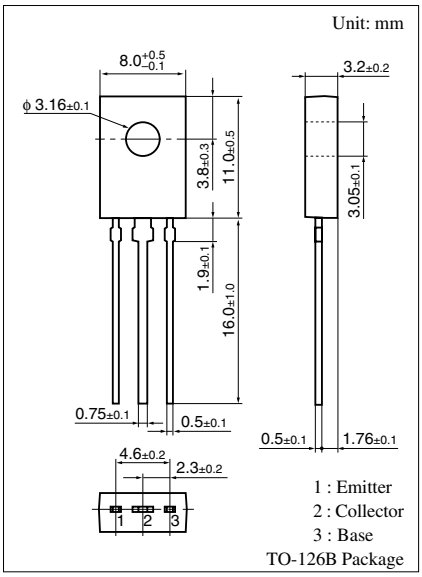
2SC1846

Silicon NPN epitaxial planar type

For midium output power amplification
Complementary to 2SA0885



■ Features

- Low collector to emitter saturation voltage $V_{CE(sat)}$
- Output of 3 W can be obtained by a complementary pair with 2SA0885
- TO-126B package which requires no insulation plate for installation to the heat sink

■ Absolute Maximum Ratings $T_C = 25°C$

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	45	V
Collector to emitter voltage	V_{CEO}	35	V
Emitter to base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	1.5	A
Collector current	I_C	1	A
Collector power dissipation	P_C	1.2 *1	W
		5 *2	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

Note) ∗1: Without heat sink
∗2: With a 100 × 100 × 2 mm A1 heat sink

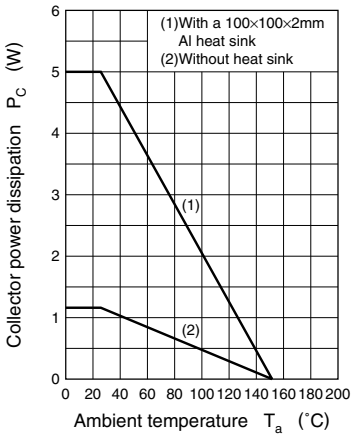
■ Electrical Characteristics $T_C = 25°C$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 20 V, I_E = 0			0.1	μA
	I_{CEO}	V_{CE} = 20 V, I_B = 0			100	μA
Emitter cutoff current	I_{EBO}	V_{EB} = 5V, I_C = 0			10	μA
Collector to base voltage	V_{CBO}	I_C = 1 mA, I_E = 0	45			V
Collector to emitter voltage	V_{CEO}	I_C = 2 mA, I_B = 0	35			V
Forward current transfer ratio	h_{FE1} *	V_{CE} = 10 V, I_C = 500 mA	85	160	340	
	h_{FE2}	V_{CE} = 5 V, I_C = 1 A	50			
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 500 mA, I_B = 50 mA			0.5	V
Transition frequency	f_T	V_{CB} = 10 V, I_E = −50 mA, f = 200 MHz		200		MHz
Collector output capacitance	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz			20	pF

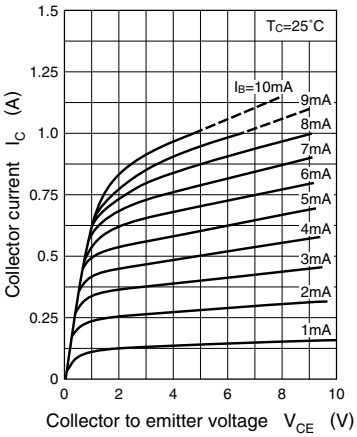
Note) ∗: Rank classification

Rank	Q	R	S
h_{FE1}	85 to 170	120 to 240	170 to 340

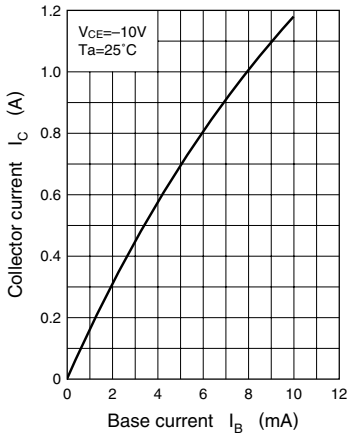
P_C — T_a



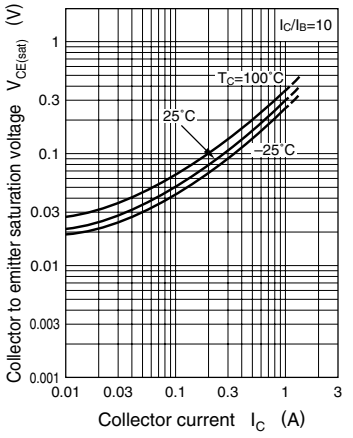
I_C — V_{CE}



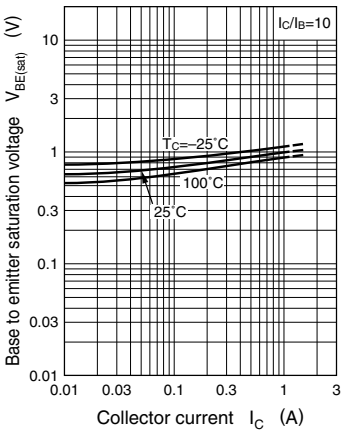
I_C — I_B



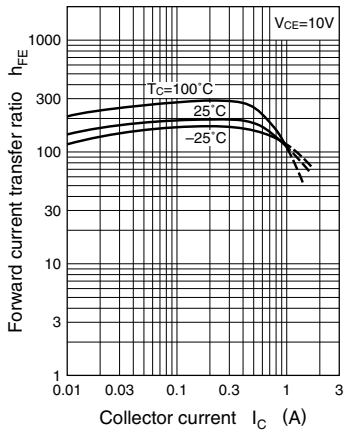
$V_{CE(sat)}$ — I_C



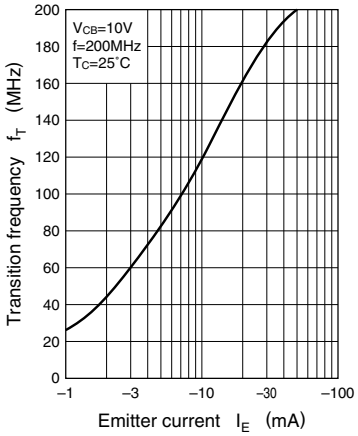
$V_{BE(sat)}$ — I_C



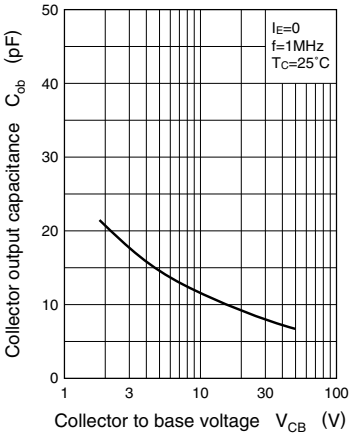
h_{FE} — I_C



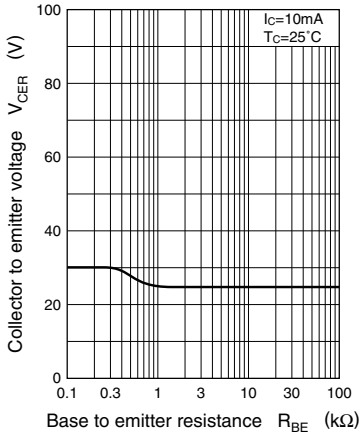
f_T — I_E



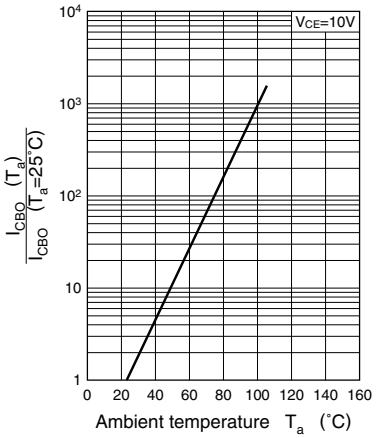
C_{ob} — V_{CB}



V_{CER} — R_{BE}



I_{CBO} — T_a



Area of safe operation (ASO)