LOW POWER NARROW BAND FM IF BL3361

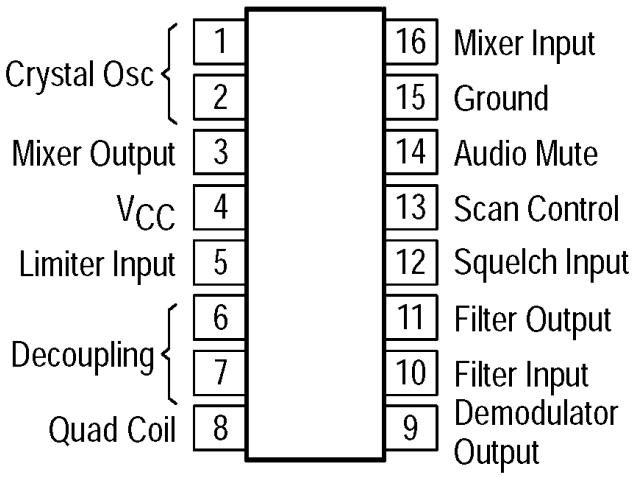
DESCRIPTION

The BL3361 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.

FEATURE

- Operating voltage range : 2.0V ~ 8.0V
- Low Current consumption I_{CC}=3.9mA Typ. (V_{CC}=4.0V)
- Excellent input sensitivity
  (-3dB Limiting = 2.6 μVrms Typ.)
- Low number of external parts required
- Operating frequency up to 60MHz
- Encapsulation：SOP-16

PIN CONFIGURATION



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

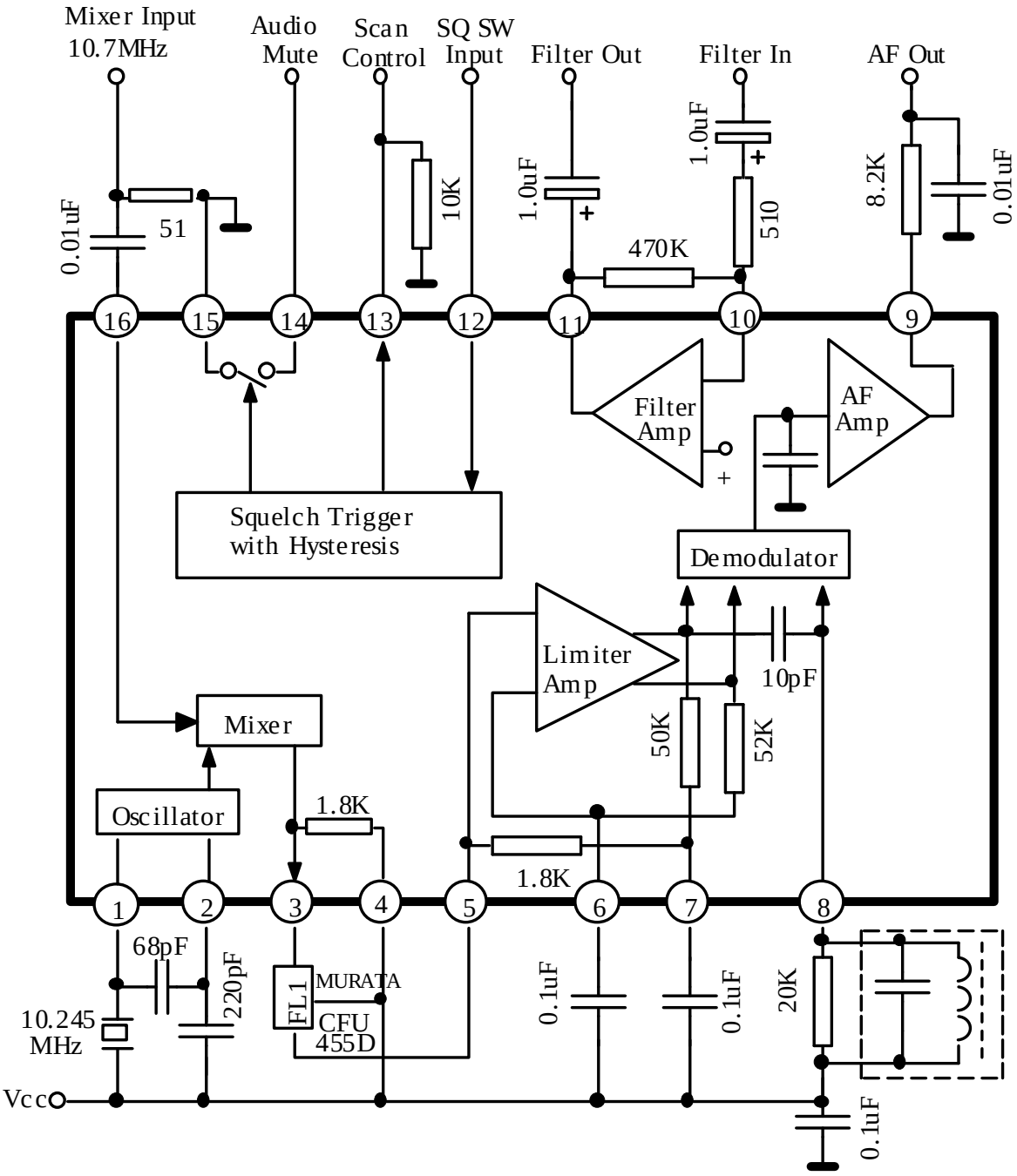
Characteristic	Symbol	Value	Unit
Maximum Supply Voltage	$V_{CC(MAX)}$	10	V
Supply Voltage Range	Vcc	2.0~8.0	V
Detector Input Voltage	$V_{IN(DET)}$	1.0	Vp-p
RF Input Voltage	$V_{IN(RF)}$	1.0	Vrms
Mute Function	V_{MUTE}	-0.5~+5.0	Vpeak
Junction Temperature	T_J	150	°C
Power Dissipation	PD	1.5	W
Operating Temperature	Topr	-30~+70	°C
Storage Temperature	Tstg	-65~150	°C

ELECTRICAL CHARACTERISTICS

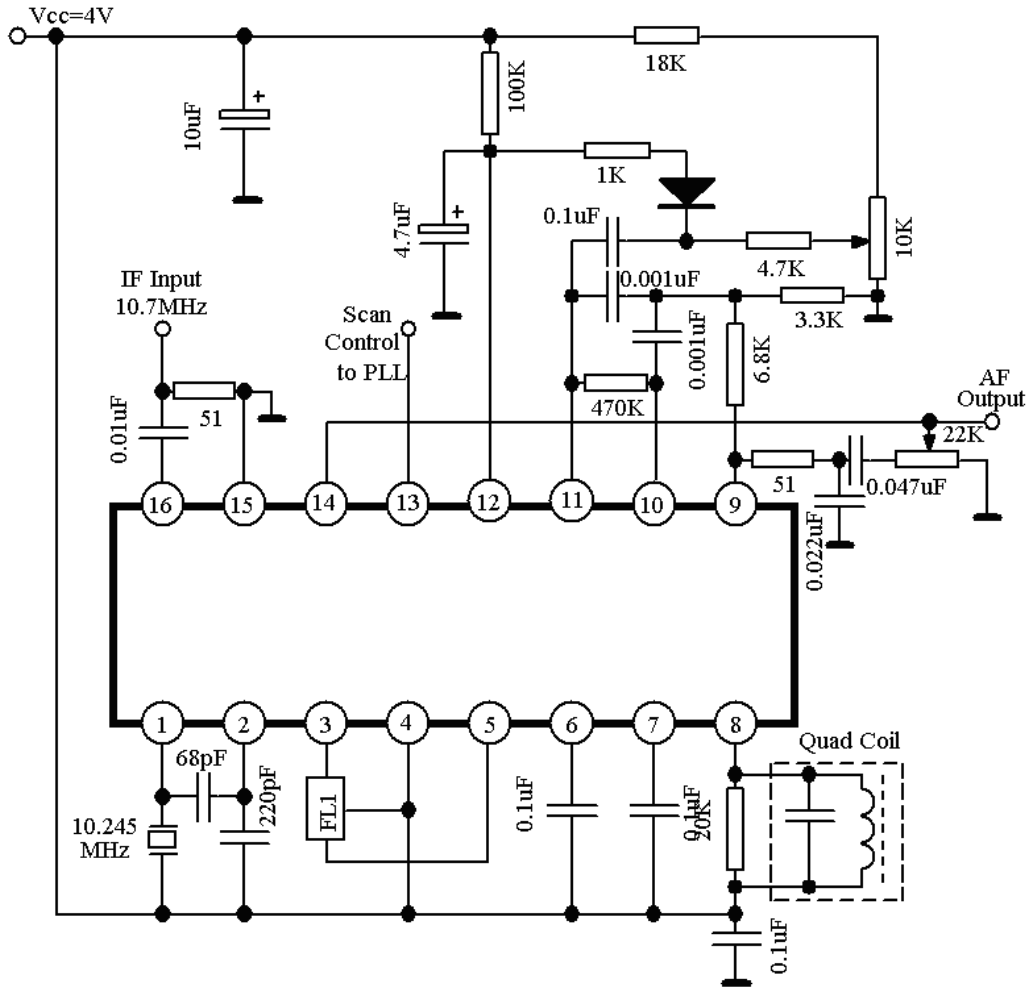
(Unless otherwise specified: Ta=25°C, Vcc=4V, fo=10.7MHz, fm=1kHz, Δf=±3kHz)

Characteristics	Symbol	Test conditions	Min	Typ	Max	Unit
Squelch Current	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}	Vin=10mVrms	130	160	200	mVrms
Input Limiting Voltage	$V_{IN(Lim)}$	-3dB Limiting		2.6	6.0	μV
Total Harmonic Distortion	THD	V_{OUT} =170mVrms		0.86		%
Detector Output Voltage	V_{NO}	No Input Signal	1.2	1.5	1.8	V
Drop Voltage AF Gain Loss	ΔGv	Vcc=4V → 2V	-3	-0.6		dB
Detector Output Resistance	R_{OUT}			450		Ω
Filter Gain	Gv	Vin=5mVrms, f=10kHz	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		30	50	Ω
Mute High Resistance	$R_{Off(Mute)}$	Mute Switch-off	1.0	11		mΩ
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	mVrms
Mixer Conversion Gain	$G_{V(Mix)}$			28		dB
Mixer Input Resistance	$R_{i(Mix)}$			3.3		kΩ
Mixer Input Capacitance	$C_{i(Mix)}$			2.2		pF

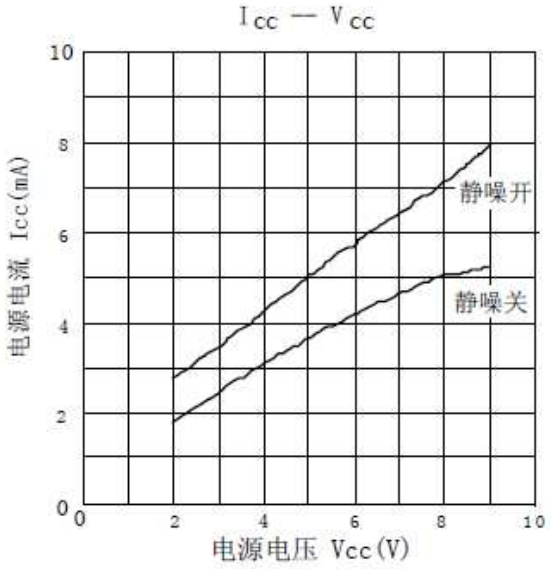
BLOCK DIAGRAM AND TEST CIRCUIT

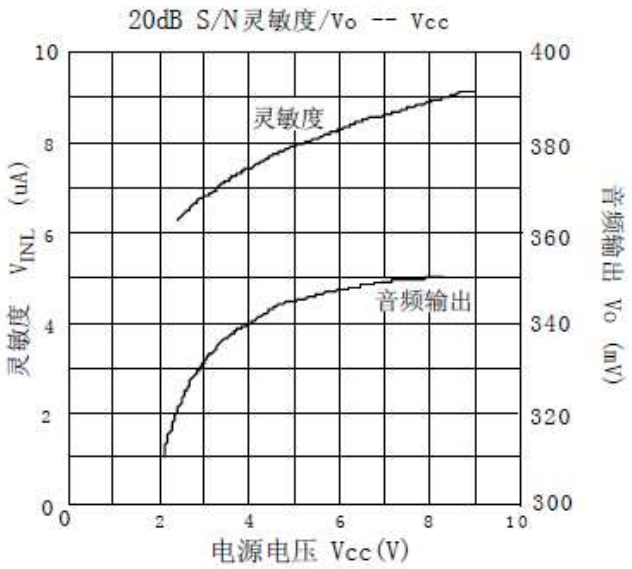


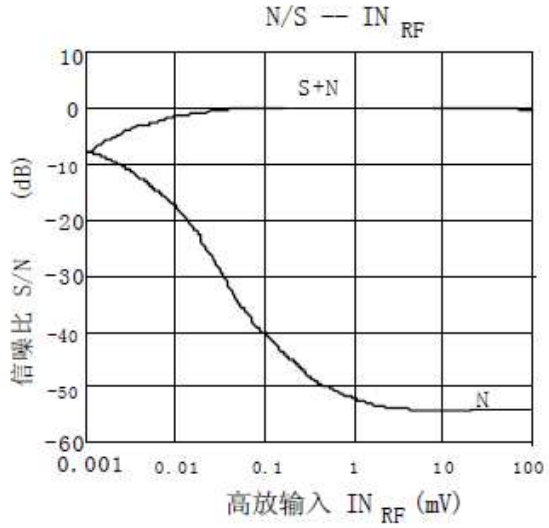
APPLICATION CIRCUIT

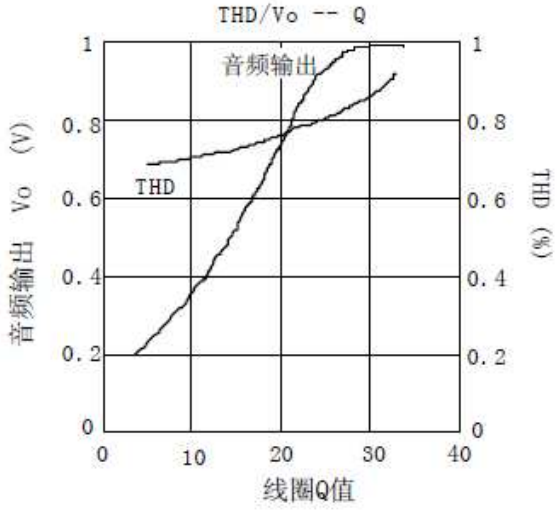


TYPICAL PERFORMANCE CHARACTERISTICS









OUTLINE DRAWING