

# 2SB949, 2SB949A

Silicon NPN Epitaxial Planar Darlington Type

Power Amplifier, Switching  
Complementary Pair with 2SD1275, 2SD1275A

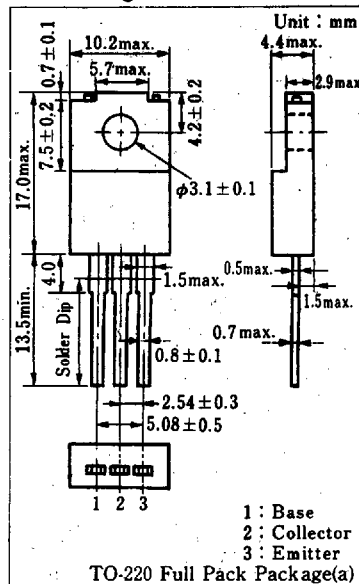
### ■ Features

- High DC current gain ( $h_{FE}$ )
- High speed switching
- "Full Pack" package for simplified mounting on a heat sink with one screw

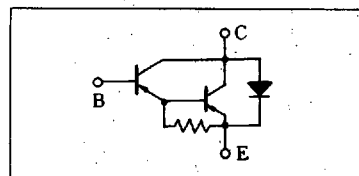
### ■ Absolute Maximum Ratings ( $T_c=25^\circ\text{C}$ )

Item	Symbol	Value	Unit	
Collector-base voltage	2SB949	-60	V	
	2SB949A	-80		
Collector-emitter voltage	2SB949	-60	V	
	2SB949A	-80		
Emitter-base voltage	$V_{EBO}$	-5	V	
Peak collector current	$I_{CP}$	-4	A	
Collector current	$I_C$	-2	A	
Collector power dissipation	$P_C$	$T_c=25^\circ\text{C}$	35	W
		$T_a=25^\circ\text{C}$	2	
Junction temperature	$T_j$	150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$	

### ■ Package Dimensions



### ■ Inner Circuit



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

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	2SB949	$V_{CB} = -60\text{ V}, I_E = 0$			-1	mA
	2SB949A	$V_{CB} = -80\text{ V}, I_E = 0$			-1	
Collector cutoff current	2SB949	$V_{CB} = -30\text{ V}, I_B = 0$			-2	mA
	2SB949A	$V_{CB} = -40\text{ V}, I_B = 0$			-2	
Emitter cutoff current	$I_{EBO}$	$V_{EB} = -5\text{ V}, I_C = 0$			-2	mA
Collector-emitter voltage	2SB949	$I_C = -30\text{ mA}, I_B = 0$	-60			V
	2SB949A		-80			
DC current gain	$h_{FE1}$	$V_{CE} = -4\text{ V}, I_C = -1\text{ A}$	1000			
		$h_{FE2}^*$	$V_{CE} = -4\text{ V}, I_C = -2\text{ A}$	1000		10000
Base-emitter voltage	$V_{BE}$	$V_{CE} = -4\text{ V}, I_C = -2\text{ A}$			-2.8	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -2\text{ A}, I_B = -8\text{ mA}$			-2.5	V
Transition frequency	$f_T$	$V_{CE} = -10\text{ V}, I_C = -0.5\text{ A}, f = 1\text{ MHz}$		20		MHz
Turn-on time	$t_{on}$	$I_C = -2\text{ A}, I_{B1} = -8\text{ mA}, I_{B2} = 8\text{ mA}, V_{CC} = -50\text{ V}$		0.4		$\mu\text{s}$
Storage time	$t_{stg}$			1.5		$\mu\text{s}$
Collector current fall time	$t_f$			0.5		$\mu\text{s}$

### \* $h_{FE2}$ Classifications

Class	R	Q	P
$h_{FE2}$	1000 ~ 2500	2000 ~ 5000	4000 ~ 10000

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