

# Low-power FM IF

# MC3361

### DESCRIPTION

The MC3361 is a monolithic low-power FM IF signal processing system consisting of an oscillator, mixer, limiting amplifier, quadrature detector, filter amplifier, squelch, scan control and mute switch. It is intended for use in narrow band FM dual conversion communications equipment. The MC3361 is available in a 16-lead, dual-in-line plastic package and 16-lead SOL (surface-mounted miniature package).

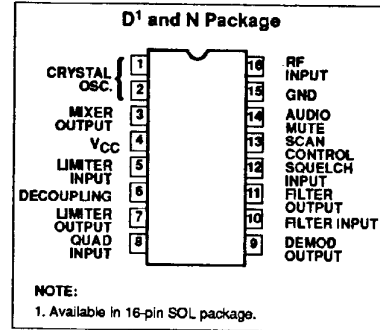
### FEATURES

- 2.0V to 8.0V operation
- Low current: 4.2mA typ at  $V_{CC} = 4.0V_{DC}$
- Excellent sensitivity:  $2.0\mu V$  for  $-3dB$  limiting typ
- Low external parts count
- Operation to 60MHz

### APPLICATIONS

- Cordless telephone
- Narrow band receivers
- Remote control

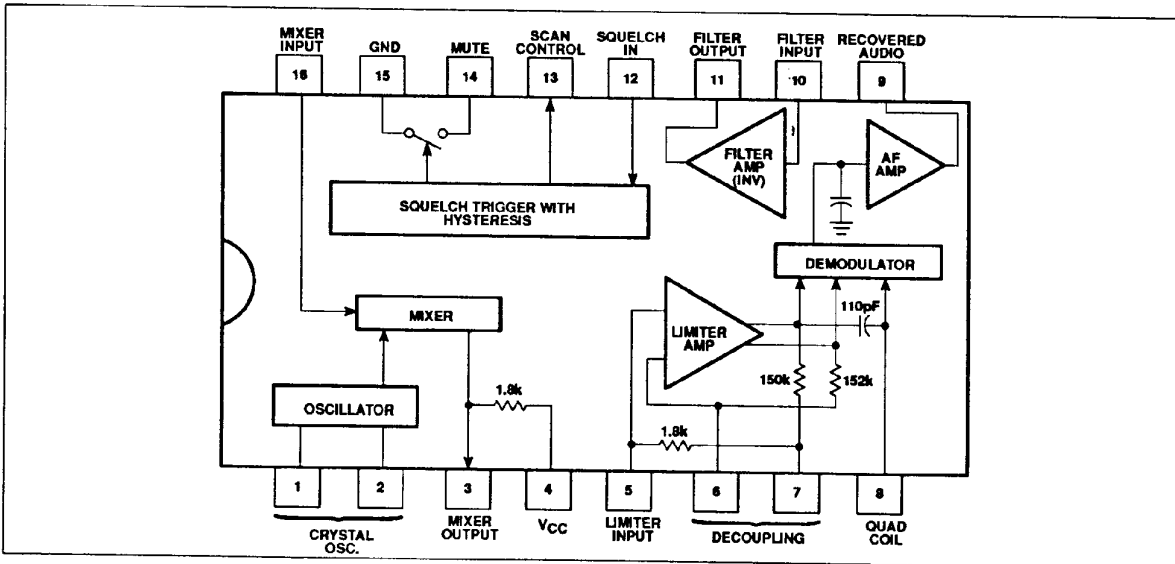
### PIN CONFIGURATION



### ORDERING INFORMATION

DESCRIPTION	TEMPERATURE RANGE	ORDER CODE	DWG #
16-Pin Plastic Dual In-Line Package (DIP)	-40 to +85°C	MC3361N	0406C
16-Pin Plastic Small Outline Large (SOL)	-40 to +85°C	MC3361D	0171B

### BLOCK DIAGRAM



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**ABSOLUTE MAXIMUM RATINGS** $T_A = 25^\circ\text{C}$  unless otherwise noted.

SYMBOL	PARAMETER	PIN	RATING	UNIT
$V_{CC}$ (Max)	Power supply voltage	4	10	$V_{DC}$
$V_{CC}$	Generating supply voltage range	4	2.0 to 8.0	$V_{DC}$
	Detector input voltage	8	1.0	$V_{P-P}$
$V_{16}$	Input voltage ( $V_{CC} \geq 4.0V$ )	16	1.0	$V_{RMS}$
$V_{14}$	Mute function	14	-0.5 to 5.0	$V_{PK}$
$T_J$	Junction temperature		150	$^\circ\text{C}$
$T_A$			-40 to +85	$^\circ\text{C}$
$T_{STG}$	Storage temperature range		-65 to +150	$^\circ\text{C}$

**AC AND DC ELECTRICAL CHARACTERISTICS** $V_{CC} = 4.0V_{DC}$ ,  $f_0 = 10.7\text{MHz}$ ,  $\Delta f = +3.0\text{kHz}$ ,  $f_{MOD} = 1.0\text{kHz}$ ,  $T_A = 25^\circ\text{C}$  unless otherwise noted.

PARAMETER	PIN	TEST CONDITIONS	LIMITS			UNIT
			Min	Typ	Max	
Drain current (no signal) squelch off squelch on	4			4.2 5.4	7.0	mA
Input limiting voltage	16	-3.0dB limiting		2.0	6.0	$\mu V$
Detector output voltage	9			2.0		$V_{DC}$
Detector output impedance				450		$\Omega$
Recovered audio output voltage	9	100	150	270		$mV_{RMS}$
Filter gain (10kHz)		$V_{IN} = 1.0mV_{RMS}$	40	46		dB
Filter output voltage	11			1.7		$V_{DC}$
Trigger hysteresis				50		mV
Mute function low	14			10		$\Omega$
Mute function high	14			10		$M\Omega$
Scan function low (mute off)	13			0.5		$V_{DC}$
Scan function high (mute on)	13	$V_{12} = GND$				$V_{DC}$
Mixer conversion gain	3			27		dB
Mixer input resistance	16			3.6		$k\Omega$
Mixer input capacitance	16			2.2		pF

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TEST CIRCUIT

