

2SC1980

Silicon NPN epitaxial planar type

For high breakdown voltage low-noise amplification
Complementary to 2SA0921

■ Features

- High collector-emitter voltage (Base open) V_{CEO}
- Low noise voltage NV

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	120	V
Collector-emitter voltage (Base open)	V_{CEO}	120	V
Emitter-base voltage (Collector open)	V_{EBO}	7	V
Collector current	I_C	20	mA
Peak collector current	I_{CP}	50	mA
Collector power dissipation	P_C	250	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

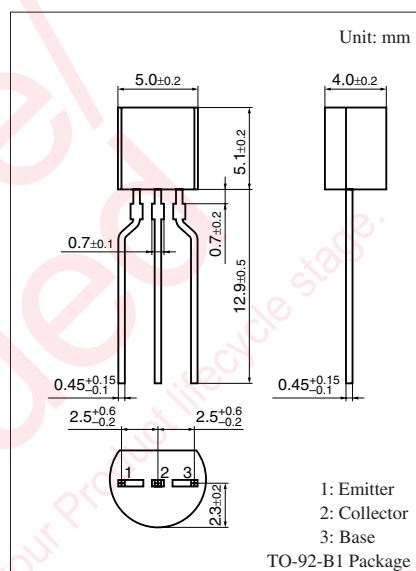
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

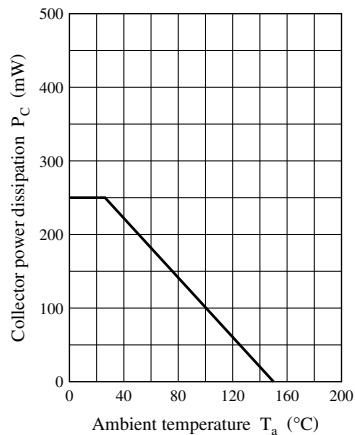
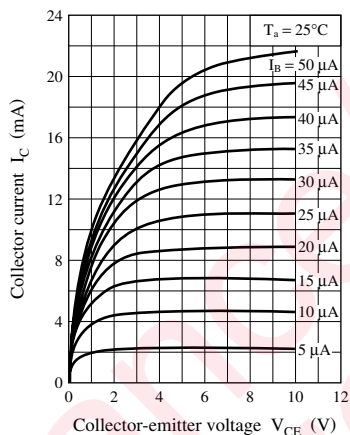
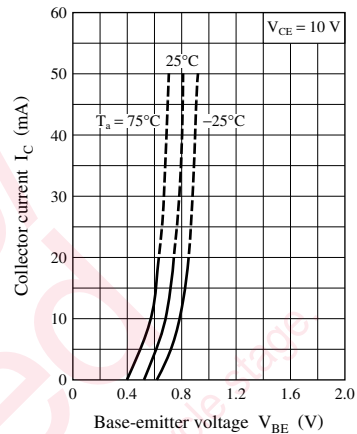
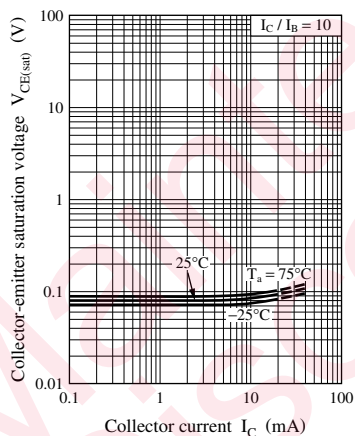
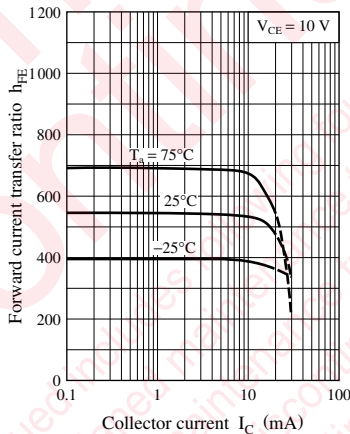
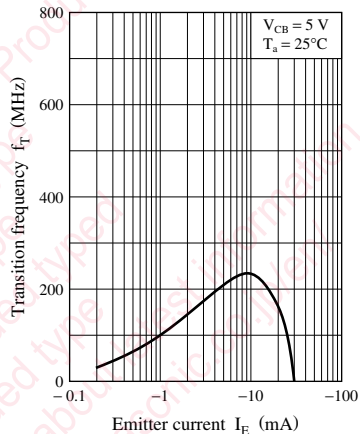
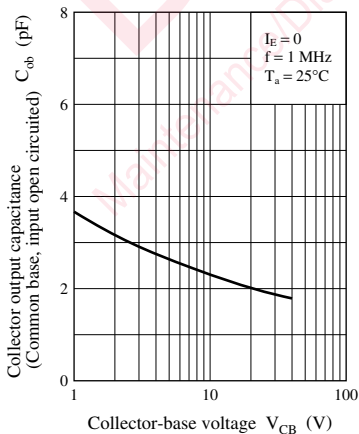
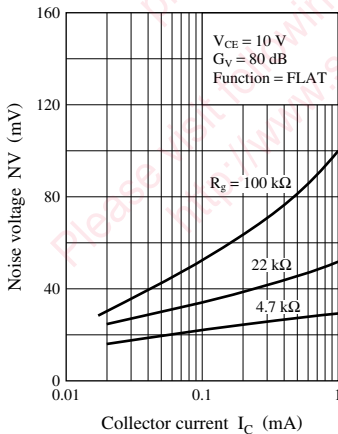
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = 10\ \mu\text{A}$, $I_E = 0$	120			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 1\ \text{mA}$, $I_B = 0$	120			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = 10\ \mu\text{A}$, $I_C = 0$	7			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 50\ \text{V}$, $I_E = 0$			0.1	μA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = 50\ \text{V}$, $I_B = 0$			1	μA
Forward current transfer ratio *	h_{FE}	$V_{CE} = 5\ \text{V}$, $I_C = 2\ \text{mA}$	180		700	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 20\ \text{mA}$, $I_B = 2\ \text{mA}$			0.6	V
Transition frequency	f_T	$V_{CB} = 5\ \text{V}$, $I_E = -2\ \text{mA}$, $f = 200\ \text{MHz}$		200		MHz
Noise voltage	NV	$V_{CE} = 40\ \text{V}$, $I_C = 1\ \text{mA}$, $G_V = 80\ \text{dB}$ $R_g = 100\ \text{k}\Omega$, Function = FLAT			150	mV

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: Rank classification

Rank	R	S	T
h_{FE}	180 to 360	260 to 520	360 to 700



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

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