

■ EXPLANATION OF TERMINAL

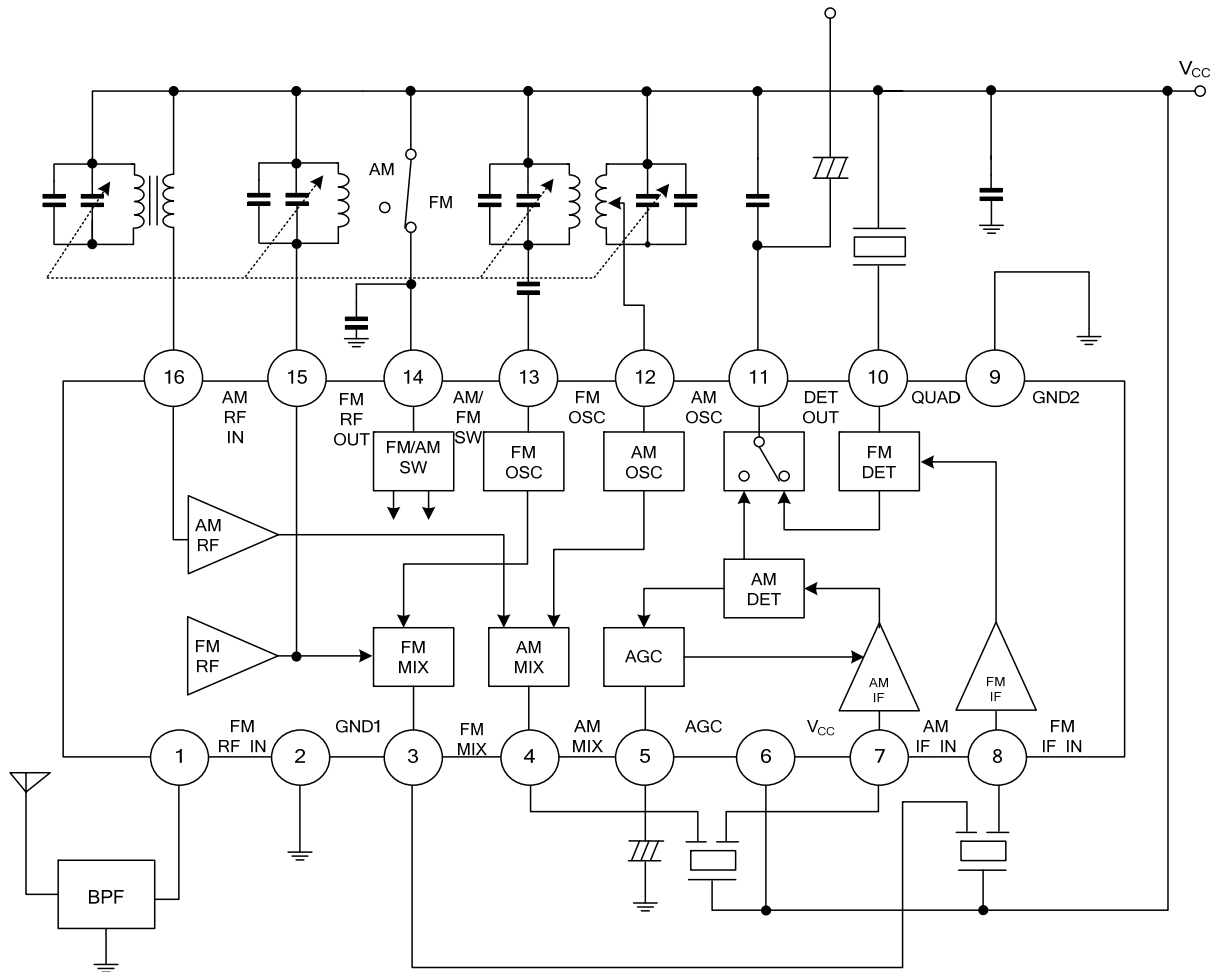
Terminal Voltage: Typical DC voltage at $T_A=25^\circ\text{C}$, $V_{CC}=3\text{V}$ and no signal with Test Circuit

| PIN NO. | PIN NAME | DESCRIPTION | INTERNAL CIRCUIT | TERMINAL VOLTAGE | |
|---------|----------|-------------------------------|------------------|------------------|-----|
| 1 | FM AF IN | Input of FM RF Amplifier | | 0 | 0.7 |
| 2 | GND1 | GND for RF, DSC and MIX Stage | | 0 | 0 |
| 3 | FM MIX | Output of FM MIX | | 0.4 | 1.7 |
| 4 | AM MIX | Output of AM MIX | | 0.6 | 0 |
| 5 | AGC | By pass of AM AGC | | 0 | 0 |
| 6 | V_{CC} | | | 3.0 | 3.0 |
| 7 | AM IF IN | Input of AM IF Amplifier | | 3.0 | 3.0 |
| 8 | FM IF IN | Input of FM IF Amplifier | | 3.0 | 3.0 |

■ EXPLANATION OF TERMINAL

| PIN NO. | PIN NAME | DESCRIPTION | INTERNAL CIRCUIT | TERMINAL VOLTAGE | |
|---------|-----------|--|------------------|------------------|-----|
| | | | | | |
| 9 | GND2 | GND for IF stage | | 0 | 0 |
| 10 | QUAD | FM QUAD Detector Ceramic Discriminator is connected. Recommendation CDA 10.7MG31 (MURATA MFG. CO., LTD) | | 2.5 | 2.2 |
| 11 | DET OUT | Output of FM/AM Detector | | 1.4 | 1.1 |
| 12 | AM OSC | AM local Oscillator Terminal Oscillator Coil is connected. | | 3.0 | 3.0 |
| 13 | FM OSC | FM local Oscillator Terminal Oscillator Coil is connected | | 0.9 | 3.0 |
| 14 | AM/FM SW | AM/FM switch connected to Pin14 Vcc->FM mode Pin14 OPEN->AM mode | | 0.9 | 3.0 |
| 15 | FM RF OUT | FM RF Coil is connected | cf. PIN 1 | 3.0 | 3.0 |
| 16 | AM RF IN | Input of AM RF Amplifier | | 3.0 | 3.0 |

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

| PARAMETER | | SYMBOL | RATINGS | UNIT |
|-----------------------|--------|------------------|-----------|------|
| Supply Voltage | | V _{CC} | 8 | V |
| Power Dissipation | DIP-16 | P _D | 750 | mW |
| | SOP-16 | | 350 | |
| Operating Temperature | | T _{OPR} | -25 ~ 75 | °C |
| Storage Temperature | | T _{STG} | -55 ~ 150 | °C |

Notes: 1. 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.

2. On PCB (Test Board: JEDEC 2s2p)

■ ELECTRICAL CHARACTERISTICS

Unless otherwise specified, T_A=25°C, V_{CC}=3V, FE: f = 98MHz, f_m = 1KHz,

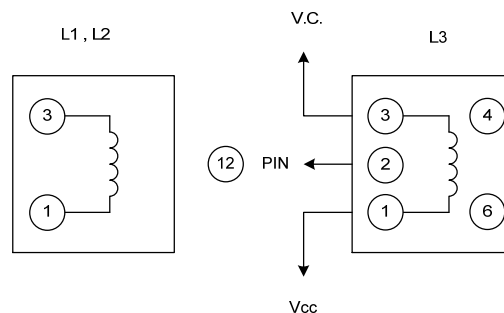
FM IF: f = 10.7MHz, Δf=±22.5kHz, f_m = 1KHz

AM: f = 1MHz, MOD = 30%, f_m = 1 KHz

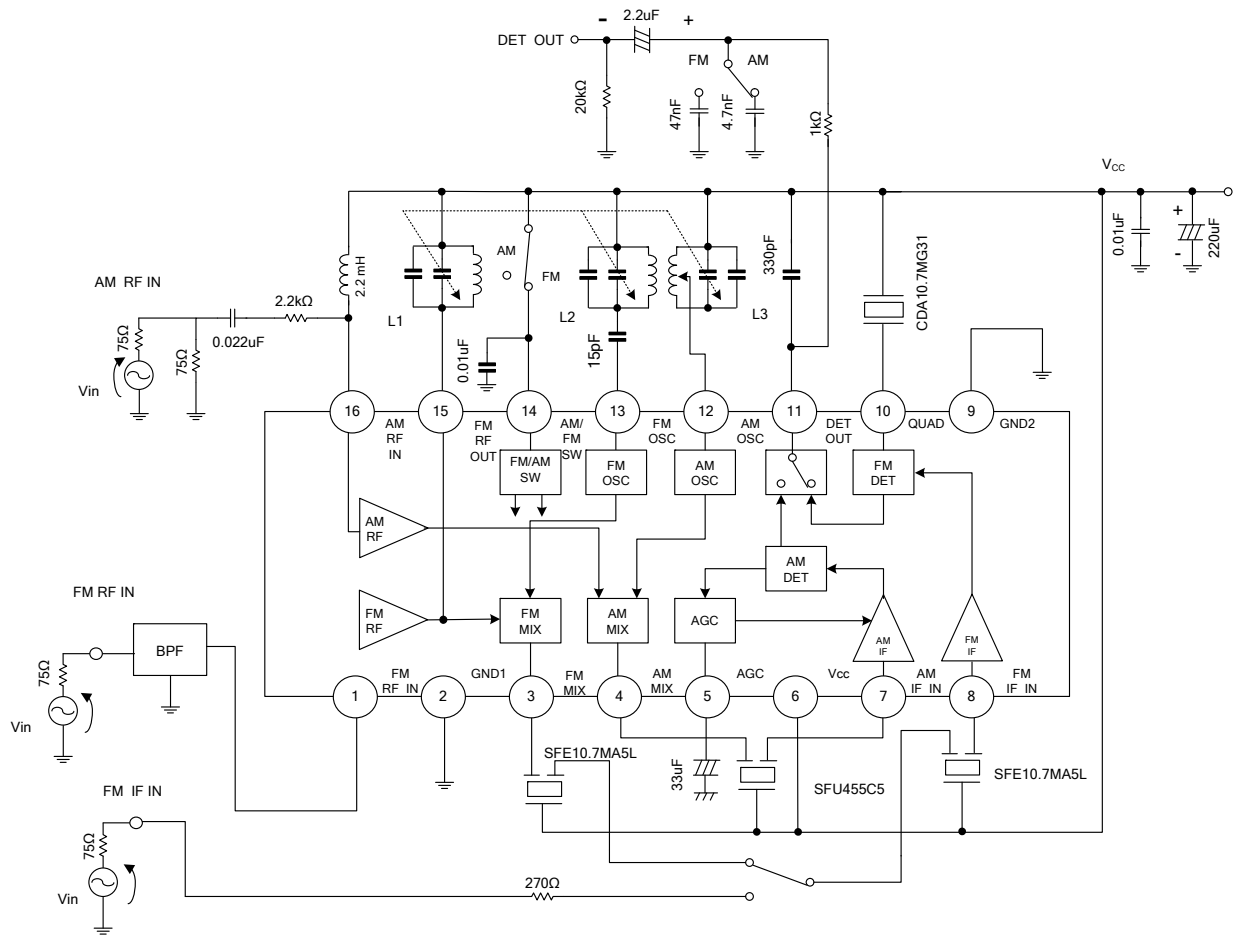
| PARAMETER | | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT | TEST CIRCUIT |
|----------------|---------------------------|-------------------------|--------------------------|-----|------|------|----------|--------------|
| Supply Current | | I _{CC} (FM) | FM Mode, Vin=0 | | 10.5 | 16.5 | mA | 1 |
| | | I _{CC} (AM) | AM Mode, Vin=0 | | 5.0 | 8.0 | | 1 |
| F/E | Input Limiting Voltage | V _{in} (lim) | -3dB limiting point | | 12 | | dBμV EMF | 1 |
| | Quiescent Sensitivity | Q _s | S/N=30dB | | 12 | | dBμV EMF | 1 |
| | Local OSC Voltage | V _{OSC} | f _{OSC} =108MHz | 160 | 240 | 320 | mVrms | 2 |
| | Local OSC Stop Voltage | V _{stop} (FM) | Vin=0 | | 1.2 | | V | 2 |
| FM IF | Input Limiting Voltage | V _{in} (lim)IF | -3dB limiting point | 42 | 47 | 52 | dBμV EMF | 1 |
| | Recovered Output Voltage | V _{OD} | Vin=80dBμV EMF | 50 | 70 | 90 | mVrms | 1 |
| | Signal To Noise Ratio | S/N | Vin=80dBμV EMF | | 62 | | dB | 1 |
| | Total Harmonic Distortion | THD | Vin=80dBμV EMF | | 0.4 | | % | 1 |
| | AM Rejection Ratio | AMR | Vin=80dBμV EMF | | 33 | | dB | 1 |
| AM | Voltage Gain | G _V | Vin=27dBμV EMF | 15 | 32 | 50 | mVrms | 1 |
| | Recovered Output Voltage | V _{OD} | Vin=60dBμV EMF | 35 | 60 | 85 | mVrms | 1 |
| | Signal To Noise Ratio | S/N | Vin=60dBμV EMF | | 43 | | dB | 1 |
| | Total Harmonic Distortion | THD | Vin=60dBμV EMF | | 1.0 | | % | 1 |
| | Local OSC Stop Voltage | V _{stop} (AM) | Vin=0 | | 1.6 | | V | 1 |

■ COIL DATA (TEST CIRCUIT)

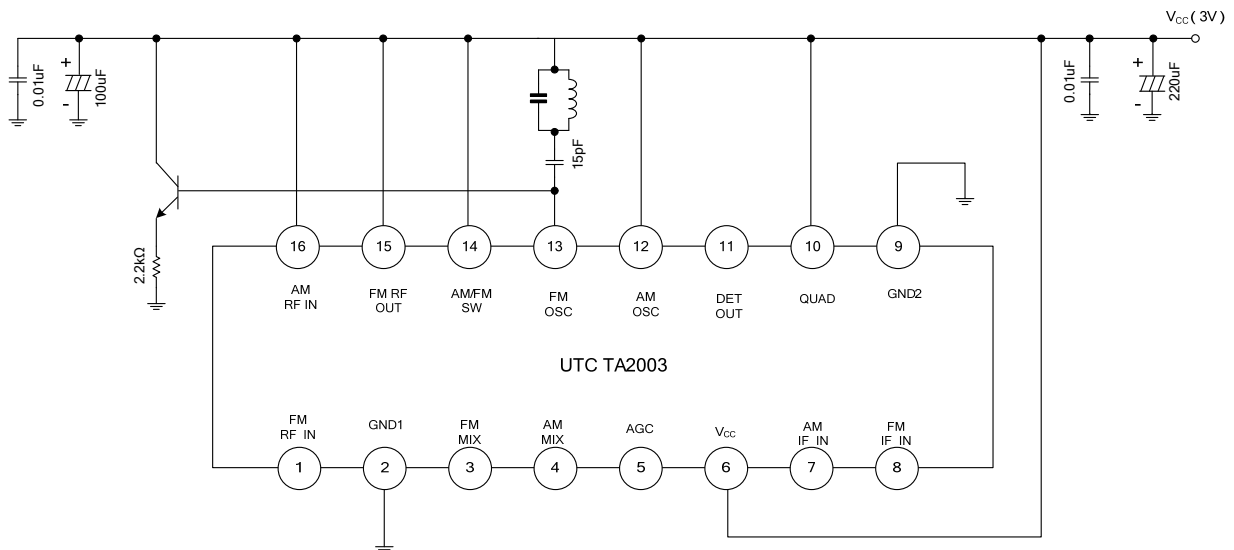
| COIL NO. | TEST FREQ (Hz) | L (μH) | C ₀ (pF) | Q ₀ | TURNS | | | | | WIRE (mm ∅) |
|-----------|----------------|--------|---------------------|----------------|-------|-----|------|------|-----|-------------|
| | | | | | 1-2 | 2-3 | 1-3 | 1-4 | 4-6 | |
| L1 FM RF | 100M | | | 100 | | | | 2.25 | | 0.5 UEW |
| L2 FM OSC | 100M | | | 100 | | | 1.75 | | | 0.5 UEW |
| L3 AM OSC | 796K | 268 | | 125 | 14 | 86 | | | | 0.06 UEW |



TEST CIRCUIT1



TEST CIRCUIT2



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