

2SB1180, 2SB1180A

Silicon PNP epitaxial planar type darlington

For medium-speed voltage switching

Complementary to 2SD1750, 2SD1750A

■ Features

- High forward current transfer ratio h_{FE}
- I 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)	2SB1180 V_{CBO}	-60	V
	2SB1180A	-80	
Collector-emitter voltage (Base open)	2SB1180 V_{CEO}	-60	V
	2SB1180A	-80	
Emitter-base voltage (Collector open)	V_{EBO}	-7	V
Collector current	I_C	-8	A
Peak collector current	I_{CP}	-12	A
Collector power dissipation $T_a = 25^\circ\text{C}$	P_C	15	W
		1.3	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

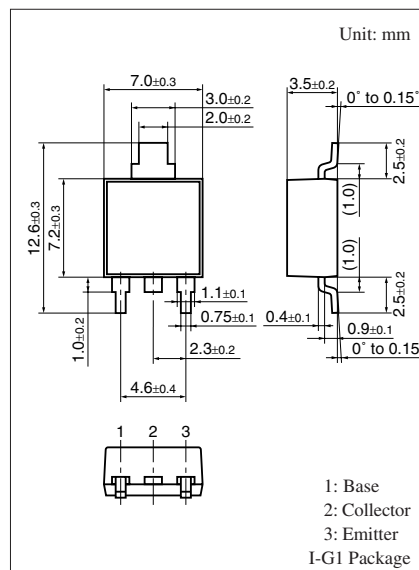
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = -30\text{ mA}, I_B = 0$	-60			V
			-80			
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = -60\text{ V}, I_E = 0$			-100	μA
		$V_{CB} = -80\text{ V}, I_E = 0$			-100	
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = -7\text{ V}, I_C = 0$			-2	mA
Forward current transfer ratio	h_{FE1}^*	$V_{CE} = -3\text{ V}, I_C = -4\text{ A}$	2000		10000	—
	h_{FE2}	$V_{CE} = -3\text{ V}, I_C = -8\text{ A}$	500			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -4\text{ A}, I_B = -8\text{ mA}$			-1.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -4\text{ A}, I_B = -8\text{ mA}$			-2	V
Transition frequency	f_T	$V_{CE} = -3\text{ V}, I_C = -1\text{ A}, f = 1\text{ MHz}$		20		MHz
Turn-on time	t_{on}	$I_C = -4\text{ A}, I_{B1} = -8\text{ mA}, I_{B2} = 8\text{ mA}$		0.5		μs
Storage time	t_{stg}	$V_{CC} = -50\text{ V}$		2.0		μs
Fall time	t_f			1.0		μs

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

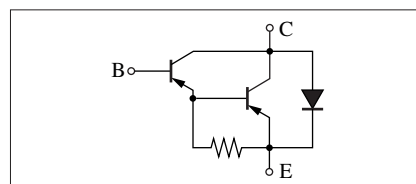
2. *: Rank classification

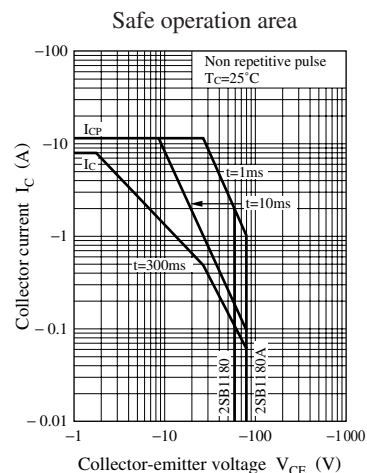
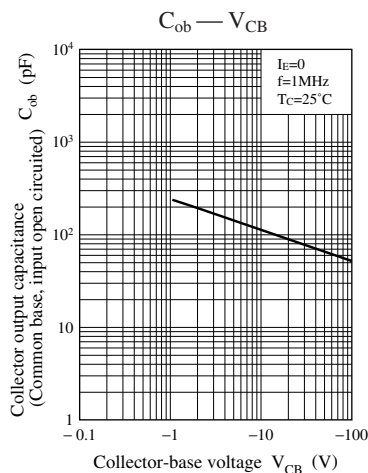
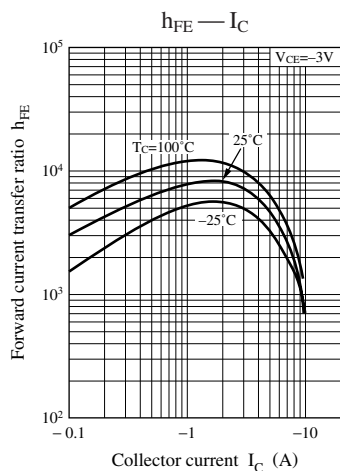
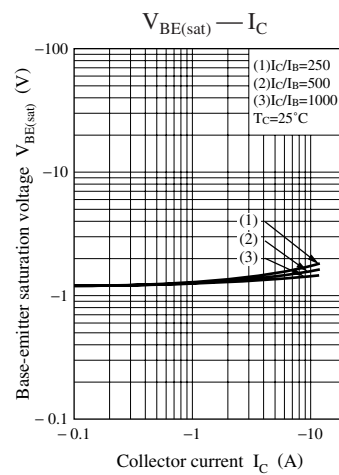
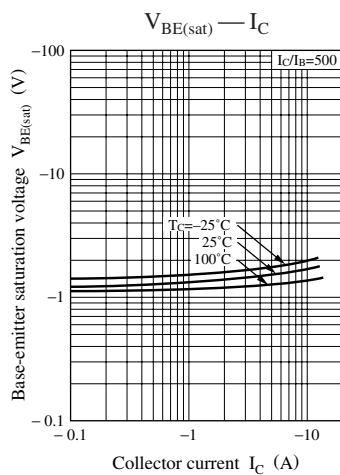
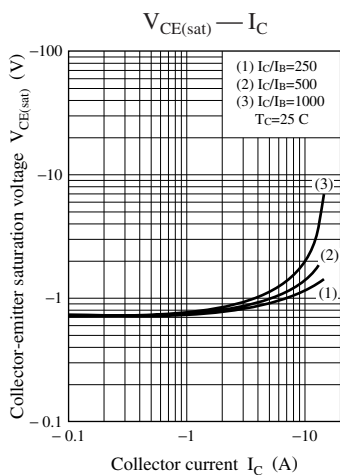
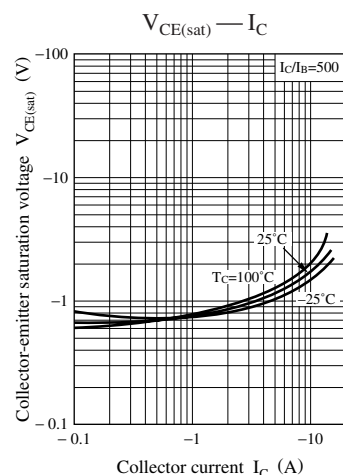
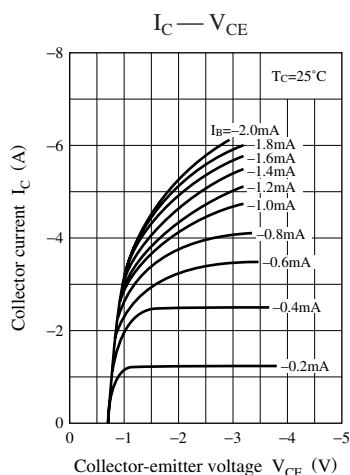
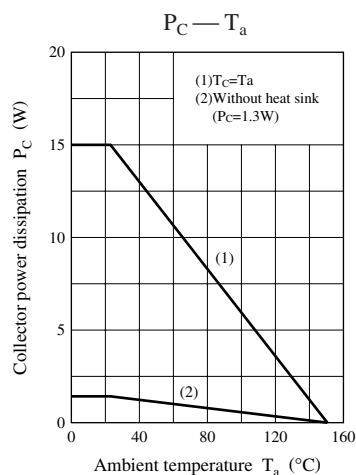
Rank	Q	P
h_{FE1}	2000 to 5000	4000 to 10000

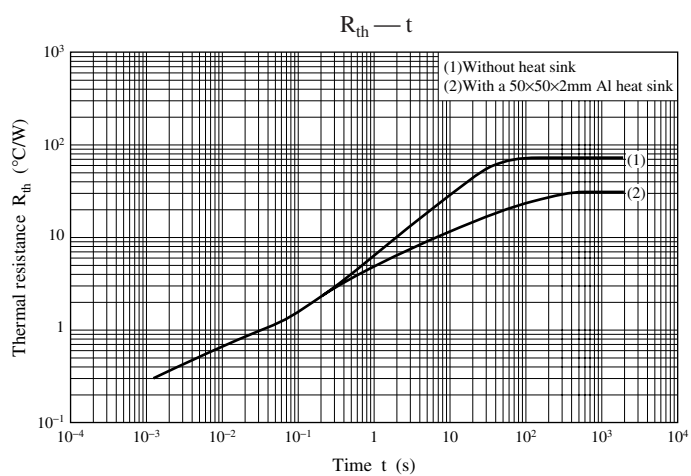


Note) Self-supported type package is also prepared.

Internal Connection







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