

# 2SC3943

## Silicon NPN epitaxial planar type

For video amplifier

### ■ Features

- High transition frequency  $f_T$
- Small collector output capacitance (Common base, input open circuited)  $C_{ob}$
- Full-pack package which can be installed to the heat sink with one screw

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

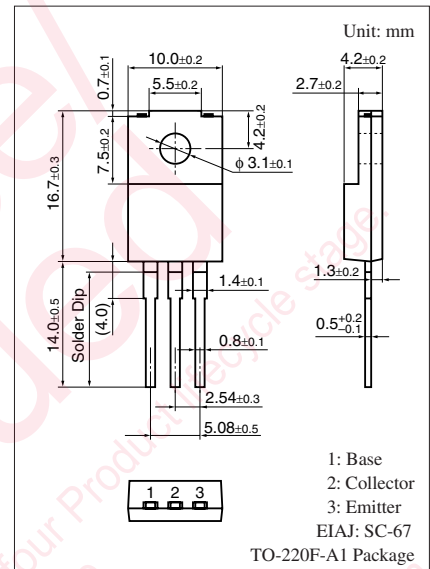
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	110	V
Collector-emitter voltage (Resistor between B and E)	$V_{CER}$	100	V
Collector-emitter voltage (Base open)	$V_{CEO}$	50	V
Emitter-base voltage (Collector open)	$V_{EBO}$	3.5	V
Collector current	$I_C$	150	mA
Peak collector current	$I_{CP}$	300	mA
Collector power dissipation *	$P_C$	2.0	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

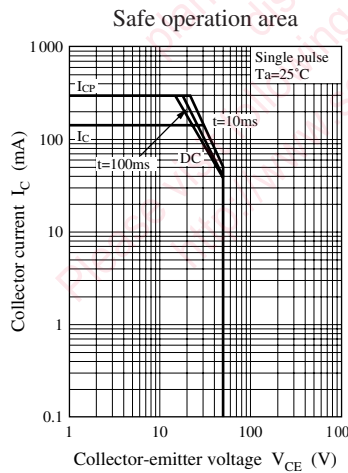
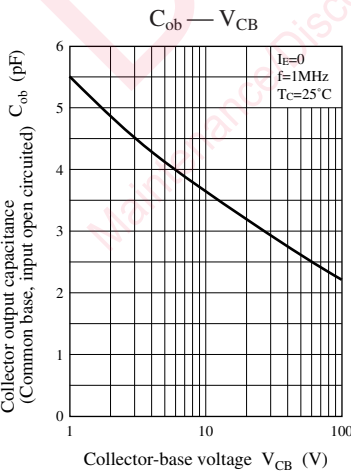
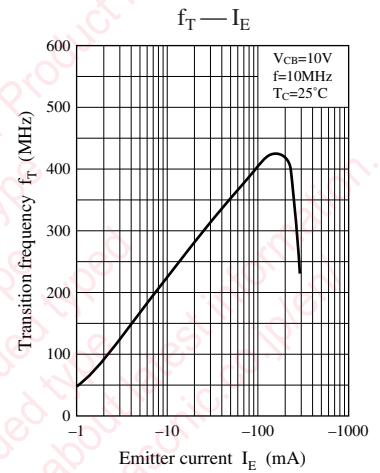
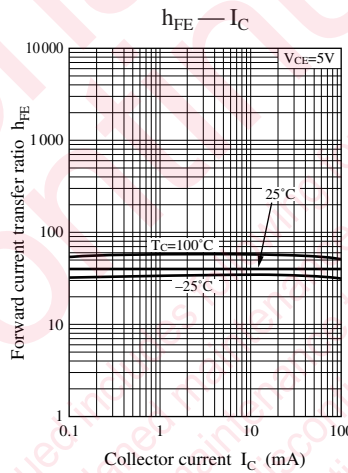
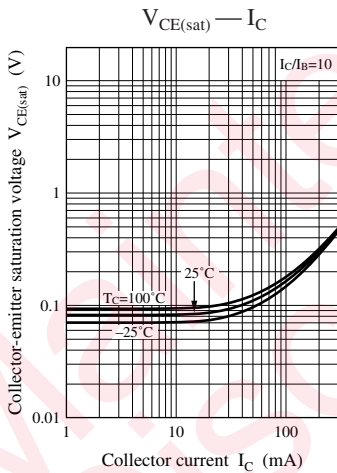
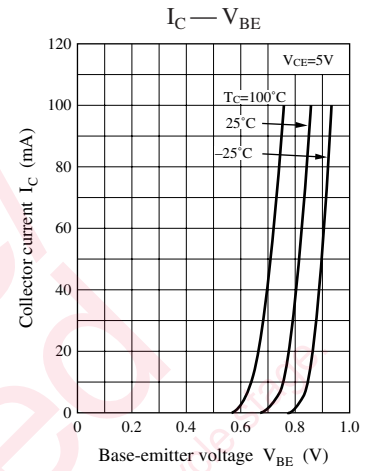
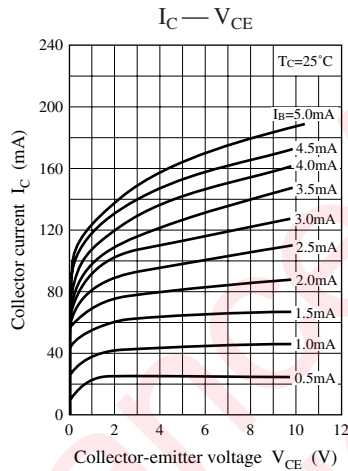
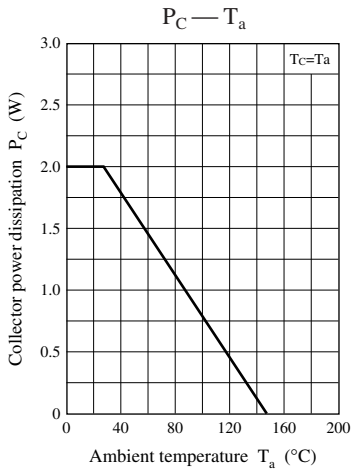
Note) \*: Without heat sink

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	$I_C = 100 \mu\text{A}, I_E = 0$	110			V
Collector-emitter voltage (Resistor between B and E)	$V_{CER}$	$I_C = 500 \mu\text{A}, R_{BE} = 470 \Omega$	100			V
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = 1 \text{ mA}, I_B = 0$	50			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = 100 \mu\text{A}, I_C = 0$	3.5			V
Collector-emitter cutoff current (Base open)	$I_{CEO}$	$V_{CE} = 35 \text{ V}, I_B = 0$			10	$\mu\text{A}$
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 5 \text{ V}, I_C = 100 \text{ mA}$	20			—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$			0.5	V
Transition frequency	$f_{T1}$	$V_{CB} = 10 \text{ V}, I_C = 10 \text{ mA}, f = 10 \text{ MHz}$		300		MHz
	$f_{T2}$	$V_{CB} = 10 \text{ V}, I_C = 110 \text{ mA}, f = 10 \text{ MHz}$		350		
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 30 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		3.5		pF

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





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