

2SB1180, 2SB1180A

Silicon PNP Epitaxial Planar Darlington Type

Medium Speed Power Switching
Complementary Pair with 2SD1750, 2SD1750A

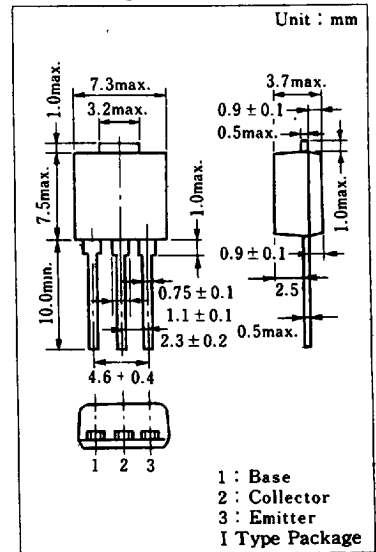
■ Features

- High DC current gain (h_{FE})
- High speed switching
- "I Type" package configuration with a cooling fin for direct soldering on PC board of a small-size electronic equipment

■ Absolute Maximum Ratings ($T_c=25^\circ\text{C}$)

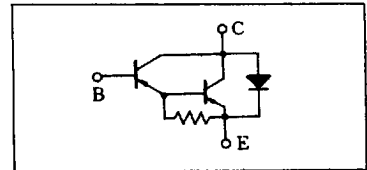
Item	Symbol	Value	Unit
Collector-base voltage	2SB1180	-60	V
	2SB1180A	-80	
Collector-emitter voltage	2SB1180	-60	V
	2SB1180A	-80	
Emitter-base voltage	V_{EBO}	-7	V
Peak collector current	I_{CP}	-12	A
Collector current	I_C	-8	A
Collector power dissipation	$T_c=25^\circ\text{C}$	15	W
	$T_a=25^\circ\text{C}$	1.3	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

■ Package Dimensions



*Surface-mount type is also available. (Refer to p.81.)

■ Inner Circuit



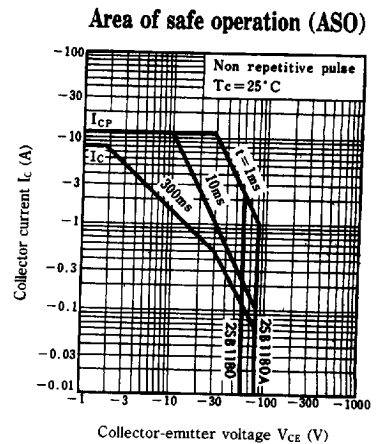
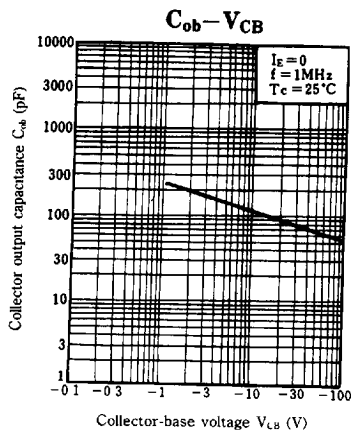
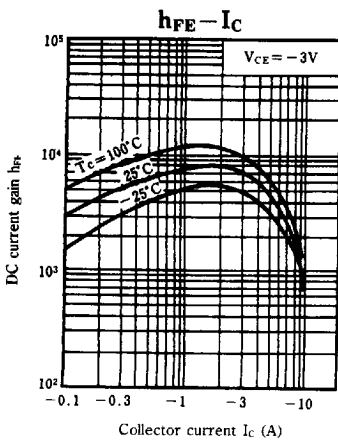
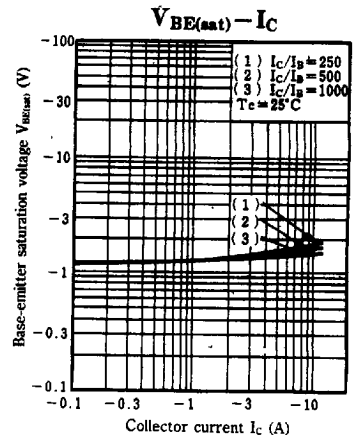
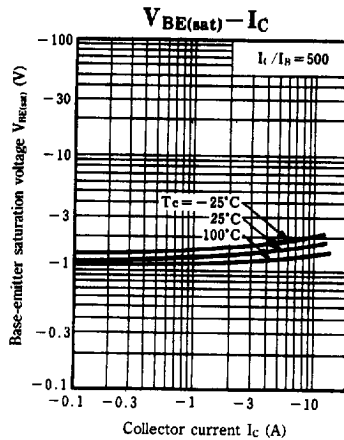
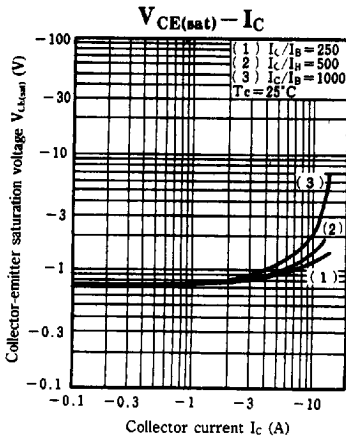
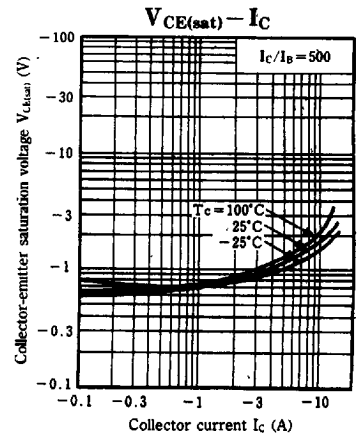
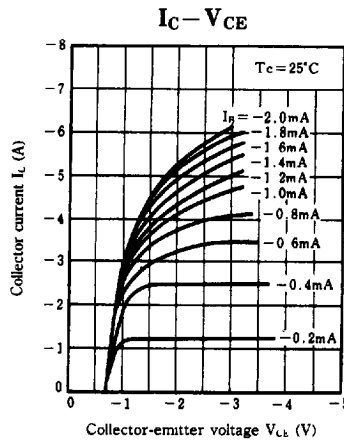
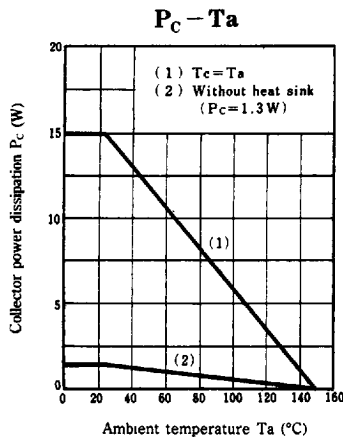
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

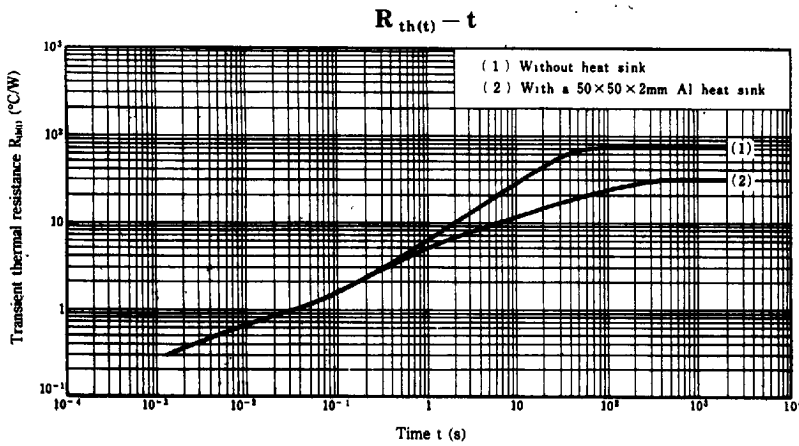
Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = -60\text{ V}, I_E = 0$			-100	μA
		$V_{CB} = -80\text{ V}, I_E = 0$			-100	
Emitter cutoff current	I_{EBO}	$V_{EB} = -7\text{ V}, I_C = 0$			-2	mA
Collector-emitter voltage	2SB1180	$I_C = -30\text{ mA}, I_B = 0$	-60			V
	2SB1180A		-80			
DC current gain	h_{FE1}^*	$V_{CE} = -3\text{ V}, I_C = -4\text{ A}$	1000		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	$V_{CE} = -10\text{ V}, I_C = -1\text{ A}, f = 1\text{ MHz}$		20		MHz
Turn-on time	t_{on}	$I_C = -4\text{ A}$		0.5		μs
Storage time	t_{stg}	$I_{B1} = -8\text{ mA}, I_{B2} = 8\text{ mA}$		2		μs
Collector current fall time	t_f	$V_{CC} = -50\text{ V}$		1		μs

* h_{FE1} Classifications

Class	R	Q	P
h_{FE1}	1000 ~ 2500	2000 ~ 5000	4000 ~ 10000

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