

# 2SB0936 (2SB936), 2SB0936A (2SB936A)

## Silicon PNP epitaxial planar type

For low-voltage switching

### ■ Features

- Low collector-emitter saturation voltage  $V_{CE(sat)}$
- High-speed switching
- 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	Rating	Unit	
Collector-base voltage (Emitter open)	2SB0936 2SB0936A	$V_{CBO}$	-40 -50	V
Collector-emitter voltage (Base open)	2SB0936 2SB0936A	$V_{CEO}$	-20 -40	V
Emitter-base voltage (Collector open)	$V_{EBO}$	-5	V	
Collector current	$I_C$	-10	A	
Peak collector current	$I_{CP}$	-20	A	
Collector power dissipation	$P_C$	40	W	
	$T_a = 25^\circ\text{C}$	1.3		
Junction temperature	$T_j$	150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$	

### ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

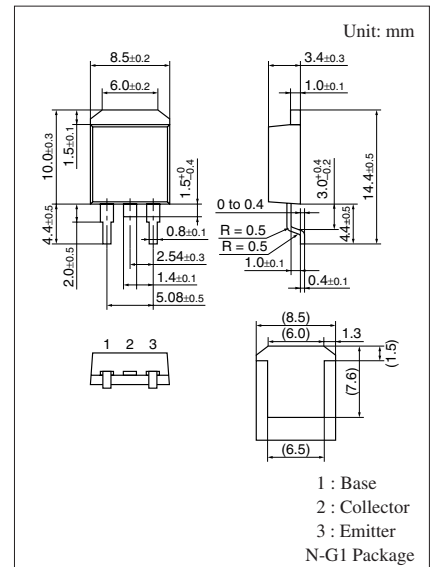
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	2SB0936 2SB0936A	$V_{CEO}$ $I_C = -10\text{ mA}, I_B = 0$	-20 -40			V
Collector-base cutoff current (Emitter open)	2SB0936 2SB0936A	$I_{CBO}$ $V_{CB} = -40\text{ V}, I_E = 0$ $V_{CB} = -50\text{ V}, I_E = 0$			-50 -50	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = -5\text{ V}, I_C = 0$			-50	$\mu\text{A}$
Forward current transfer ratio	$h_{FE1}^*$ $h_{FE2}$	$V_{CE} = -2\text{ V}, I_C = -0.1\text{ A}$ $V_{CE} = -2\text{ V}, I_C = -3\text{ A}$	45 90		260	—
Base-emitter voltage	$V_{BE(sat)}$	$I_C = -10\text{ A}, I_B = -0.33\text{ A}$			-1.5	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10\text{ A}, I_B = -0.33\text{ A}$			-0.6	V
Transition frequency	$f_T$	$V_{CE} = -10\text{ V}, I_C = -0.5\text{ A}, f = 10\text{ MHz}$		100		MHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$		400		pF
Turn-on time	$t_{on}$	$I_C = -3\text{ A},$		0.1		$\mu\text{s}$
Storage time	$t_{stg}$	$I_{B1} = -0.1\text{ A}, I_{B2} = 0.1\text{ A}$		0.5		$\mu\text{s}$
Fall time	$t_f$	$V_{CC} = -20\text{ V}$		0.1		$\mu\text{s}$

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

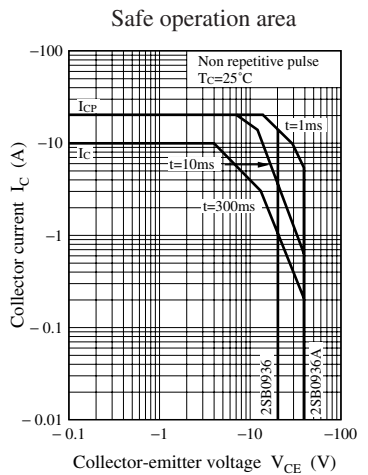
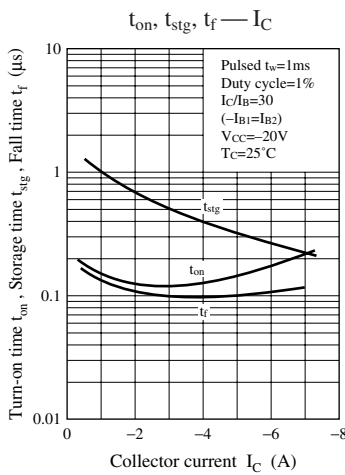
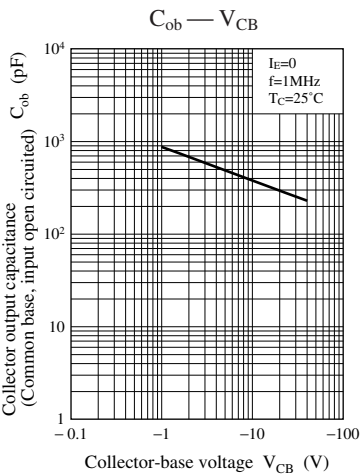
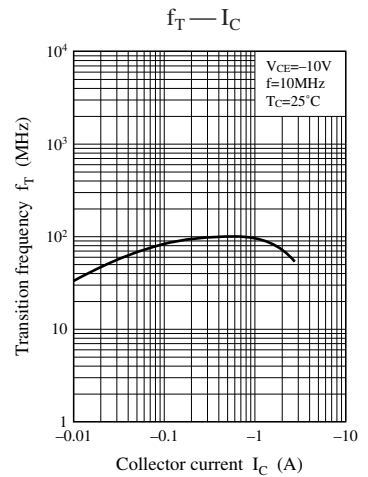
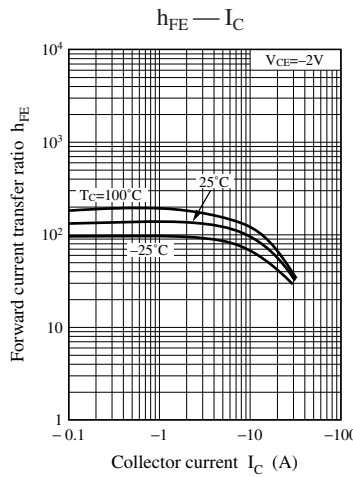
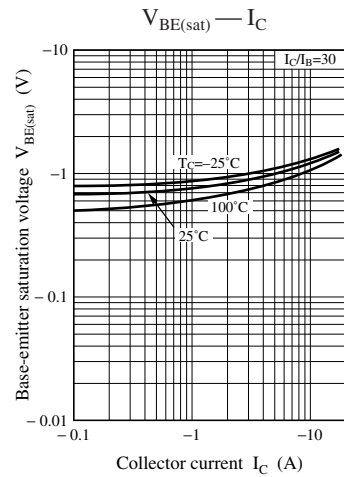
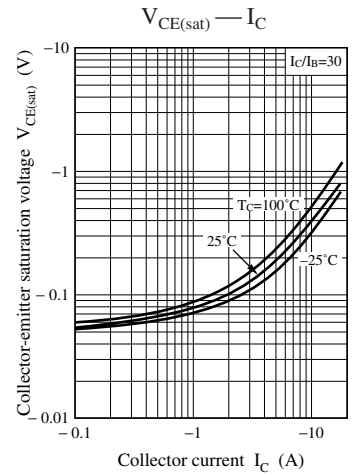
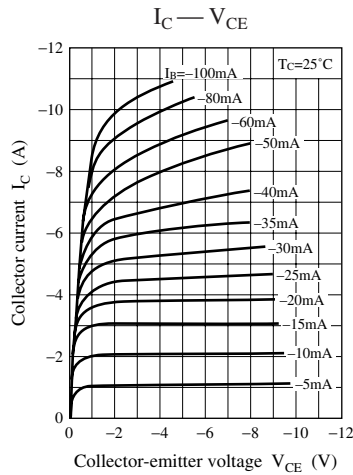
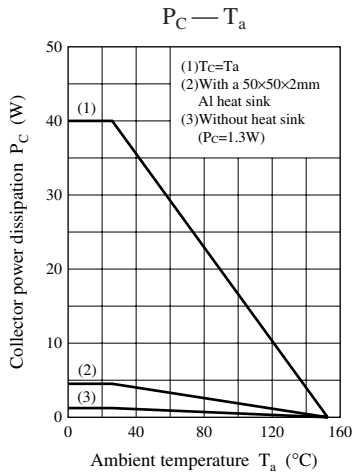
2. \*: Rank classification

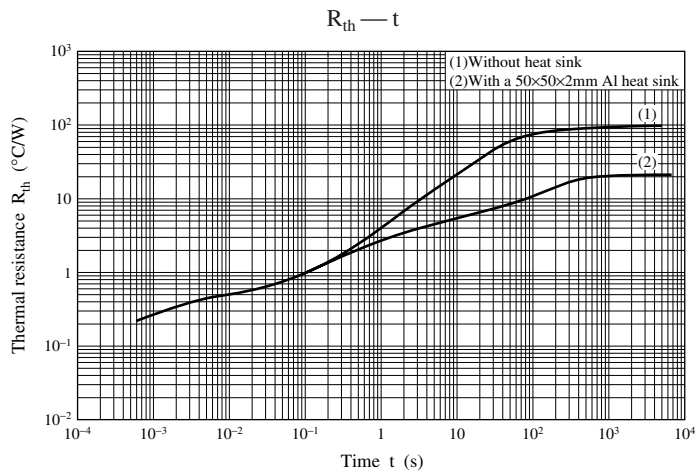
Rank	Q	P
$h_{FE1}$	90 to 180	130 to 260

Note) The part number in the parenthesis shows conventional part number.



Note) Self-supported type package is also prepared.





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