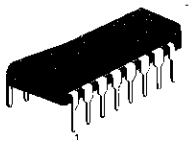
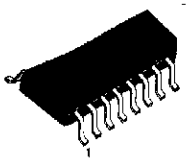
INTRODUCTION

The KA3361B 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.

16-DIP-300A



16-SOP-225



FEATURES

- Low power consumption (4.0mA typ. at V_{CC} = 4.0V)
- Excellent input sensitivity (-3dB limiting, 2.0 μ V_{rms} 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

Device	Package	Operating Temperature
KA3361B	16-DIP-300A	-20 ~ + 70℃
KS3361BD	16-SOP-225	

PIN CONFIGURATION

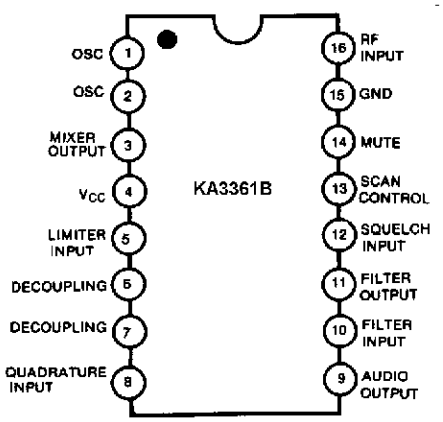


Fig. 1

ABSOLUTE MAXIMUM RATINGS (Ta = 25℃)

Characteristic	Symbol	Value	Unit
Max. Supply Voltage	$V_{CC\,(MAX)}$	10	V
Supply Voltage Range	V_{CC}	2.5 to 7.0	V
Detector Input Voltage	$V_{I\,(DET)}$	1.0	V_{P-P}
RF Input Voltage (V_{CC} = 4.0V)	$V_{I\,(RF)}$	1.0	V_{rms}
Mute Function	V_{MUTE}	- 0.5 ~ + 5.0	V_{peak}
Operating Temperature	T_{OPR}	- 20 ~ + 70	℃
Storage Temperature	T_{STG}	- 65 ~ + 150	℃

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

(V_{CC} = 4.0V, fo = 10.7MHz, △f = ⊥3KHz, f_{MOD} = 1KHz, Ta = 25℃, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Operating Current	I_{CC}	Squelch off (V_{12} = 2V) Squelch on (V_{12} = GND)	—	4.0 6.0	—	mA mA
Input Limiting Voltage	$V_{I\,(LIM)}$	-3.0dB limiting	—	2.0	—	μV
Detector Output Voltage	$V_{O\,(DET)}$	—	—	2.0	—	V_{dc}
Detector Output Impedance	$Z_{O\,(DET)}$	—	—	400	—	Ω
Audio Output Voltage	V_O	V_{in} = 10mV	100	160	—	mV_{rms}
Filter Gain	G_V	f = 10KHz, V_{in} = 5mV	40	48	—	dB
Filter Output DC Voltage	$V_{O\,(DC)}$	—	—	1.5	—	V_{dc}
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	V_{dc}
Scan Control "High" Output	$V_{H\,(SCAN)}$	Mute on (V_{12} = GND)	3.0	—	—	V_{dc}
Mixer Conversion Gain	$G_{V\,(MIXER)}$	—	—	24	—	dB
Maixer Input Resistance	$R_{I\,(MIXER)}$	—	—	3.3	—	kΩ
Mixer Input Capacitance	$C_{I\,(MIXER)}$	—	—	2.2	—	pF

APPLICATION CIRCUIT

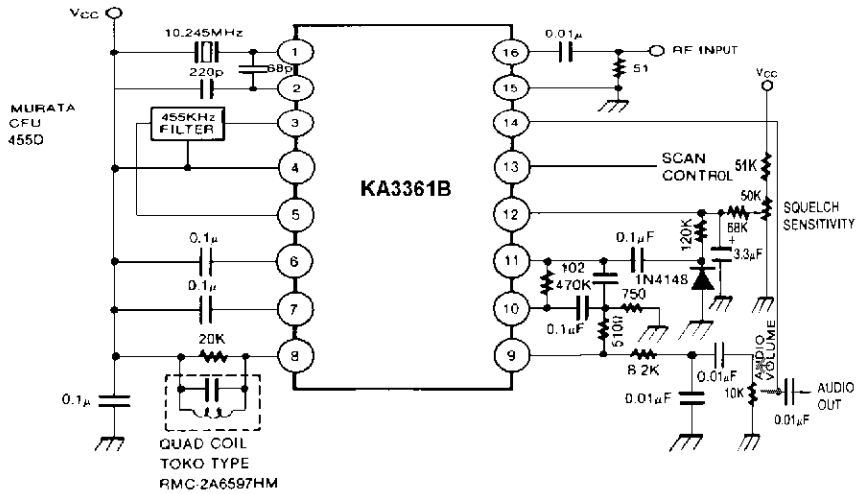
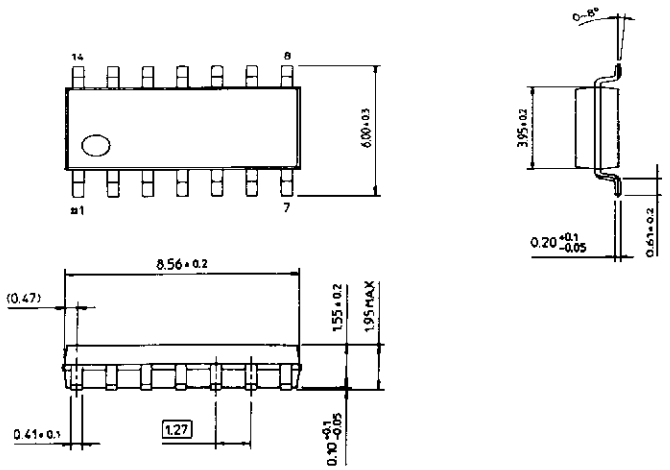


Fig. 2

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.

Dimensions in Milimeters

14-SOP-225B



16-DIP-300A