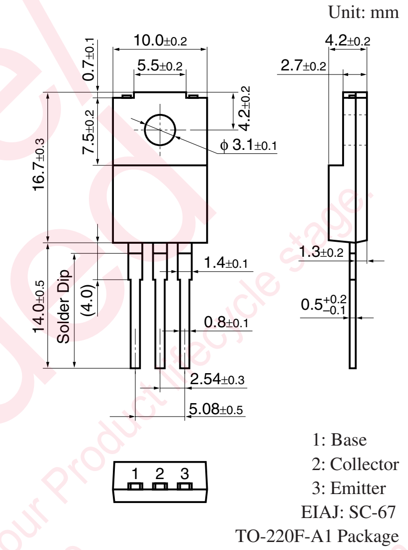
2SC3943

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 $T_a = 25°C$

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	°C
Storage temperature	T_{stg}	−55 to +150	°C

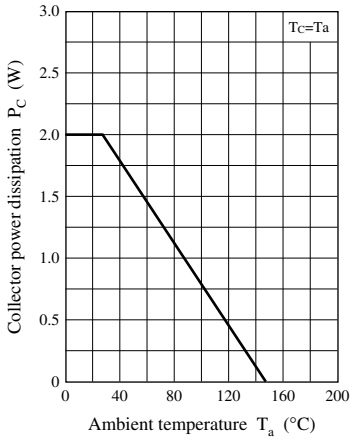
Note) *: Without heat sink

■ Electrical Characteristics $T_a = 25°C \pm 3°C$

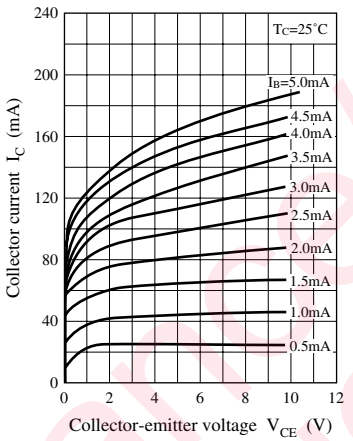
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = 100\ \mu A$, $I_E = 0$	110			V
Collector-emitter voltage (Resistor between B and E)	V_{CER}	$I_C = 500\ \mu A$, $R_{BE} = 470\ \Omega$	100			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 1$ mA,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

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

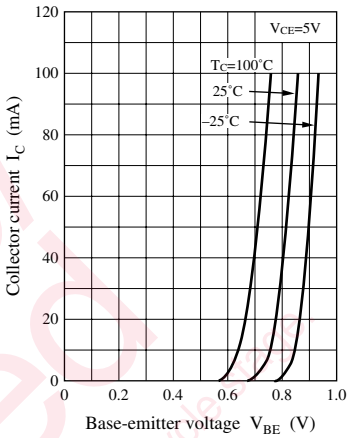
P_C — T_a



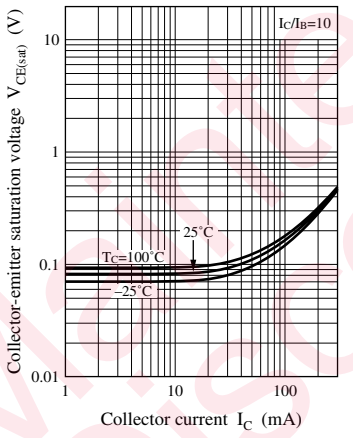
I_C — V_{CE}



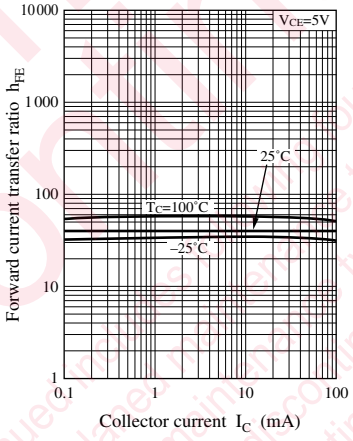
I_C — V_{BE}



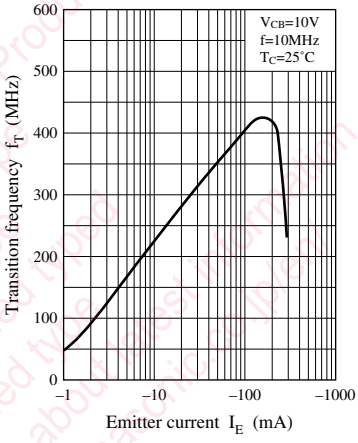
$V_{CE(sat)}$ — I_C



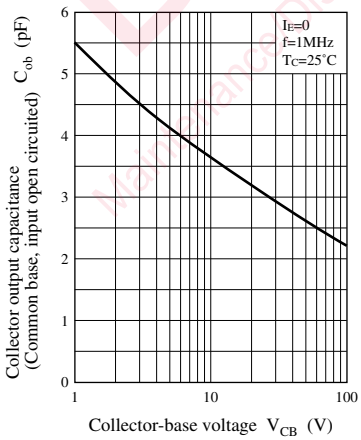
h_{FE} — I_C



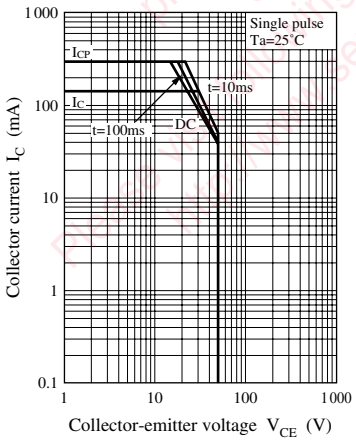
f_T — I_E



C_{ob} — V_{CB}



Safe operation area



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