

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

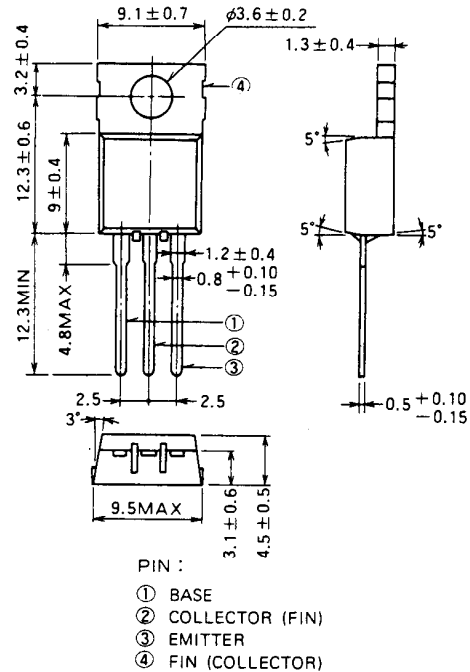
- High power gain : $G_{pe} \geq 11\text{dB}$, @ $V_{cc} = 12\text{V}$, $f = 27\text{MHz}$, $P_o = 13\text{W}$
- TO-220 package similarly is combinient for mounting.
- Emitter ballasted construction for good performances.
- Ability to withstanding infinite load VSWR when operated at $V_{cc} = 16\text{V}$,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

APPLICATIONS

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

OUTLINE DRAWING

Dimension in mm



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 |
| η_c | Collector efficiency | | 55 | | % |

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