

# 2SC3939

## Silicon NPN epitaxial planar type

For low-frequency driver amplification

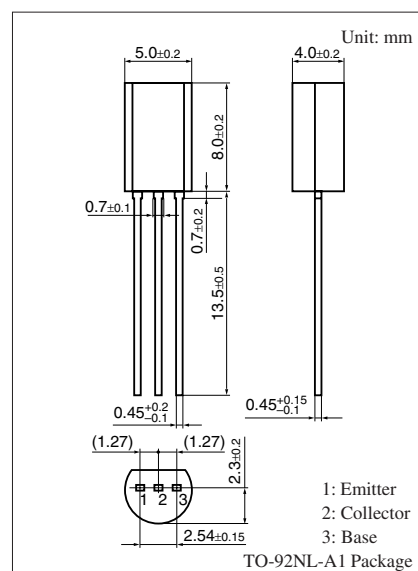
Complementary to 2SA1533

### ■ Features

- High collector-emitter voltage (Base open)  $V_{CEO}$
- Optimum for the driver stage of a low-frequency and 25 W to 30 W output amplifier
- Allowing supply with the radial taping

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	80	V
Collector-emitter voltage (Base open)	$V_{CEO}$	80	V
Emitter-base voltage (Collector open)	$V_{EBO}$	5	V
Collector current	$I_C$	0.5	A
Peak collector current	$I_{CP}$	1	A
Collector power dissipation	$P_C$	1	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



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

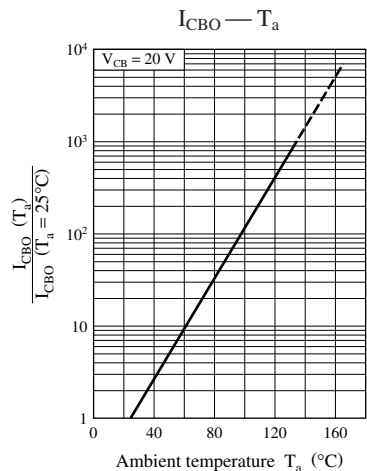
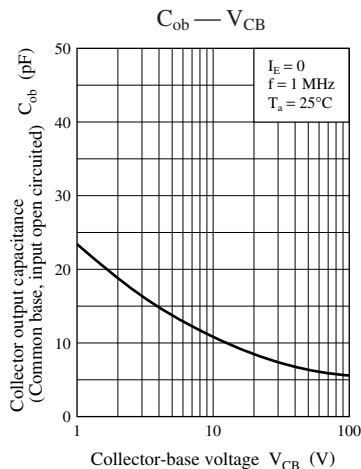
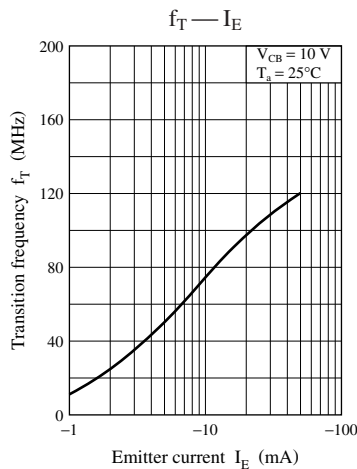
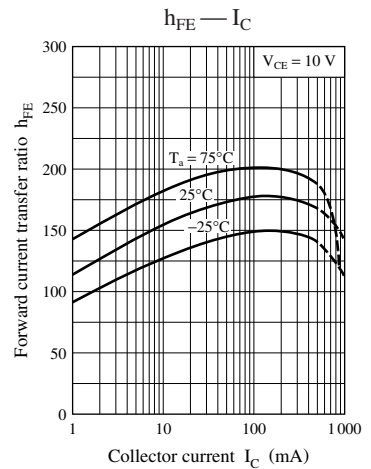
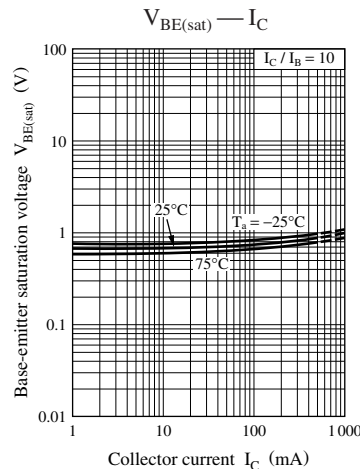
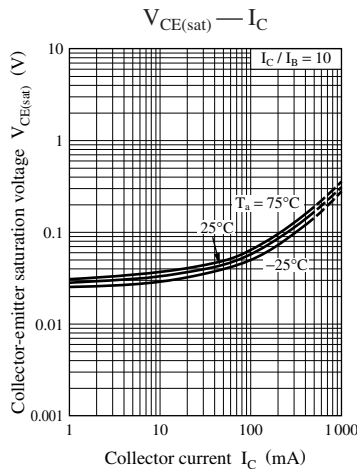
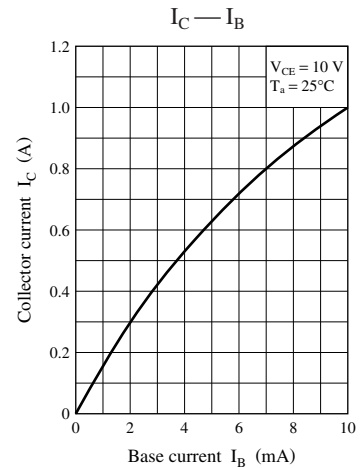
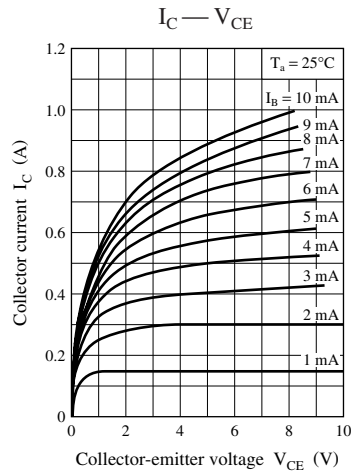
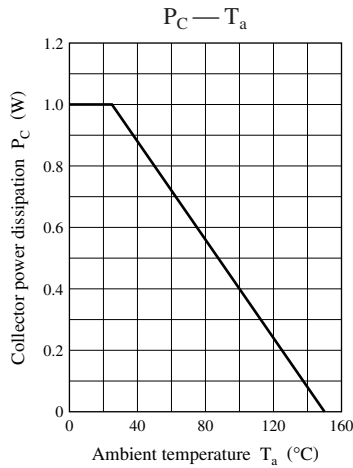
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	$I_C = 10\ \mu\text{A}$ , $I_E = 0$	80			V
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = 100\ \mu\text{A}$ , $I_B = 0$	80			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = 10\ \mu\text{A}$ , $I_C = 0$	5			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 20\ \text{V}$ , $I_E = 0$			0.1	$\mu\text{A}$
Forward current transfer ratio *1	$h_{FE1}$ *2	$V_{CE} = 10\ \text{V}$ , $I_C = 150\ \text{mA}$	130		330	—
	$h_{FE2}$	$V_{CE} = 5\ \text{V}$ , $I_C = 500\ \text{mA}$	50	100		—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 300\ \text{mA}$ , $I_B = 30\ \text{mA}$		0.2	0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 300\ \text{mA}$ , $I_B = 30\ \text{mA}$		0.85	1.20	V
Transition frequency	$f_T$	$V_{CB} = 10\ \text{V}$ , $I_E = -50\ \text{mA}$ , $f = 200\ \text{MHz}$		120		MHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 10\ \text{V}$ , $I_E = 0$ , $f = 1\ \text{MHz}$		11	20	pF

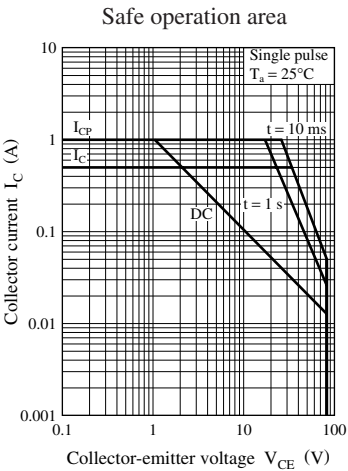
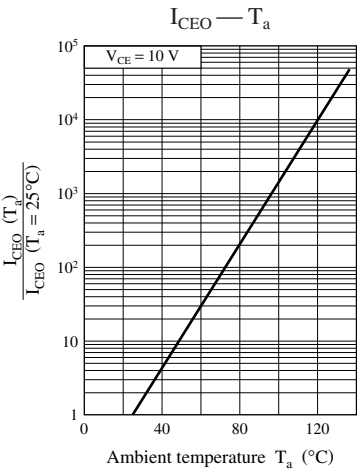
(Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*1: Pulse measurement

\*2: Rank classification

Rank	R	S
$h_{FE1}$	130 to 220	185 to 330





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