

# 2SC3937

## Silicon NPN epitaxial planer type

For UHF band low-noise amplification

### Features

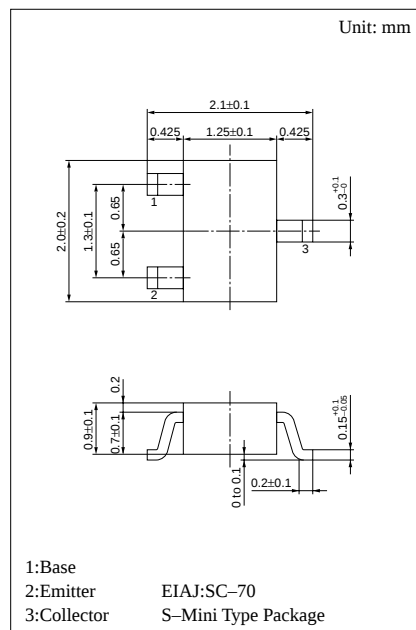
- Low noise figure NF.
- High gain.
- High transition frequency  $f_T$ .
- S-Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

### Absolute Maximum Ratings (Ta=25°C)

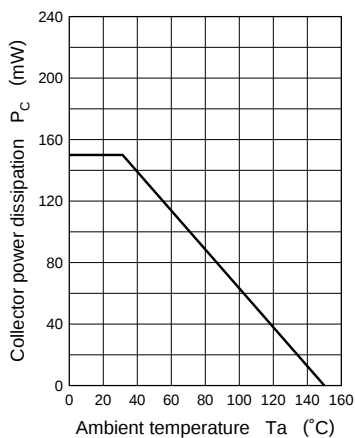
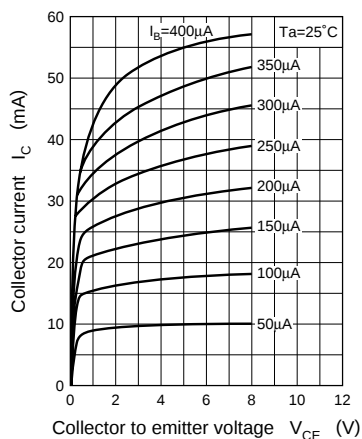
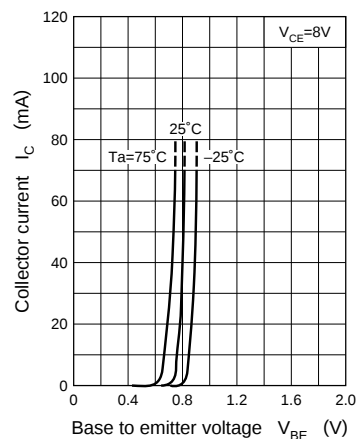
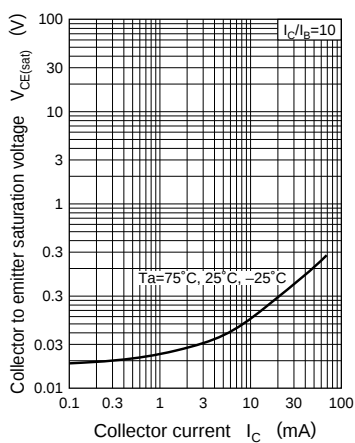
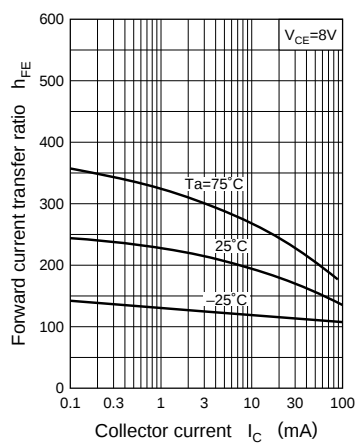
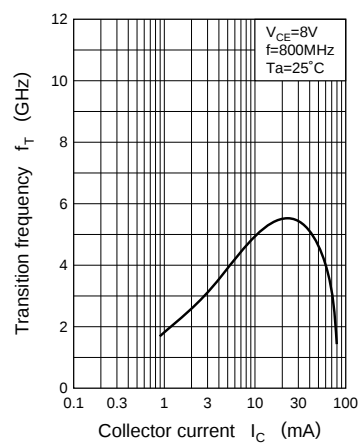
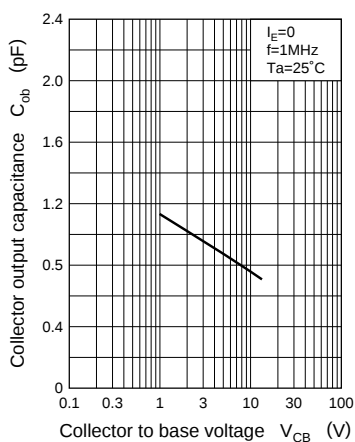
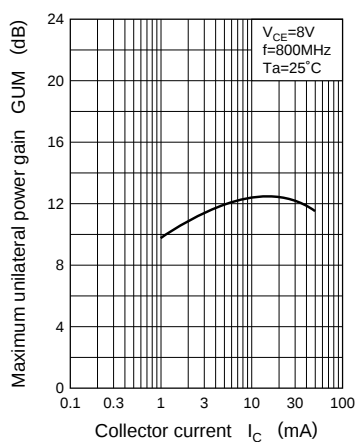
| Parameter                    | Symbol    | Ratings    | Unit |
|------------------------------|-----------|------------|------|
| Collector to base voltage    | $V_{CBO}$ | 15         | V    |
| Collector to emitter voltage | $V_{CEO}$ | 10         | V    |
| Emitter to base voltage      | $V_{EBO}$ | 2          | V    |
| Collector current            | $I_C$     | 80         | mA   |
| Collector power dissipation  | $P_C$     | 150        | mW   |
| Junction temperature         | $T_j$     | 150        | °C   |
| Storage temperature          | $T_{stg}$ | -55 ~ +150 | °C   |

### Electrical Characteristics (Ta=25°C)

| Parameter                      | Symbol        | Conditions                            | min | typ | max | Unit    |
|--------------------------------|---------------|---------------------------------------|-----|-----|-----|---------|
| Collector cutoff current       | $I_{CBO}$     | $V_{CB} = 15V, I_E = 0$               |     |     | 1   | $\mu A$ |
| Emitter cutoff current         | $I_{EBO}$     | $V_{EB} = 1V, I_C = 0$                |     |     | 1   | $\mu A$ |
| Forward current transfer ratio | $h_{FE1}$     | $V_{CE} = 8V, I_C = 20mA$             | 50  | 150 | 300 |         |
|                                | $h_{FE2}$     | $V_{CE} = 1V, I_C = 3mA$              | 80  |     | 280 |         |
| Transition frequency           | $f_T$         | $V_{CE} = 8V, I_C = 20mA, f = 800MHz$ |     | 6   |     | GHz     |
| Collector output capacitance   | $C_{ob}$      | $V_{CE} = 10V, I_E = 0, f = 1MHz$     |     | 0.7 | 1.2 | pF      |
| Noise figure                   | NF            | $V_{CE} = 8V, I_C = 7mA, f = 800MHz$  |     | 1   | 1.7 | dB      |
| Maximum unilateral power gain  | GUM           | $V_{CE} = 8V, I_C = 20mA, f = 800MHz$ |     | 14  |     | dB      |
| Foward transfer gain           | $ S_{21e} ^2$ | $V_{CE} = 8V, I_C = 20mA, f = 800MHz$ |     | 13  |     | dB      |



Marking symbol : 2W

$P_C - T_a$  $I_C - V_{CE}$  $I_C - V_{BE}$  $V_{CE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_C$  $C_{ob} - V_{CB}$  $GUM - I_C$  $NF - I_C$ 