

LOW POWER NARROW BAND FM IF

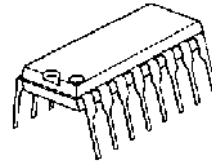
■ GENERAL DESCRIPTION

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.

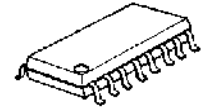
■ FEATURES

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

■ PACKAGE OUTLINE

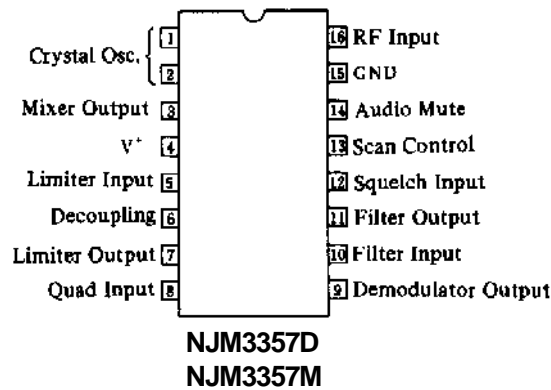


NJM3357D

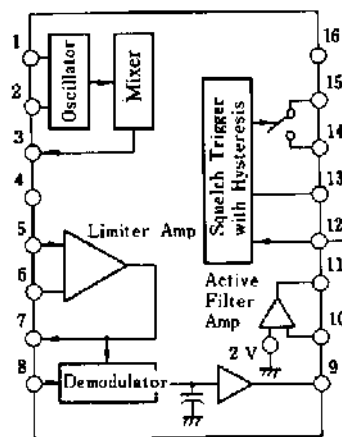


NJM3357M

■ PIN CONFIGURATION



■ BLOCK DIAGRAM



NJM3357D
NJM3357M

NJM3357

■ ABSOLUTE MAXIMUM RATINGS

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

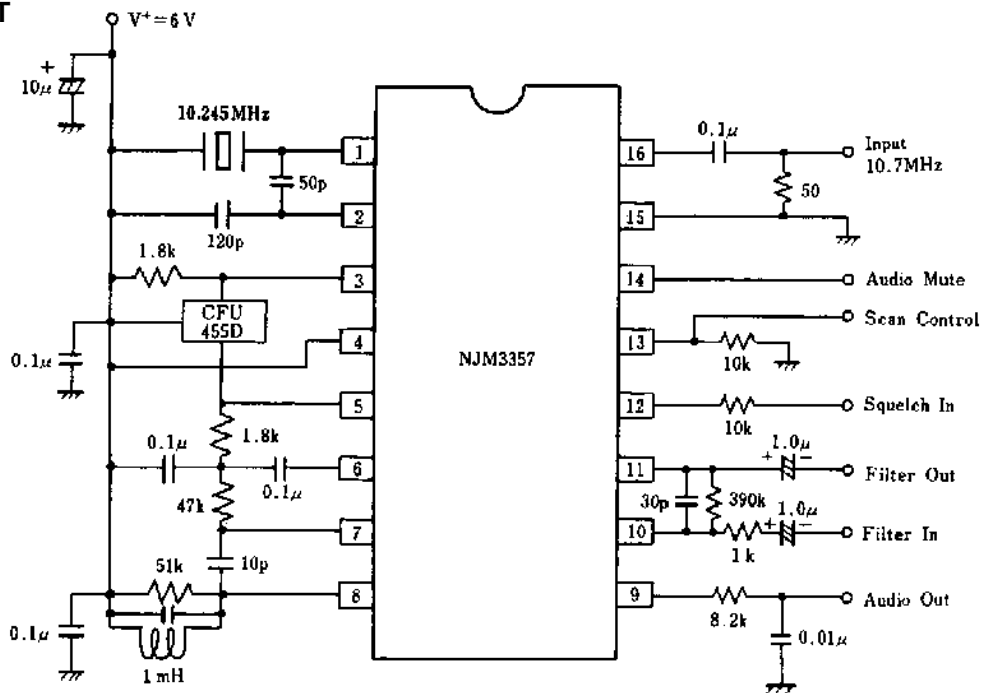
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	12	V
Operating Supply Voltage Range	V^+_{opr}	4 to 8	V
Detector Input Voltage	V_8	1.0	V_{P-P}
Input Voltage ($V^+ \geq 6\text{V}$)	V_{16}	1.0	V_{rms}
Mute Function	V_{14}	- 0.5 to + 5.0	V_{PK}
Power Dissipation	P_D	DIP16	700
		DMP16	300
Operating Temperature 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	SYMBOL	TEST CONDITION	PIN	MIN.	TYP.	MAX.	UNIT
Operating Current	I_{CC}	Squelch OFF	4	-	2.0	-	mA
		Squelch ON		-	3.0	5.0	mA
Input Limiting Voltage	V_{LIM}	-3dB Limiting	16	-	5.0	10.0	μV
Detector Output Voltage	V_{DET}		9	-	3.0	-	V
Detector Output Impedance	R_{DET}		-	-	400	-	Ω
Recovered Audio Output Voltage	V_O	$V_{IN}=10\text{mVrms}$	9	200	350	-	mVrms
Filter Gain	G_F	$f=10\text{kHz}$, $V_{IN}=5\text{mVrms}$	-	40	46	-	dB
Filter Output Voltage	V_F		11	1.8	2.0	2.5	V
Trigger Hysteresis	H_{YST}		-	-	100	-	mV
Mute Function Low	Mute		14	-	15	50	Ω
Mute Function High			14	1.0	10	-	$\text{M}\Omega$
Scan Function Low		Mute OFF, $V_{12}=2\text{V}$	13	-	0	0.5	V
Scan Function High	V_{SCAN}	Mute ON, $V_{12}=0\text{V}$	13	5.0	-	-	V
Mixer Conversion Gain	G_C		3	-	20	-	dB
Mixer Input Resistance	R_{IN}		16	-	3.3	-	$\text{k}\Omega$
Mixer Input Capacitance	C_{IN}		16	-	2.2	-	pF

■ TEST CIRCUIT

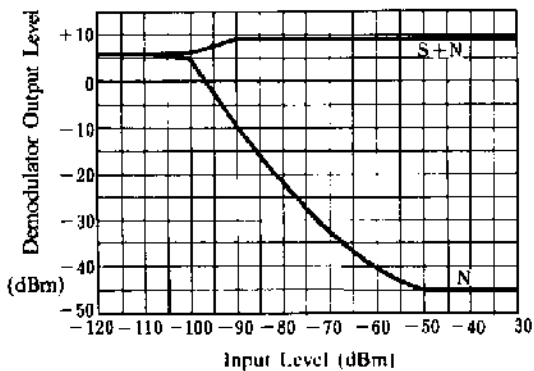


1mH: TOKO IFP455B

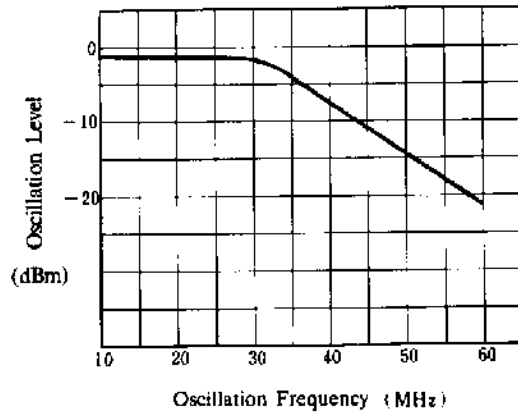
■ TYPICAL CHARACTERISTICS

Input - Output

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

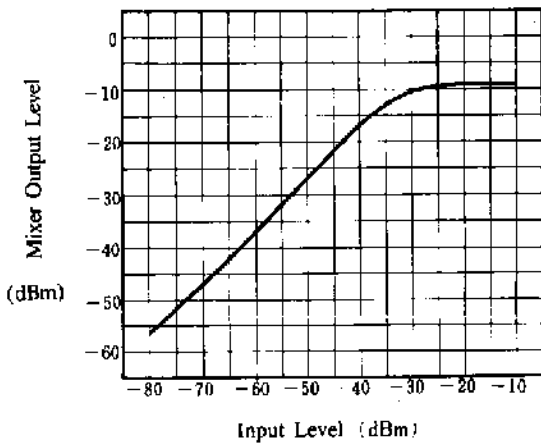


Local OSC Frequency



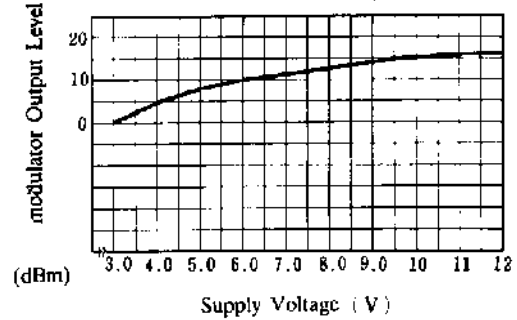
Mixer Input - Output

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



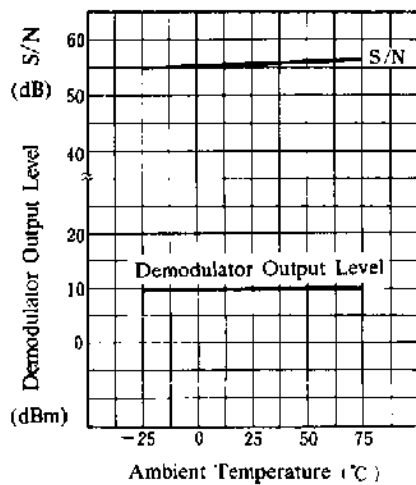
Demodulator Output Level

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



Demodulator Output Level, S/N

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



[CAUTION]

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