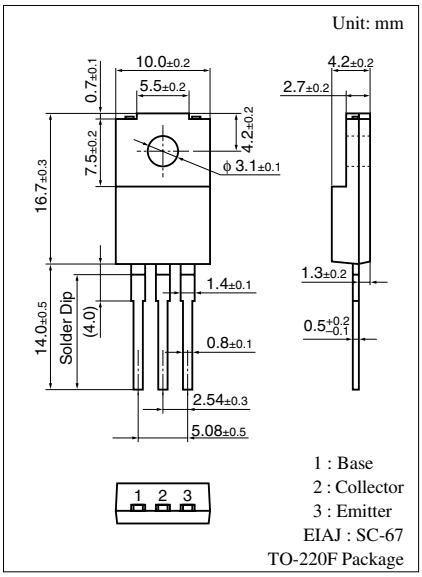
2SC3944, 2SC3944A

Silicon NPN epitaxial planar type

For low-frequency driver and high power amplification

Complementary to 2SA1535 and 2SA1535A



■ Features

- Excelent current I_C characteristics of forward current transfer ratio h_{FE} vs. collector
- High transition frequency f_T
- A complementary pair with 2SA1535 and 2SA1535A, is optimum for the driver-stage of a 60 W to 100 W output amplifier
- Full-pack package which can be installed to the heat sink with one screw

■ Absolute Maximum Ratings $T_C = 25°C$

Parameter		Symbol	Rating	Unit
Collector to base voltage	2SC3944	V_{CBO}	150	V
	2SC3944A		180	
Collector to emitter voltage	2SC3944	V_{CEO}	150	V
	2SC3944A		180	
Emitter to base voltage		V_{EBO}	5	V
Peak collector current		I_{CP}	1.5	A
Collector current		I_C	1	A
Collector power dissipation	$T_C = 25°C$	P_C	15	W
	$T_a = 25°C$		2.0	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55 to +150	°C

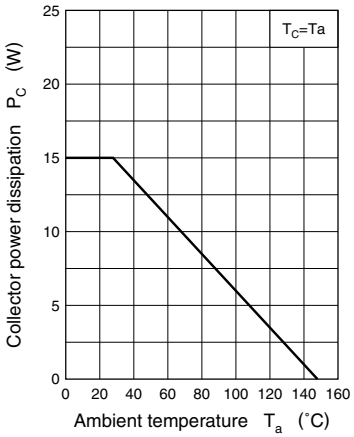
■ Electrical Characteristics $T_C = 25°C$

Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	2SC3944	I_{CBO}	V_{CB} = 150 V, I_E = 0			10	μA
	2SC3944A		V_{CB} = 180 V, I_E = 0			10	
Collector to base voltage	2SC3944	V_{CEO}	I_C = 1 mA, I_B = 0	150			V
	2SC3944A			180			
Emitter cutoff current		V_{EBO}	I_E = 10 μA, I_C = 0	5			V
Forward current transfer ratio		h_{FE1} *	V_{CE} = 10 V, I_C = 150 mA	95	160	220	
		h_{FE2}	V_{CE} = 5 V, I_C = 500 mA	50	100		
Collector to emitter saturation voltage		$V_{CE(sat)}$	I_C = 500 mA, I_B = 50 mA		0.5	2	V
Base to emitter saturation voltage		$V_{BE(sat)}$	I_C = 500 mA, I_B = 50 mA		1	2	V
Transition frequency		f_T	V_{CB} = 10 V, I_E = −50 mA, f = 10 MHz		200		MHz
Collector output capacitance		C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz		30	50	pF

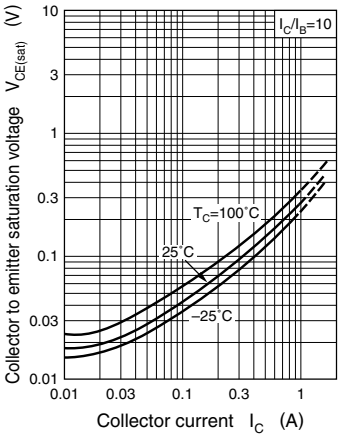
Note) *: Rank classification

Rank	Q	R
h_{FE1}	95 to 155	130 to 220

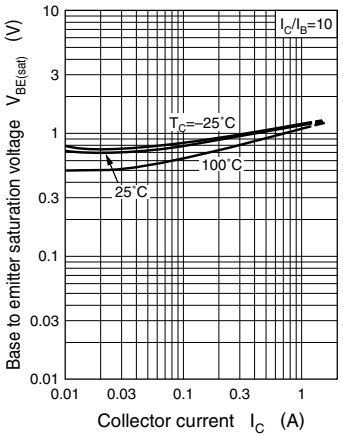
P_C — T_a



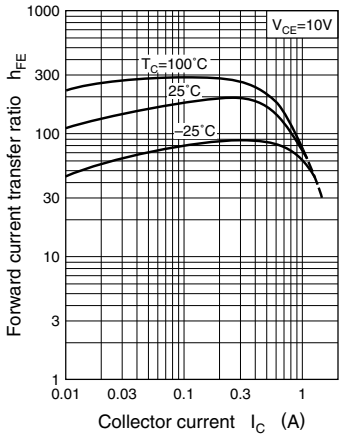
$V_{CE(sat)}$ — I_C



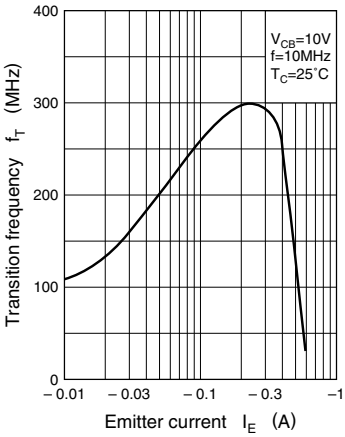
$V_{BE(sat)}$ — I_C



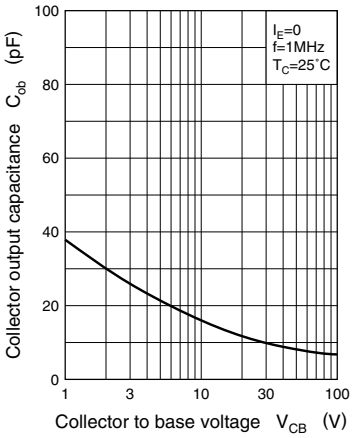
h_{FE} — I_C



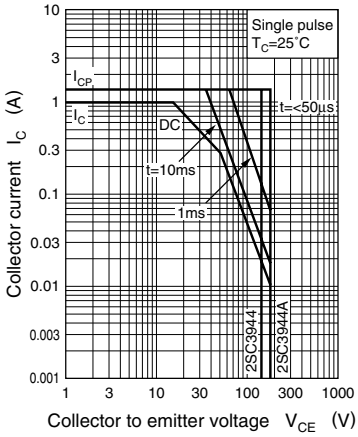
f_T — I_E



C_{ob} — V_{CB}



Area of safe operation (ASO)



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