

2SC2590

Silicon NPN epitaxial planar type

For low-frequency power amplification

Complementary to 2SA1110

■ Features

- Excellent current I_C characteristics of forward current transfer ratio h_{FE} vs. collector
- High transition frequency f_T
- A complementary pair with 2SA1110, is optimum for the driver-stage of a 40 W to 60 W output amplifier
- 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}	120	V
Collector to emitter voltage	V_{CEO}	120	V
Emitter to base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	1	A
Collector current	I_C	0.5	A
Collector power dissipation *	P_C	1.2	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

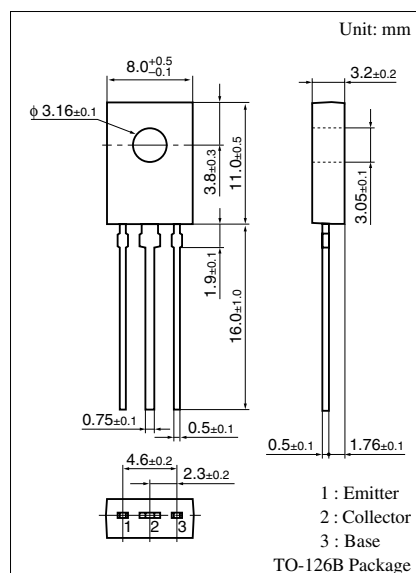
Note) *: Without heat sink

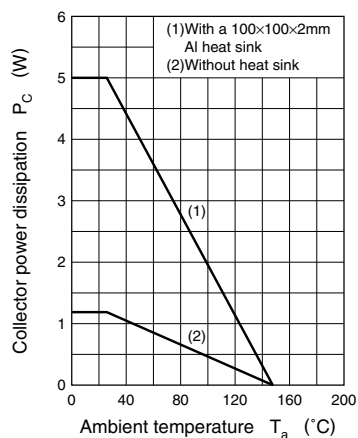
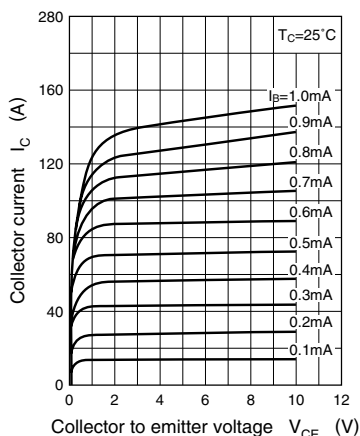
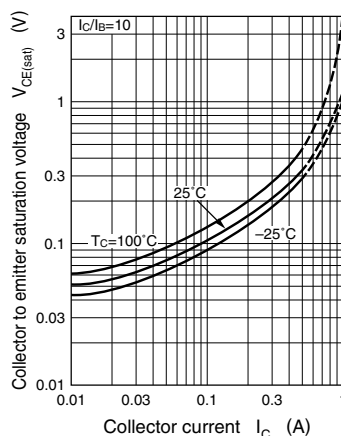
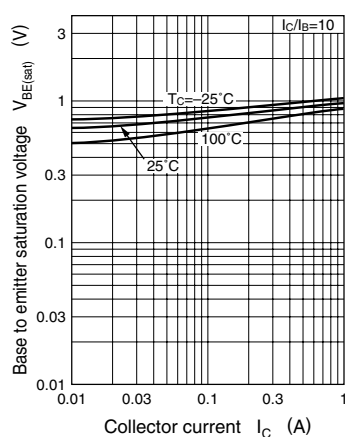
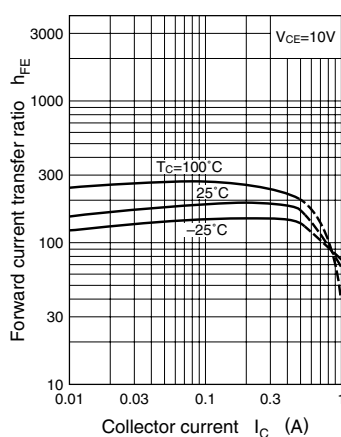
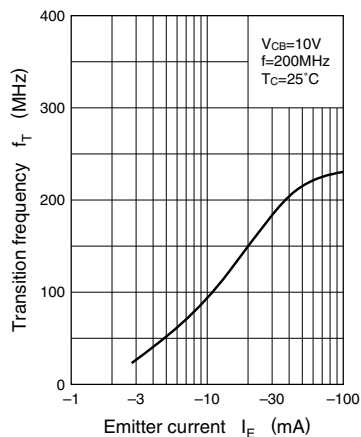
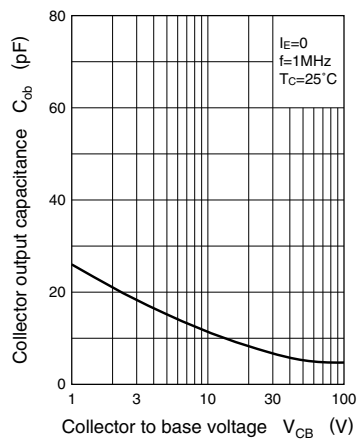
■ Electrical Characteristics $T_C = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector to emitter voltage	V_{CEO}	$I_C = 100\ \mu\text{A}$, $I_B = 0$	120			V
Emitter to base voltage	V_{EBO}	$I_E = 10\ \mu\text{A}$, $I_C = 0$	5			V
Forward current transfer ratio	h_{FE1} *	$V_{CE} = 10\ \text{V}$, $I_C = 150\ \text{mA}$	90		220	
	h_{FE2}	$V_{CE} = 5\ \text{V}$, $I_C = 500\ \text{mA}$	65	100		
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 300\ \text{mA}$, $I_B = 30\ \text{mA}$			1	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 300\ \text{mA}$, $I_B = 30\ \text{mA}$			1.2	V
Transition frequency	f_T	$V_{CB} = 10\ \text{V}$, $I_E = -50\ \text{mA}$, $f = 200\ \text{MHz}$		200		MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10\ \text{V}$, $I_E = 0$, $f = 1\ \text{MHz}$		11	20	pF

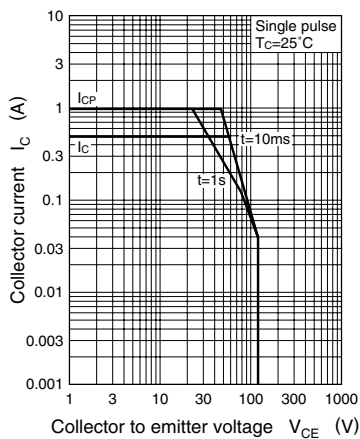
Note) *: Rank classification

Rank	Q	R
h_{FE1}	90 to 155	130 to 220



$P_C - T_a$  $I_C - V_{CE}$  $V_{CE(sat)} - I_C$  $V_{BE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_E$  $C_{ob} - V_{CB}$ 

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