

2SB0947 (2SB947), 2SB0947A (2SB947A)

Silicon PNP epitaxial planar type

For low-voltage switching

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- High-speed switching
- Full-pack package which can be installed to the heat sink with one screw

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

Parameter	Symbol	Rating	Unit	
Collector-base voltage (Emitter open)	2SB0947	V_{CBO}	-40	V
	2SB0947A		-50	
Collector-emitter voltage (Base open)	2SB0947	V_{CEO}	-20	V
	2SB0947A		-40	
Emitter-base voltage (Collector open)	V_{EBO}	-5	V	
Collector current	I_C	-10	A	
Peak collector current	I_{CP}	-15	A	
Collector power	P_C	35	W	
dissipation	$T_a = 25^\circ\text{C}$	2		
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$	

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

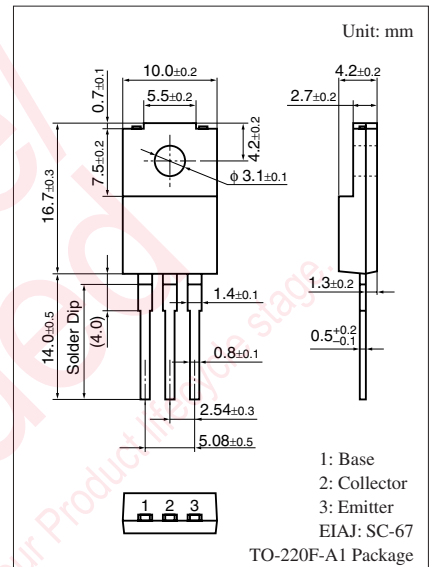
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	2SB0947	$I_C = -10 \text{ mA}, I_B = 0$	-20			V
	2SB0947A		-40			
Collector-base cutoff current (Emitter open)	2SB0947	$V_{CB} = -40 \text{ V}, I_E = 0$			-50	μA
	2SB0947A	$V_{CB} = -50 \text{ V}, I_E = 0$			-50	
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = -5 \text{ V}, I_C = 0$			-50	μA
Forward current transfer ratio	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 (Common base, input open circuited)	C_{ob}	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		200		pF
Turn-on time	t_{on}	$I_C = -2 \text{ A}, I_{B1} = -66 \text{ mA}, I_{B2} = 66 \text{ mA}$		0.1		μs
Storage time	t_{stg}	$V_{CC} = -20 \text{ V}$		0.5		μs
Fall time	t_f			0.1		μs

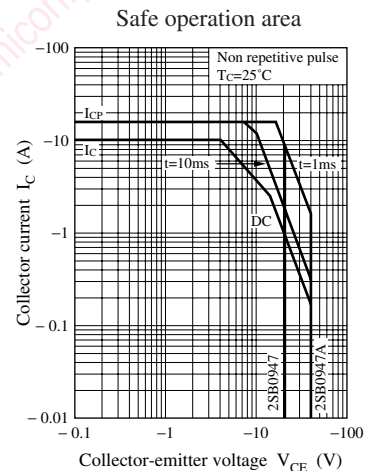
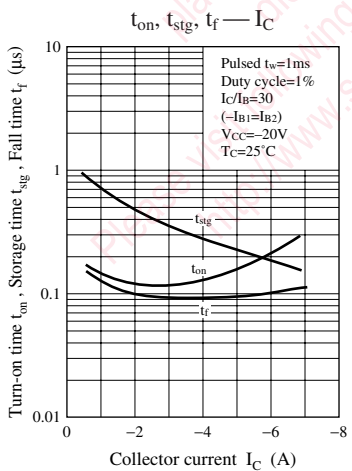
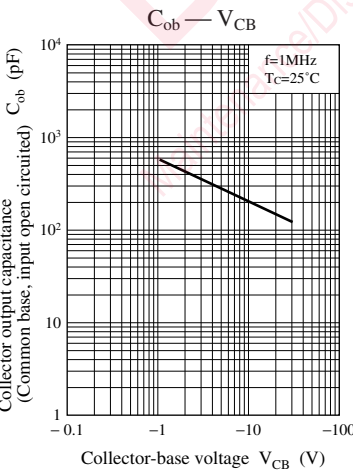
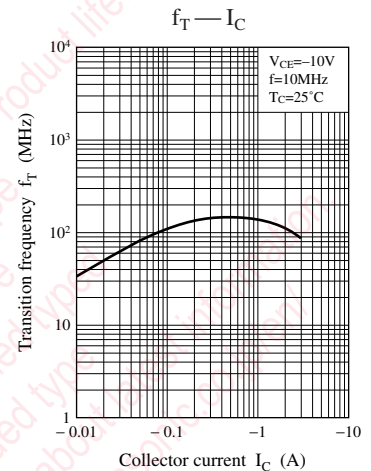
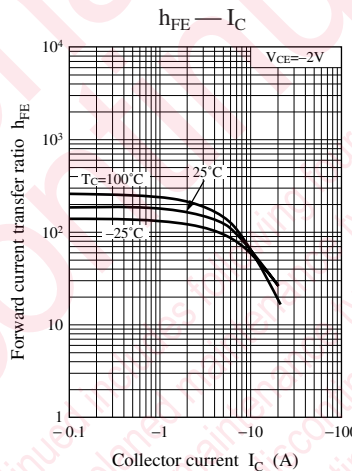
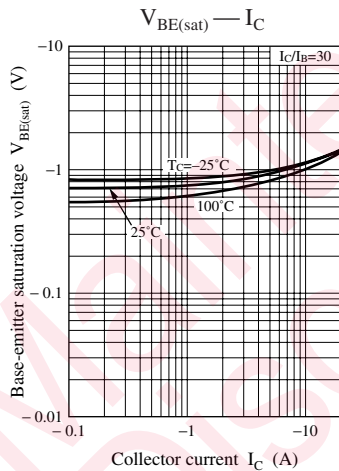
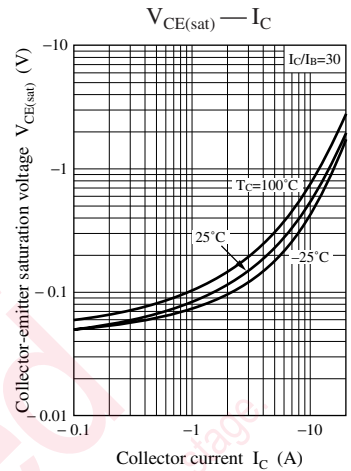
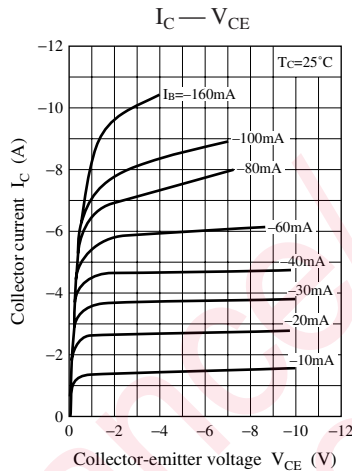
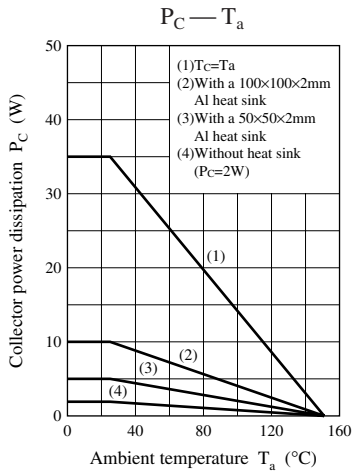
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

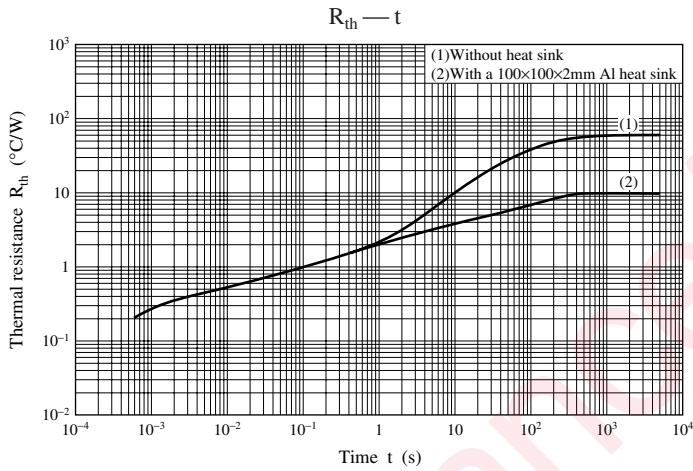
2. *: Rank classification

Rank	R	Q	P
h_{FE2}	60 to 120	90 to 180	130 to 260

Note) The part numbers in the parenthesis show conventional part number.







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maintenance type
planned discontinued type
discontinued type
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