

LOW POWER NARROW BAND FM IF

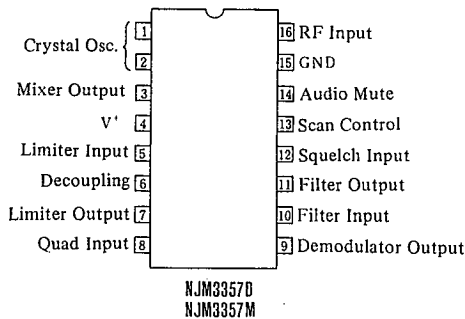
■ GENERAL DESCRIPTION

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.

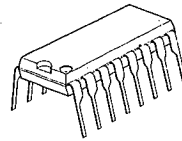
■ FEATURES

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

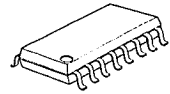
■ PIN CONFIGURATION



■ PACKAGE OUTLINE



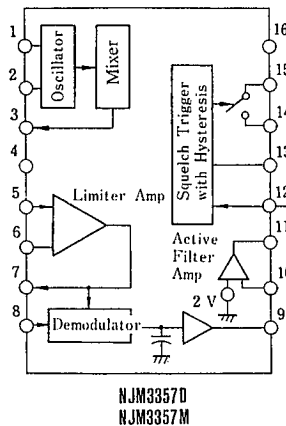
NJM3357D



NJM3357M

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■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V*	12	V
Operating Supply Voltage Range	V*opr	4~8	V
Detector Input Voltage	V <sub>s</sub>	1.0	V <sub>p,p</sub>
Input Voltage (V*≥6V)	V <sub>16</sub>	1.0	V <sub>rms</sub>
Mute Function	V <sub>14</sub>	-0.5~5.0	V <sub>PK</sub>
Operating Temperature Range	T <sub>opr</sub>	-20~75	°C
Storage Temperature Range	T <sub>stg</sub>	-40~125	°C

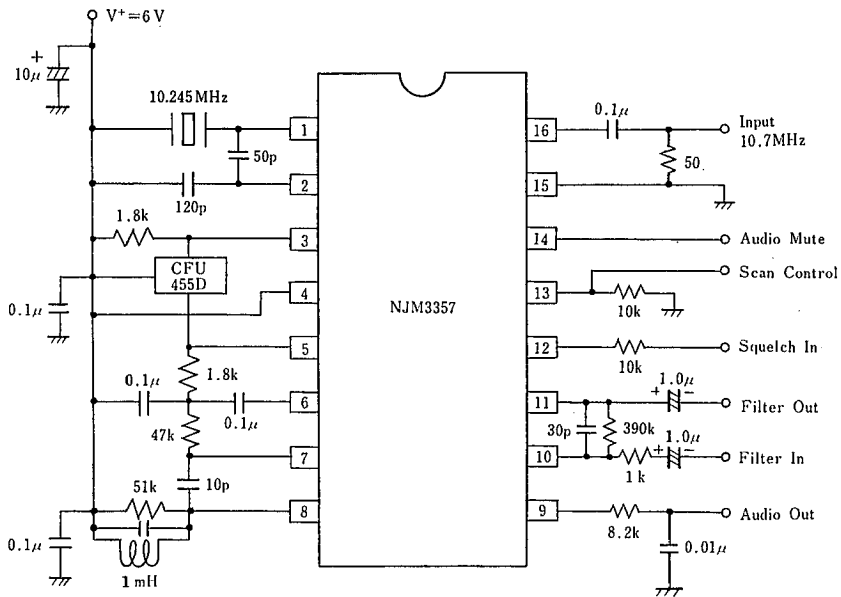
## ■ ELECTRICAL CHARACTERISTICS

(V<sup>+</sup>=6V, f<sub>0</sub>=10.7MHz, Δf=±3.0kHz, F<sub>mod</sub>=1.0kHz, T<sub>a</sub>=25°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 <sub>in</sub> =10mVrms)	9	200	350	—	mVrms
Filter Gain (f=10kHz, V <sub>in</sub> =5mVrms)	—	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	—	MΩ
Scan Function Low (Mute OFF V <sub>12</sub> =2V)	13	—	0	0.5	V
Scan Function High (Mute ON V <sub>12</sub> =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

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## ■ TEST CIRCUIT

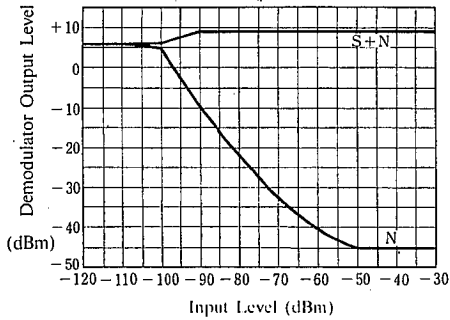


1mH: TOKO IFP455B

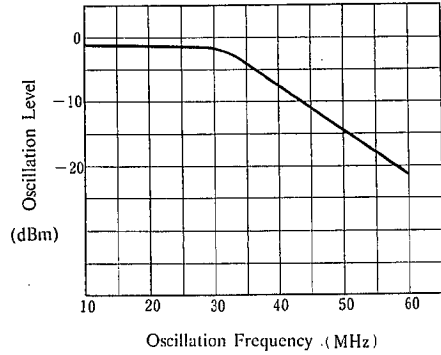
## TYPICAL CHARACTERISTICS

### Input-Output

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

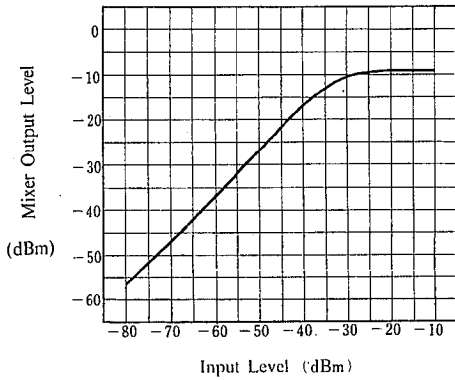


### Local OSC Frequency



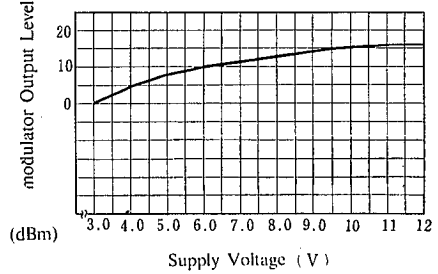
### Mixer Input-Output

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



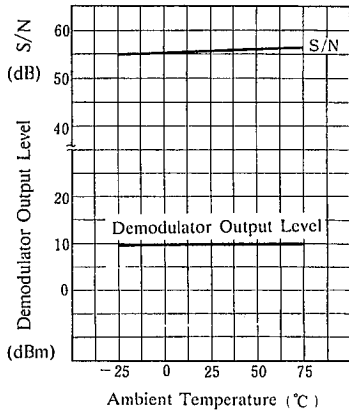
### Demodulator Output Level

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



### Demodulator Output Level, S/N

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



## MEMO

[CAUTION]

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