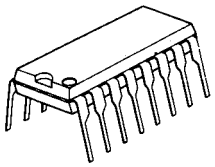
LOW POWER NARROW BAND FM IF

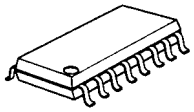
■ GENERAL DESCRIPTION

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.

■ PACKAGE OUTLINE



NJM3357D

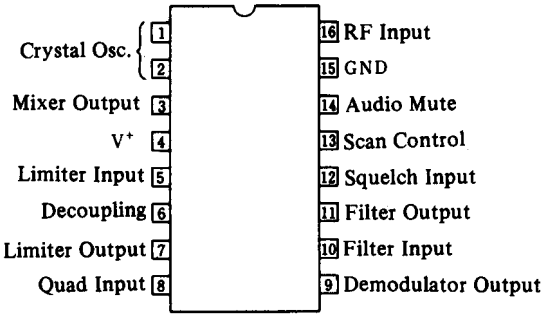


NJM3357M

■ FEATURES

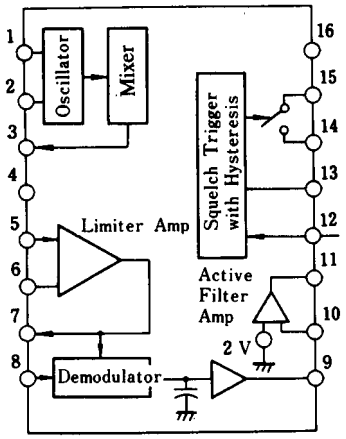
- Low Operating Current (3.0mA typ. @V^+=6V)
- Minimum other parts.
- Package Outline DIP16, DMP16
- Bipolar Technology

■ PIN CONFIGURATION



NJM3357D
NJM3357M

■ BLOCK DIAGRAM



NJM3357D
NJM3357M

■ ABSOLUTE MAXIMUM RATINGS

(T_a=25°C)

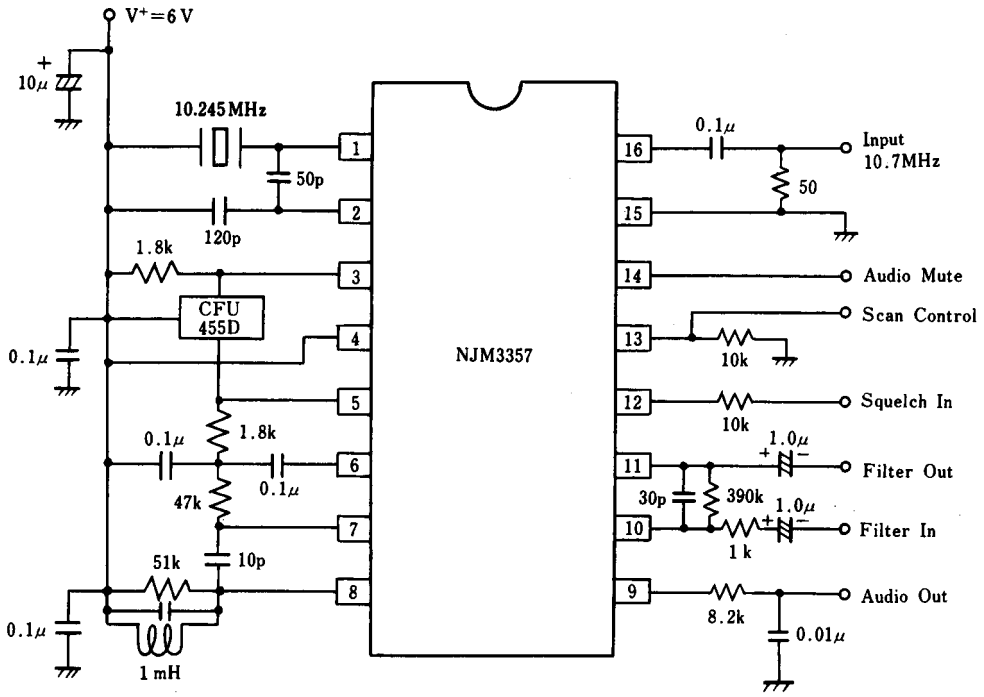
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	12	V
Operating Supply Voltage Range	V^+opr	4 to 8	V
Detector Input Voltage	V_8	1.0	V_{P-P}
Input Voltage (V^+≥6V)	V_{16}	1.0	Vrms
Mute Function	V_{14}	-0.5 to 5.0	V_{PK}
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +125	°C

■ ELECTRICAL CHARACTERISTICS

(V^+=6V, f_O=10.7MHz, Δf=±3.0kHz, Fmod=1.0kHz, T_a=25°C)

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

■ TEST CIRCUIT

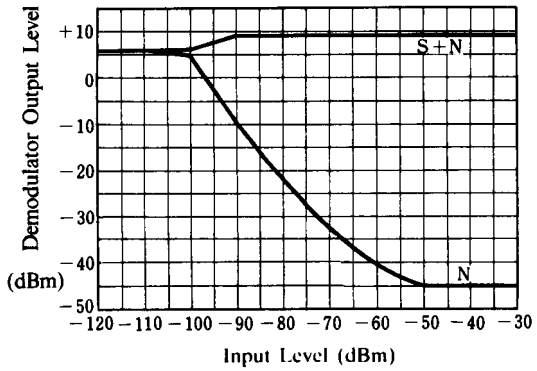


1mH: TOKO IFP455B

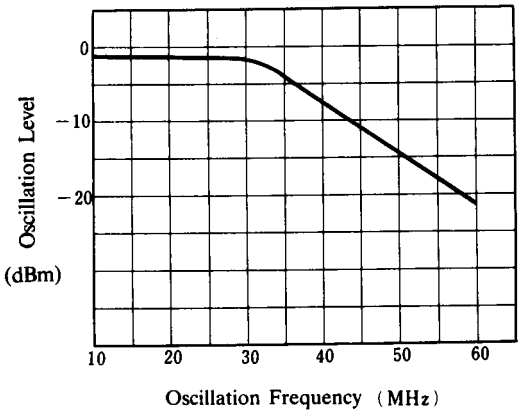
■ TYPICAL CHARACTERISTICS

Input - Output

(V^+=6.0V, f_{in}=10.7MHz, f_{mod}=1kHz, Δf=±3kHz)

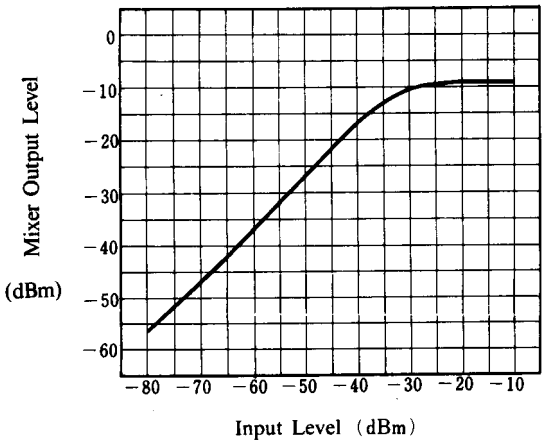


Local OSC Frequency



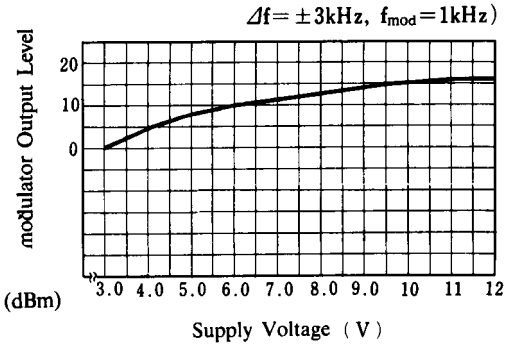
Mixer Input - Output

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



Demodulator Output Level

(f_{in}=10.7MHz, V_{in}=10mV_{rms}, Δf=±3kHz, f_{mod}=1kHz)



Demodulator Output Level, S / N

(V^+=6.0V, f_{in}=10.7MHz, V_{in}=10mV_{rms}, f_{mod}=1kHz, Δf=±3kHz)