = 0)	I_C = -100 µA for **BSP31** for **BSP33**	 -70 -90			 V V
$V_{(BR)CEO}$*	Collector-Emitter Breakdown Voltage (I_B = 0)	I_C = -20 mA for **BSP31** for **BSP33**	 -60 -80			 V V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (I_C = 0)	I_E = -10 µA	-5			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = -150 mA I_B = -15 mA I_C = -500 mA I_B = -50 mA			-0.25 -0.5	V V
$V_{BE(sat)}$*	Base-Emitter Saturation Voltage	I_C = -150 mA I_B = -15 mA I_C = -500 mA I_B = -50 mA			-1 -1.2	V V
h_{FE}*	DC Current Gain	I_C = -100 µA V_{CE} = -5 V I_C = -100 mA V_{CE} = -5 V I_C = -500 mA V_{CE} = -5 V	30 100 50		 300 	
f_T	Transition Frequency	I_C = -50 mA V_{CE} = -10 V f = 100 MHz	100			MHz

∗ Pulsed: Pulse duration = 300 µs, duty cycle ≤ 1.5 %

SOT-223 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			1.80			0.071
B	0.60	0.70	0.80	0.024	0.027	0.031
B1	2.90	3.00	3.10	0.114	0.118	0.122
c	0.24	0.26	0.32	0.009	0.010	0.013
D	6.30	6.50	6.70	0.248	0.256	0.264
e		2.30			0.090	
e1		4.60			0.181	
E	3.30	3.50	3.70	0.130	0.138	0.146
H	6.70	7.00	7.30	0.264	0.276	0.287
V			10^o			10^o
A1		0.02				



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