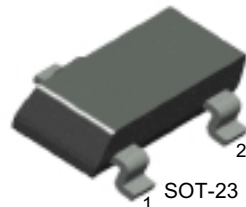


KSC2734

KSC2734

MIXER, OSC. FOR UHF TV TUNER

- High Current Gain Bandwidth Product : $f_T=3.5\text{GHz}$ (TYP.)



SOT-23
1. Base 2. Emitter 3. Collector

NPN Epitaxial Silicon Transistor

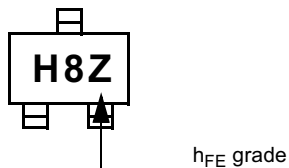
Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Ratings | Units |
|-----------|---------------------------|-----------|------------------|
| V_{CBO} | Collector-Base Voltage | 20 | V |
| V_{CEO} | Collector-Emitter Voltage | 12 | V |
| V_{EBO} | Emitter-Base Voltage | 3 | V |
| I_C | Collector Current | 50 | mA |
| P_C | Collector Dissipation | 150 | mW |
| T_J | Junction Temperature | 125 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | -55 ~ 125 | $^\circ\text{C}$ |

Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|----------------------|--------------------------------------|---|------|------|------|-------|
| BV_{CBO} | Collector-Base Breakdown Voltage | $I_C=10\mu\text{A}, I_E=0$ | 20 | | | V |
| BV_{CEO} | Collector-Emitter Breakdown Voltage | $I_C=1\text{mA}, I_B=0$ | 12 | | | V |
| BV_{EBO} | Emitter-Base Breakdown Voltage | $I_E=10\mu\text{A}, I_C=0$ | 3 | | | V |
| I_{CBO} | Collector Cut-off Current | $V_{CB}=15\text{V}, I_E=0$ | | | 700 | nA |
| h_{FE} | DC Current Gain | $V_{CE}=10\text{V}, I_C=5\text{mA}$ | 20 | 90 | 200 | |
| $V_{CE}(\text{sat})$ | Collector-Emitter Saturation Voltage | $I_C=10\text{mA}, I_B=5\text{mA}$ | | | 0.7 | V |
| f_T | Current Gain Bandwidth Product | $V_{CE}=10\text{V}, I_C=10\text{mA}$ | 1.4 | 3.5 | | GHz |
| C_{ob} | Output Capacitance | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$ | | 0.9 | 1.5 | pF |

Marking



Typical Characteristics

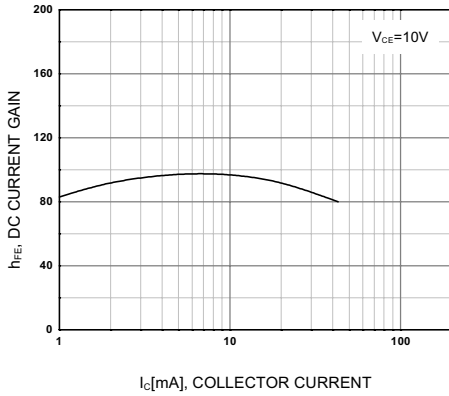


Figure 1. DC current Gain

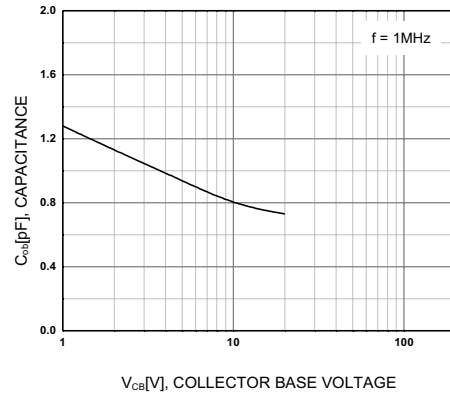


Figure 2. Reverse Transfer Capacitance

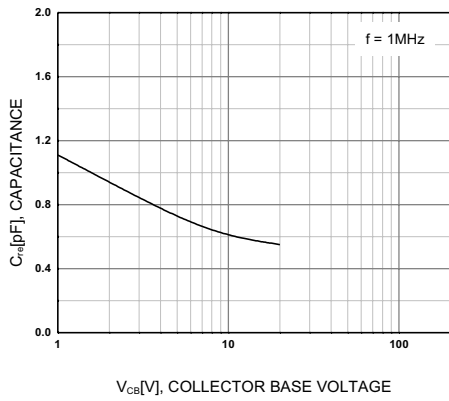


Figure 3. Collector Output Capacitance

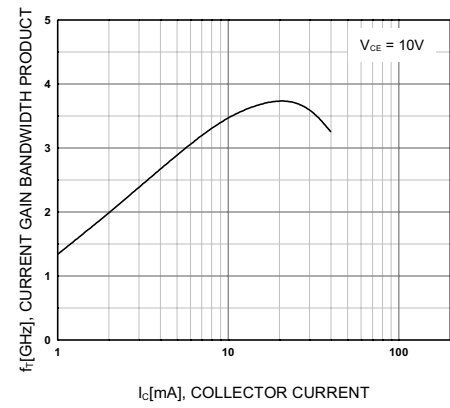


Figure 4. Current Gain Bandwidth Product

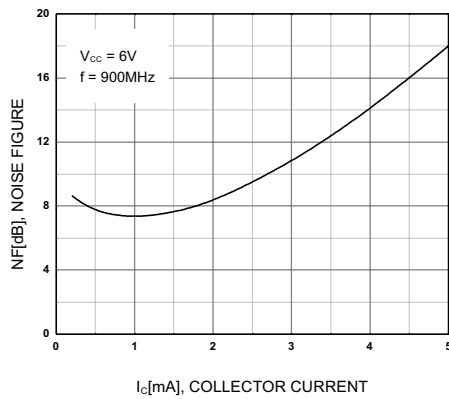


Figure 5. Noise Figure

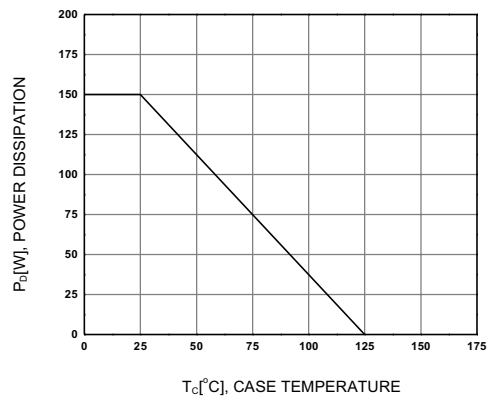


Figure 6. Power Derating

Typical Characteristics (Continued)

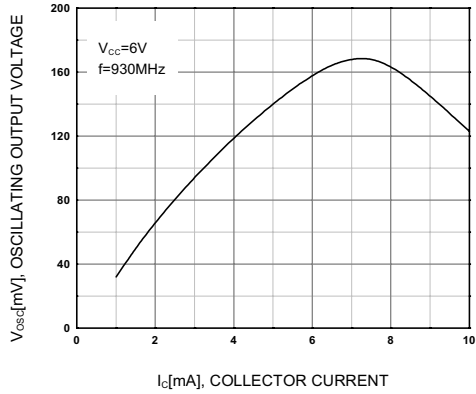


Figure 7. Oscillating Output Voltage vs. Collector Current

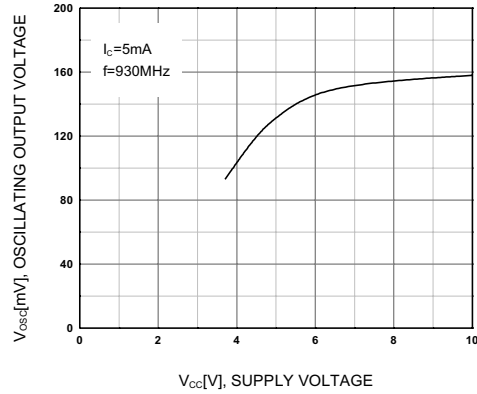


Figure 8. Oscillating Output Voltage vs. Supply Voltage

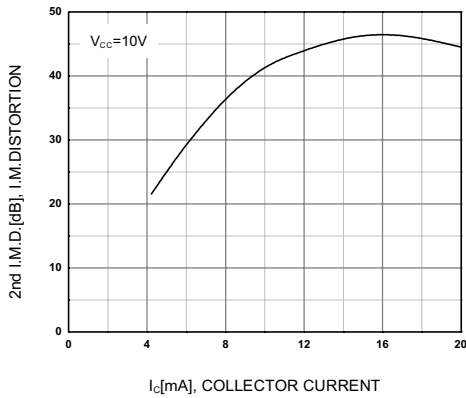


Figure 9. 2nd I.M. Distortion vs. Collector Current

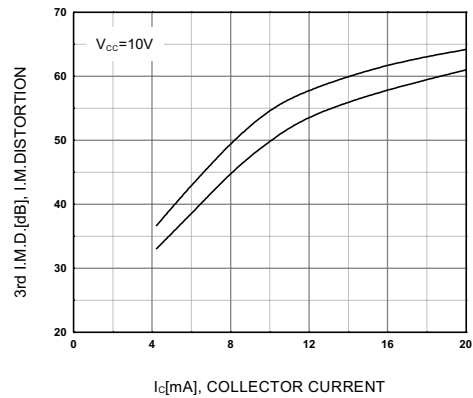


Figure 10. 3rd I.M. Distortion vs. Collector Current

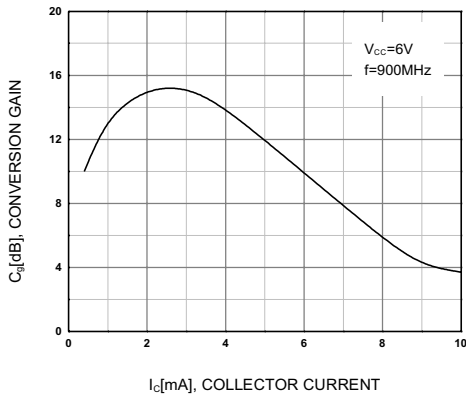


Figure 11. Conversion Gain vs. Collector Current

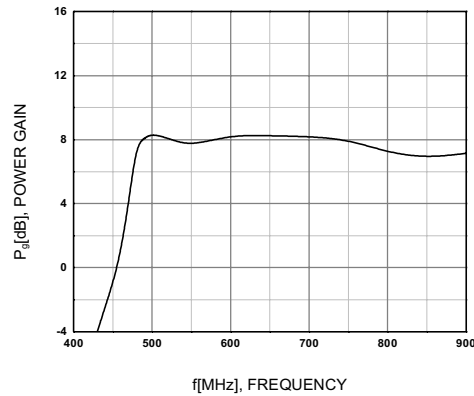
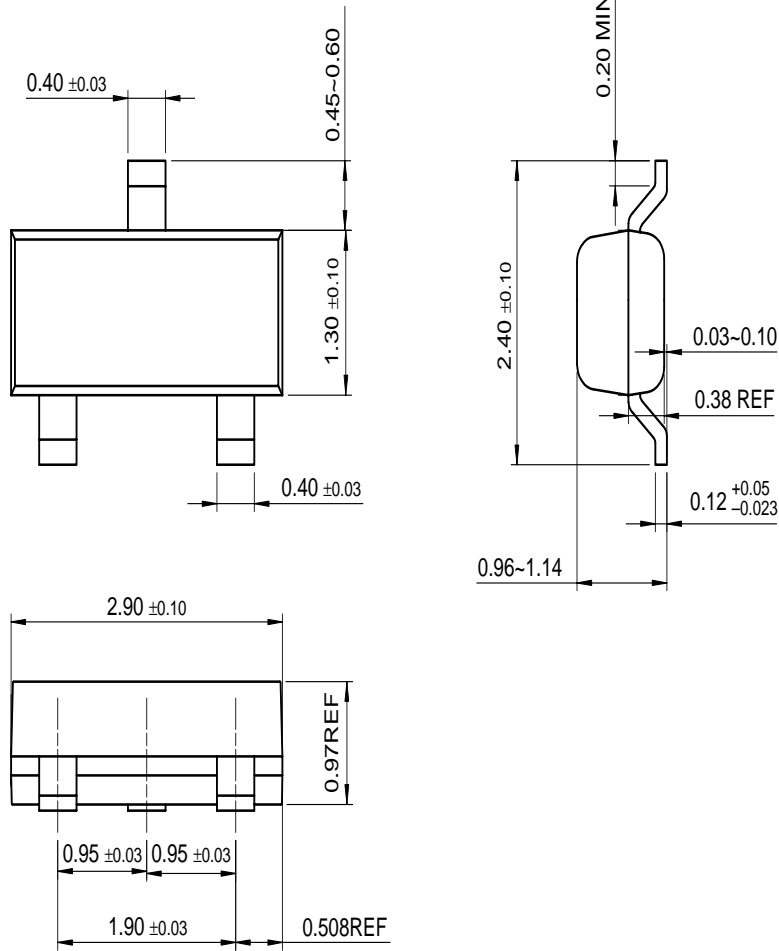


Figure 12. Power Gain vs. Frequency

Package Dimensions

SOT-23



Dimensions in Millimeters

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| | | |
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| Bottomless™ | ISOPLANAR™ | SyncFET™ |
| CoolFET™ | MICROWIRE™ | TinyLogic™ |
| CROSSVOLT™ | POP™ | UHC™ |
| E ² CMOS™ | PowerTrench® | VCX™ |
| FACT™ | QFET™ | |
| FACT Quiet Series™ | QS™ | |
| FAST® | Quiet Series™ | |
| FASTr™ | SuperSOT™-3 | |
| GTO™ | SuperSOT™-6 | |

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|--------------------------|------------------------|---|
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