

2SB1176

Silicon PNP Epitaxial Planar Type

Power Switching

Complementary Pair with 2SD1746

■ Features

- Low collector-emitter saturation voltage ($V_{CE(sat)}$)
- Good linearity of DC current gain (h_{FE})
- High collector current (I_C)
- "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	V_{CBO}	-130	V
Collector-emitter voltage	V_{CEO}	-80	V
Emitter-base voltage	V_{EBO}	-7	V
Peak collector current	I_{CP}	-10	A
Collector current	I_C	-5	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	$^\circ\text{C}$

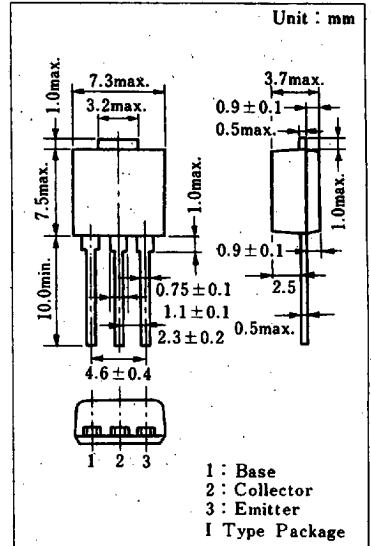
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB}=-100\text{V}, I_E=0$			-10	μA
Emitter cutoff current	I_{EBO}	$V_{EB}=-5\text{V}, I_C=0$			-50	μA
Collector-emitter voltage	V_{CEO}	$I_C=-10\text{mA}, I_B=0$	-80			V
DC current gain	h_{FE1}	$V_{CE}=-2\text{V}, I_C=-0.1\text{A}$	45			
	h_{FE2}^*	$V_{CE}=-2\text{V}, I_C=-2\text{A}$	60		260	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-4\text{A}, I_B=-0.2\text{A}$			-0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-4\text{A}, I_B=-0.2\text{A}$			-1.5	V
Transition frequency	f_T	$V_{CE}=-10\text{V}, I_C=-0.5\text{A}, f=10\text{MHz}$		30		MHz
Turn-on time	t_{on}	$I_C=-2\text{A}$		0.13		μs
Storage time	t_{stg}	$I_{B1}=-0.2\text{A}, I_{B2}=0.2\text{A}$		0.5		μs
Collector current fall time	t_f	$V_{CC}=-50\text{V}$		0.13		μs

* h_{FE2} Classifications

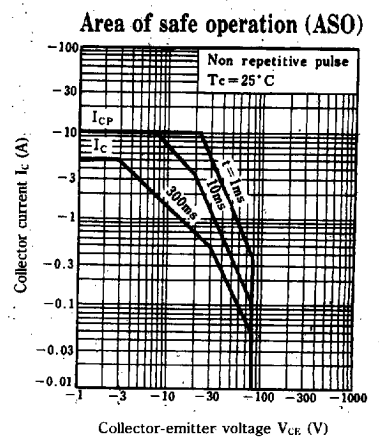
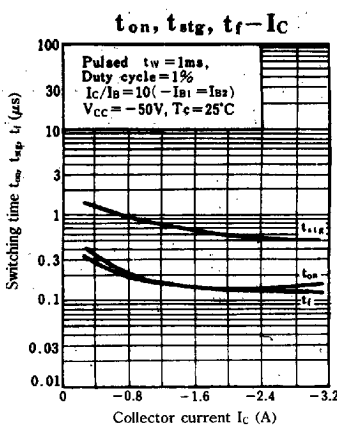
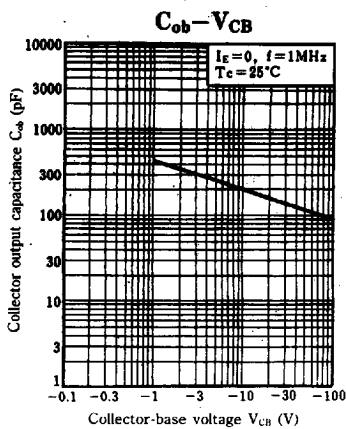
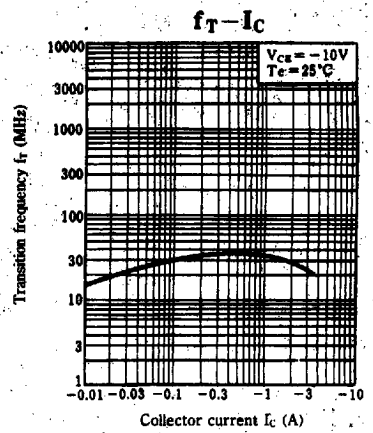
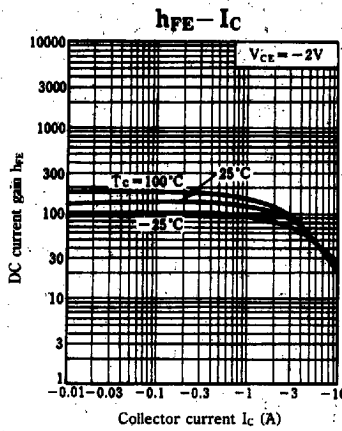
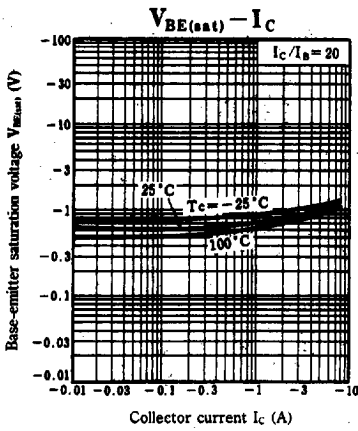
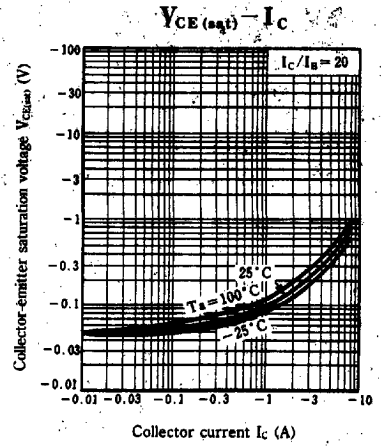
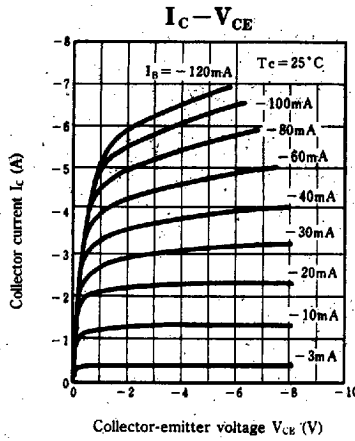
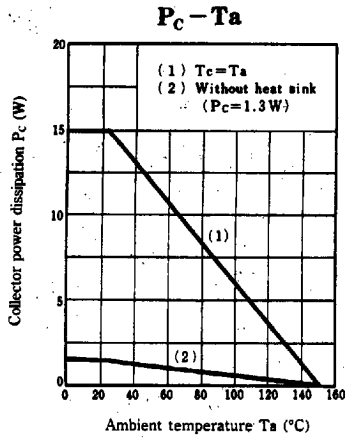
Class	R	Q	P
h_{FE2}	60~120	90~180	130~260

■ Package Dimensions



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

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Note) Refer to P.253 (on 2SB1180/A) for $R_{th(j-c)}$ - t characteristics.