

2SB942, 2SB942A

Silicon PNP epitaxial planar type

For low-frequency power amplification

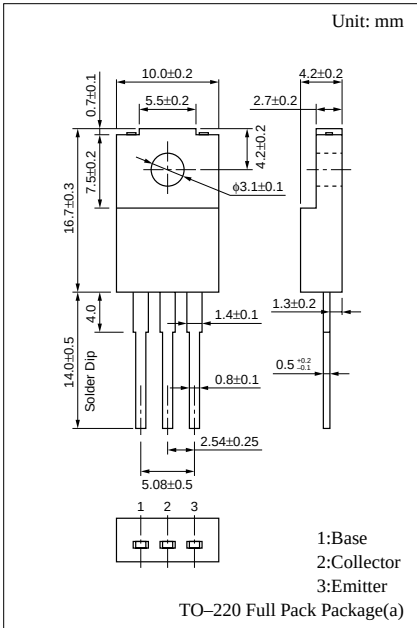
Complementary to 2SD1267 and 2SD1267A

■ 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	Ratings	Unit
Collector to base voltage	2SB942	V_{CBO}	-60	V
	2SB942A		-80	
Collector to emitter voltage	2SB942	V_{CEO}	-60	V
	2SB942A		-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_{sig}	-55 to +150	$^{\circ}\text{C}$



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

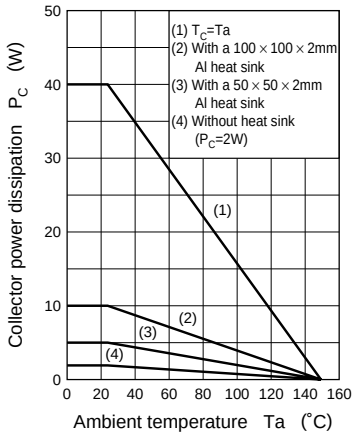
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	2SB942 2SB942A	I_{CES}	$V_{CE} = -60\text{V}, V_{BE} = 0$		-400	μA
					-400	
Collector cutoff current	2SB942 2SB942A	I_{CEO}	$V_{CE} = -30\text{V}, I_B = 0$		-700	μA
					-700	
Emitter cutoff current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$			-1	mA
Collector to emitter voltage	2SB942 2SB942A	V_{CEO}	$I_C = -30\text{mA}, I_B = 0$	-60		V
				-80		
Forward current transfer ratio	h_{FE1}^* h_{FE2}	$V_{CE} = -4\text{V}, I_C = -1\text{A}$	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		μs
Storage time	t_{stg}			0.5		μs
Fall time	t_f			0.2		μs

* h_{FE1} Rank classification

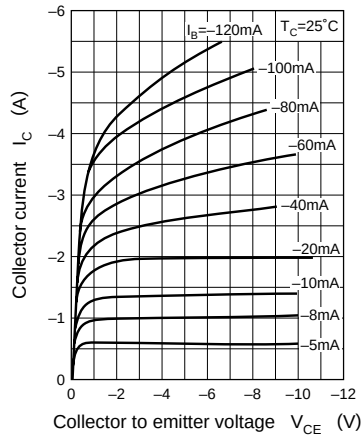
Rank	Q	P
h_{FE1}	70 to 150	120 to 250

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

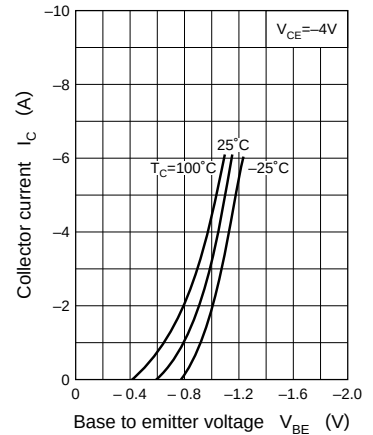
$P_C - T_a$



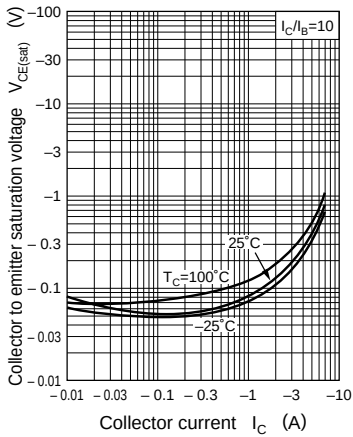
$I_C - V_{CE}$



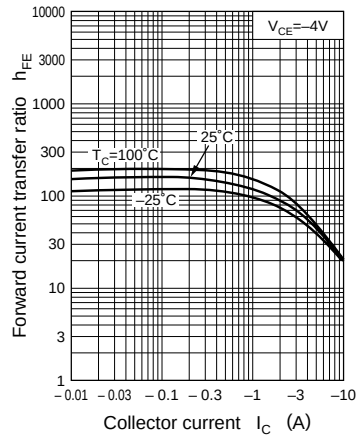
$I_C - V_{BE}$



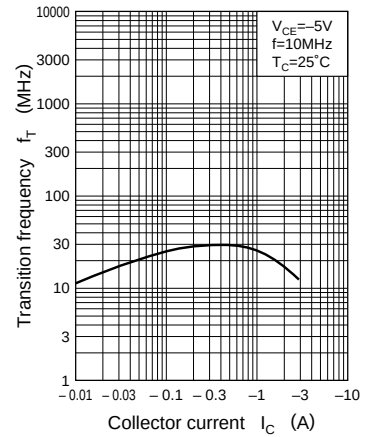
$V_{CE(\text{sat})} - I_C$



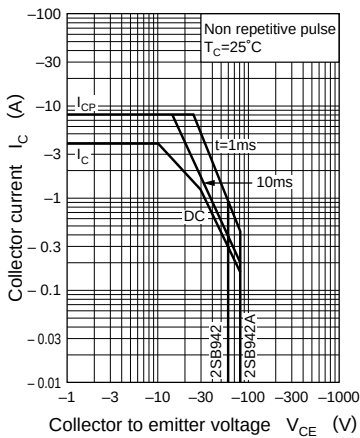
$h_{FE} - I_C$



$f_T - I_C$



Area of safe operation (ASO)



$R_{th(t)} - t$

