

# 2SB0942, 2SB0942A (2SB942, 2SB942A)

## Silicon PNP epitaxial planar type

For low-frequency power amplification

Complementary to 2SD1267 and 2SD1267A

### ■ Features

- High forward current transfer ratio  $h_{FE}$  which has satisfactory linearity
- Low collector to emitter saturation voltage  $V_{CE(sat)}$
- 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 to base voltage	2SB0942	$V_{CBO}$	-60	V
	2SB0942A		-80	
Collector to emitter voltage	2SB0942	$V_{CEO}$	-60	V
	2SB0942A		-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	$T_C = 25^{\circ}\text{C}$	$P_C$	40	W
	$T_a = 25^{\circ}\text{C}$		2	
Junction temperature		$T_j$	150	$^{\circ}\text{C}$
Storage temperature		$T_{\text{stg}}$	-55 to +150	$^{\circ}\text{C}$

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

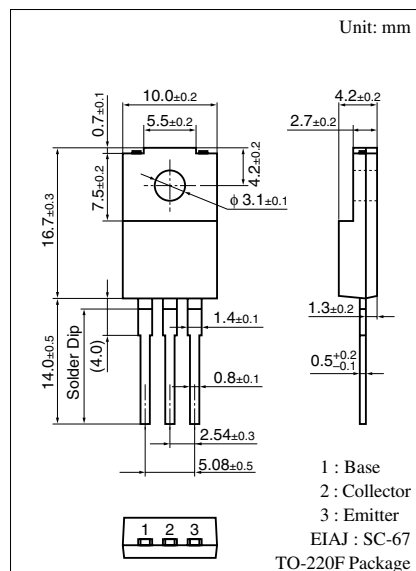
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	2SB0942 2SB0942A	$I_{CES}$ $V_{CE} = -60\text{ V}, V_{BE} = 0$			-400	$\mu\text{A}$
					-400	
Collector cutoff current	2SB0942 2SB0942A	$I_{CEO}$ $V_{CE} = -30\text{ V}, I_B = 0$			-700	$\mu\text{A}$
					-700	
Emitter cutoff current	$I_{EBO}$	$V_{EB} = -5\text{ V}, I_C = 0$			-1	mA
Collector to emitter voltage	2SB0942 2SB0942A	$V_{CEO}$ $I_C = -30\text{ mA}, I_B = 0$	-60			V
			-80			
Forward current transfer ratio	$h_{FE1}^*$ $h_{FE2}$	$V_{CE} = -4\text{ V}, I_C = -1\text{ A}$ $V_{CE} = -4\text{ V}, I_C = -3\text{ A}$	70		250	
			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	$f_T$	$V_{CE} = -10\text{ V}, I_C = -0.1\text{ A}, f = 10\text{ MHz}$		30		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		$\mu\text{s}$

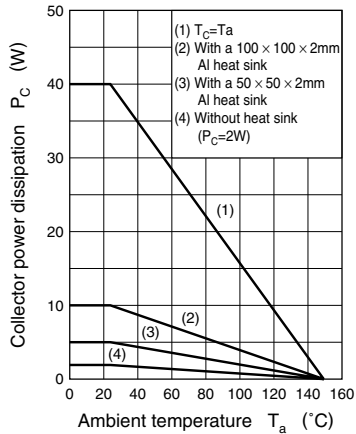
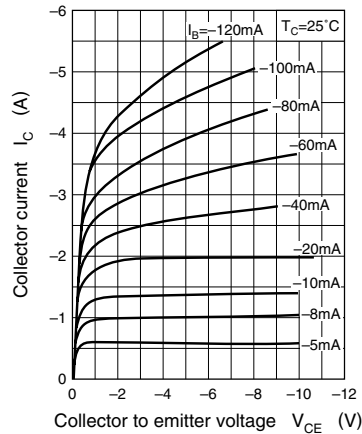
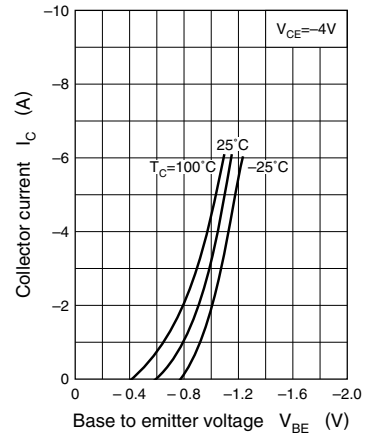
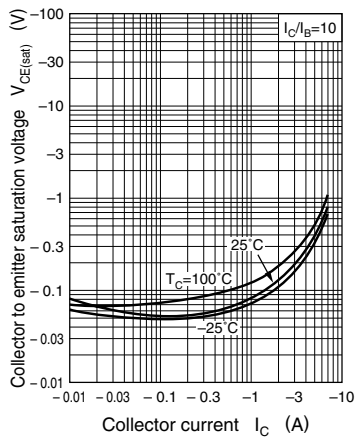
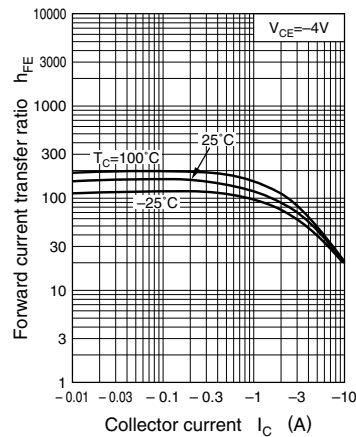
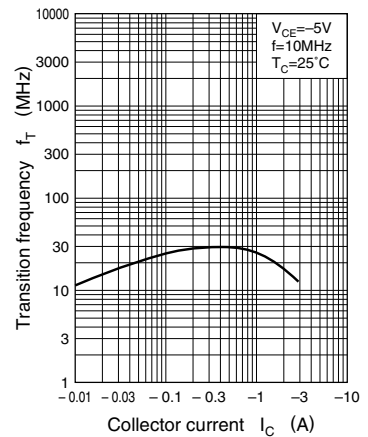
Note) \*: Rank classification

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

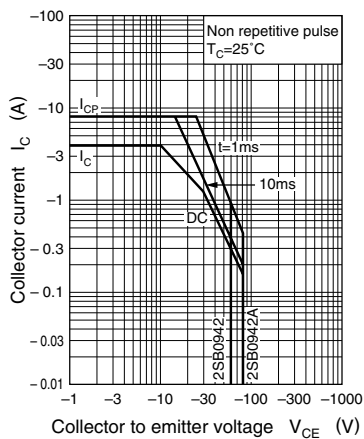
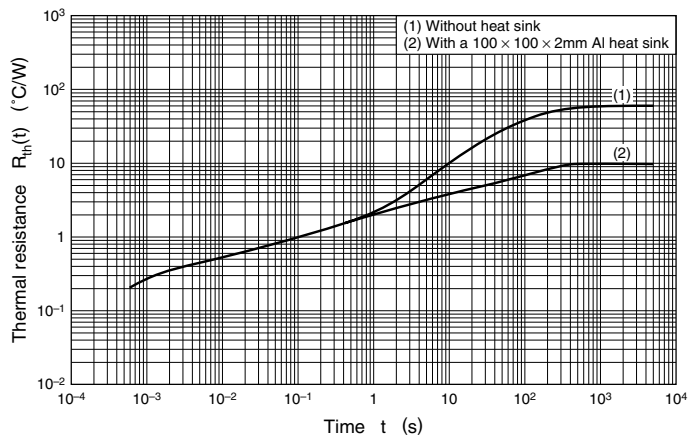
Ordering can be made by the common rank (PQ rank  $h_{FE1} = 70$  to 250) in the rank classification.

Note.) The Part numbers in the Parenthesis show conventional part number.



$P_C - T_a$  $I_C - V_{CE}$  $I_C - V_{BE}$  $V_{CE(\text{sat})} - I_C$  $h_{FE} - I_C$  $f_T - I_C$ 

Area of safe operation (ASO)

 $R_{th(t)} - t$ 

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