

TOSHIBA Transistor Silicon NPN Epitaxial Planar Type

# 2SC2347

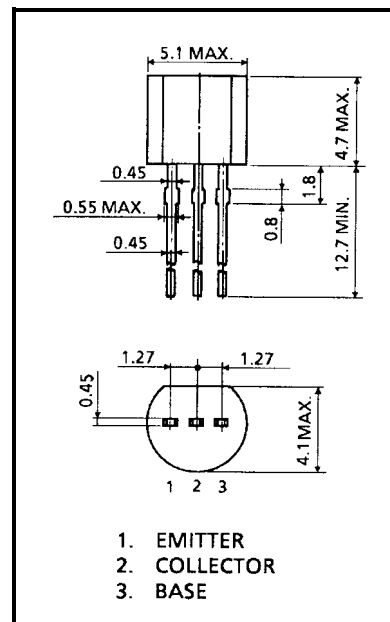
## TV UHF Oscillator Applications

## TV VHF Mixer Applications

Unit: mm

### Maximum Ratings (Ta = 25°C)

| Characteristics             | Symbol    | Rating  | Unit |
|-----------------------------|-----------|---------|------|
| Collector-base voltage      | $V_{CBO}$ | 30      | V    |
| Collector-emitter voltage   | $V_{CEO}$ | 15      | V    |
| Emitter-base voltage        | $V_{EBO}$ | 3       | V    |
| Collector current           | $I_C$     | 50      | mA   |
| Emitter current             | $I_E$     | −50     | mA   |
| Collector power dissipation | $P_C$     | 250     | mW   |
| Junction temperature        | $T_j$     | 125     | °C   |
| Storage temperature range   | $T_{stg}$ | −55~125 | °C   |



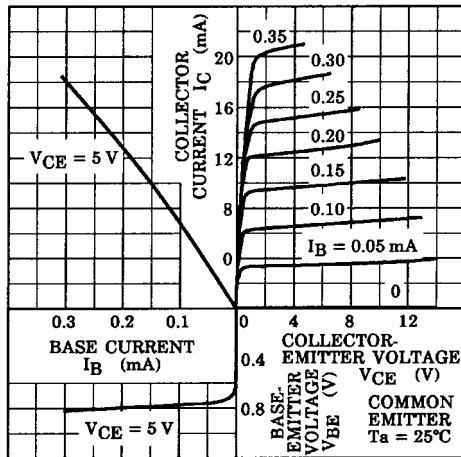
|         |        |
|---------|--------|
| JEDEC   | TO-92  |
| JEITA   | SC-43  |
| TOSHIBA | 2-5F1B |

Weight: 0.21 g (typ.)

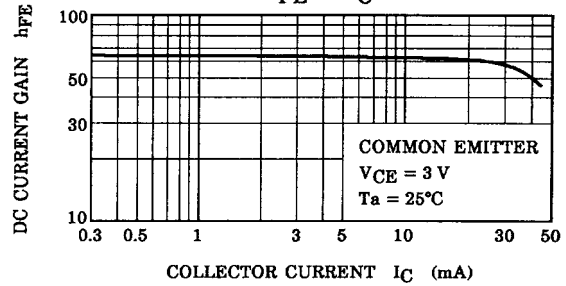
### Electrical Characteristics (Ta = 25°C)

| Characteristics                     | Symbol                | Test Condition                                               | Min | Typ. | Max | Unit          |
|-------------------------------------|-----------------------|--------------------------------------------------------------|-----|------|-----|---------------|
| Collector cut-off current           | $I_{CBO}$             | $V_{CB} = 15\text{ V}, I_E = 0$                              | —   | —    | 0.1 | $\mu\text{A}$ |
| Emitter cut-off current             | $I_{EBO}$             | $V_{EB} = 3\text{ V}, I_C = 0$                               | —   | —    | 1.0 | $\mu\text{A}$ |
| Collector-emitter breakdown voltage | $V_{(BR)\text{ CEO}}$ | $I_C = 1\text{ mA}, I_B = 0$                                 | 15  | —    | —   | V             |
| DC current gain                     | $h_{FE}$              | $V_{CE} = 3\text{ V}, I_C = 8\text{ mA}$                     | 20  | —    | —   |               |
| Transition frequency                | $f_T$                 | $V_{CE} = 10\text{ V}, I_C = 8\text{ mA}$                    | 650 | —    | —   | MHz           |
| Collector output capacitance        | $C_{ob}$              | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$            | —   | 1.2  | 1.5 | pF            |
| Collector-base time constant        | $C_{c.rbb'}$          | $V_{CB} = 10\text{ V}, I_C = 8\text{ mA}, f = 30\text{ MHz}$ | —   | —    | 12  | ps            |

STATIC CHARACTERISTICS

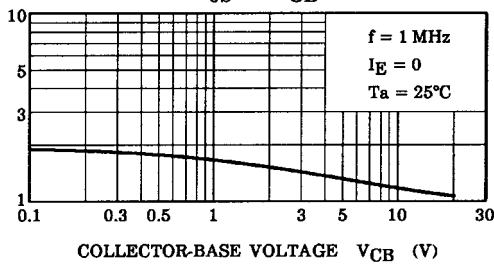


$h_{FE} - I_C$

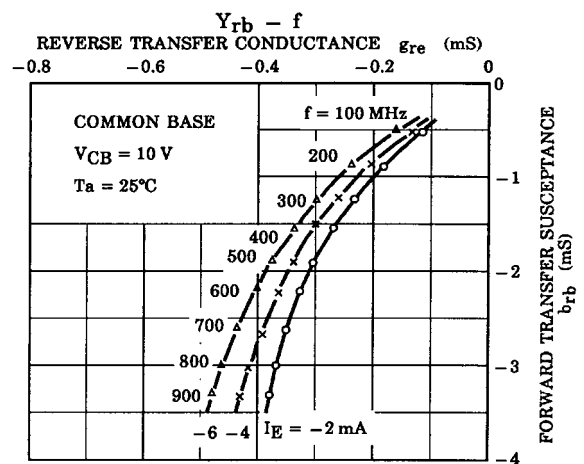
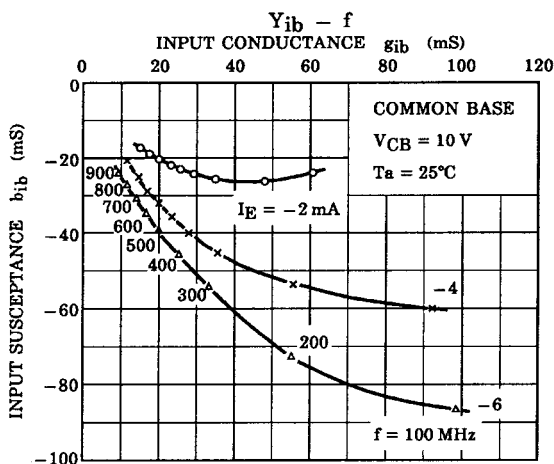
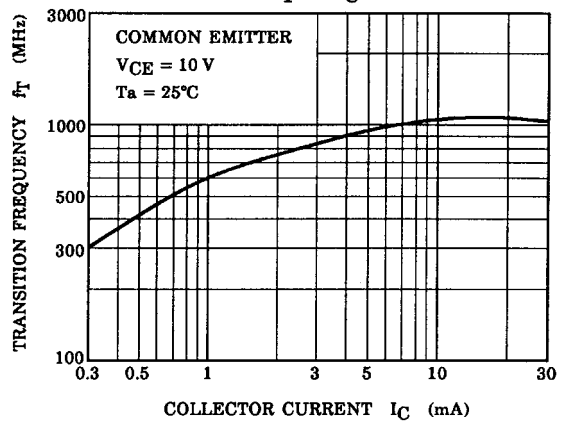


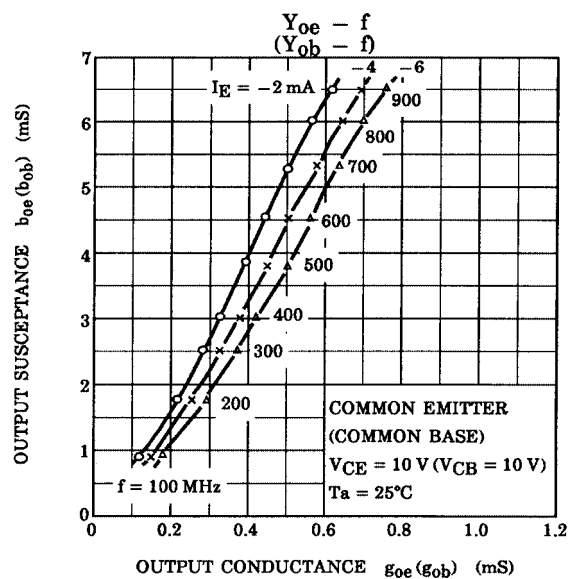
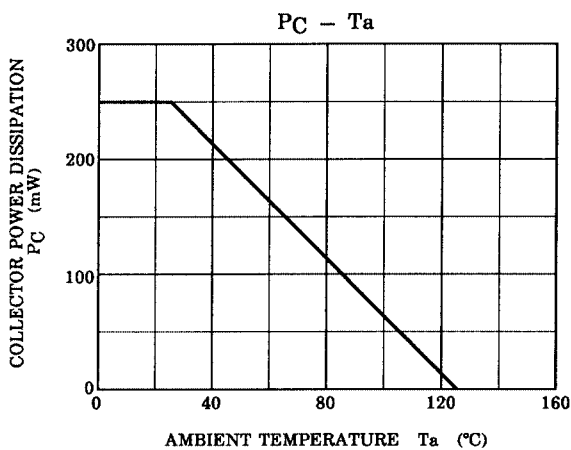
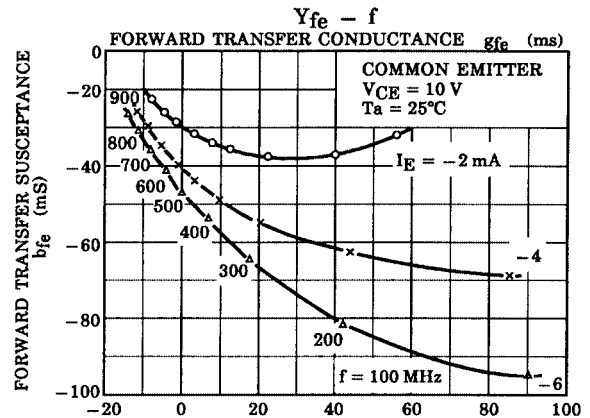
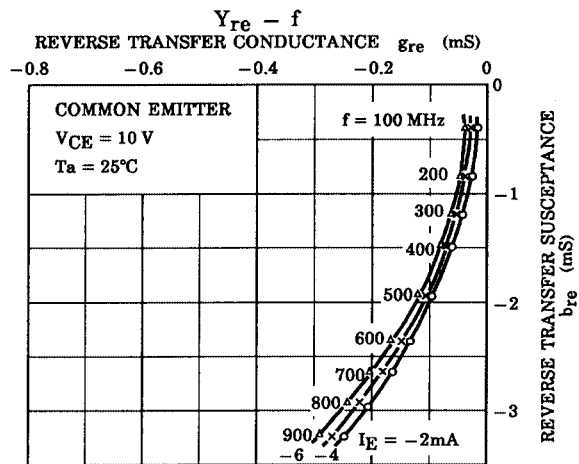
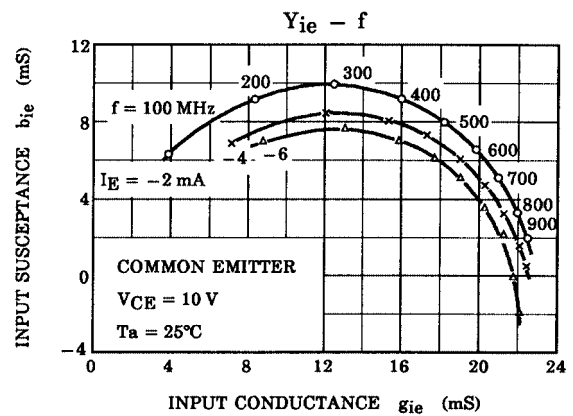
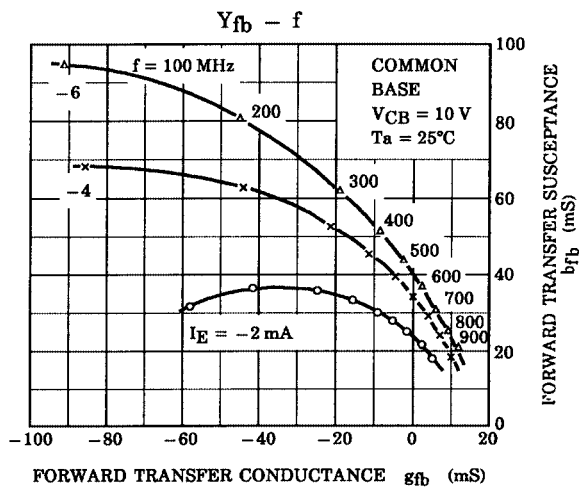
COLLECTOR OUTPUT CAPACITANCE  
 $C_{ob}$  (pF)

$C_{ob} - V_{CB}$



$f_T - I_C$





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