

# 2SB935, 2SB935A

## Silicon PNP Epitaxial Planar Type

### Low Voltage Switching

#### ■ Features

- Low collector-emitter saturation voltage ( $V_{CE(sat)}$ )
- High speed switching
- "N Type" package configuration with a cooling fin for direct soldering on PC board of a small-size electronic equipment

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

Item	Symbol	Value	Unit
Collector-base voltage	2SB935	-40	V
	2SB935A	-50	
Collector-emitter voltage	2SB935	-20	V
	2SB935A	-40	
Emitter-base voltage	$V_{EBO}$	-5	V
Peak collector current	$I_{CP}$	-15	A
Collector current	$I_C$	-10	A
Collector power dissipation	$T_c=25^\circ\text{C}$	35	W
	$T_a=25^\circ\text{C}$	1.3	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$

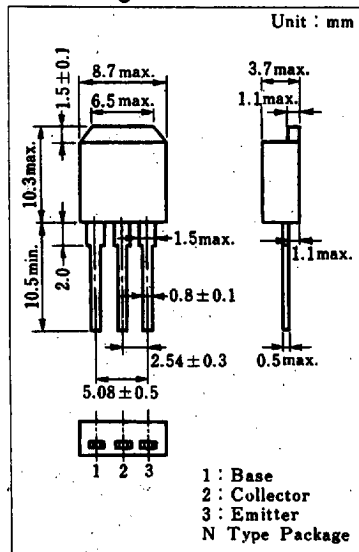
#### ■ Electrical Characteristics ( $T_c=25^\circ\text{C}$ )

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	2SB935	$V_{CB} = -40\text{ V}, I_E = 0$			-50	$\mu\text{A}$
	2SB935A	$V_{CB} = -50\text{ V}, I_E = 0$			-50	
Emitter cutoff current	$I_{EBO}$	$V_{EB} = -5\text{ V}, I_C = 0$			-50	$\mu\text{A}$
Collector-emitter voltage	2SB935	$I_C = -10\text{ mA}, I_B = 0$	-20			V
	2SB935A		-40			
DC current gain	$h_{FE1}$	$V_{CE} = -2\text{ V}, I_C = -0.1\text{ A}$	45			
	$h_{FE2}^*$	$V_{CE} = -2\text{ V}, I_C = -2\text{ A}$	60		260	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -7\text{ A}, I_B = -0.23\text{ A}$			-0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -7\text{ A}, I_B = -0.23\text{ A}$			-1.5	V
Transition frequency	$f_T$	$V_{CE} = -10\text{ V}, I_C = -0.5\text{ A}, f = 10\text{ MHz}$		150		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$		200		pF
Turn-on time	$t_{on}$	$I_C = -2\text{ A}$ $I_{B1} = -66\text{ mA}, I_{B2} = 60\text{ mA}$		0.1		$\mu\text{s}$
Storage time	$t_{str}$			0.5		$\mu\text{s}$
Collector current fall time	$t_f$			0.1		$\mu\text{s}$

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

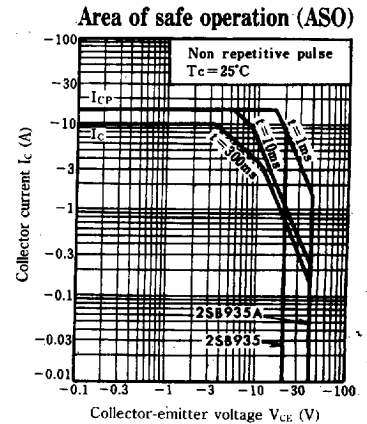
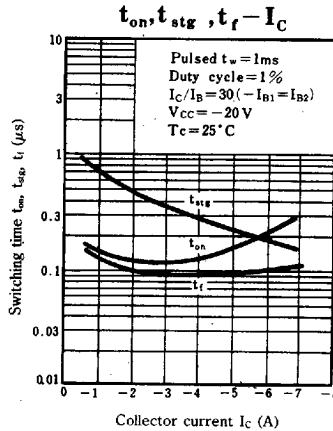
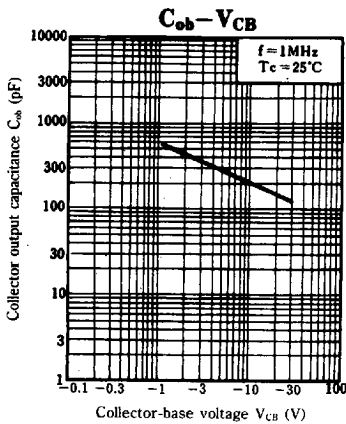
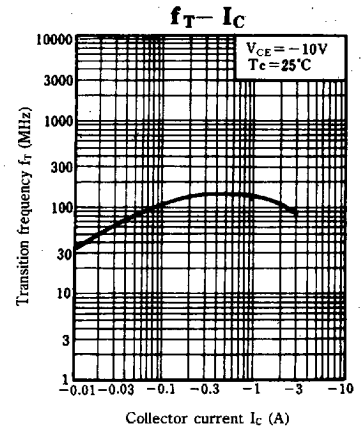
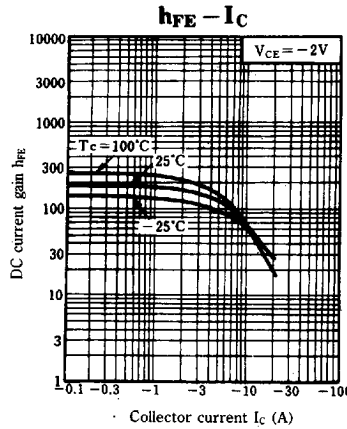
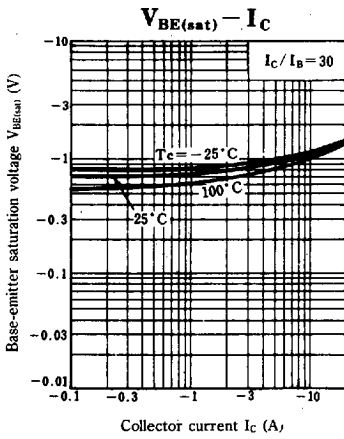
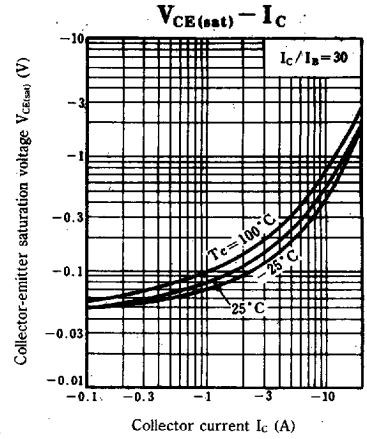
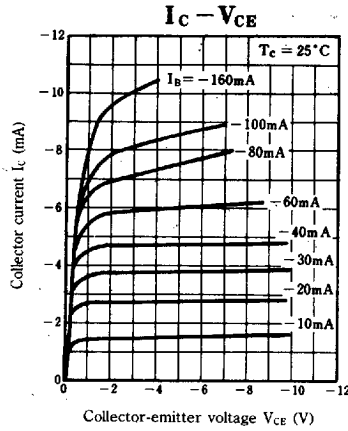
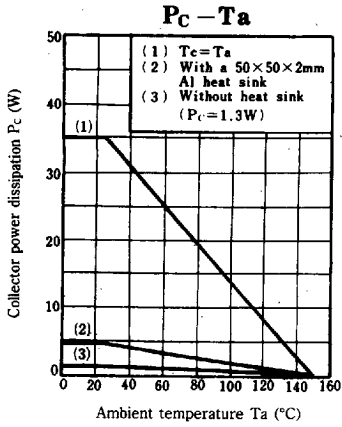
Class	R	Q	P
$h_{FE2}$	60 ~ 120	90 ~ 180	130 ~ 260

#### ■ Package Dimensions



\*Surface-mount type is also available. (Refer to p.82.)

■ 6932852 0016167 T88 ■



Note) Refer to P.154 (on 2SB930/A) for  $R_{th(j-c)} - t$  characteristics.

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