

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		P_C	15	W
$T_a = 25^{\circ}\text{C}$			1.3	
Junction temperature		T_j	150	$^{\circ}\text{C}$
Storage temperature		T_{stg}	-55 to +150	$^{\circ}\text{C}$

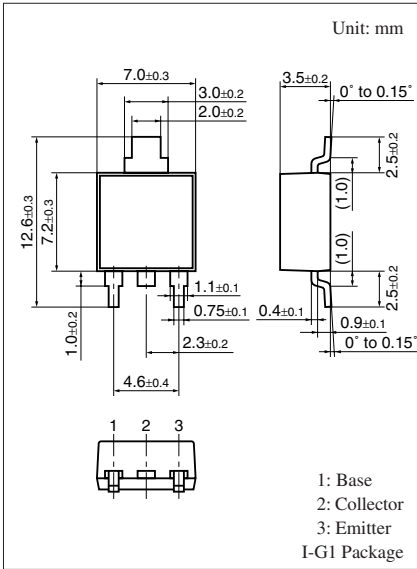
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	2SB1180 2SB1180A	V_{CEO} $I_C = -30\text{ mA}, I_B = 0$	-60			V
			-80			
Collector-base cutoff current (Emitter open)	2SB1180 2SB1180A	I_{CBO} $V_{CB} = -60\text{ V}, I_E = 0$ $V_{CB} = -80\text{ V}, I_E = 0$			-100	μA
					-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}^* h_{FE2} $V_{CE} = -3\text{ V}, I_C = -4\text{ A}$ $V_{CE} = -3\text{ V}, I_C = -8\text{ A}$	2000		10000	—
			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.

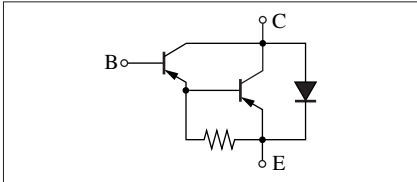
2. *: Rank classification

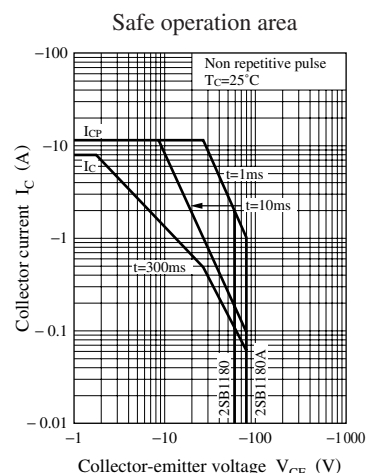
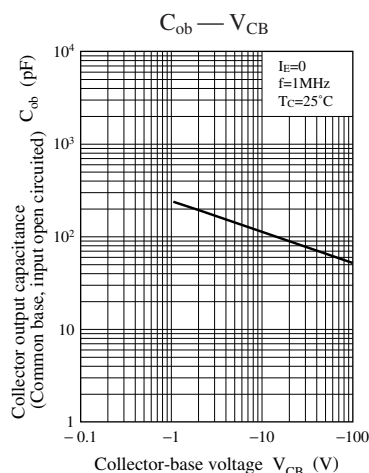
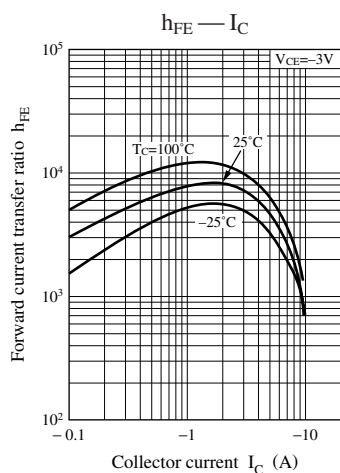
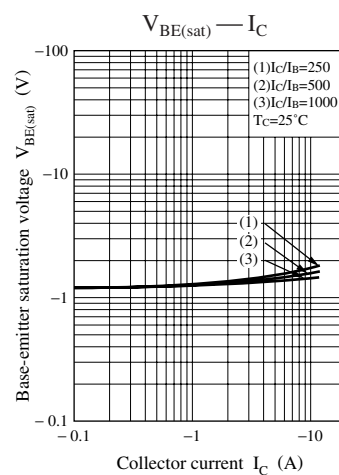
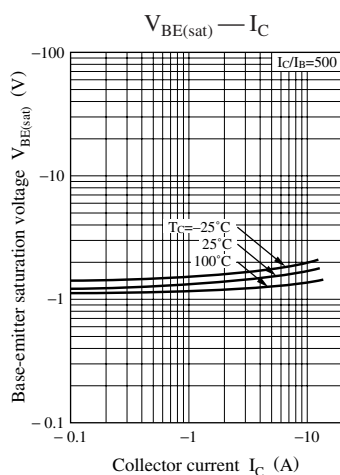
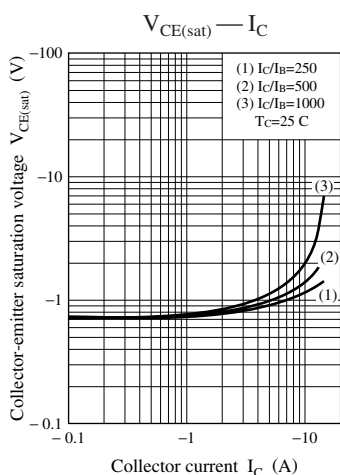
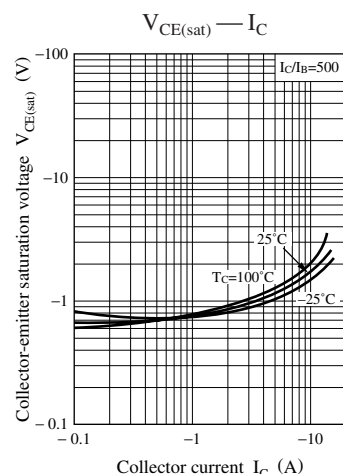
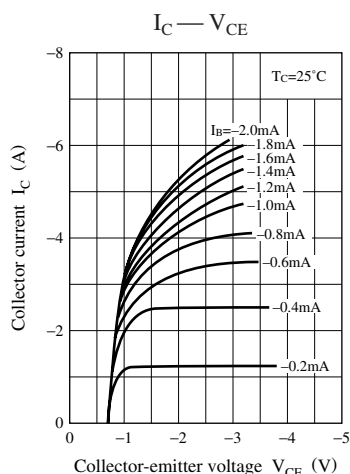
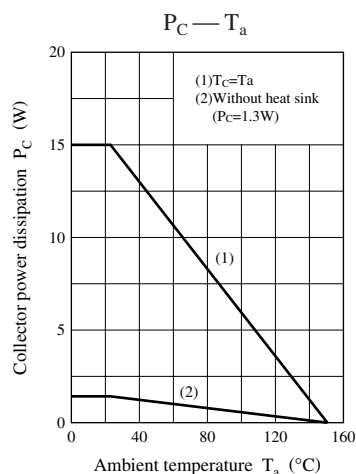
Rank	Q	P
h_{FE1}	2000 to 5000	4000 to 10000

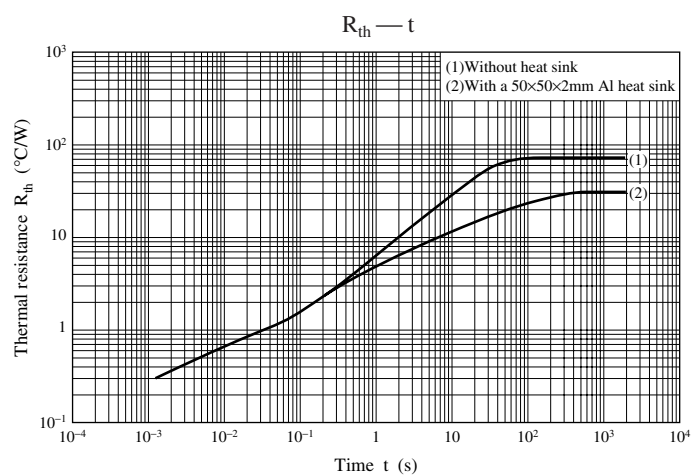


Note) Self-supported type package is also prepared.

Internal Connection







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