

# 2SB930, 2SB930A

## Silicon PNP epitaxial planar type

For power amplification

Complementary to 2SD1253 and 2SD1253A

### Features

- High forward current transfer ratio  $h_{FE}$  which has satisfactory linearity
- Low collector to emitter saturation voltage  $V_{CE(sat)}$
- N type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.

### Absolute Maximum Ratings ( $T_C=25^\circ\text{C}$ )

Parameter	Symbol	Ratings	Unit
Collector to base voltage	2SB930	-60	V
	2SB930A	-80	
Collector to emitter voltage	2SB930	-60	V
	2SB930A	-80	
Emitter to base voltage	$V_{EBO}$	-5	V
Peak collector current	$I_{CP}$	-8	A
Collector current	$I_C$	-4	A
Collector power dissipation	$P_C$	$T_C=25^\circ\text{C}$	40
		$T_a=25^\circ\text{C}$	1.3
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

### Electrical Characteristics ( $T_C=25^\circ\text{C}$ )

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	2SB930	$V_{CE} = -60\text{V}, V_{BE} = 0$			-400	$\mu\text{A}$
	2SB930A					
Collector cutoff current	2SB930	$V_{CE} = -30\text{V}, I_B = 0$			-700	$\mu\text{A}$
	2SB930A					
Emitter cutoff current	$I_{EBO}$	$V_{EB} = -5\text{V}, I_C = 0$			-1	mA
Collector to emitter voltage	2SB930	$I_C = -30\text{mA}, I_B = 0$			-60	V
	2SB930A				-80	
Forward current transfer ratio		$h_{FE1}^*$	$V_{CE} = -4\text{V}, I_C = -1\text{A}$		70	250
		$h_{FE2}$	$V_{CE} = -4\text{V}, I_C = -3\text{A}$		15	
Base to emitter voltage	$V_{BE}$	$V_{CE} = -4\text{V}, I_C = -3\text{A}$			-2	V
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -4\text{A}, I_B = -0.4\text{A}$			-1.5	V
Transition frequency	$f_T$	$V_{CE} = -10\text{V}, I_C = -0.1\text{A}, f = 1\text{MHz}$		20		MHz
Turn-on time	$t_{on}$	$I_C = -4\text{A}, I_{B1} = -0.4\text{A}, I_{B2} = 0.4\text{A}$		0.2		$\mu\text{s}$
Storage time	$t_{stg}$			0.5		$\mu\text{s}$
Fall time	$t_f$			0.2		$\mu\text{s}$

\* $h_{FE1}$  Rank classification

Rank	Q	P
$h_{FE1}$	70 to 150	120 to 250



