

2SB1148, 2SB1148A

Silicon PNP Epitaxial Planar Type

Low Voltage Switching

Complementary Pair with 2SD1752, 2SD1752A

■ Features

- Low collector-emitter saturation voltage ($V_{CE(sat)}$)
- 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	2SB1148	V_{CBO}	V
	2SB1148A	-40	
Collector-emitter voltage	2SB1148	V_{CEO}	V
	2SB1148A	-20	
Emitter-base voltage	V_{EBO}	-7	V
Peak collector current	I_{CP}	-20	A
Collector current	I_C	-10	A
Collector power dissipation	$T_c=25^\circ\text{C}$	P_C	W
	$T_a=25^\circ\text{C}$	15	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

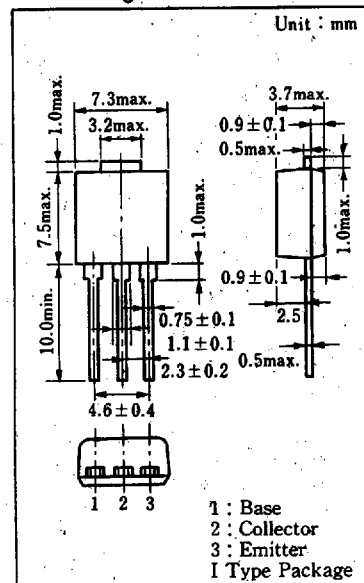
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	2SB1148	$V_{CB} = -40\text{ V}, I_E = 0$			-50	μA
	2SB1148A	$V_{CB} = -50\text{ V}, I_E = 0$			-50	
Emitter cutoff current	I_{EBO}	$V_{EB} = -5\text{ V}, I_C = 0$			-50	μA
Collector-emitter voltage	2SB1148	$I_C = -10\text{ mA}, I_B = 0$	-20			V
	2SB1148A		-40			
DC current gain	h_{FE1}	$V_{CE} = -2\text{ V}, I_C = -0.1\text{ A}$	45			
	h_{FE2}^*	$V_{CE} = -2\text{ V}, I_C = -3\text{ A}$	60		260	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10\text{ A}, I_B = -0.33\text{ A}$			-0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -10\text{ A}, I_B = -0.33\text{ A}$			-1.5	V
Transition frequency	f_T	$V_{CE} = -10\text{ V}, I_C = -0.5\text{ A}, f = 10\text{ MHz}$		100		MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$		400		pF
Turn-on time	t_{on}	$I_C = -3\text{ A}, I_{B1} = -0.1\text{ A}, I_{B2} = 0.1\text{ A}$ $V_{CC} = -20\text{ V}$		0.1		μs
Storage time	t_{stg}			0.5		μs
Collector current fall time	t_f			0.1		μs

* h_{FE2} Classifications

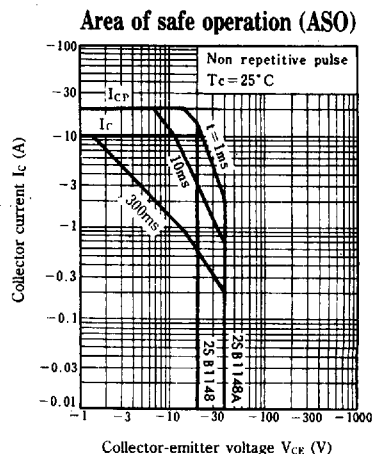
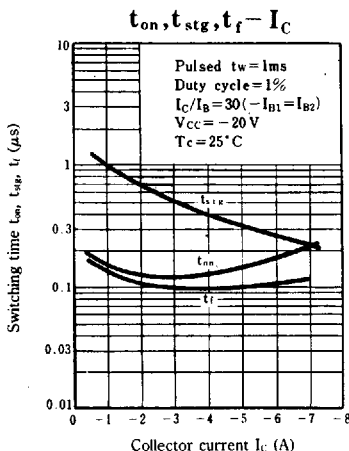
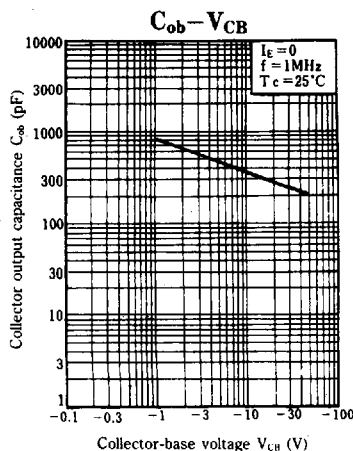
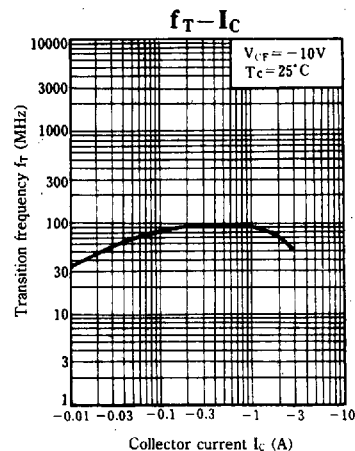
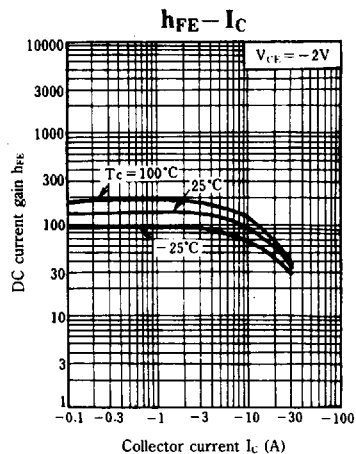
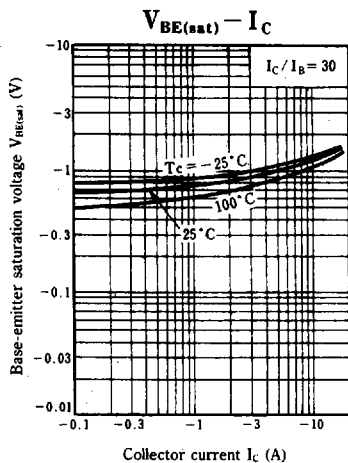
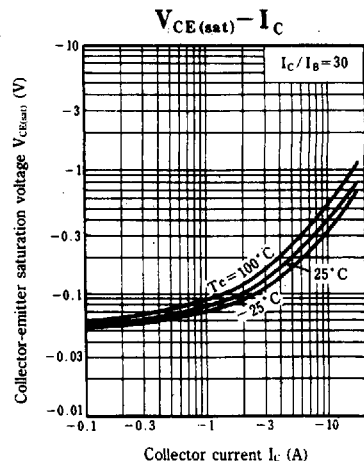
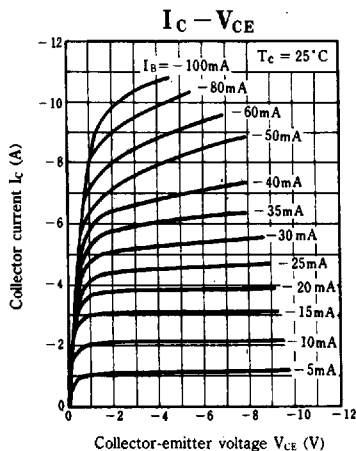
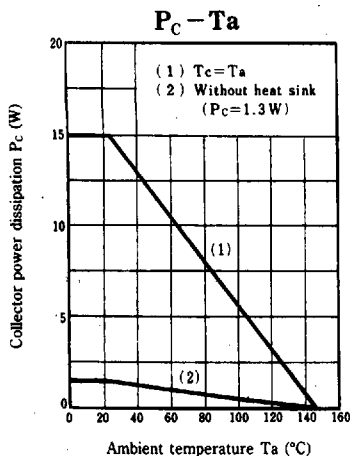
Class	R	Q	P
h_{FE2}	60 ~ 120	90 ~ 180	130 ~ 260

■ 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 $R_{th(j-a)}$ - t characteristics.