

2SC3944, 2SC3944A

Silicon NPN epitaxial planar type

For low-frequency driver and high power amplification

Complementary to 2SA1535 and 2SA1535A

Features

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

Absolute Maximum Ratings ($T_C=25^\circ\text{C}$)

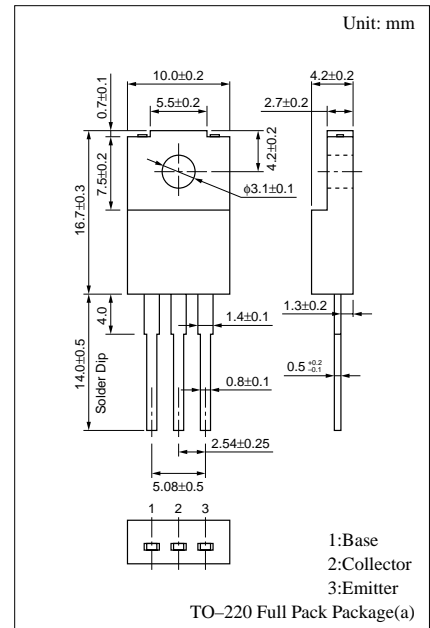
Parameter	Symbol	Rated	Unit
Collector to base voltage	V_{CBO}	150	V
2SC3944		180	
Collector to emitter voltage	V_{CEO}	150	V
2SC3944A		180	
Emitter to base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	1.5	A
Collector current	I_C	1	A
Collector power dissipation	P_C	$T_C=25^\circ\text{C}$	W
$T_a=25^\circ\text{C}$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

Electrical Characteristics ($T_C=25^\circ\text{C}$)

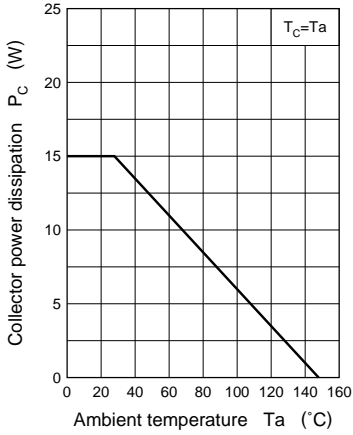
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 150\text{V}, I_E = 0$			10	μA
2SC3944A		$V_{CB} = 180\text{V}, I_E = 0$			10	
Collector to base voltage	V_{CEO}	$I_C = 1\text{mA}, I_B = 0$	150			V
2SC3944A			180			
Emitter to base voltage	V_{EBO}	$I_E = 10\mu\text{A},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

* h_{FE1} Rank classification

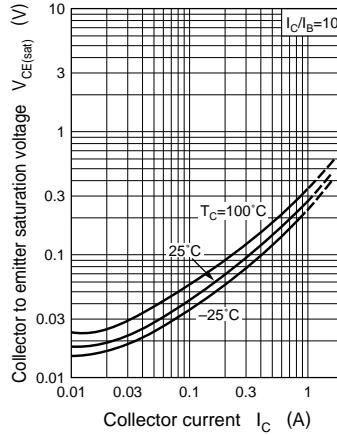
Rank	Q	R
h_{FE1}	95 to 155	130 to 220



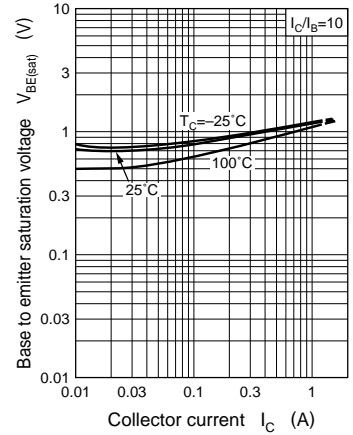
$P_C - T_a$



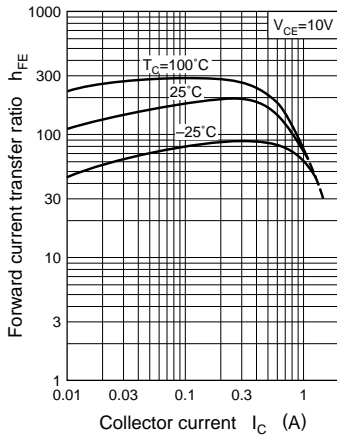
$V_{CE(sat)} - I_C$



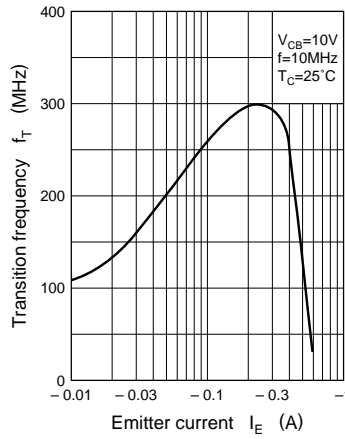
$V_{BE(sat)} - I_C$



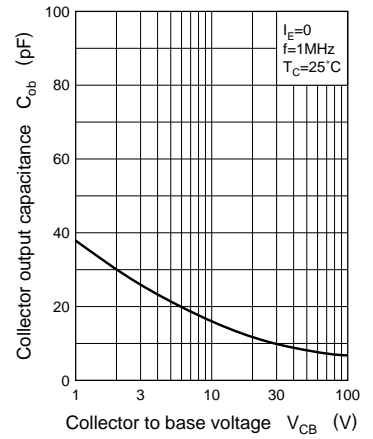
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



Area of safe operation (ASO)

