

2SC1847

Silicon NPN epitaxial planar type

For medium output power amplification

Complementary to 2SA0886

■ Features

- Output of 4 W can be obtained by a complementary pair with 2SA0886
- TO-126B package which requires no insulation plate for installation to the heat sink

■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	50	V
Collector to emitter voltage	V_{CEO}	40	V
Emitter to base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	3	A
Collector current	I_C	1.5	A
Collector power dissipation	P_C	1.2 *1	W
		5 *2	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Note) *1: Without heat sink

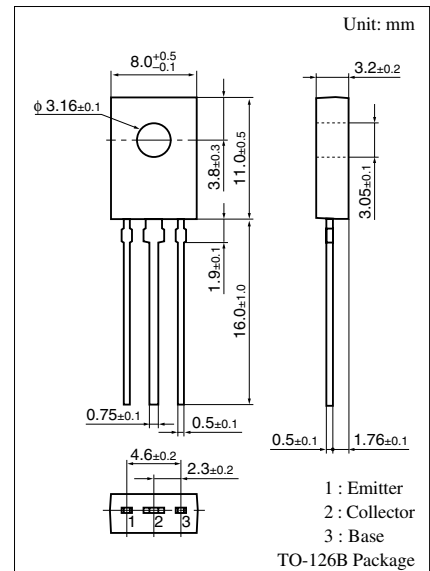
*2: With a $100 \times 100 \times 2$ mm A1 heat sink

■ Electrical Characteristics $T_C = 25^\circ\text{C}$

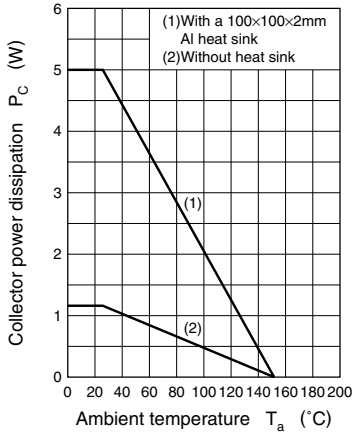
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 20 \text{ V}, I_E = 0$			1	μA
	I_{CEO}	$V_{CE} = 10 \text{ V}, I_B = 0$			100	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 5 \text{ V}, I_C = 0$			10	μA
Collector to base voltage	V_{CBO}	$I_C = 1 \text{ mA}, I_E = 0$	50			V
Collector to emitter voltage	V_{CEO}	$I_C = 2 \text{ mA}, I_B = 0$	40			V
Forward current transfer ratio *	h_{FE}	$V_{CE} = 5 \text{ V}, I_C = 1 \text{ A}$	80		220	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 2 \text{ A}, I_B = 0.2 \text{ A}$			1	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 2 \text{ A}, I_B = 0.2 \text{ A}$			1.5	V
Transition frequency	f_T	$V_{CB} = 5 \text{ V}, I_E = -0.5 \text{ A}, f = 200 \text{ MHz}$		150		MHz
Collector output capacitance	C_{ob}	$V_{CB} = 20 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		35		pF

Note) *: Rank classification

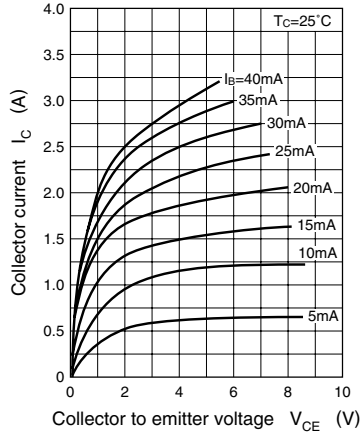
Rank	Q	R
h_{FE}	80 to 160	120 to 220



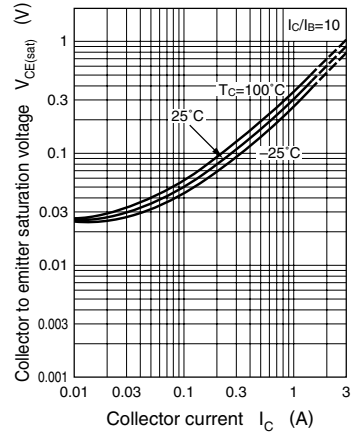
$P_C - T_a$



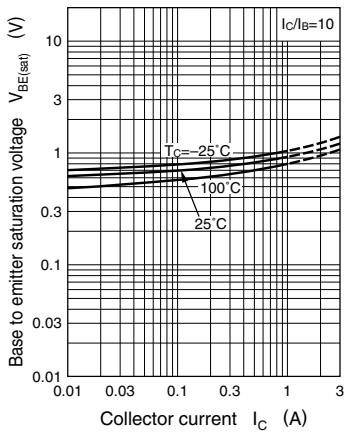
$I_C - V_{CE}$



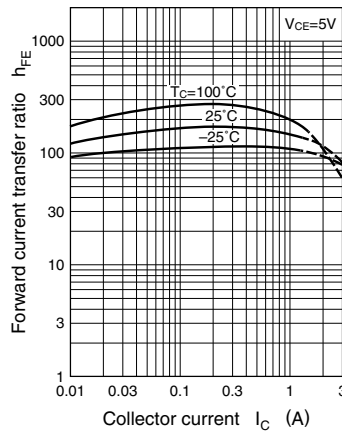
$V_{CE(sat)} - I_C$



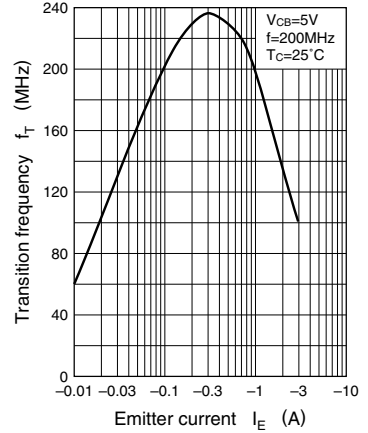
$V_{BE(sat)} - I_C$



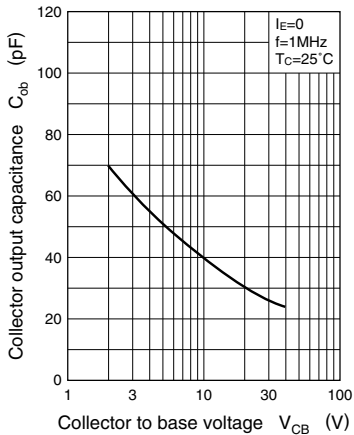
$h_{FE} - I_C$



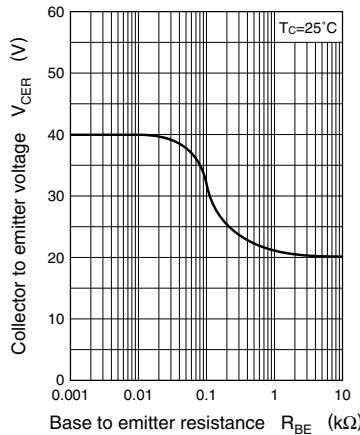
$f_T - I_E$



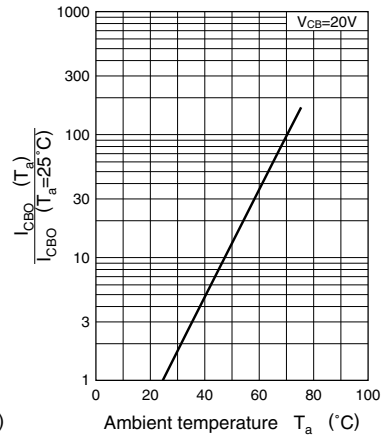
$C_{ob} - V_{CB}$



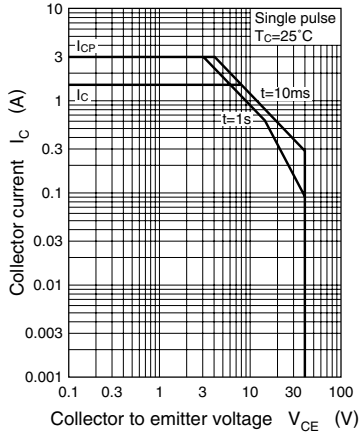
$V_{CER} - R_{BE}$



$I_{CBO} - T_a$



Area of safe operation (ASO)



$R_{th(t)} - t$

