

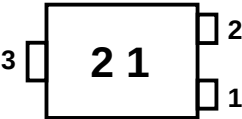
MT3S36FS

VCO OSCILLETOR STAGE  
UHF LOW NOISE AMPLIFIER APPLICATION

FEATURES

- Low Noise Figure :NF=1.3dB (@f=2GHz)
- High Gain:|S21e|^2=12.5dB (@f=2GHz)

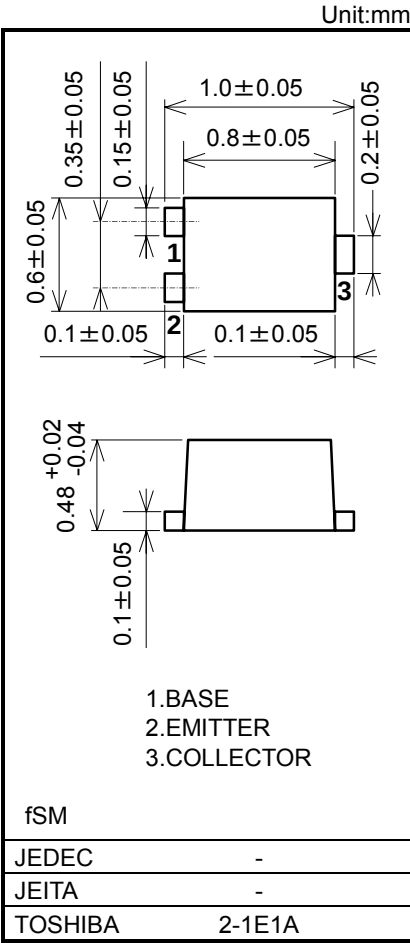
Marking



Maximum Ratings (Ta = 25°C)

| Characteristics             | Symbol                | Rating  | Unit |
|-----------------------------|-----------------------|---------|------|
| Collector-Base voltage      | V <sub>CBO</sub>      | 8       | V    |
| Collector-Emitter voltage   | V <sub>CEO</sub>      | 4.5     | V    |
| Emitter-Base voltage        | V <sub>EBO</sub>      | 1.5     | V    |
| Collector-Current           | I <sub>C</sub>        | 36      | mA   |
| Base-Current                | I <sub>B</sub>        | 18      | mA   |
| Collector Power dissipation | P <sub>C</sub> (Note) | 100     | mW   |
| Junction temperature        | T <sub>j</sub>        | 150     | °C   |
| Storage temperature Range   | T <sub>stg</sub>      | -55~150 | °C   |

Note: Device mounted on a glass-epoxy PCB(0.88 cm<sup>2</sup> × 0.7 mm (t))



Weight: 0.0006 g

**Microwave Characteristics (Ta = 25°C)**

| Characteristics      | Symbol           | Test Condition                | Min | Typ. | Max | Unit |
|----------------------|------------------|-------------------------------|-----|------|-----|------|
| Transition Frequency | $f_T$            | $V_{CE}=3V, I_C=15mA, f=2GHz$ | 15  | 19   | -   | GHz  |
| Insertion Gain       | $ S_{21e} ^2(1)$ | $V_{CE}=3V, I_C=15mA, f=1GHz$ | 15  | 17.5 | -   | dB   |
|                      | $ S_{21e} ^2(2)$ | $V_{CE}=3V, I_C=15mA, f=2GHz$ | 10  | 12.5 | -   | dB   |
| Noise Figure         | NF(1)            | $V_{CE}=3V, I_C=3mA, f=1GHz$  | -   | 1.1  | -   | dB   |
|                      | NF(2)            | $V_{CE}=3V, I_C=3mA, f=2GHz$  | -   | 1.3  | 1.8 | dB   |

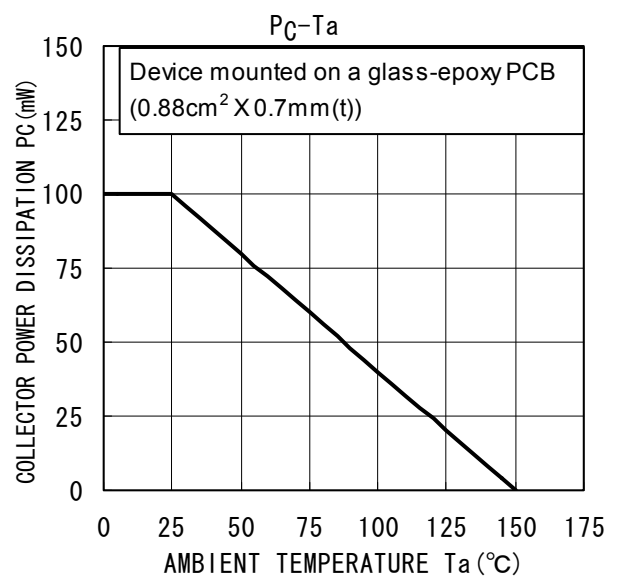
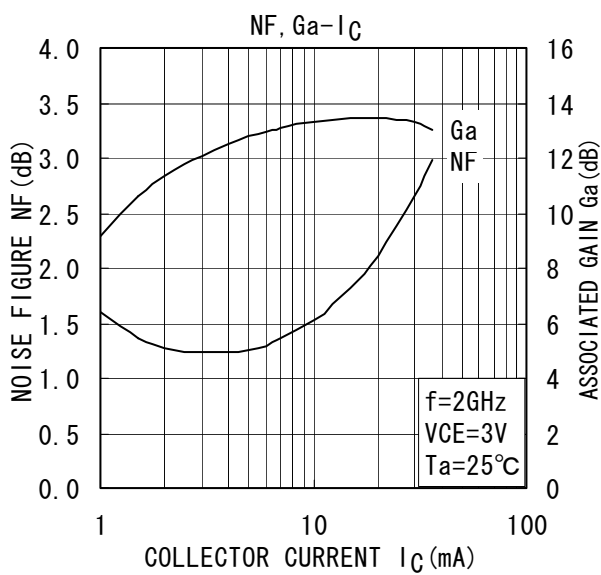
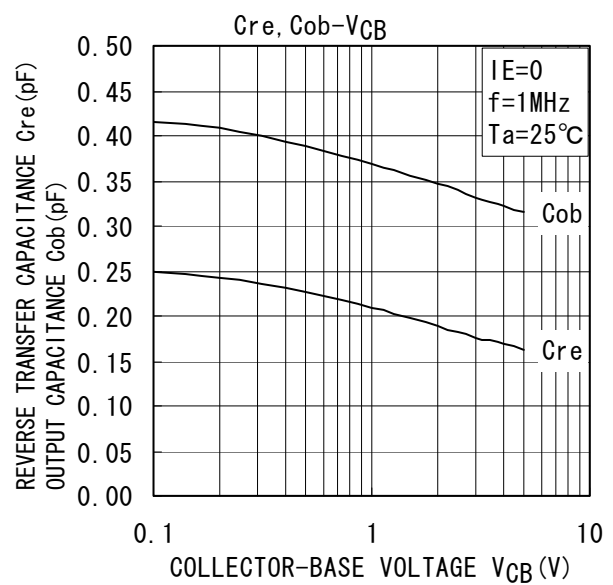
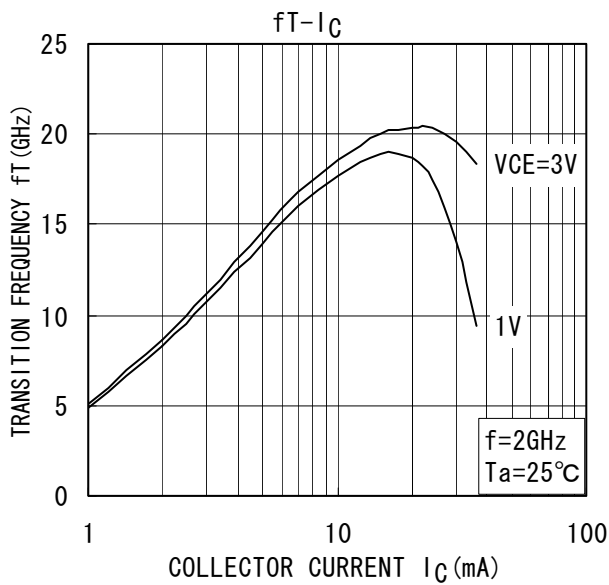
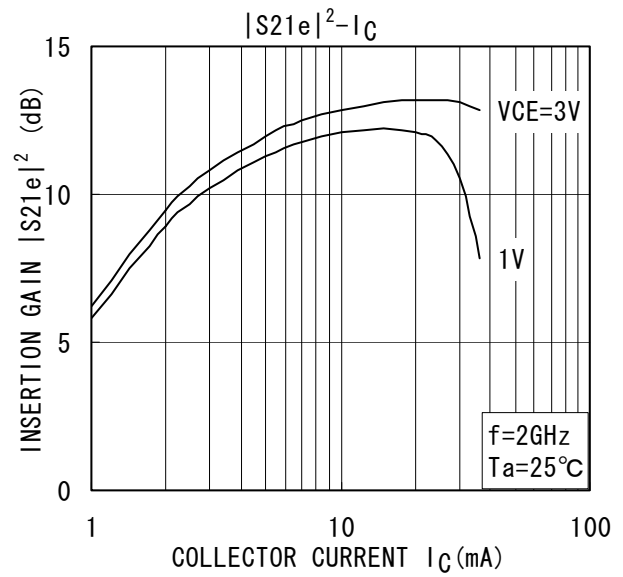
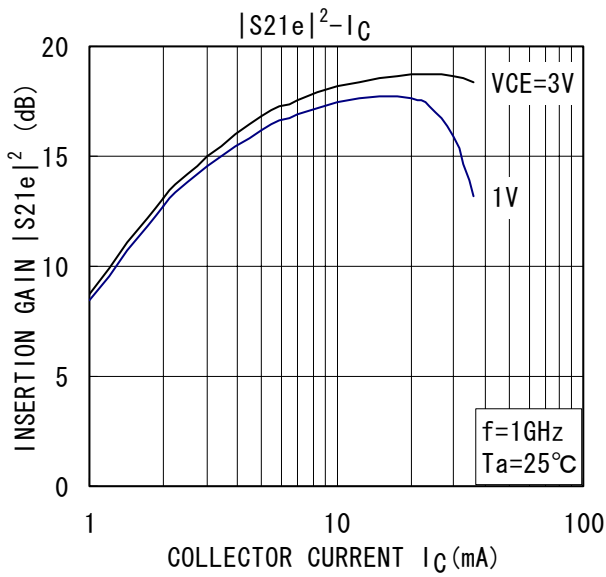
**Electrical Characteristics (Ta = 25°C)**

| Characteristics                | Symbol    | Test Condition                      | Min | Typ. | Max  | Unit    |
|--------------------------------|-----------|-------------------------------------|-----|------|------|---------|
| Collector Cut-off Current      | $I_{CBO}$ | $V_{CB}=8V, I_E=0$                  | -   | -    | 1    | $\mu A$ |
| Emitter Cut-off Current        | $I_{EBO}$ | $V_{EB}=1V, I_C=0$                  | -   | -    | 1    | $\mu A$ |
| DC Current Gain                | $h_{FE}$  | $V_{CE}=3V, I_C=10mA$               | 70  | -    | 140  | -       |
| Output Capacitance             | $C_{ob}$  | $V_{CB}=1V, I_E=0, f=1MHz$          | -   | 0.37 | 0.60 | pF      |
| Reverse Transistor Capacitance | $C_{re}$  | $V_{CB}=1V, I_E=0, f=1MHz$ (Note 1) | -   | 0.21 | 0.40 | pF      |

**Note 1:**  $C_{re}$  is measured by 3 terminal method with capacitance bridge.

**Caution:** This device is sensitive to electrostatic discharge.

Please make enough tool and equipment earthed when you handle.



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