

# 2SC1944

NPN EPITAXIAL PLANAR TYPE

### DESCRIPTION

2SC1944 is a silicon NPN epitaxial planar type transistor designed for RF power amplifiers on HF bandmobile radio applications.

### FEATURES

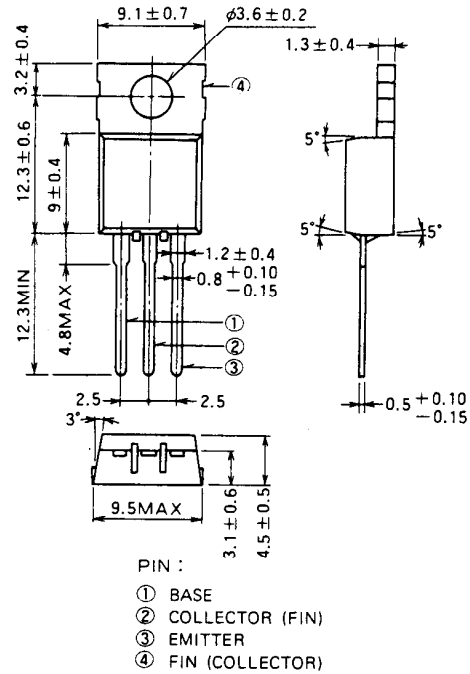
- High power gain :  $G_{pe} \geq 11\text{dB}$ , @  $V_{cc} = 12\text{V}$ ,  $f = 27\text{MHz}$ ,  $P_o = 13\text{W}$
- TO-220 package similarly is combinient for mounting.
- Emitter ballasted construction for good performances.
- Ability to withstanding infinite load VSWR when operated at  $V_{cc} = 16\text{V}$ ,  $P_o = 13\text{W}$ ,  $f = 27\text{MHz}$

### APPLICATIONS

10 to 14W output power class AB amplifiers in HF band.

### OUTLINE DRAWING

Dimension in mm



- PIN :
- ① BASE
  - ② COLLECTOR (FIN)
  - ③ EMITTER
  - ④ FIN (COLLECTOR)

T-30

### ABSOLUTE MAXIMUM RATINGS ( $T_c = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
$V_{cbo}$	Collector-base voltage		80	V
$V_{ebo}$	Emitter-base voltage		5	V
$V_{ceo}$	Collector-emitter voltage	$R_{BE} = \infty$	40	V
$I_c$	Collector current		6	A
$P_c$	Collector dissipation	$T_a = 25^\circ\text{C}$	1.5	W
		$T_c = 25^\circ\text{C}$	20	W
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		- 55 to 150	$^\circ\text{C}$
$R_{th-c}$	Thermal resistance	Junction to ambient	83.3	$^\circ\text{C}/\text{W}$
		Junction to case	6.25	$^\circ\text{C}/\text{W}$

Note. Above parameters are guaranteed independently.

### ELECTRICAL CHARACTERISTICS ( $T_c = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Test conditions	Limits		Unit
			Min	Max	
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_c = 1\text{mA}$ , $I_E = 0$	80		V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E = 5\text{mA}$ , $I_c = 0$	5		V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_c = 10\text{mA}$ , $R_{BE} = \infty$	40		V
$I_{cbo}$	Collector cutoff current	$V_{CB} = 30\text{V}$ , $I_E = 0$		0.1	mA
$I_{ebo}$	Emitter cutoff current	$V_{EB} = 4\text{V}$ , $I_c = 0$		0.1	mA
$h_{FE}$	DC forward current gain	$V_{CE} = 10\text{V}$ , $I_c = 0.1\text{A}$	10	180	-
$P_o$	Output power	$V_{cc} = 12\text{V}$ , $f = 27\text{MHz}$ , $P_{in} = 1\text{W}$	13		W
$\eta_c$	Collector efficiency		55		%

Note. Above parameters, ratings, limits and conditions are subject to change.