

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 $T_C = 25^\circ\text{C}$

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

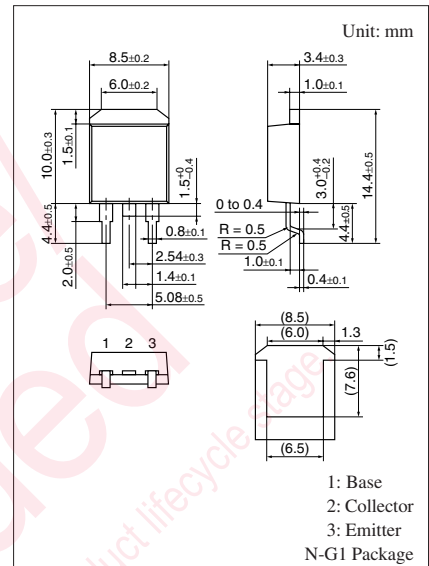
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	2SB0938	V_{CEO} $I_C = -30\text{ mA}$, $I_B = 0$	-60			V
	2SB0938A		-80			
Base-emitter voltage	V_{BE}	$V_{CE} = -3\text{ V}$, $I_C = -3\text{ A}$			-2.5	V
Collector-base cutoff current (Emitter open)	2SB0938	I_{CBO} $V_{CB} = -60\text{ V}$, $I_E = 0$			-200	μA
	2SB0938A	$V_{CB} = -80\text{ V}$, $I_E = 0$			-200	
Collector-emitter cutoff current (Base open)	2SB0938	I_{CEO} $V_{CE} = -30\text{ V}$, $I_B = 0$			-500	μA
	2SB0938A	$V_{CE} = -40\text{ V}$, $I_B = 0$			-500	
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = -5\text{ V}$, $I_C = 0$			-2	mA
Forward current transfer ratio	h_{FE1}	$V_{CE} = -3\text{ V}$, $I_C = -0.5\text{ A}$	1000			—
	h_{FE2}^*	$V_{CE} = -3\text{ V}$, $I_C = -3\text{ A}$	2000	10000		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -3\text{ A}$, $I_B = -12\text{ mA}$			-2	V
		$I_C = -5\text{ A}$, $I_B = -20\text{ mA}$			-4	
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
Storage 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) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: Rank classification

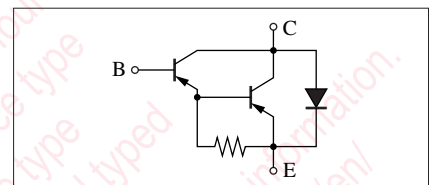
Rank	Q	P
h_{FE1}	2000 to 5000	4000 to 10000

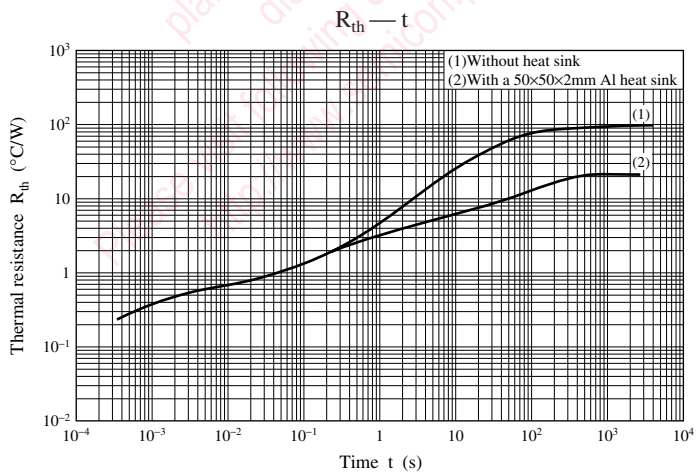
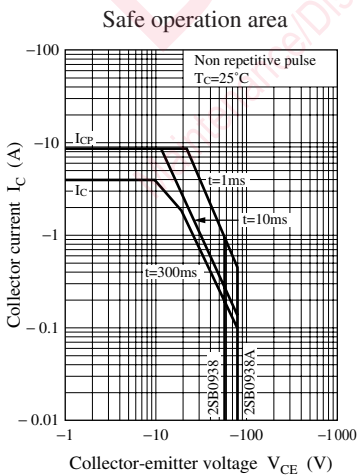
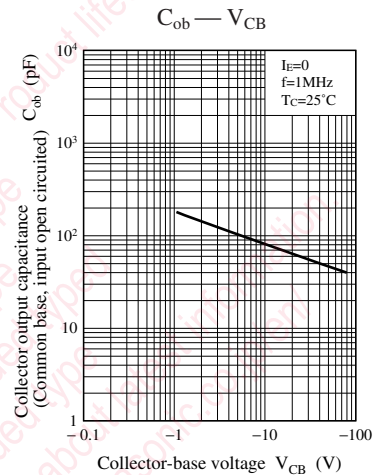
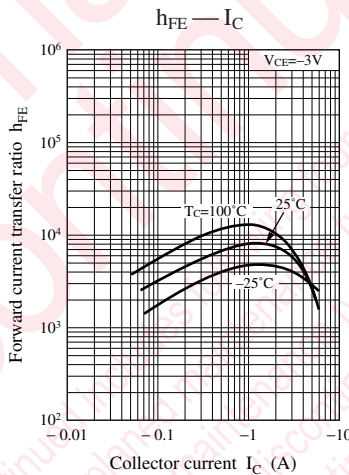
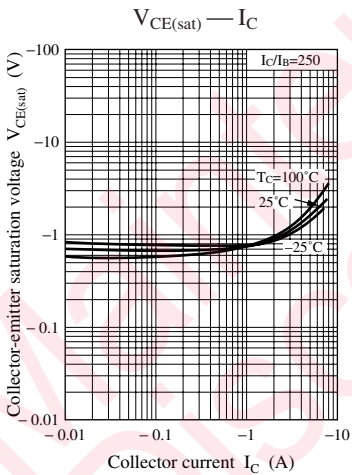
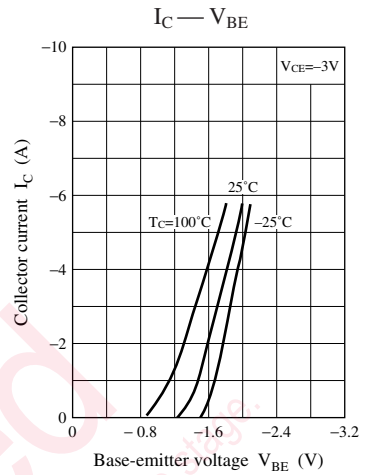
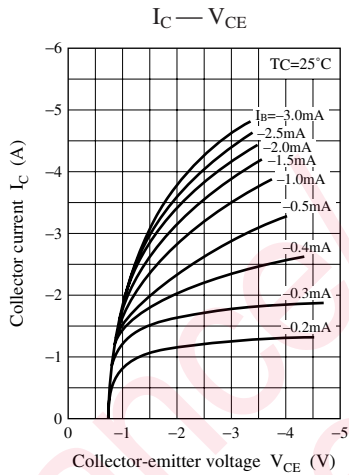
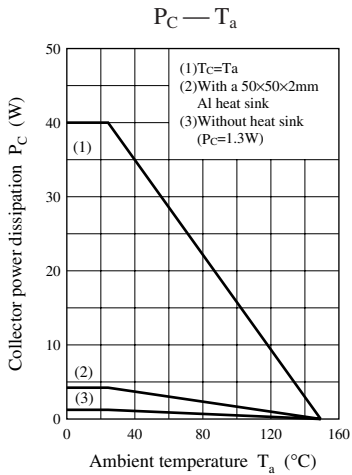
Note) The part number in the parenthesis shows conventional part number.



Note) Self-supported type package is also prepared.

Internal Connection





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