

2SB0938 (2SB938), 2SB0938A (2SB938A)

Silicon PNP epitaxial planar type Darlington

For power amplification and switching

Complementary to 2SD1261, 2SD1261A

■ Features

- High forward current transfer ratio h_{FE}
- 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 $T_C = 25^\circ C$

Parameter		Symbol	Rating	Unit
Collector-base voltage (Emitter open)	2SB0938	V_{CBO}	-60	V
	2SB0938A		-80	
Collector-emitter voltage (Base open)	2SB0938	V_{CEO}	-60	V
	2SB0938A		-80	
Emitter-base voltage (Collector open)		V_{EBO}	-5	V
Collector current		I_C	-4	A
Peak collector current		I_{CP}	-8	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	$^{\circ}\text{C}$

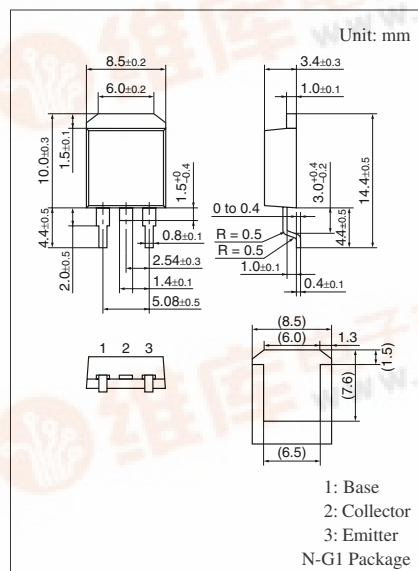
■ Electrical Characteristics $T_C = 25^\circ C \pm 3^\circ C$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	2SB0938 2SB0938A	V_{CEO} $I_C = -30 \text{ mA}, I_B = 0$	-60			V
			-80			
Base-emitter voltage	V_{BE}	$V_{CE} = -3 \text{ V}, I_C = -3 \text{ A}$			-2.5	V
Collector-base cutoff current (Emitter open)	2SB0938 2SB0938A	I_{CBO} $V_{CB} = -60 \text{ V}, I_E = 0$ $V_{CB} = -80 \text{ V}, I_E = 0$			-200 -200	μA
Collector-emitter cutoff current (Base open)	2SB0938 2SB09378	I_{CEO} $V_{CE} = -30 \text{ V}, I_B = 0$ $V_{CE} = -40 \text{ V}, I_B = 0$			-500 -500	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = -5 \text{ V}, I_C = 0$			-2	mA
Forward current transfer ratio	h_{FE1} h_{FE2}^*	$V_{CE} = -3 \text{ V}, I_C = -0.5 \text{ A}$ $V_{CE} = -3 \text{ V}, I_C = -3 \text{ A}$	1000			—
			2000		10000	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -3 \text{ A}, I_B = -12 \text{ mA}$ $I_C = -5 \text{ A}, I_B = -20 \text{ mA}$			-2 -4	V
Transition frequency	f_T	$V_{CE} = -10 \text{ V}, I_C = -0.5 \text{ A}, f = 1 \text{ MHz}$		15		MHz
Turn-on time	t_{on}	$I_C = -3 \text{ A}$		0.3		μs
Strage time	t_{stg}	$I_{B1} = -12 \text{ mA}, I_{B2} = 12 \text{ mA}$		2		μs
Fall time	t_f	$V_{CC} = -50 \text{ V}$		0.5		μs

Note) * Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
②: Rank classification

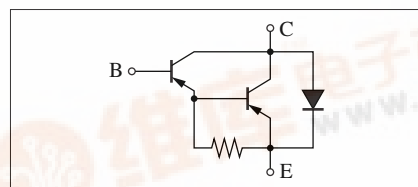
Rank	Q	P
h_{FE1}	2000 to 5000	4000 to 10000

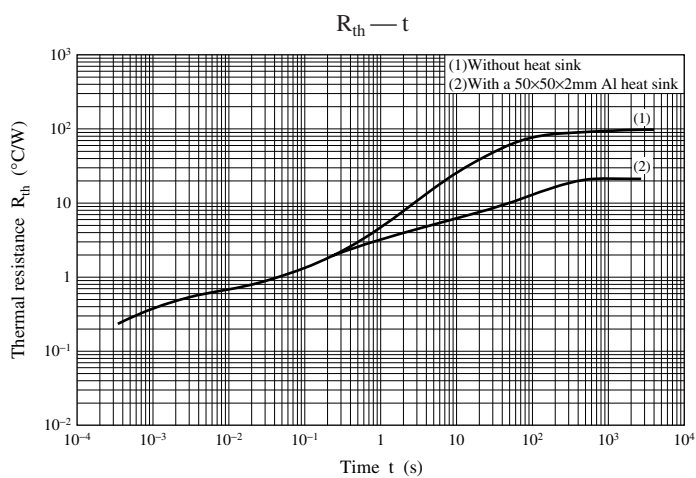
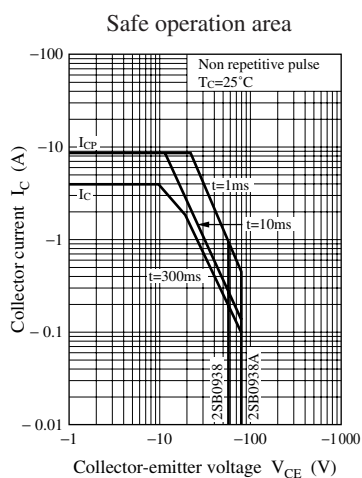
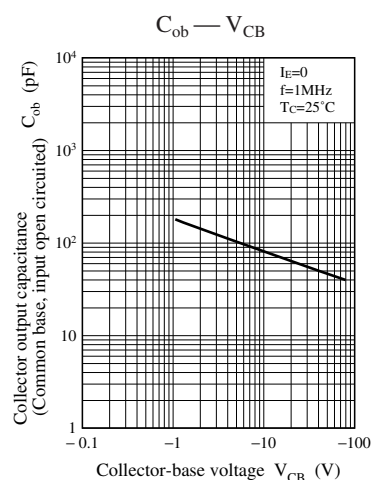
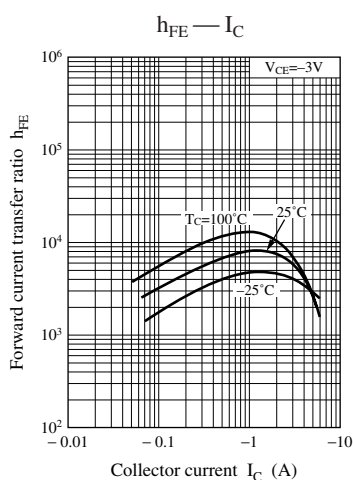
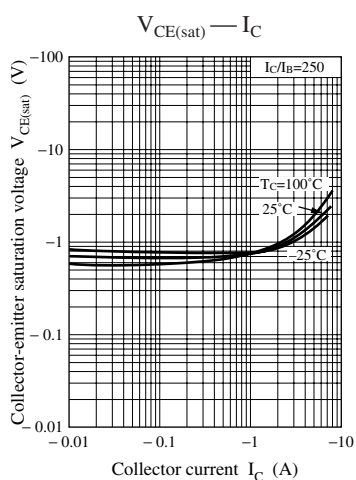
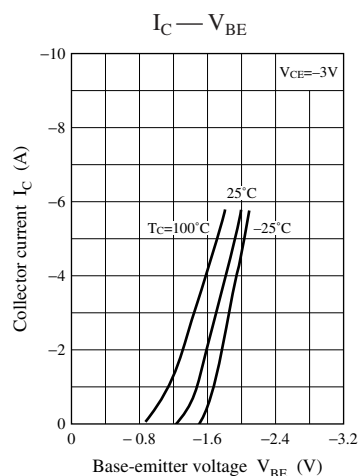
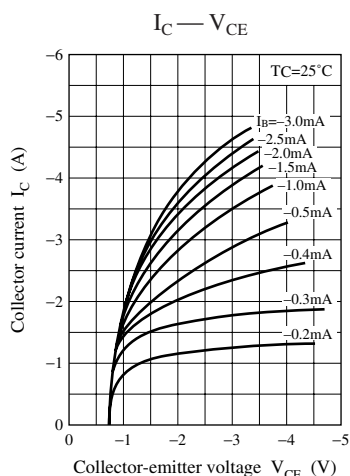
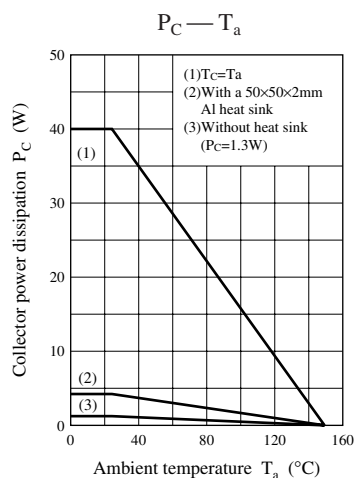
Note) The part number in the parenthesis shows conventional part number.



Note) Self-supported type package is also prepared.

Internal Connection





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