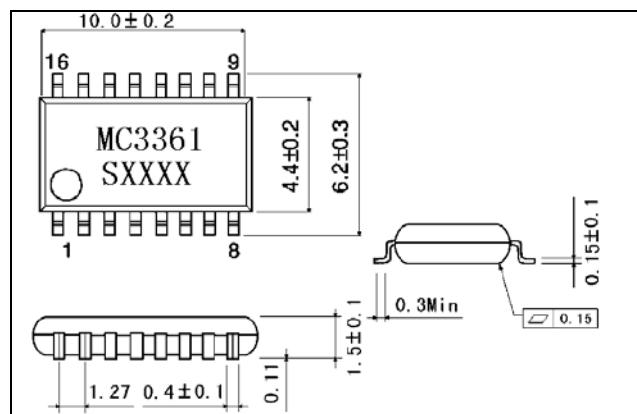


LOW POWER NARROW BAND FM IF MC3361N/D

DESCRIPTION

The MC3361 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.

Outline Drawing



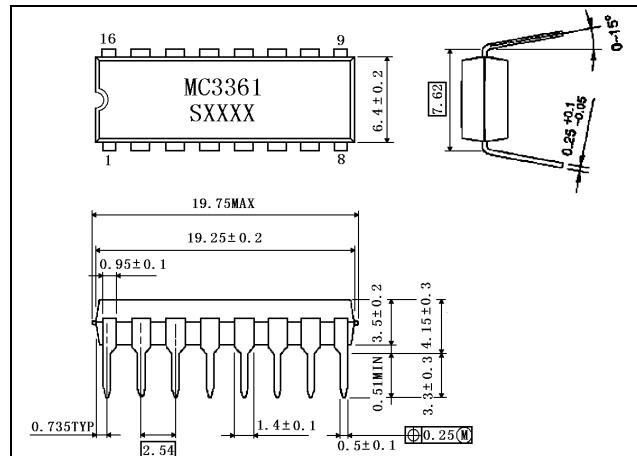
SOP-16

FEATURE

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

PIN CONFIGURATION

Crystal Osc	{	1	Mixer Input
		2	Ground
Mixer Output		3	C
		4	Audio Mute
V_{CC}		5	Scan Control
Limiter Input		6	Squelch Input
Decoupling	{	7	Filter Output
Quad Coil		8	Filter Input
			Demodulator Output



DIP-16

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

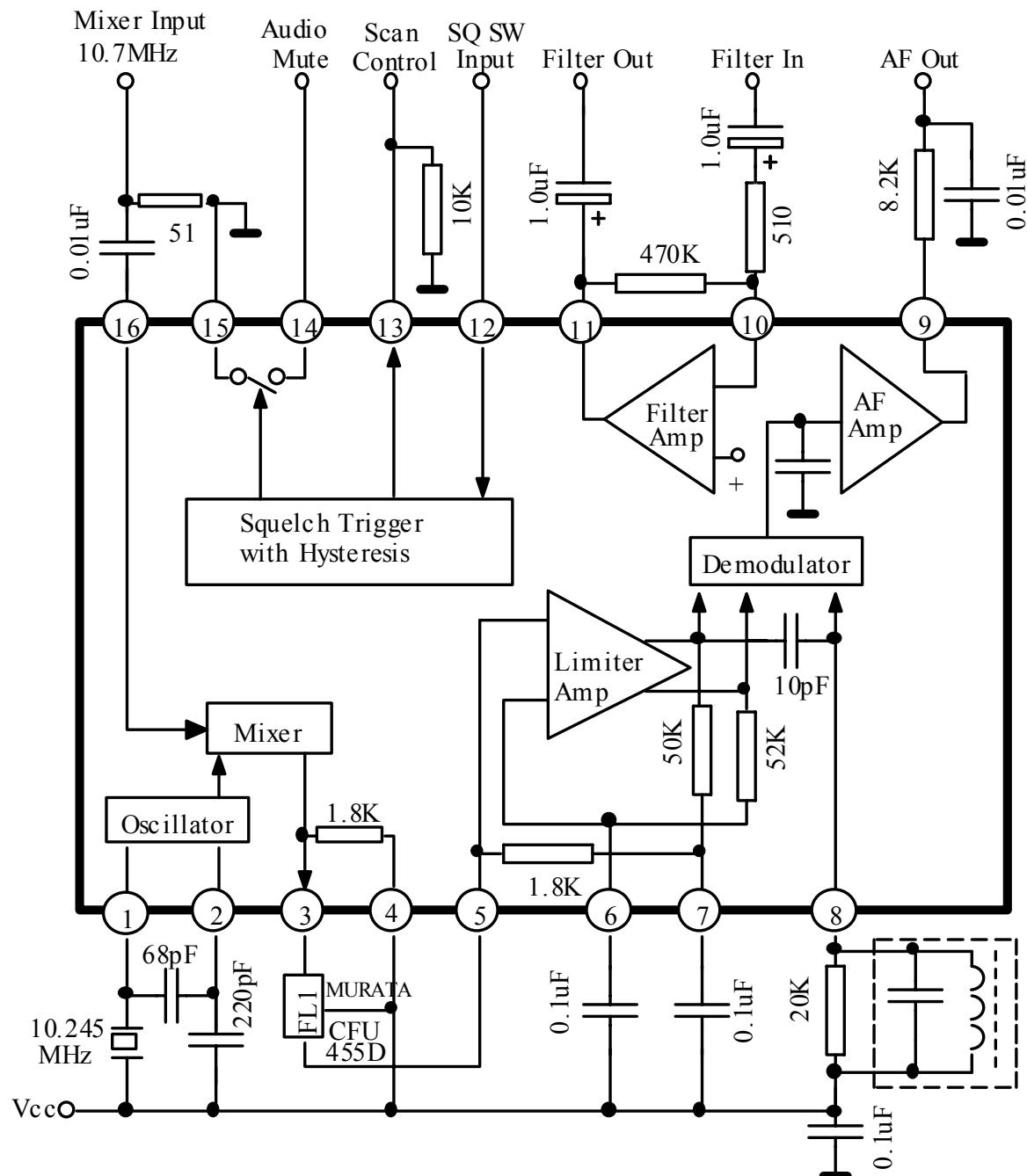
Characteristic	Symbol	Value	Unit
Maximum Supply Voltage	Vcc(MAX)	10	V
Supply Voltage Range	Vcc	2.0~8.0	V
Detector Input Voltage	VIN(DET)	1.0	Vp-p
RF Input Voltage	VIN(RF)	1.0	Vrms
Mute Function	VMUTE	-0.5~+5.0	Vpeak
Junction Temperature	TJ	150	°C
Operating Temperature	Topr	-30~+70	°C
Storage Temperature	Tstg	-65~150	°C

ELECTRICAL CHARACTERISTICS

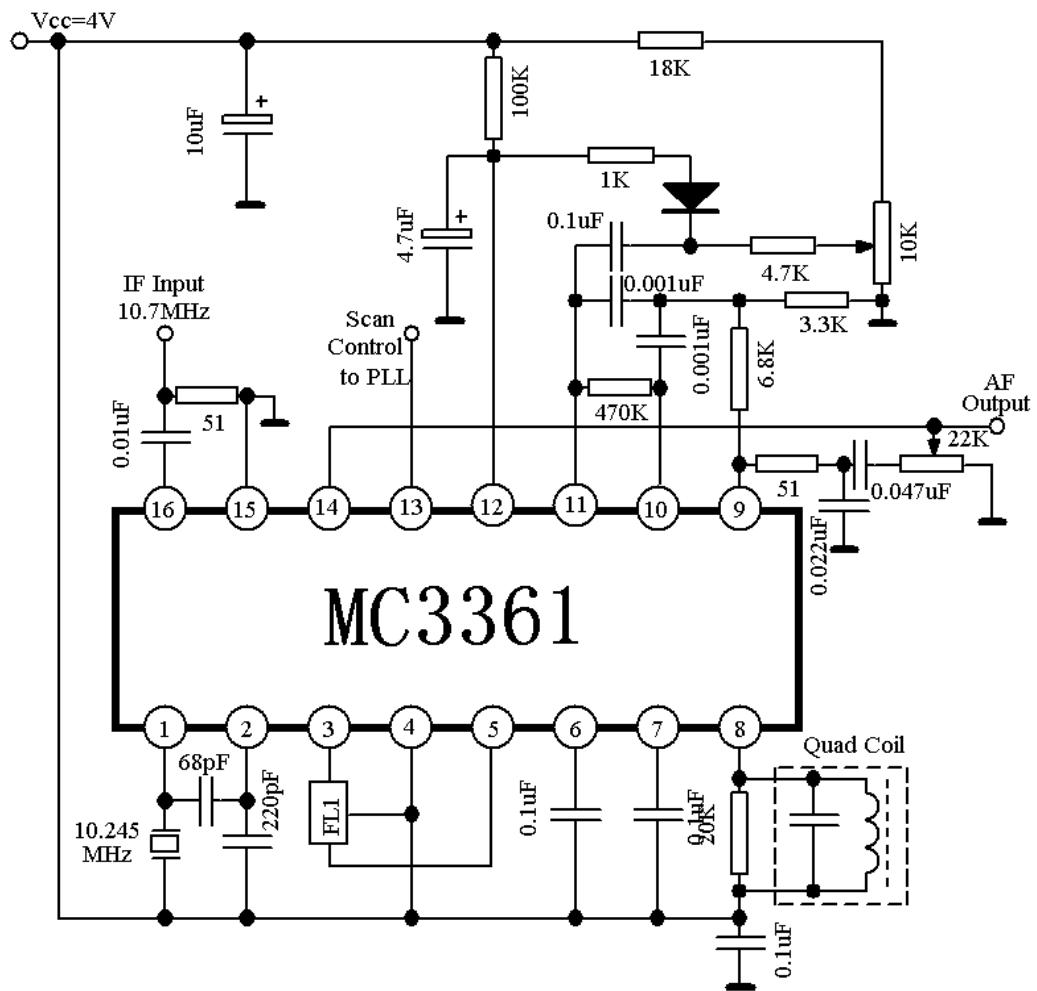
(Unless otherwise specified: Ta=25°C, Vcc=4V, fo=10.7MHz, fm=1kHz, Δf=±3kHz)

Characteristics	Symbol	Test conditions	Min	Typ	Max	Unit
Squelch Current	ICC1	Squelch off (V12=2V)	2.9	3.9	4.9	mA
	ICC2	Squelch on (V12=0V)	4.4	5.4	6.4	
Audio Output Voltage	VOUT	Vin=10mVrms	130	160	200	mVrms
Input Limiting Voltage	VIN(Lim)	-3dB Limiting		2.0	6.0	μV
Total Harmonic Distortion	THD	VOUT =170mVrms		0.8		%
Recovered Output Noise Voltage	VNO	No Input Signal	60	80	250	mVrms
Drop Voltage AF Gain Loss	ΔGv	Vcc=4V → 2V	-3	-0.6		dB
Detector Output Resistance	ROUT			450		Ω
Signal to Noise Ratio	S/N		36	67		dB
Filter Gain	Gv	Vin=5mVrms, f=10kHz	40	50		dB
Filter Output DC Voltage	VO(DC)		1.0	1.3	1.6	VDC
Mute Low Resistance	RON(Mute)	Mute Switch-on		10		Ω
Mute High Resistance	ROff(Mute)	Mute Switch-off	1.0	10		MΩ
Scan Control Low	VL(Scan)	Mute off(V12=2V)		0	0.4	VDC
Scan Control High	VH(Scan)	Mute on(V12=0V)	3.0	3.5		VDC
Trigger Hysteresis	VTH	Squelch on/off		45	100	mVrms
Mixer Conversion Gain	GV(Mix)			28		dB
Mixer Input Resistance	Ri(Mix)			3.3		kΩ
Mixer Input Capacitance	Ci(Mix)			2.2		pF

BLOCK DIAGRAM AND TEST CIRCUIT



APPLICATION CIRCUIT



TYPICAL PERFORMANCE CHARACTERISTICS

