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.

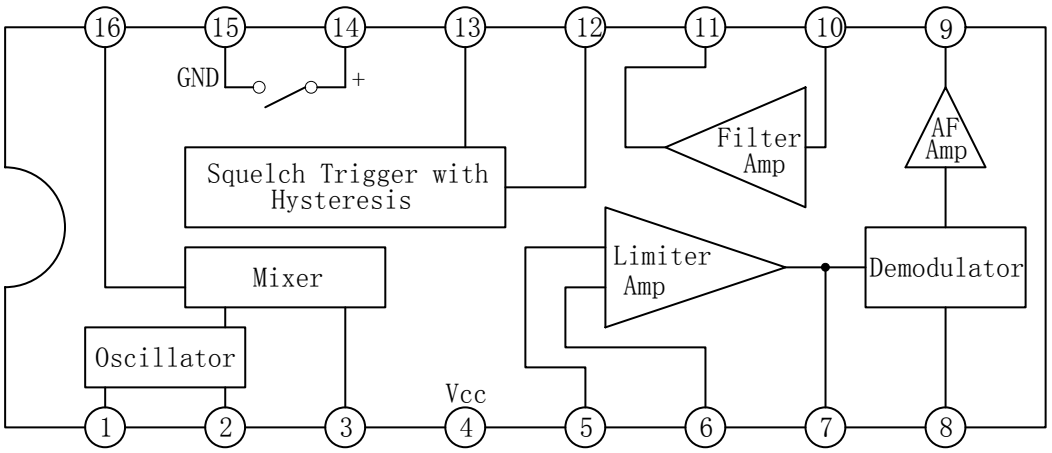
*Low drain current 3.9 mA Typical @ VCC=4.0 Vdc.

*Excellent sensitivity: input limiting voltage (–3.0 dB)2.6μV typical.

*Low number of external parts required.

*Operating frequency up to 60 MHz.

BLOCK DIAGRAM



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ABSOLUTE MAXIMUM RATINGS(Tamb=25℃)

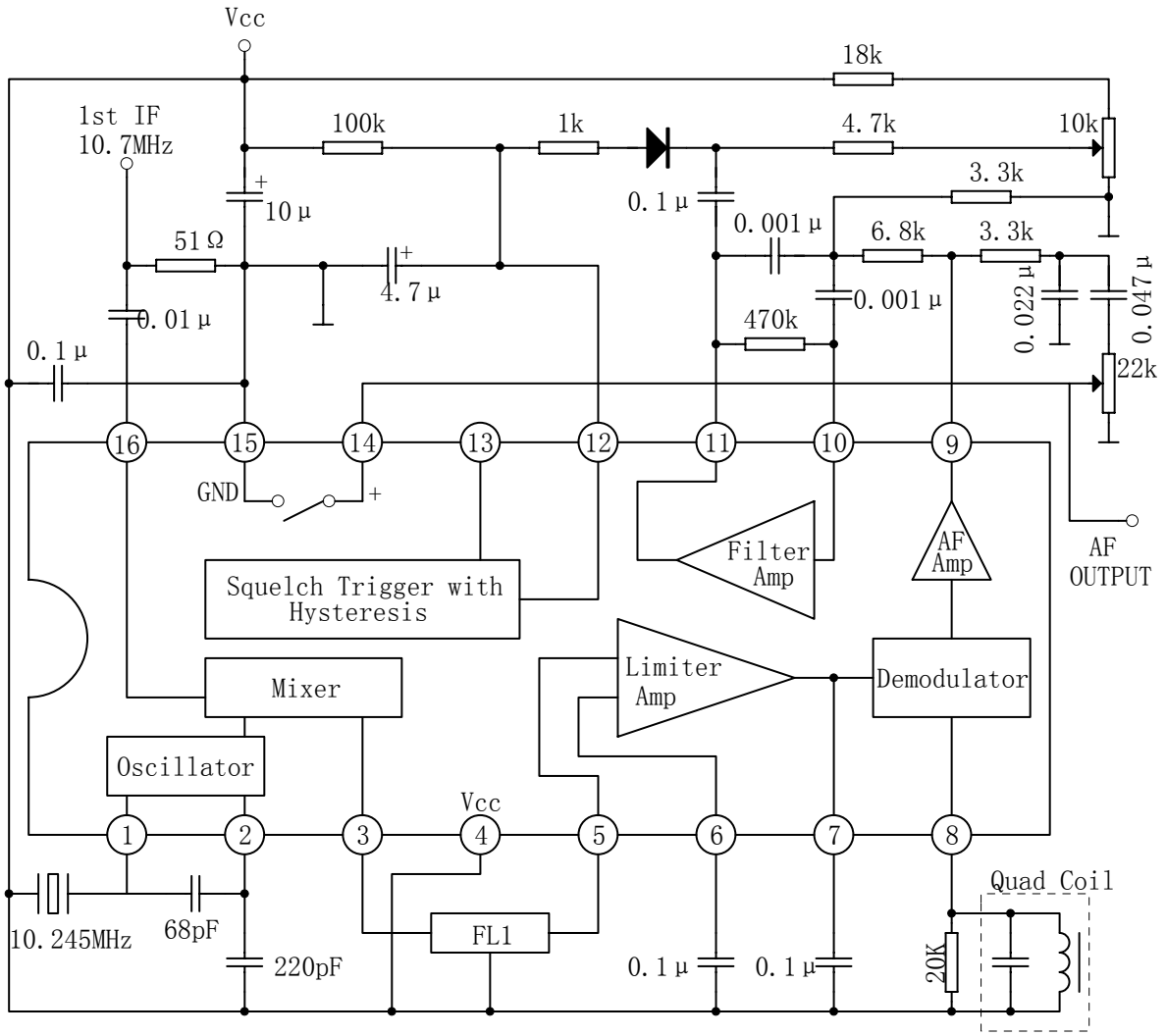
PARAMETERS	SYMBOL	VALUE	UNIT
Power Supply Voltage	V_{CC}	10	V
Input Voltage(Vcc≥4.0V)	V_{15}	1.0	Vrms
Mute Function	V_{14}	-0.5～5.0	V
Detector Input Voltage	V_8	1.0	Vp-p
Junction Temperature	Tj	150	℃
Operating Temperature	Topr	-20～+70	℃
Storage Temperature	Tstg	-55～+150	℃

ELECTRICAL CHARACTERISTICS

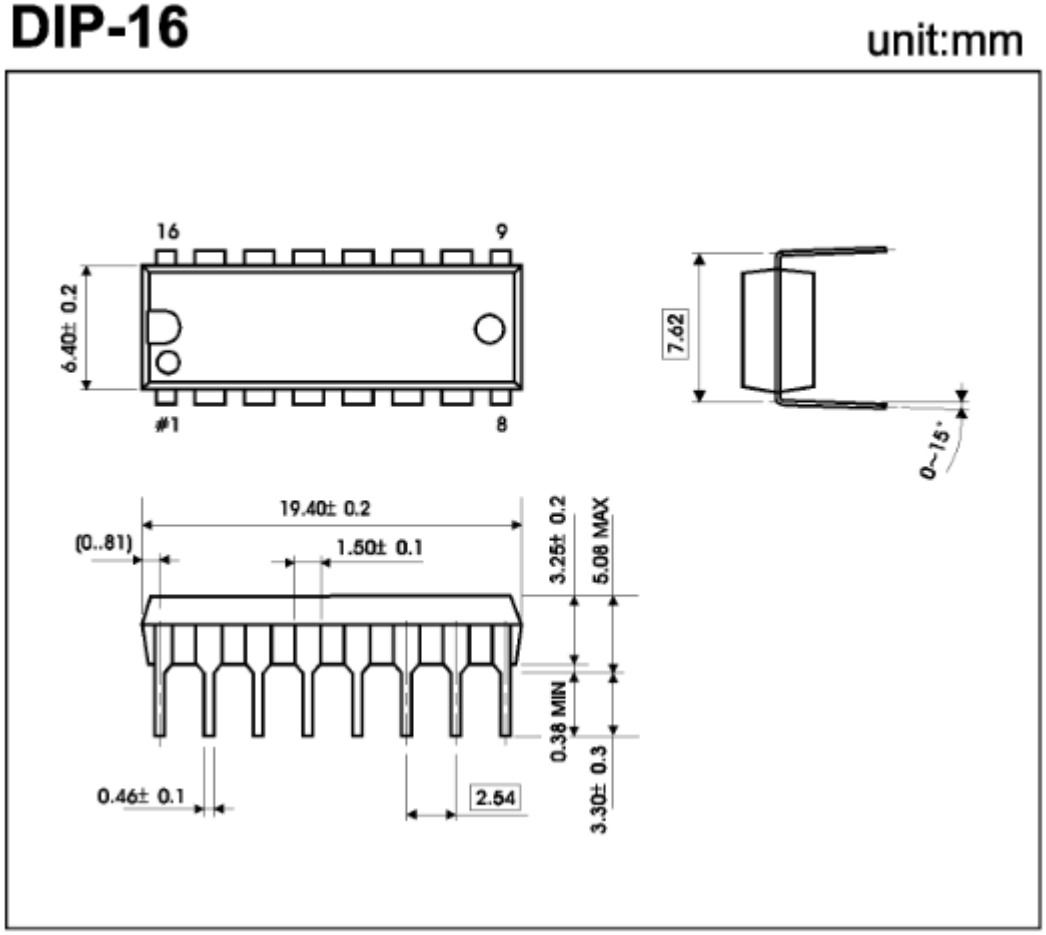
(Tamb=25℃, V_{CC}=1.3V, fm=1MHz, MOD=30% unless otherwise specified)

PARAMETERS	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V_{CC}		2.4		7.0	V
Drain Current	Icc	Mute OFF	2.9	3.9	4.9	mA
		Mute ON	4.4	5.4	6.4	
Input Limiting Voltage	V_{ILIM}	-3dBlimiting		2.6	6.0	μV
Recovered Audio Output Voltage	Vod	V_{IN}=10mV	130	160	200	mV
Distortion	THD			0.86		%
Recovered Output Voltage	V9	No Input Signal	1.2	1.5	1.8	V
Detector Output Impedance	R9			450		Ω
Drop Voltage AF Gain Loss	$\triangle A_F$		-3.0	-0.6		dB
Filter Gain	A_{VF}	f=10kHz，Vin=0.3mV	40	50		dB
Filter Output Voltage	V_{OF}		1.0	1.3	1.6	V
Mute Function	R_{OL}			30	50	Ω
	R_{OH}		1.0	11		MΩ
Scan Level	V_{13L}	V_{12}=1.0V		0	0.4	V
	V_{13H}	V_{12}=0V	3.0	3.5		
Trigger Hysteresis	V_{TH}			45	100	mV
Mixer Conversion Gain	A_{VM}			28		dB
Mixer Input Resistance	R_{16}			3.3		kΩ
Mixer Input Capacitor	C_{16}			2.2		pF

APPLICATION CIRCUIT



OUTLINE DRAWING (1)



OUTLINE DRAWING (2)

