

# LOW POWER NARROW BAND IF AMPLIFIER

## —YD3361

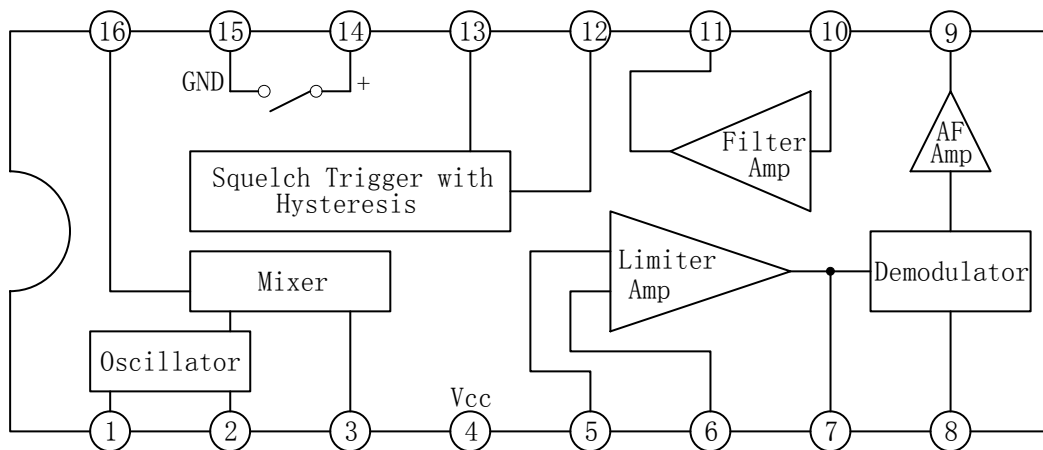
### DESCRIPTION

The YD3361 includes an Oscillator, Mixer, Limiting Amplifier, Quadrature Discriminator, Active Filter, Squelch, Scan Control and mute Switch. This device is designed for use in FM dual conversion communications equipment.

### FEATURES

- \*Operates from 2.0 to 7.0 V supply.
- \*Low drain current 3.9 mA Typical @ VCC=4.0 Vdc.
- \*Excellent sensitivity: input limiting voltage (-3.0 dB )2.6  $\mu$  V typical.
- \*Low number of external parts required.
- \*Operating frequency up to 60 MHz.

### BLOCK DIAGRAM



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**ABSOLUTE MAXIMUM RATINGS**(Tamb=25°C)

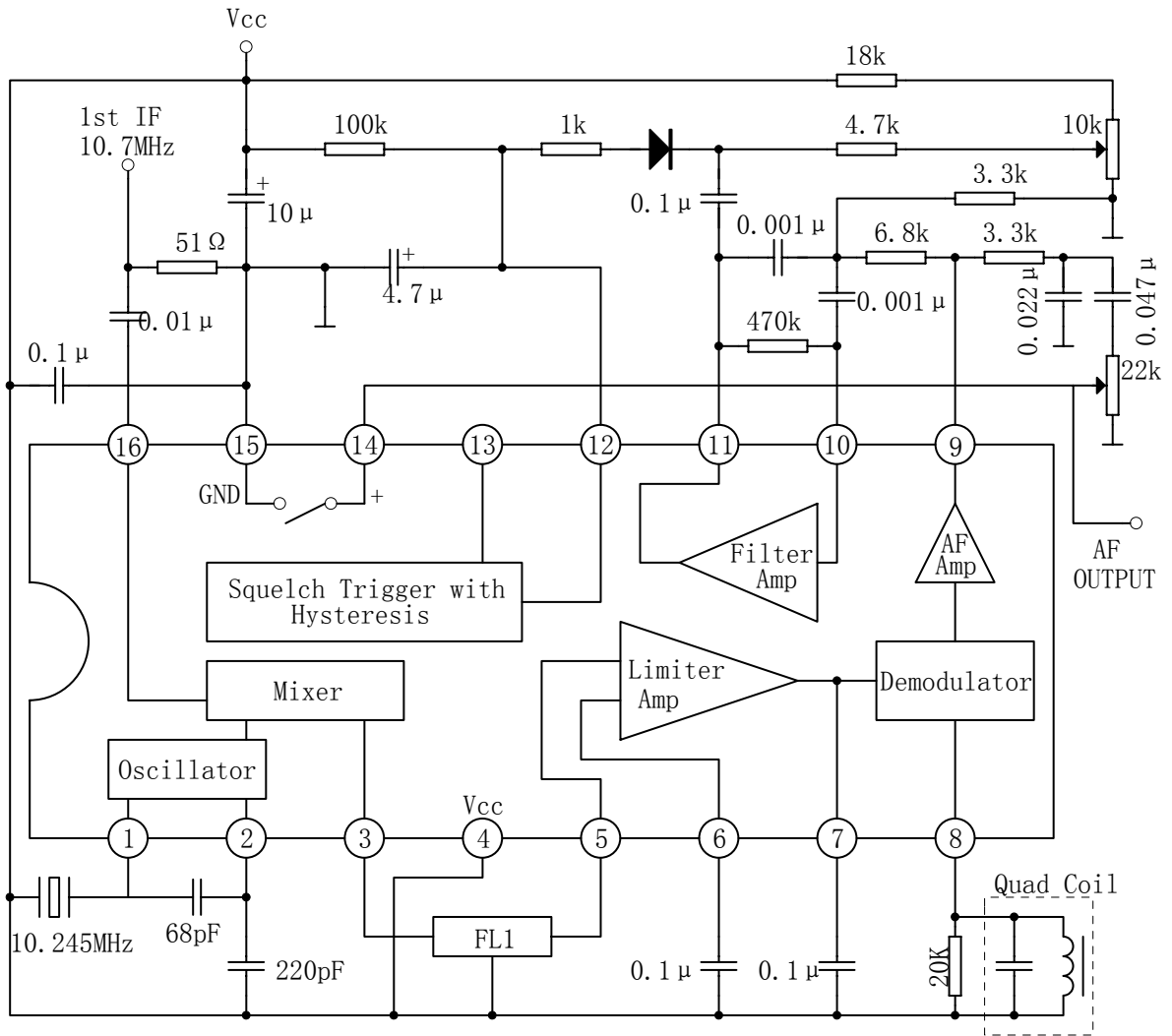
PARAMETERS	SYMBOL	VALUE	UNIT
Power Supply Voltage	V <sub>CC</sub>	10	V
Input Voltage(V <sub>cc</sub> ≥4.0V)	V <sub>15</sub>	1.0	V <sub>rms</sub>
Mute Function	V <sub>14</sub>	-0.5~5.0	V
Detector Input Voltage	V <sub>8</sub>	1.0	V <sub>p-p</sub>
Junction Temperature	T <sub>j</sub>	150	°C
Operating Temperature	Topr	-20~+70	°C
Storage Temperature	Tstg	-55~+150	°C

**ELECTRICAL CHARACTERISTICS**

(Tamb=25°C, V<sub>cc</sub>=1.3V, fm=1MHz, MOD=30% unless otherwise specified)

PARAMETERS	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V <sub>CC</sub>		2.4		7.0	V
Drain Current	I <sub>cc</sub>	Mute OFF	2.9	3.9	4.9	mA
		Mute ON	4.4	5.4	6.4	
Input Limiting Voltage	V <sub>ILIM</sub>	-3dBlimiting		2.6	6.0	μV
Recovered Audio Output Voltage	V <sub>od</sub>	V <sub>IN</sub> =10mV	130	160	200	mV
Distortion	THD			0.86		%
Recovered Output Voltage	V <sub>9</sub>	No Input Signal	1.2	1.5	1.8	V
Detector Output Impedance	R <sub>9</sub>			450		Ω
Drop Voltage AF Gain Loss	ΔA <sub>F</sub>		-3.0	-0.6		dB
Filter Gain	A <sub>VF</sub>	f=10kHz, Vin=0.3mV	40	50		dB
Filter Output Voltage	V <sub>OF</sub>		1.0	1.3	1.6	V
Mute Function	R <sub>OL</sub>			30	50	Ω
	R <sub>OH</sub>		1.0	11		MΩ
Scan Level	V <sub>13L</sub>	V <sub>12</sub> =1.0V		0	0.4	V
	V <sub>13H</sub>	V <sub>12</sub> =0V	3.0	3.5		
Trigger Hysteresis	V <sub>TH</sub>			45	100	mV
Mixer Conversion Gain	A <sub>VM</sub>			28		dB
Mixer Input Resistance	R <sub>16</sub>			3.3		kΩ
Mixer Input Capacitor	C <sub>16</sub>			2.2		pF

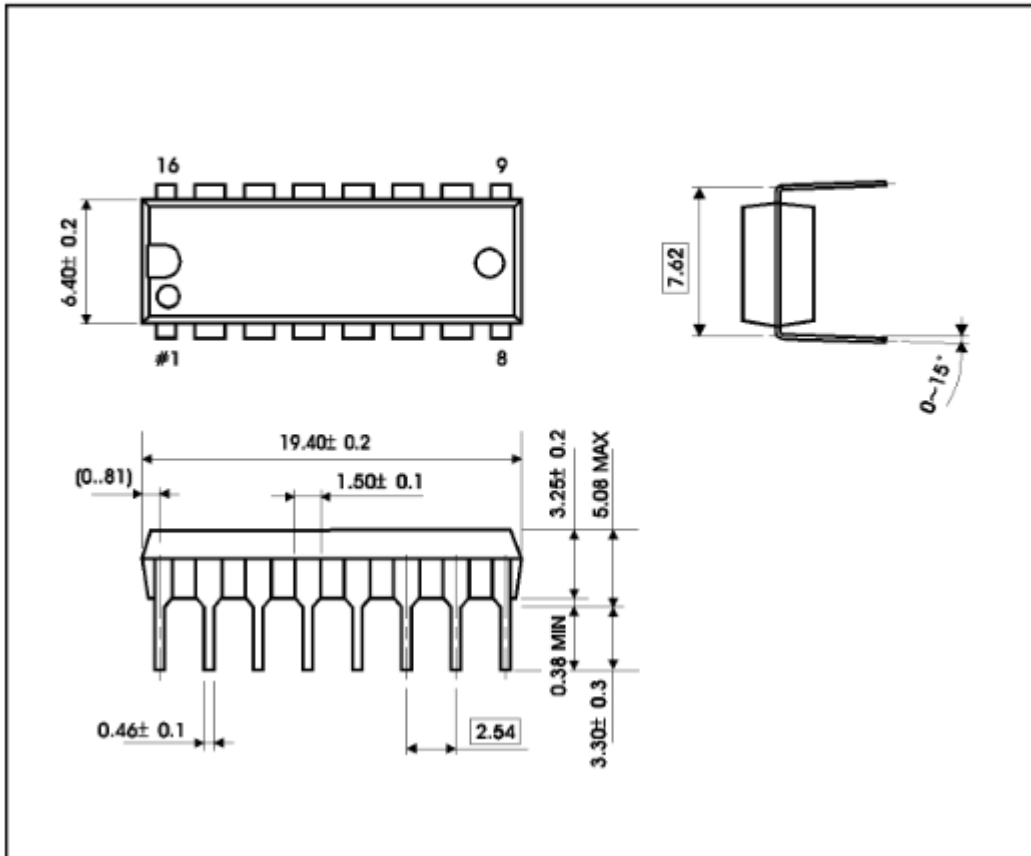
APPLICATION CIRCUIT



OUTLINE DRAWING (1)

**DIP-16**

unit:mm



OUTLINE DRAWING (2)

SOP-16



unit:mm

