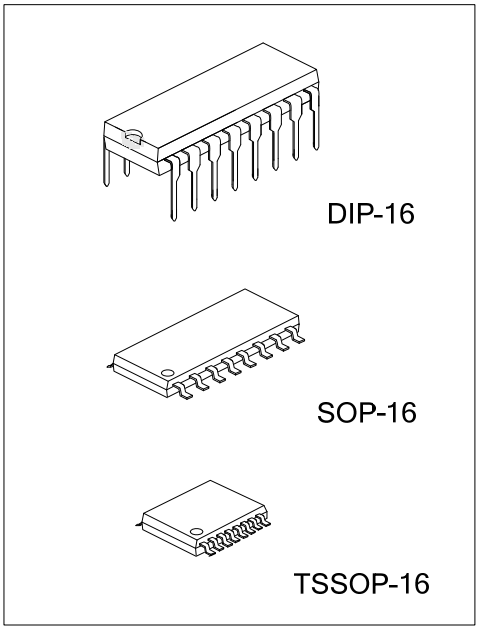
MC3361BP

LINEAR INTEGRATED CIRCUIT

LOW VOLTAGE/POWER NARROW BAND FM IF



■ DESCRIPTION

The UTC MC3361BP is designed for use in FM dual conversion communication. It contains a complete narrow band FM demodulation system operable to less than 2.5V 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

*Low power consumption (4.0mA typ. at Vcc=4.0V)
*Excellent input sensitivity
(-3dB limiting, 2.0μVrms typ.)
*Minimum number of external components required.
*Operating Voltage: 2.5~7.0V

■ APPLICATIONS

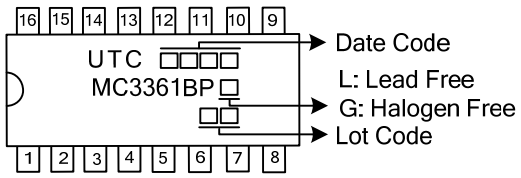
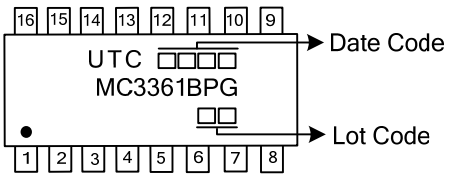
*Cordless phone (for home use)
*FM dual conversion communications equipment

■ ORDERING INFORMATION

Order Number		Package	Packing
Lead Free	Halogen Free		
MC3361BPL-D16-T	MC3361BPG-D16-T	DIP-16	Tube
-	MC3361BPG-N16-R	TSSOP-16	Tape Reel
-	MC3361BPG-S16-R	SOP-16	Tape Reel

MC3361BPL-D16-T (1)Packing Type (2)Package Type (3)Green Package	(1) T: Tube, R: Tape Reel (2) D16: DIP-16, N16: TSSOP-16, S16: SOP-16 (3) L: Lead Free, G: Halogen Free and Lead Free

■ MARKING

DIP-16	SOP-16 / TSSOP-16
	

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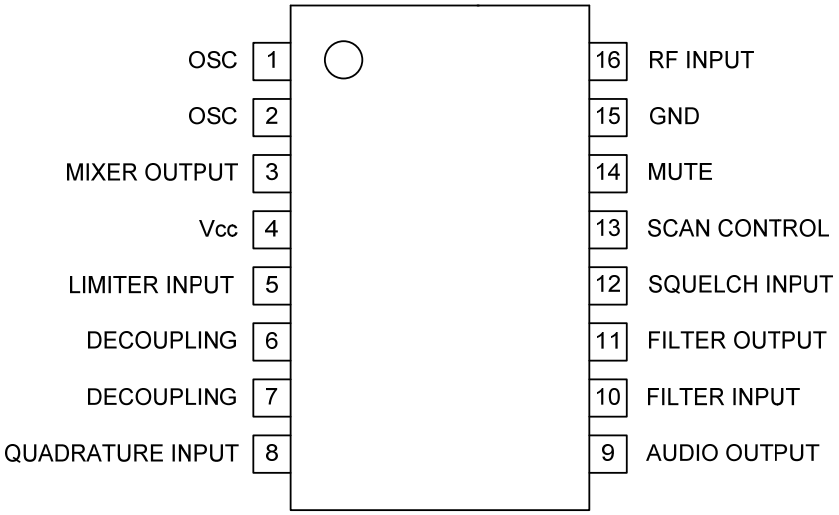
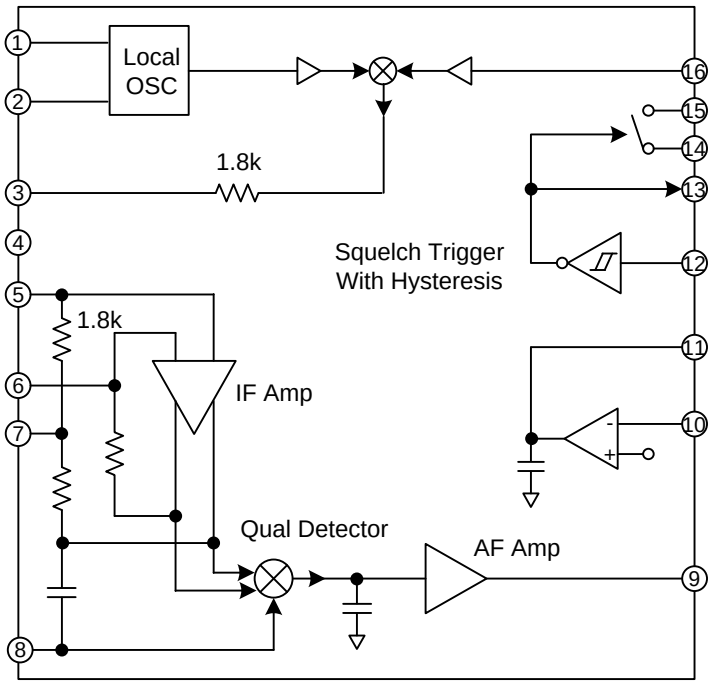
■ PIN CONFIGURATION



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Max. Supply Voltage	$Vcc_{(MAX)}$	10	V
Supply Voltage Range	Vcc	2.5 to 7.0	V
Detector Input voltage	$V_{I(DET)}$	1.0	Vp-p
RF Input Voltage ($Vcc \geqq 4.0V$)	$V_{I(RF)}$	1.0	Vrms
Mute Function	V_{MUTE}	-0.5 ~ + 5.0	Vpeak
Operating Temperature	T_{OPR}	-20 ~ +70	°C
Storage Temperature	T_{STG}	-65 ~ +150	°C

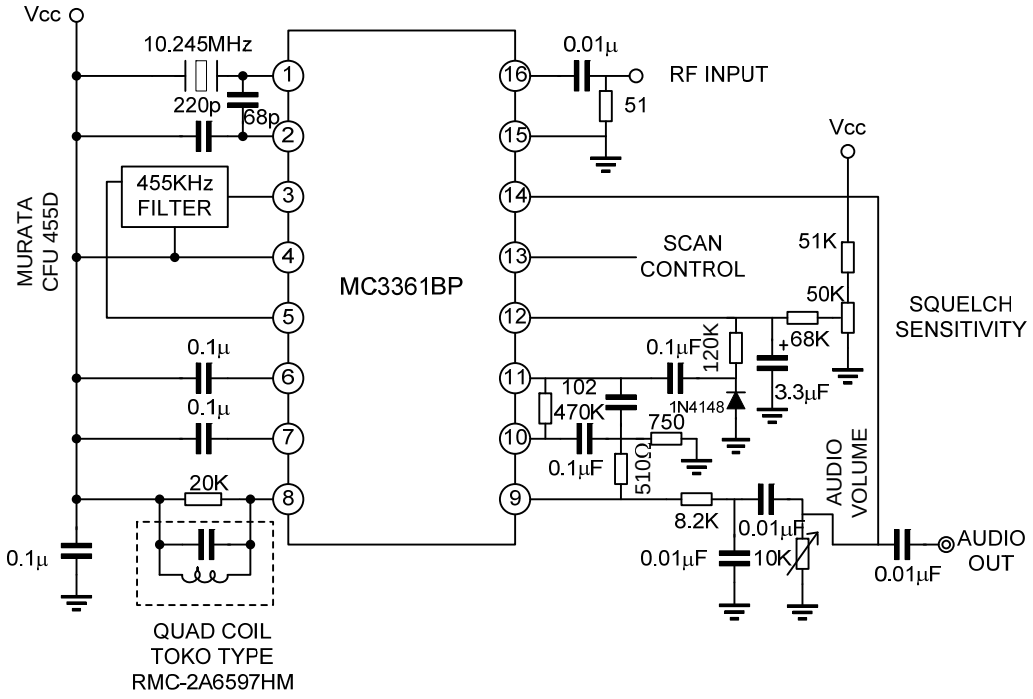
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS

(Vcc=4.0V, fo=10.7MHz, Δf=±3KHz, f_{MOD}=1KHz, Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Current	Icc	Squelch OFF (V_{12}=2V)		4.0		mA
		Squelch ON (V_{12}=GND)		6.0		mA
Input Limiting Voltage	$V_{I(LIMIT)}$	-3.0dB limiting		2.0		μV
Detector Output Voltage	$V_{O(DET)}$			2.0		Vdc
Detector Output Impedance	$Z_{O(DET)}$			400		Ω
Audio Output Voltage	V_O	V_{IN}=10mV	100	160		mVrms
Filter Gain	G_V	f=10KHz,V_{IN}=5mV	40	48		dB
Filter Output DC Voltage	$V_{O(DC)}$			1.5		Vdc
Trigger Hysteresis of Filter	V_{TH}			50		mV
Mute Switch-ON Resistance	$R_{ON(MUTE)}$	Mute “Low”		10		Ω
Mute Switch-OFF Resistance	$R_{OFF(MUTE)}$	Mute “High”		10		MΩ
Scan Control “Low” Output	$V_{L(SCAN)}$	Mute OFF (V_{12}=2V)			0.5	Vdc
Scan Control “High” Output	$V_{H(SCAN)}$	Mute ON (V_{12}=GND)	3.0			Vdc
Mixer Conversion Gain	$G_{V(MIXER)}$			24		dB
Mixer Input Resistance	$R_{I(MIXER)}$			3.3		KΩ
Mixer Input Capacitance	$C_{I(MIXER)}$			2.2		pF

■ APPLICATION CIRCUIT



In the above typical application, the audio signal is recovered using a conventional quadrature FM detector. The absence of an input signal is indicated by the presence of noise above the desired audio frequencies. This “noise band: is monitored by an active filter and a detector. A squelch trigger circuit indicates the presence of noise (or a tone) by an output which can be used to control scanning. At the same time, an internal switch is operated which can be used to mute the audio.

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