

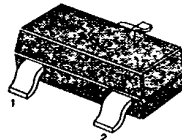
KSC2734**NPN EPITAXIAL SILICON TRANSISTOR**

T-31-15

MIXER, OSC. FOR UHF TV TUNERHigh f_T : 3.5GHz (TYP)**ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)**

| Characteristic | Symbol | Rating | Unit |
|---------------------------|-----------|---------|------------------|
| Collector-Base Voltage | V_{CB0} | 20 | V |
| Collector-Emitter Voltage | V_{CE0} | 12 | V |
| Emitter-Base Voltage | V_{EB0} | 3 | V |
| Collector Current (DC) | I_C | 50 | mA |
| Collector Dissipation | P_C | 150 | mW |
| Junction Temperature | T_J | 125 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -55~125 | $^\circ\text{C}$ |

SOT-23



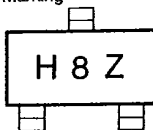
1 Base 2. Emitter 3. Collector

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

| Characteristic | Symbol | Test Condition | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|-----|-----|------|
| Collector-Base Breakdown Voltage | BV_{CB0} | $I_C = 10\mu\text{A}, I_E = 0$ | 20 | | | V |
| Collector-Emitter Breakdown Voltage | BV_{CE0} | $I_C = 1\text{mA}, R_{BE} = \infty$ | 12 | | | V |
| Emitter-Base Breakdown Voltage | BV_{EB0} | $I_E = 10\mu\text{A}, I_C = 0$ | 3 | | | V |
| Collector Cutoff Current | I_{CB0} | $V_{CB} = 15\text{V}, I_E = 0$ | | | 700 | nA |
| DC Current Gain | h_{FE} | $V_{CE} = 10\text{V}, I_C = 5\text{mA}$ | 20 | 90 | 200 | |
| Collector Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 10\text{mA}, I_B = 5\text{mA}$ | | | 0.7 | V |
| Current Gain Bandwidth Product | f_T | $V_{CE} = 10\text{V}, I_C = 10\text{mA}$ | 1.4 | 3.5 | | GHz |
| Output Capacitance | C_{ob} | $V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$ | | 0.9 | 1.5 | pF |

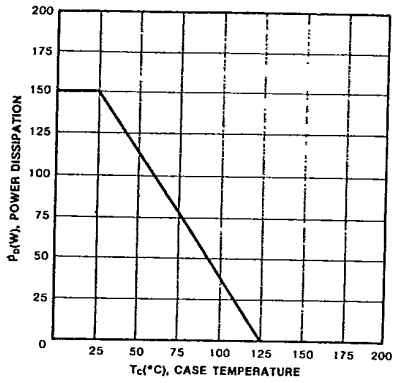
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Marking

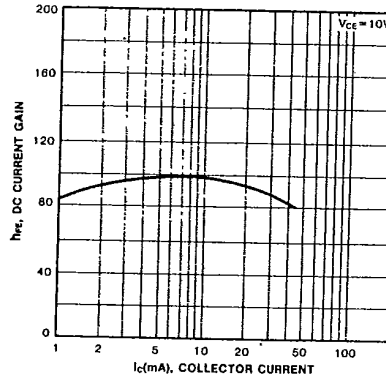


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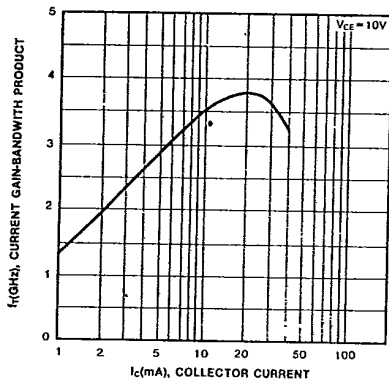
POWER DERATING



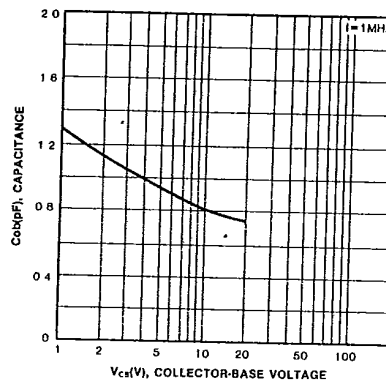
DC CURRENT GAIN



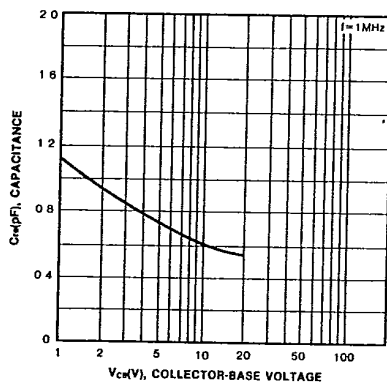
CURRENT GAIN BANDWIDTH PRODUCT



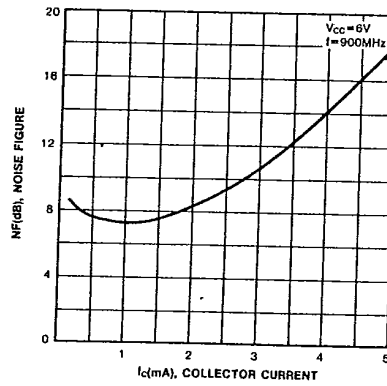
COLLECTOR OUTPUT CAPACITANCE

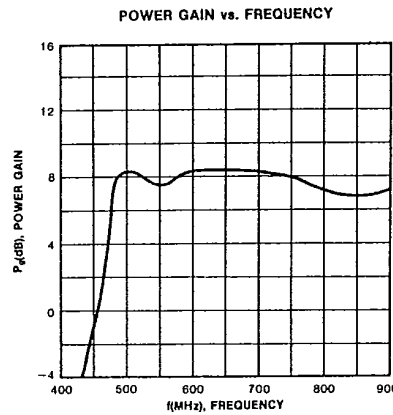
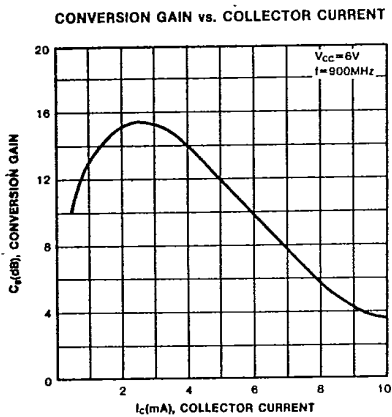
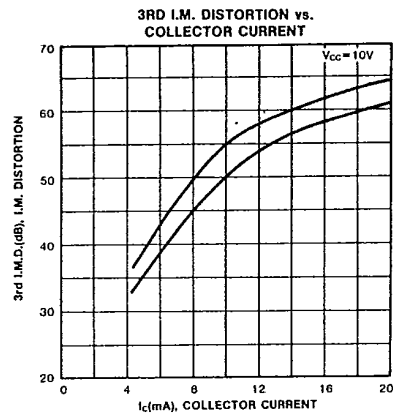
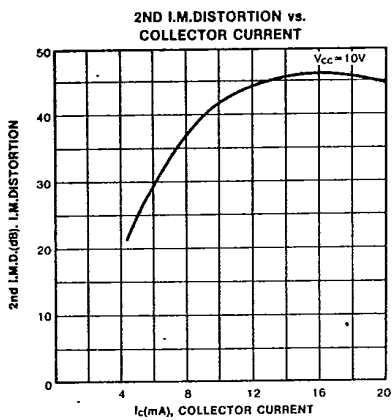
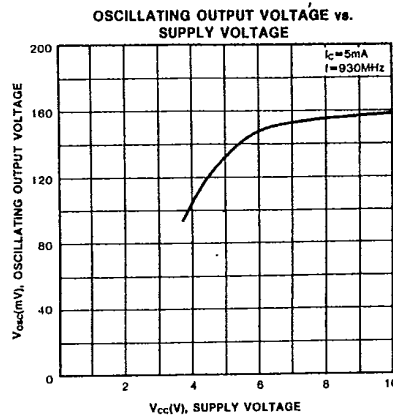
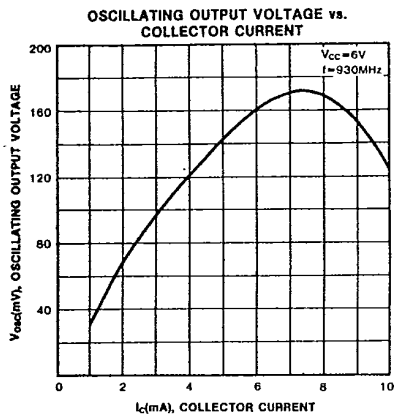


REVERSE TRANSFER CAPACITANCE



NOISE FIGURE vs. COLLECTOR CURRENT





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