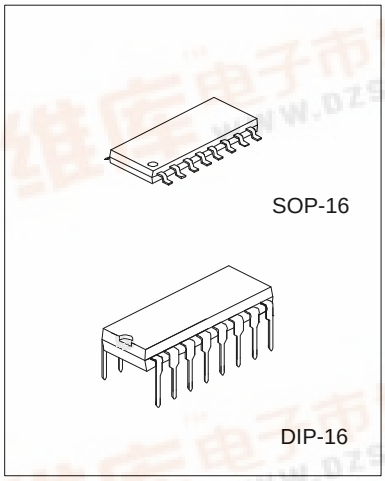
UTC MC3361BP LINEAR INTEGRATED CIRCUIT

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.

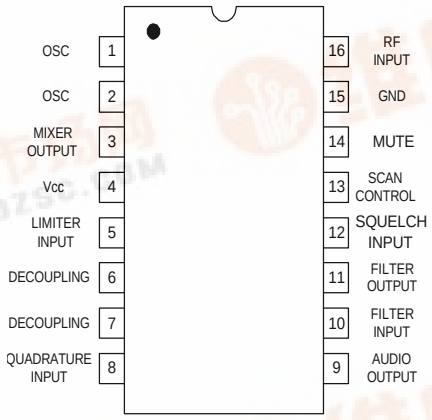
FEATURES

*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

PIN CONFIGURATION



ABSOLUTE MAXIMUM RATINGS(TA=25°C)

PARAMETER	SYMBOL	VALUE	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>=4.0V)	$V_{I(RF)}$	1.0	Vrms
Mute Function	V_{MUTE}	-0.5 ~ + 5.0	Vpeak
Operating Temperature	T_{OPR}	-20 to +70	°C
Storage Temperature	T_{STG}	-65 to +150	°C

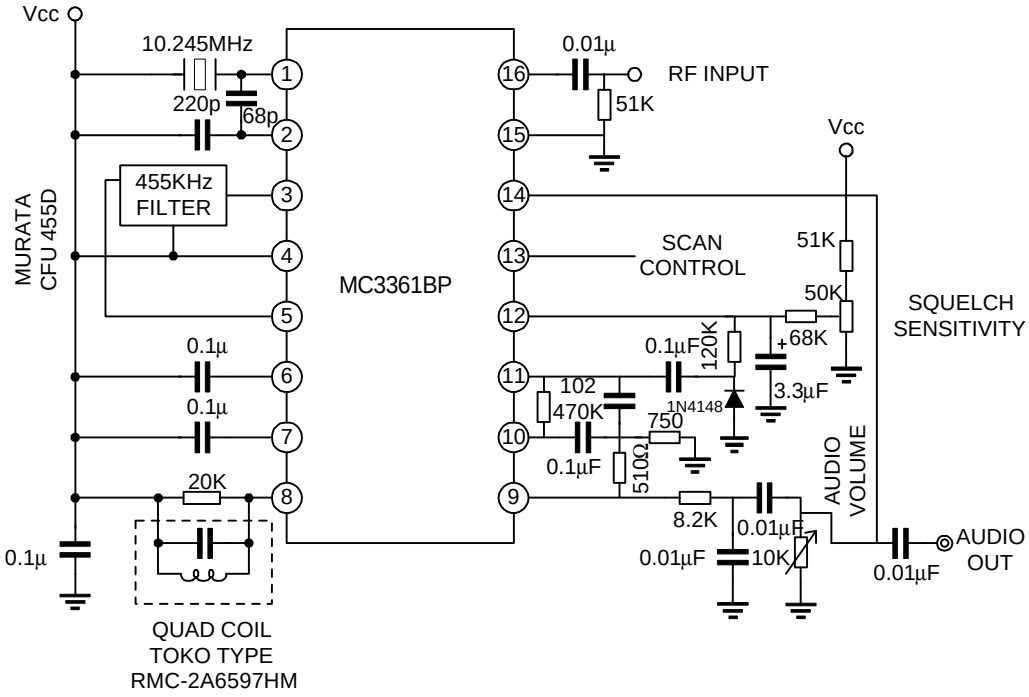
Note: Absolute maximum ratings are those values beyond which permanent damage to the device may occur. These are stress ratings only and functional operation of the device at or beyond them is not implied. Long exposure to these conditions may affect device reliability.

ELECTRICAL CHARACTERISTICS

(Vcc=4.0V, fo=10.7MHz,Δf=+-3KHz,Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Current	Icc	Squelch off (V12=2V) Squelch on (V12=GND)		4.0 6.0		mA
Input Limiting voltage	$V_{I(LIM)}$	-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	Vin=10mV	100	160		mVrms
Filter Gain	G_V	f=10KHz,Vin=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 (V12=2V)			0.5	Vdc
Scan Control "High" Output	$V_{H(SCAN)}$	Mute on (V12=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.