

2SB1154

Silicon PNP Epitaxial Planar Type

Power Switching

Complementary Pair with 2SD1705

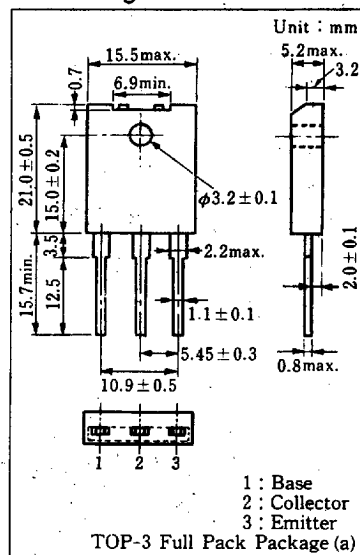
■ Features

- Low collector-emitter saturation voltage ($V_{CE(sat)}$)
- Good linearity of DC current gain (h_{FE})
- High collector current (I_C)
- "Full Pack" package for simplified mounting on a heat sink with one screw

■ 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}	-20	A
Collector current	I_C	-10	A
Collector power dissipation	$T_c=25^\circ\text{C}$	70	W
	$T_a=25^\circ\text{C}$	3	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

■ Package Dimensions



■ 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}^*	$V_{CE}=-2\text{ V}, I_C=3\text{ A}$	60		260	
	h_{FE3}	$V_{CE}=-2\text{ V}, I_C=-6\text{ A}$	30			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C=-6\text{ A}, I_B=-0.3\text{ A}$			-0.5	V
	$V_{CE(sat)2}$	$I_C=-10\text{ A}, I_B=-1\text{ A}$			-1.5	V
Base-emitter saturation voltage	$V_{BE(sat)1}$	$I_C=-6\text{ A}, I_B=-0.3\text{ A}$			-1.5	V
	$V_{BE(sat)2}$	$I_C=-10\text{ A}, I_B=-1\text{ A}$			-2.5	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}	$I_C=-6\text{ A}, I_{B1}=-0.6\text{ A}, I_{B2}=0.6\text{ A}$ $V_{CC}=-50\text{ V}$		0.5		μs
Storage time	t_{stg}			1.0		μs
Collector current fall time	t_f			0.2		μs

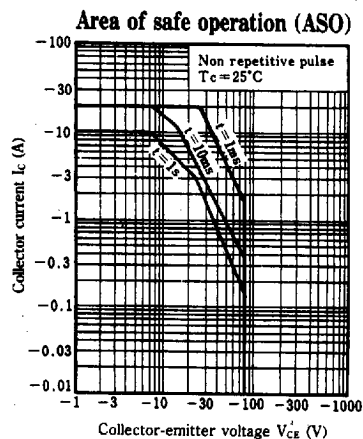
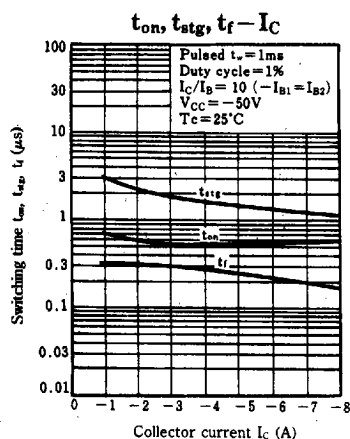
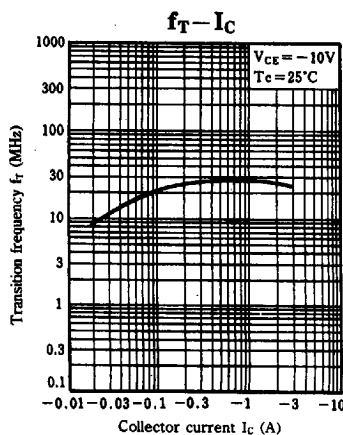
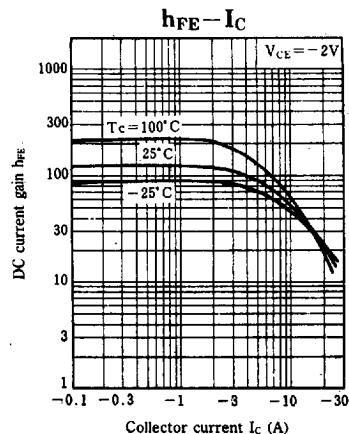
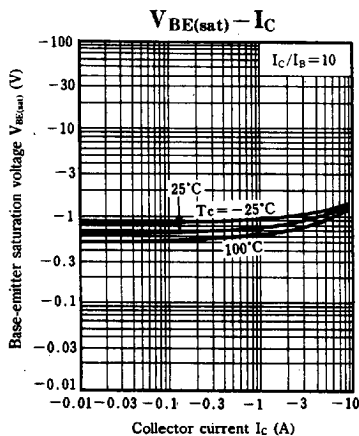
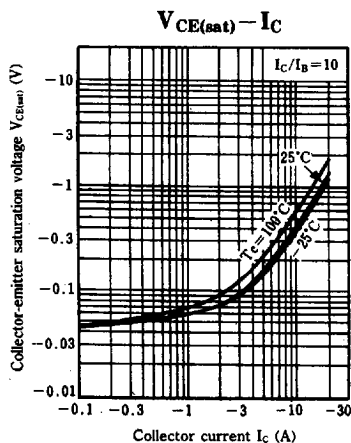
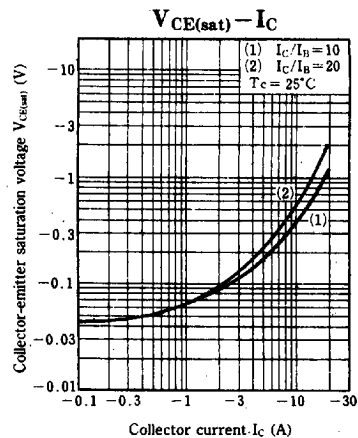
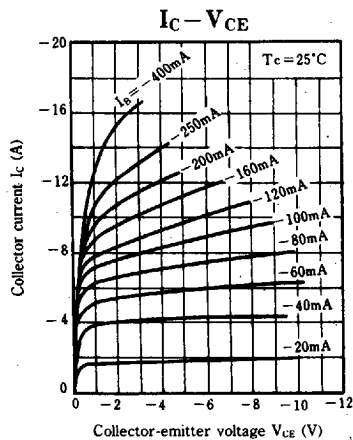
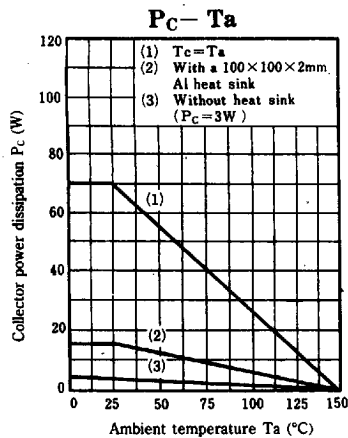
* h_{FE2} Classifications

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

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Note) Refer to P.280 (on 2SB1254) for $R_{th(ja)} - t$ characteristics.

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