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RF Communications	

MC3361

Low-power FM IF

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).

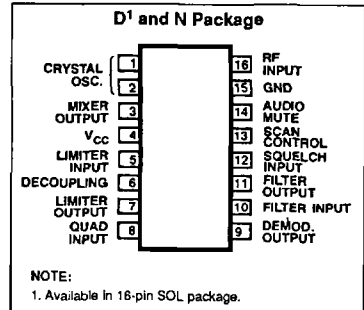
FEATURES

- 2.0V to 8.0V operation
- Low current: 4.2mA typ at VCC=4.0VDC
- Excellent sensitivity: 2.0μV for -3dB limiting typ
- Low external parts count
- Operation to 60MHz

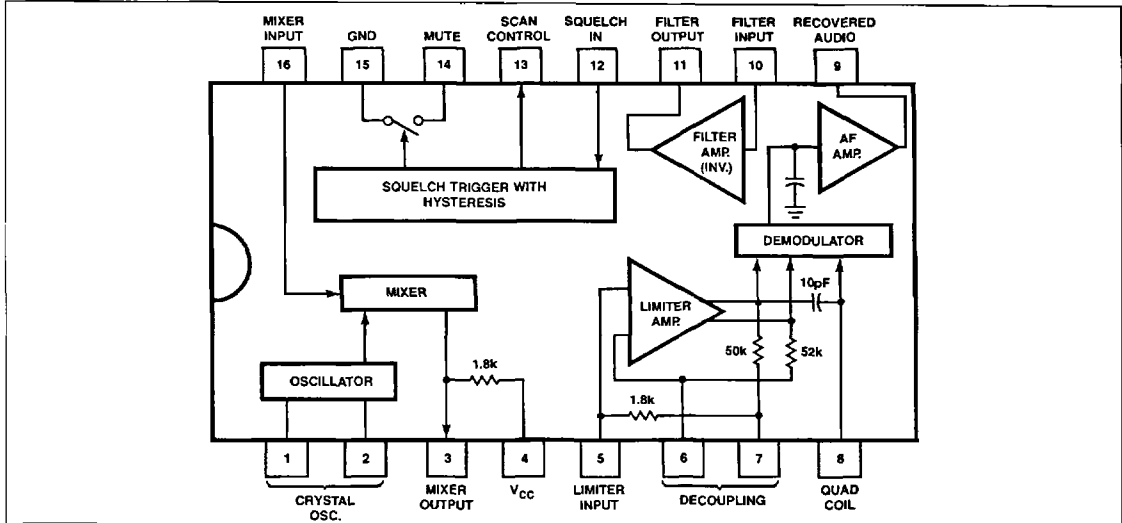
APPLICATIONS

- Cordless telephone
- Narrow band receivers
- Remote control

PIN CONFIGURATION



BLOCK DIAGRAM



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ORDERING INFORMATION

DESCRIPTION	TEMPERATURE RANGE	ORDER CODE
16-Pin Plastic DIP	-40 to +85	MC3361N
16-Pin Plastic SOL	-40 to +85°C	MC3361D

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 ($V_{CC} \geq 4.0\text{V}$)	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

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

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

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TEST CIRCUIT

