

# 2SC3944, 2SC3944A

Silicon NPN epitaxial planar type

For low-frequency driver and high power amplification

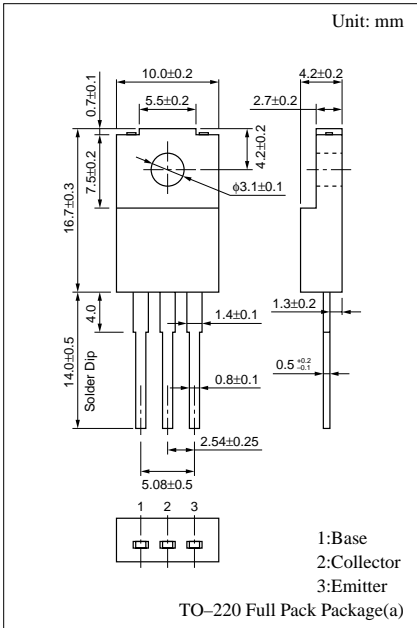
Complementary to 2SA1535 and 2SA1535A

## ■ 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	Ratings	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	$T_C=25^{\circ}\text{C}$	$P_C$	15	W
	$T_a=25^{\circ}\text{C}$		2.0	
Junction temperature		$T_j$	150	$^{\circ}\text{C}$
Storage temperature		$T_{\text{stg}}$	-55 to +150	$^{\circ}\text{C}$

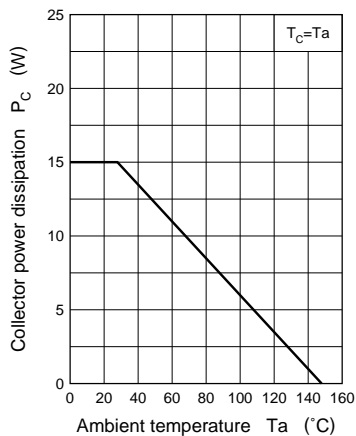
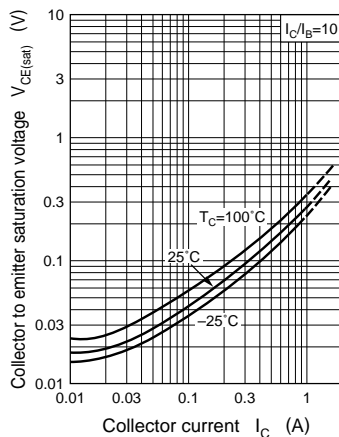
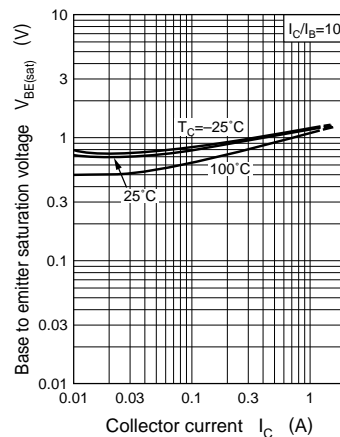
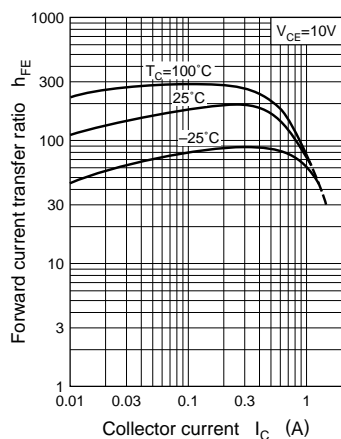
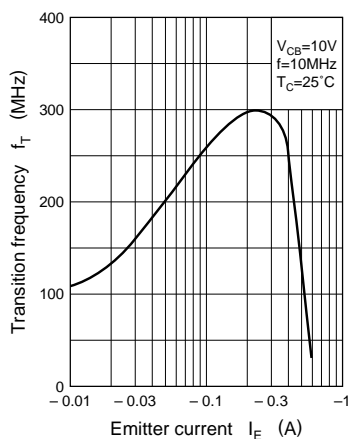
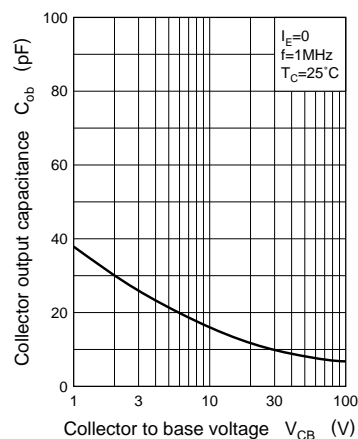


## ■ Electrical Characteristics ( $T_C=25^\circ\text{C}$ )

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 150\text{V}, I_E = 0$			10	$\mu\text{A}$
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)

