

LOW POWER NARROW BAND FM IF

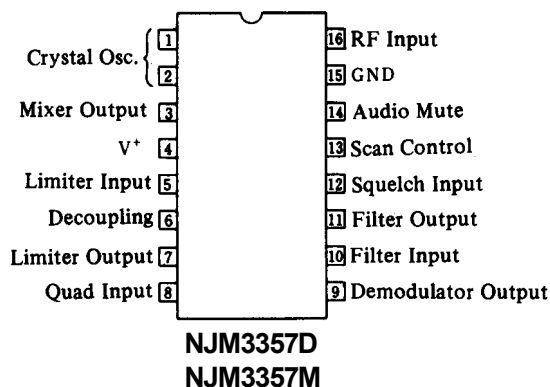
■ GENERAL DESCRIPTION

The **NJM3357** includes Oscillator, Mixer, Limiting Amplifier, Quadrature Discriminator, Active Filter, Squelch Scan Control, and Mute Switch. The **NJM3357** is designed for use in FM dual conversion communication equipment.

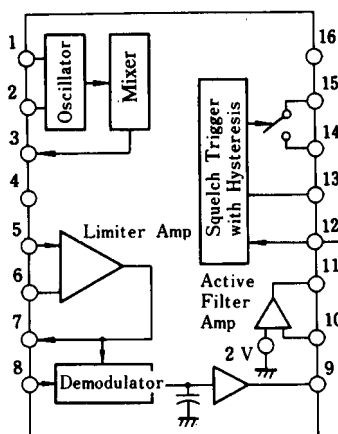
■ FEATURES

- Low Operating Current (3.0mA typ. @ $V^+=6V$)
- Minimum other parts.
- Package Outline DIP16, DMP16
- Bipolar Technology

■ PIN CONFIGURATION



■ BLOCK DIAGRAM



NJM3357

■ ABSOLUTE MAXIMUM RATINGS

($T_a=25^{\circ}\text{C}$)

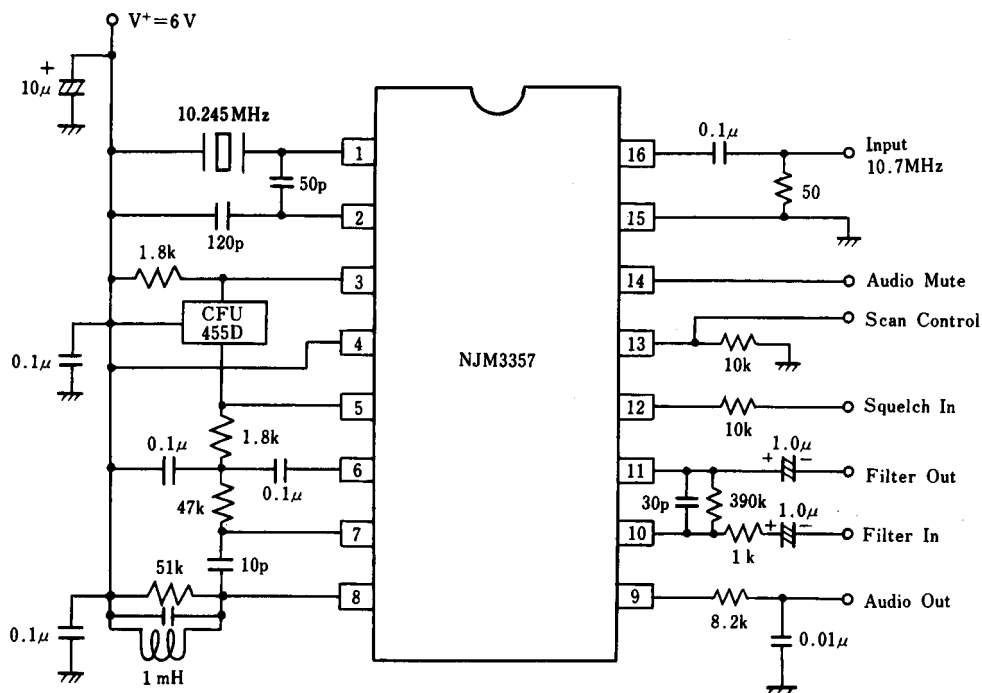
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	12	V
Operating Supply Voltage Range	V^+_{opr}	4 to 8	V
Detector Input Voltage	V_8	1.0	V_{P-P}
Input Voltage ($V \geq 6\text{V}$)	V_{16}	1.0	V_{rms}
Mute Function	V_{14}	-0.5 to 5.0	V_{PK}
Operating Temperature Range	T_{opr}	-40 to +85	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-40 to +125	$^{\circ}\text{C}$

■ ELECTRICAL CHARACTERISTICS

($V^+=6\text{V}$, $f_o=10.7\text{MHz}$, $\Delta f=\pm 3.0\text{kHz}$, $F_{mod}=1.0\text{kHz}$, $T_a=25^{\circ}\text{C}$)

PARAMETER	PIN	MIN.	TYP.	MAX.	UNIT
Operating Current	4				
Squelch OFF		-	2.0	-	mA
Squelch ON		-	3.0	5.0	mA
Input Limiting Voltage (-3dB Limiting)	16	-	5.0	10.0	μV
Detector Output Voltage	9	-	3.0	-	V
Detector Output Impedance	-	-	400	-	Ω
Recovered Audio Output Voltage ($V_{IN}=10\text{mVrms}$)	9	200	350	-	mVrms
Filter Gain ($f=10\text{kHz}$, $V_{IN}=5\text{mVrms}$)	-	40	46	-	dB
Filter Output Voltage	11	1.8	2.0	2.5	V
Trigger Hysteresis	-	-	100	-	mV
Mute Function Low	14	-	15	50	Ω
Mute Function High	14	1.0	10	-	M Ω
Scan Function Low (Mute OFF $V_{12}=2\text{V}$)	13	-	0	0.5	V
Scan Function High (Mute ON $V_{12}=0\text{V}$)	13	5.0	-	-	V
Mixer Conversion Gain	3	-	20	-	dB
Mixer Input Resistance	16	-	3.3	-	k Ω
Mixer Input Capacitance	16	-	2.2	-	pF

■ TEST CIRCUIT

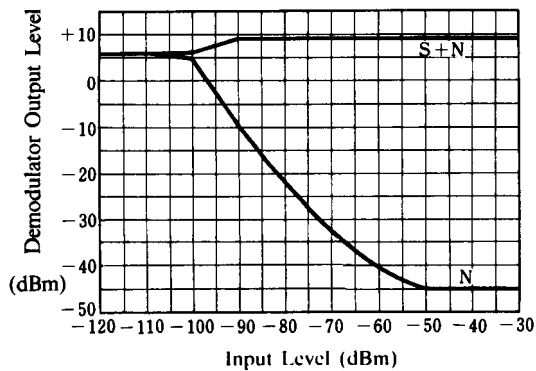


1mH: TOKO IFP455B

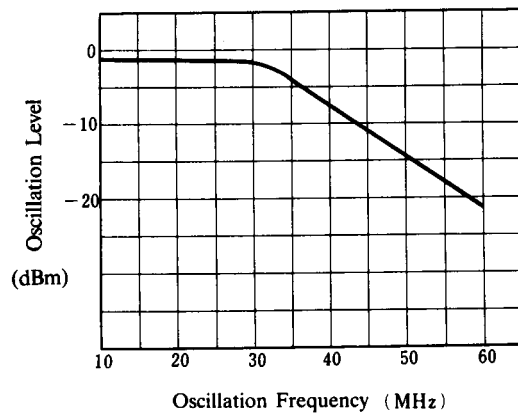
■ TYPICAL CHARACTERISTICS

Input - Output

($V^+ = 6.0\text{V}$, $f_{in} = 10.7\text{MHz}$, $f_{mod} = 1\text{kHz}$,
 $\Delta f = \pm 3\text{kHz}$)

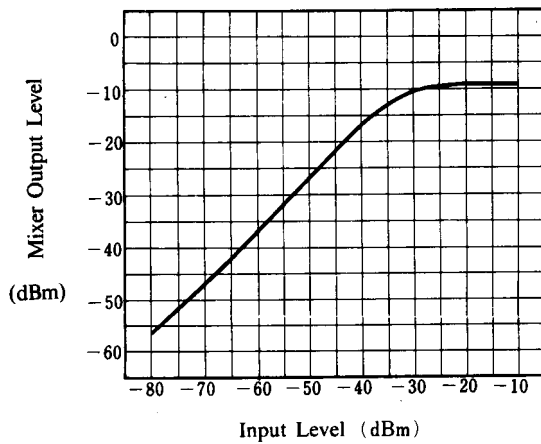


Local OSC Frequency



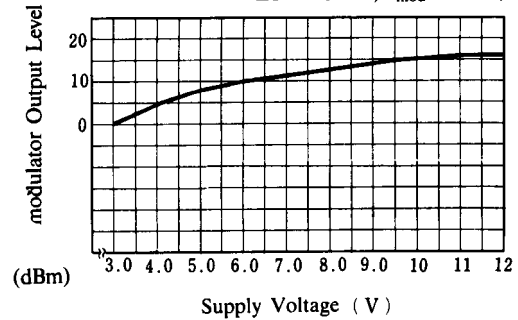
Mixer Input - Output

($V^+ = 6.0$, $f_{in} = 10.7\text{MHz}$, 2nd IF = 455kHz)



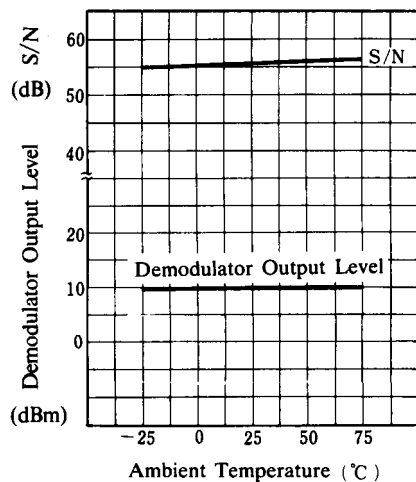
Demodulator Output Level

($f_{in} = 10.7\text{MHz}$, $V_{in} = 10\text{mV}_{rms}$,
 $\Delta f = \pm 3\text{kHz}$, $f_{mod} = 1\text{kHz}$)



Demodulator Output Level, S / N

($V^+ = 6.0\text{V}$, $f_{in} = 10.7\text{MHz}$, $V_{in} = 10\text{mV}_{rms}$,
 $f_{mod} = 1\text{kHz}$, $\Delta f = \pm 3\text{kHz}$)



[CAUTION]

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