

Description

The SL5018/P is designed for use in FM dual conversion communication.

It contains a complete narrow band FM demodulation system operable to less than 2.0V supply voltage. This low power narrow band FM IF system provides the second converter, second IF, demodulator. Filter Amp and squelch circuitry for communications and scanning receivers.

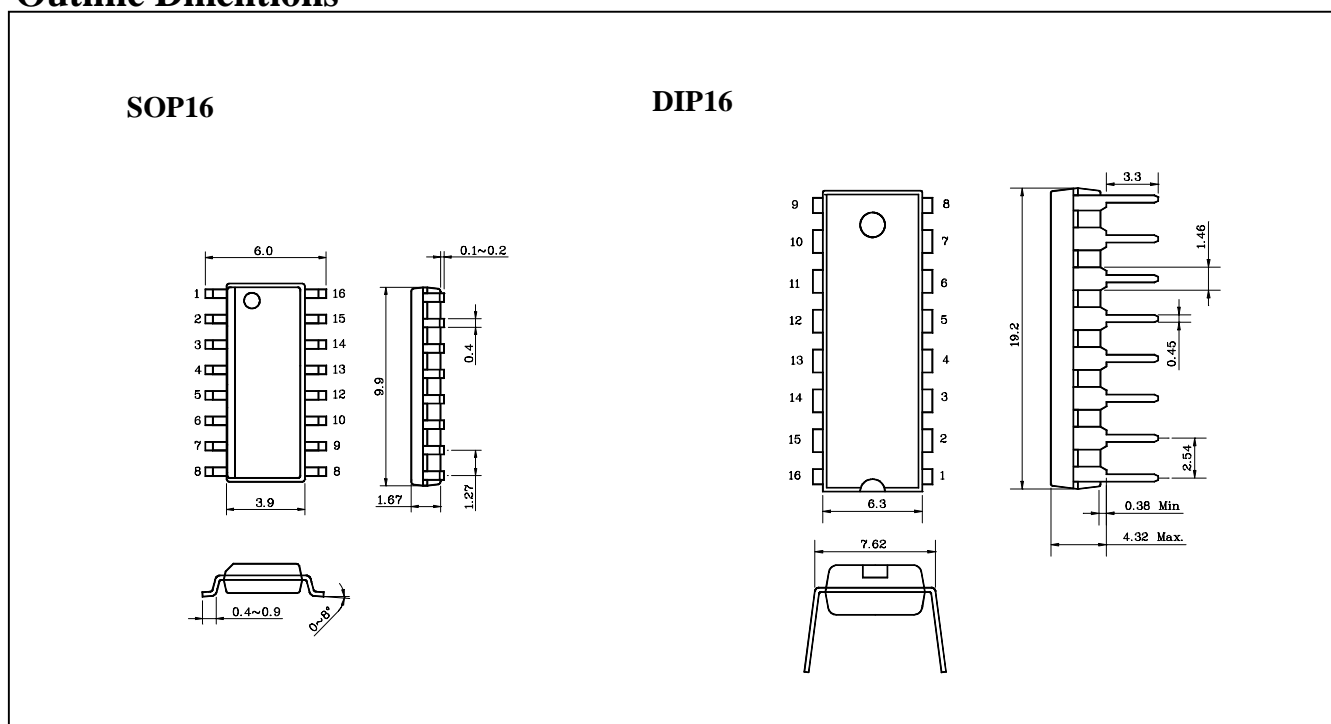
Features

- Operating voltage range : 2.0V ~ 8.0V
- Low Current consumption $I_{CC}=4.0mA$ Typ. ($V_{CC}=4.0V$)
- Excellent input sensitivity (-3dB Limiting = $2.0 \mu V_{rms}$ Typ.)
- Low number of external parts required
- Operating frequency up to 60MHz

Ordering Information

| Type NO. | Marking | Package Code |
|----------|---------|--------------|
| SL5018 | SL5018 | SOP16 |
| SL5018P | SL5018 | DIP16 |

Outline Dmensions



Absolute Maximum Ratings

(Ta=25 °C)

| Characteristics | Symbol | Rating | Unit |
|------------------------------|---------------|-------------|------------|
| Maximum Supply Voltage | $V_{CC(MAX)}$ | 10 | V |
| Supply Voltage Range | V_{CC} | 2.0 ~ 8.0 | V |
| Detector input Voltage | $V_{IN(DET)}$ | 1.0 | V_{p-p} |
| RF Input Voltage(Vcc = 4.0V) | $V_{IN(RF)}$ | 1.0 | V_{rms} |
| Mute Function | V_{MUTE} | -0.5 ~ +5.0 | V_{peak} |
| Operating Temperature | T_{opr} | -20 ~ +70 | °C |
| Storage Temperature | T_{stg} | -65 ~ +150 | °C |

Electrical Characteristics

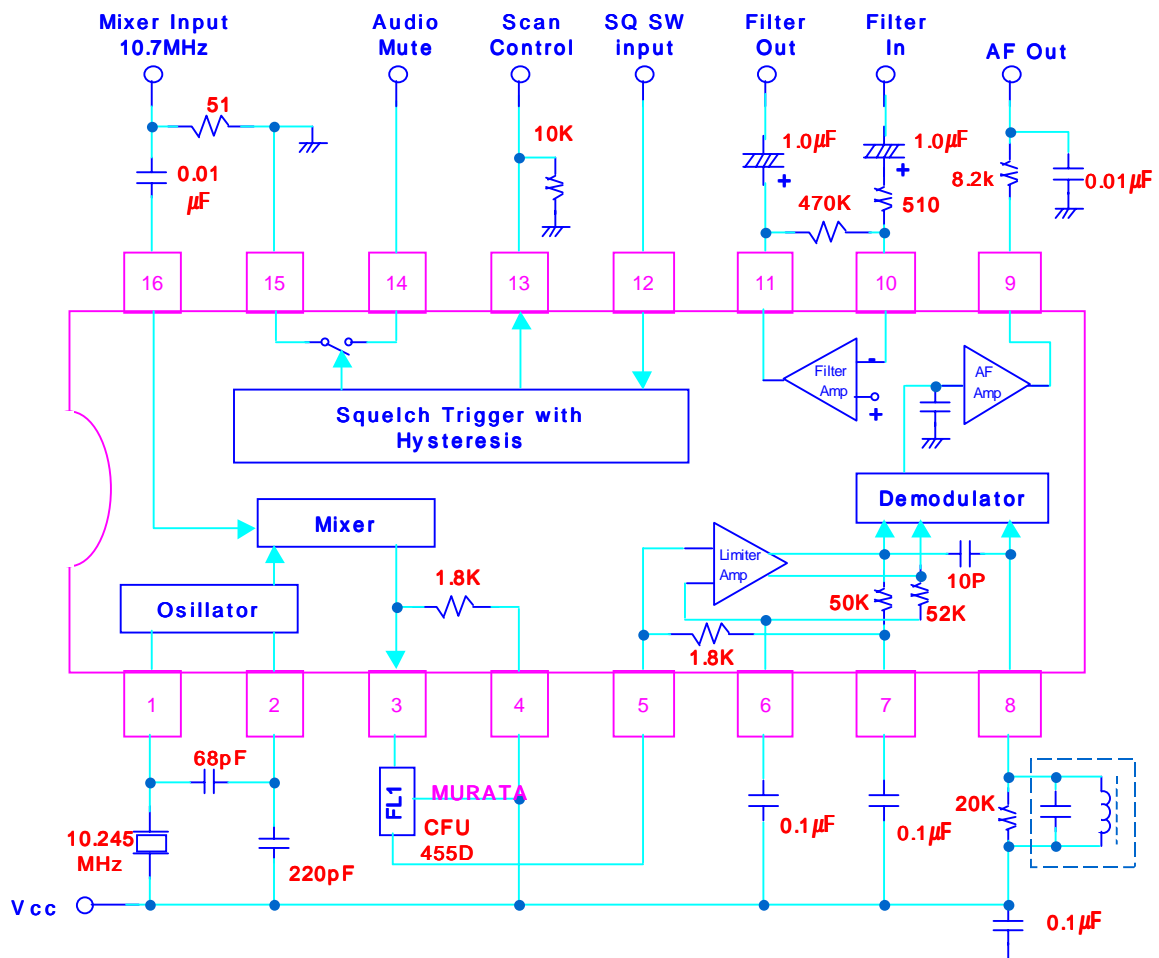
(Unless otherwise specified Ta=25 °C , Vcc=4V, fo=10.7MHz, fm=1kHz, Δf = ± 3kHz)

| Characteristics | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|--------------------------------|-----------------|---------------------------------|------|------|------|------------|
| Squelch Current (No signal) | I_{CC1} | Squelch off($V_{12} = 2V$) | 2.9 | 3.9 | 4.9 | mA |
| | I_{CC2} | Squelch on($V_{12} = 0V$) | 4.4 | 5.4 | 6.4 | |
| Audio output Voltage | V_{OUT} | $V_{in} = 10mV_{rms}$ | 130 | 160 | 200 | mV_{rms} |
| Input Limiting Voltage | $V_{IN(Lim)}$ | -3dB Limiting | - | 2.0 | 6.0 | μV |
| Total Harmonic Distortion | THD | $V_{OUT} = 170mV_{rms}$ | - | 0.8 | - | % |
| Recovered output Noise Voltage | V_{NO} | No Input Signal | 60 | 80 | 250 | mV_{rms} |
| Drop Voltage AF Gain Loss | G_V | $V_{CC} = 4V \quad 2V$ | -3 | -0.6 | - | dB |
| Detector Output Resistance | R_{OUT} | - | - | 450 | - | |
| Signal to Noise Ratio | S/N | - | 36 | 67 | - | dB |
| Filter Gain | G_V | $f = 10kHz, V_{in} = 5mV_{rms}$ | 40 | 50 | - | dB |
| Filter Output DC voltage | $V_{O(DC)}$ | - | 1.0 | 1.3 | 1.6 | V_{DC} |
| Mute Low Resistance | $R_{ON(Mute)}$ | Mute Switch-on | - | 10 | - | |
| Mute High Resistance | $R_{off(Mute)}$ | Mute Switch-off | 1.0 | 10 | - | M |
| Scan control Low | $V_{L(Scan)}$ | Mute off($V_{12} = 2V$) | - | 0 | 0.4 | V_{DC} |
| Scan control High | $V_{H(Scan)}$ | Mute on($V_{12} = 0V$) | 3.0 | 3.5 | - | V_{DC} |
| Trigger Hysteresis | V_{TH} | Squelch on/off | - | 45 | 100 | mV_{rms} |
| Mixer conversion Gain | $G_V(Mix)$ | - | - | 28 | - | dB |
| Mixer Input Resistance | $R_i(Mix)$ | - | - | 3.3 | - | k |
| Mixer Input Capacitance | $C_i(Mix)$ | - | - | 2.2 | - | pF |

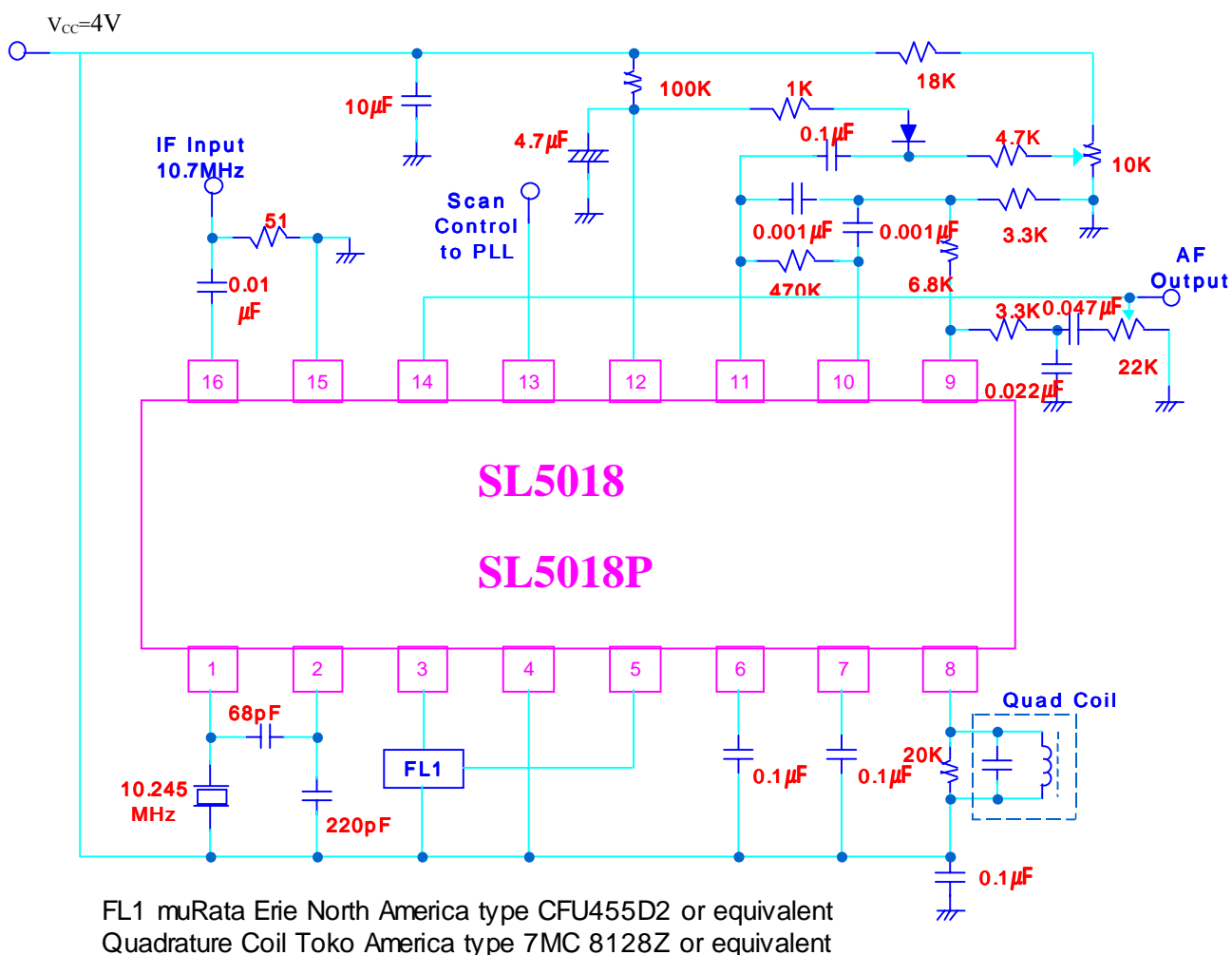
PIN Configuration



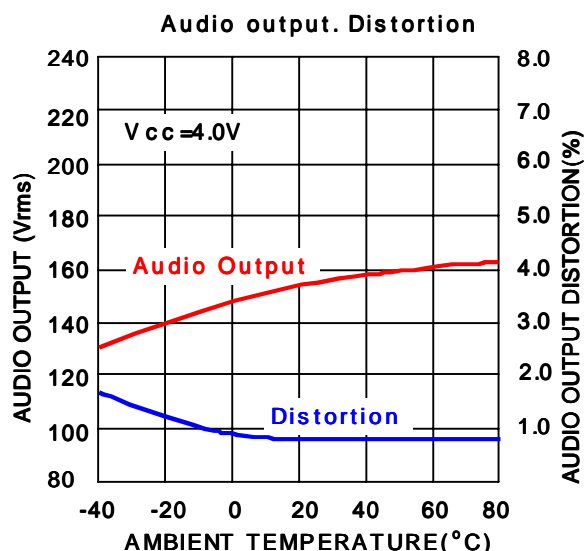
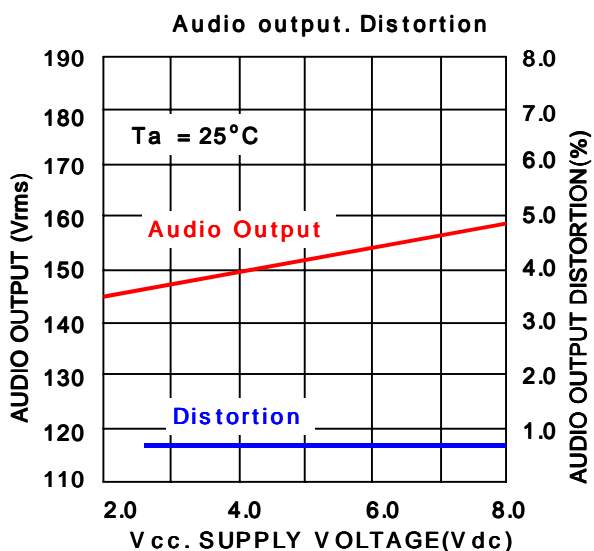
Block Diagram and Test Circuit



Application Circuit



Typical Performance Characteristics



Typical Performance Characteristics (continued)

