



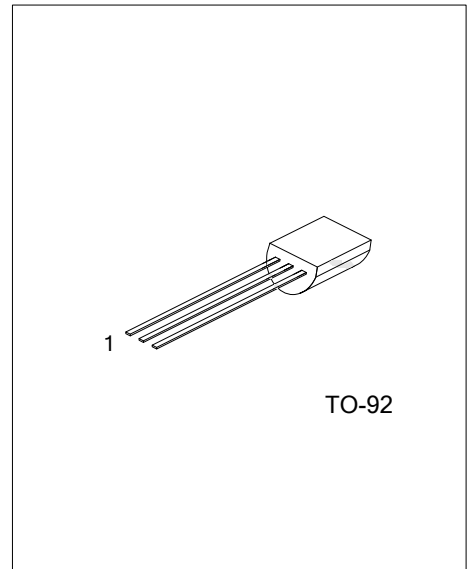
MPSH10A

NPNEPITAXIAL SILICON TRANSISTOR

RF TRANSISTOR

■ DESCRIPTION

The UTC **MPSH10A** is desinged for using as VHF and UHF oscillators and VHF Mixer in a tuner of a TV receiver.



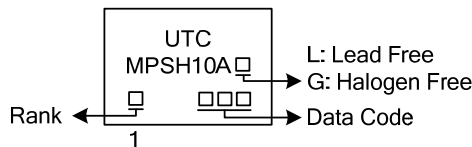
■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|------------------|------------------|---------|----------------|---|---|----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| MPSH10AL-x-T92-B | MPSH10AG-x-T92-B | TO-92 | B | E | C | Tape Box |
| MPSH10AL-x-T92-K | MPSH10AG-x-T92-K | TO-92 | B | E | C | Bulk |

Note: Pin Assignment: E: Emitter C: Collector B: Base

| | |
|-------------------------|---|
| <p>MPSH10AL-x-T92-B</p> | <p>(1) B: Tape Box, K: Bulk (2) T92: TO-92 (3) x: refer to Classification of h_{FE} (4) L: Lead Free, G: Halogen Free</p> |
|-------------------------|---|

■ MARKING



■ ABSOLUTE MAXIMUM RATING ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---------------------------|-----------|------------|--------------------|
| Collector-Base Voltage | V_{CB0} | 30 | V |
| Collector-Emitter Voltage | V_{CEO} | 25 | V |
| Emitter-Base Voltage | V_{EBO} | 3 | V |
| Total Power Dissipation | P_C | 350 | mW |
| Collector Current | I_C | 50 | mA |
| Junction Temperature | T_J | 150 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{STG} | -55 ~ +150 | $^{\circ}\text{C}$ |

Notes: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|--|-----|-----|-----|------|
| Collector-Base Breakdown Voltage | BV_{CB0} | $I_C=100\mu\text{A}$ | 30 | | | V |
| Collector-Emitter Breakdown Voltage | BV_{CEO} | $I_C=1\text{mA}$ | 25 | | | V |
| Emitter-Base Breakdown Voltage | BV_{EBO} | $I_E=10\mu\text{A}$ | | | 3 | V |
| Collector Cut-Off Current | I_{CBO} | $V_{CB}=25\text{V}$ | | | 100 | nA |
| Emitter Cut-Off Current | I_{EBO} | $V_{EB}=2\text{V}$ | | | 100 | nA |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C=4\text{mA}$, $I_B=400\mu\text{A}$ | | | 500 | mV |
| Base-Emitter On Voltage | $V_{BE(ON)}$ | $V_{CE}=10\text{V}$, $I_C=4\text{mA}$ | | | 950 | mV |
| DC Current Gain | h_{FE} | $V_{CE}=10\text{V}$, $I_C=4\text{mA}$ | 60 | | | |
| Output Capacitance | C_{OB} | $V_{CB}=10\text{V}$, $f=1\text{MHZ}$ | | | 0.7 | pF |
| Current Gain Bandwidth Product | f_T | $V_{CE}=10\text{V}$, $I_C=4\text{mA}$, $f=100\text{MHZ}$ | 650 | | | MHZ |

■ CLASSIFICATION OF h_{FE}

| RANK | A | B | C |
|-------|--------|--------|---------|
| RANGE | 60-100 | 90-130 | 120-200 |

■ TEST CIRCUIT

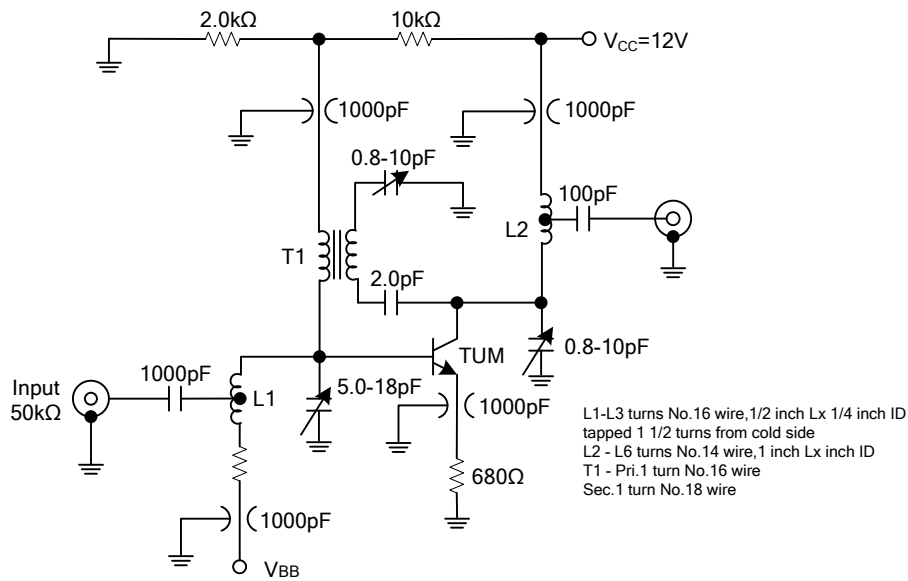


Figure 1. Neutralized 200 MHz PG and NF Circuit

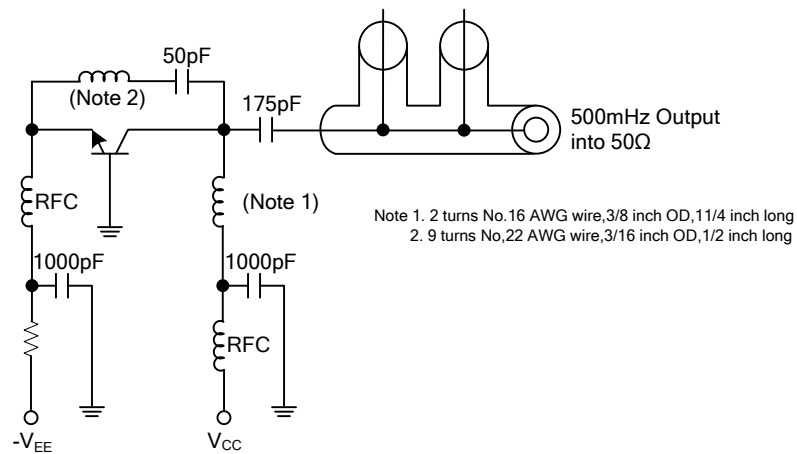


Figure 2. 500 MHz Oscillator Circuit

■ TEST CIRCUIT(Cont.)

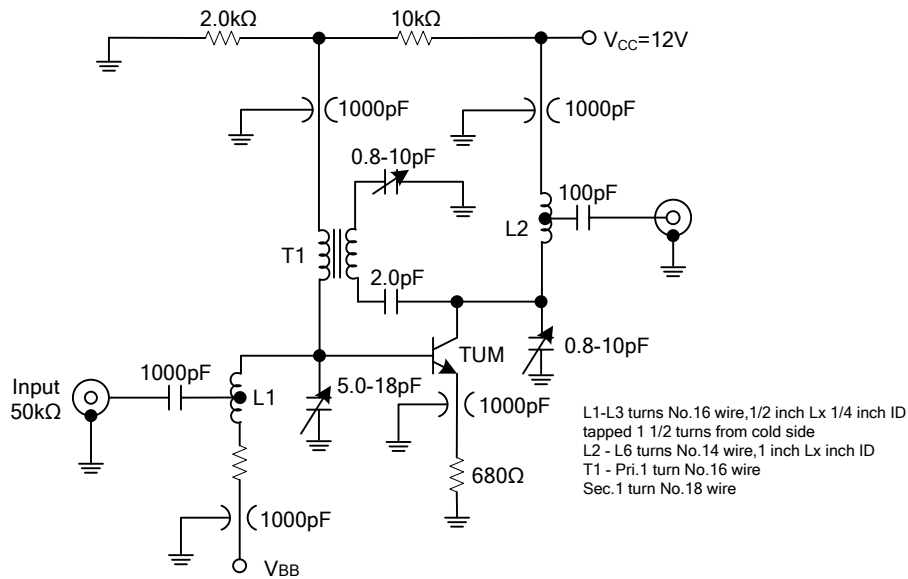


Figure 1. Neutralized 200 MHz PG and NF Circuit

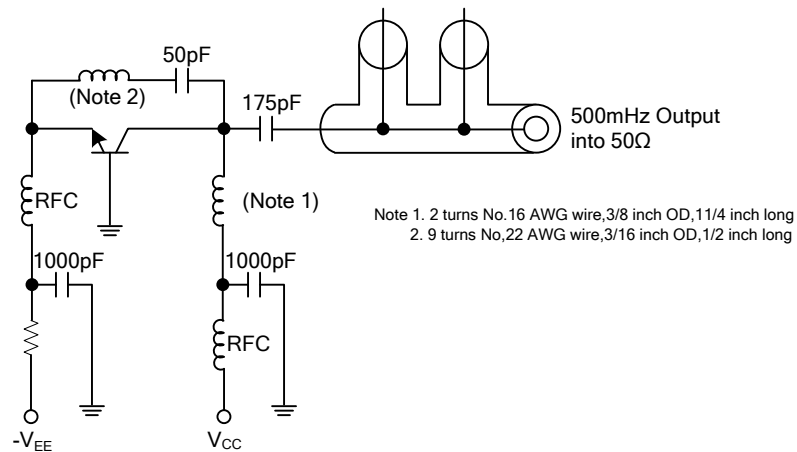


Figure 2. 500 MHz Oscillator Circuit

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