# 2SB1156

### Silicon PNP epitaxial planar type

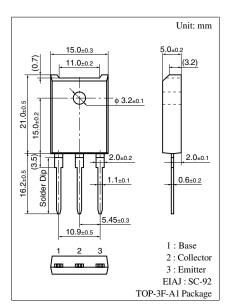
For power switching Complementary to 2SD1707

#### ■ Features

- ullet Low collector to emitter saturation voltage  $V_{CE(sat)}$
- ullet Satisfactory linearity of forward current transfer ratio  $h_{\text{FE}}$
- Large collector current I<sub>C</sub>
- Full-pack package which can be installed to the heat sink with one screw

#### ■ Absolute Maximum Ratings $T_C = 25$ °C

Parameter		Symbol	Rating	Unit
Collector to base voltage		$V_{CBO}$	-130	V
Collector to emitter voltage		$V_{CEO}$	-80	V
Emitter to base voltage		$V_{EBO}$	-7	V
Peak collector current		$I_{CP}$	-30	A
Collector current		$I_{C}$	-20	A
Collector power	$T_C = 25^{\circ}C$	$P_{C}$	100	W
dissipation	$T_a = 25^{\circ}C$		3	
Junction temperature		T <sub>j</sub>	150	°C
Storage temperature		$T_{stg}$	-55 to +150	°C



### ■ Electrical Characteristics $T_C = 25$ °C

Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = -100 \text{ V}, I_E = 0$			-10	μΑ
Emitter cutoff current	$I_{EBO}$	$V_{EB} = -5 \text{ V}, I_C = 0$			-50	μΑ
Collector to emitter voltage	$V_{CEO}$	$I_{\rm C} = -10 \text{ mA}, I_{\rm B} = 0$	-80			V
Forward current transfer ratio	h <sub>FE1</sub>	$V_{CE} = -2 \text{ V}, I_{C} = -0.1 \text{ A}$	45			
	h <sub>FE2</sub> *	$V_{CE} = -2 \text{ V}, I_{C} = -3 \text{ A}$	90		260	
	h <sub>FE3</sub>	$V_{CE} = -2 \text{ V}, I_C = -10 \text{ A}$	30			
Collector to emitter saturation voltage	V <sub>CE(sat)1</sub>	$I_C = -8 \text{ A}, I_B = -0.4 \text{ A}$			- 0.5	V
	V <sub>CE(sat)2</sub>	$I_C = -20 \text{ A}, I_B = -2 \text{ A}$			-1.5	V
Base to emitter saturation voltage	V <sub>BE(sat)1</sub>	$I_C = -8 \text{ A}, I_B = -0.4 \text{ A}$			-1.5	V
	V <sub>BE(sat)2</sub>	$I_{\rm C} = -20 \text{ A}, I_{\rm B} = -2 \text{ A}$			-2.5	V
Transition frequency	$f_T$	$V_{CE} = -10 \text{ V}, I_C = -0.5 \text{ A}, f = 10 \text{ MHz}$		25		MHz
Turn-on time	t <sub>on</sub>	$I_C = -3 \text{ A}, I_{B1} = -0.8 \text{ A}, I_{B2} = 0.8 \text{ A},$		0.5		μs
Storage time	t <sub>stg</sub>	$V_{CC} = -50 \text{ V}$		1.2		μs
Fall time	$t_{\rm f}$			0.2		μs

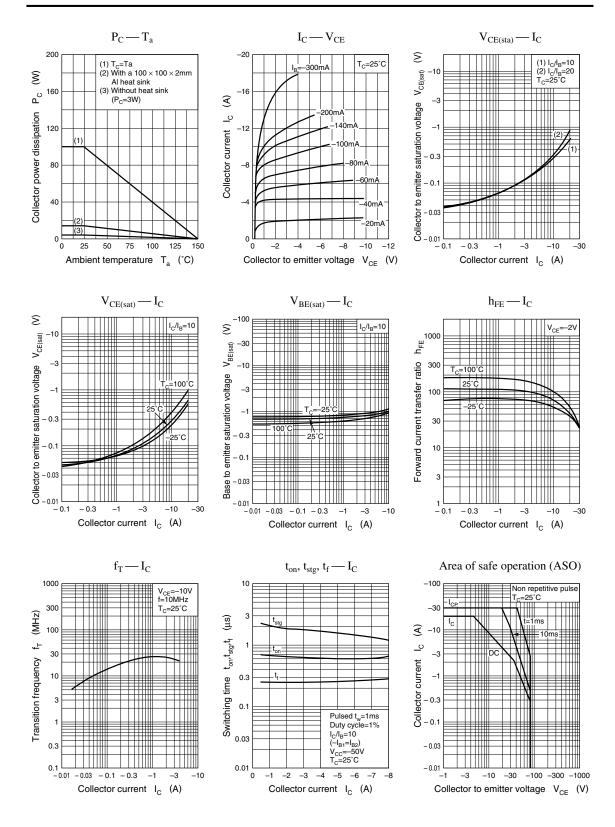
Note) \*: Rank classification

Rank	Q	Р			
h <sub>FE2</sub>	90 to 180	130 to 260			

Ordering can be made by the common rank (PQ rank  $h_{FE2} = 90$  to 260) in the rank classification.

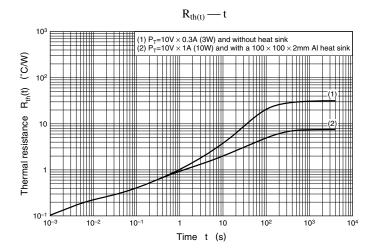
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