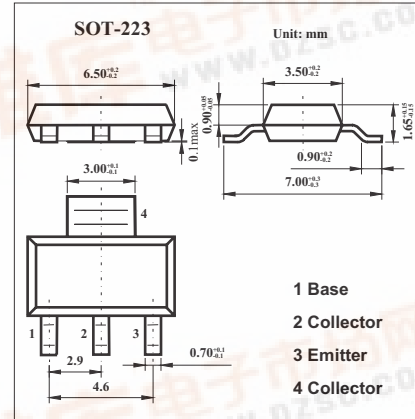


SMD Type Transistors

NPN Silicon Epitaxial Transistor  
BSP20A

■ Features

- High Voltage:  $V_{(BR)CEO}$  of 250 and 350 Volts.
- Available in 12 mm Tape and Reel



■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage (Open Base)	$V_{CEO}$	250	V
Collector-Base Voltage (Open Emitter)	$V_{CBO}$	300	V
Emitter-Base Voltage (Open Collector)	$V_{EBO}$	5	V
Collector Current (DC)	$I_C$	1000	mA
Total Power Dissipation @ $T_A = 25^\circ\text{C}^*$	$P_D$	0.8	Watts
Derate above $25^\circ\text{C}$		6.4	mW/ $^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-65 to 150	$^\circ\text{C}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Thermal Resistance from Junction-to-Ambient	$R_{\theta JA}$	156	$^\circ\text{C}/\text{W}$
Maximum Temperature for Soldering Purposes	$T_L$	260	$^\circ\text{C}$
Time in Solder Bath		10	Sec

\* Device mounted on a FR-4 glass epoxy printed circuit board using minimum recommended footprint.

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1.0 \text{ mA}, I_B = 0$	250			V
Collector-Base Cutoff Current	$I_{CBO}$	$V_{CB} = 400 \text{ V}, I_E = 0$			20	nA
Emitter-Base Cutoff Current	$I_{EBO}$	$V_{EB} = 5.0 \text{ V}, I_C = 0$			10	mA
DC Current Gain *	$h_{FE}$	$I_C = 20 \text{ mA}, V_{CE} = 10 \text{ V}$	40			
Current-Gain □ Bandwidth Product *	$f_T$	$I_C = 10 \text{ mA}, V_{CE} = 10 \text{ V}, f = 5.0 \text{ MHz}$	70			MHz
Collector-Emitter Saturation Voltage *	$V_{CE(sat)}$	$I_C = 50 \text{ mA}, I_B = 4.0 \text{ mA}$			0.5	V
Base-Emitter Saturation Voltage *	$V_{BE(sat)}$	$I_C = 50 \text{ mA}, I_B = 4.0 \text{ mA}$			1.3	V

\* Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle = 2.0%

■ Marking

Marking	SP20A
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