

2SB1175

Silicon PNP Epitaxial Planar Type

Power Switching
Complementary Pair with 2SD1745

■ 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_{CB0}	-130	V
Collector-emitter voltage	V_{CE0}	-80	V
Emitter-base voltage	V_{EB0}	-7	V
Peak collector current	I_{CP}	-8	A
Collector current	I_C	-4	A
Collector power dissipation	$T_c=25^\circ\text{C}$	P_C	W
	$T_a=25^\circ\text{C}$		
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

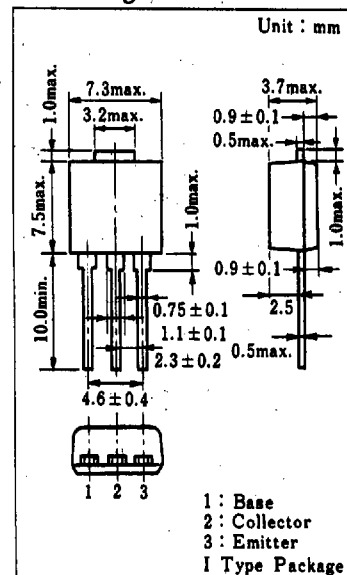
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CB0}	$V_{CB} = -100\text{ V}, I_E = 0$			-10	μA
Emitter cutoff current	I_{EB0}	$V_{EB} = -5\text{ V}, I_C = 0$			-50	μA
Collector-emitter voltage	V_{CE0}	$I_C = -10\text{ mA}, I_B = 0$	-80			V
DC current gain	h_{FE1}	$V_{CE} = -2\text{ V}, I_C = -0.1\text{ A}$	45			
	h_{FE2}^*	$V_{CE} = -2\text{ V}, I_C = -1\text{ A}$	60		260	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -3\text{ A}, I_B = -0.15\text{ A}$			-0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -3\text{ A}, I_B = -0.15\text{ A}$			-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}	$I_C = -1\text{ A}, I_{B1} = -0.1\text{ A}, I_{B2} = 0.1\text{ A}$		0.15		μs
Storage time	t_{stg}			0.8		μs
Collector current fall time	t_f	$V_{CC} = -50\text{ V}$		0.15		μs

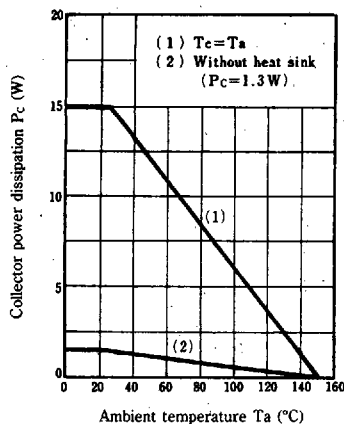
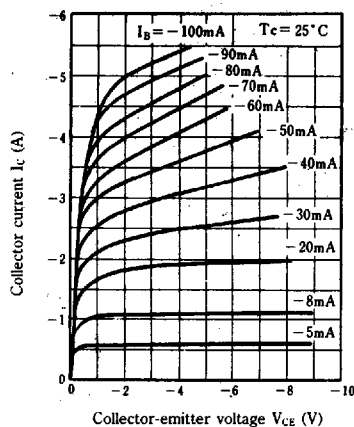
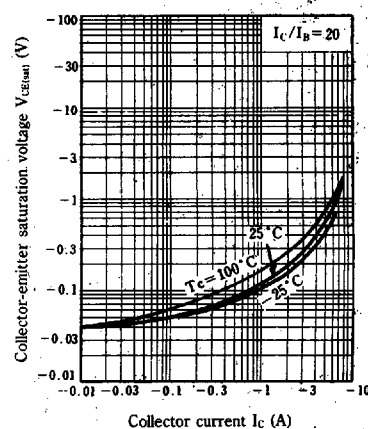
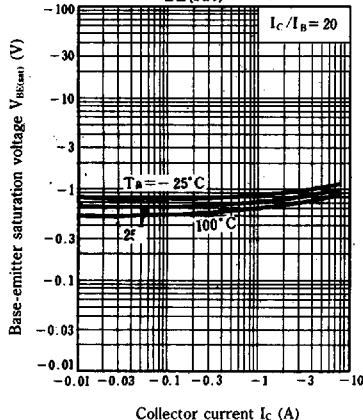
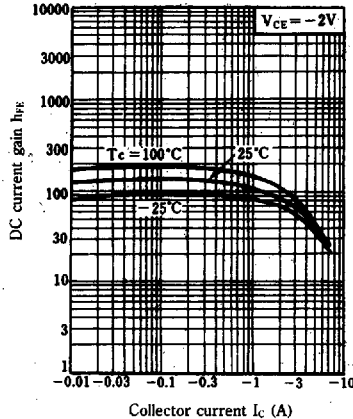
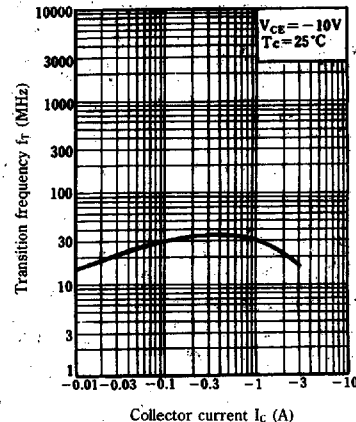
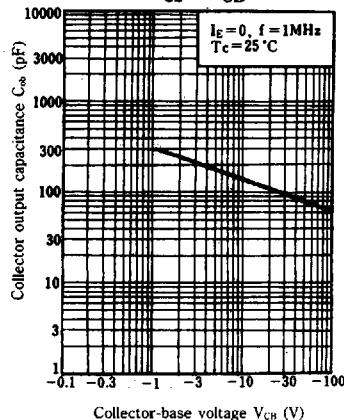
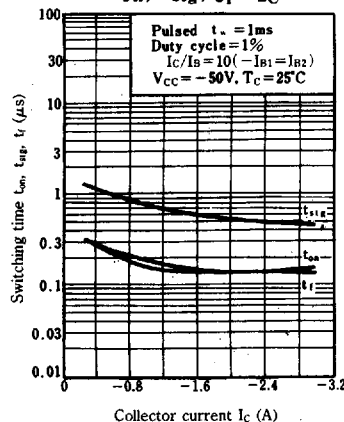
* h_{FE2} Classifications

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

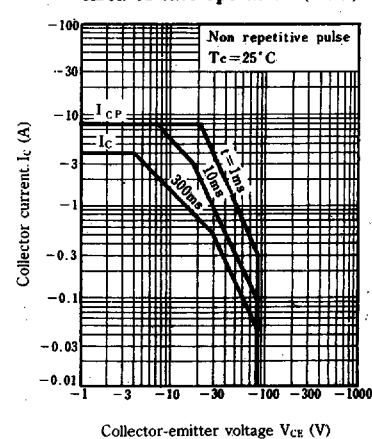
■ Package Dimensions



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

$P_C - T_a$  $I_C - V_{CE}$  $V_{CE(sat)} - I_C$  $V_{BE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_C$  $C_{ob} - V_{CB}$  $t_{on}, t_{stg}, t_f - I_C$ 

Area of safe operation (ASO)



Note) Refer to P.238 (on 2SB1173/A) for $R_{th(jc)} - t$ characteristics.