

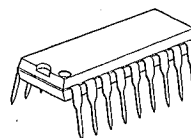
LOW POWER NARROW BAND FM IF

■ GENERAL DESCRIPTION

The NJM3359 is a low power narrow band FM detector integrated circuit for FM dual conversion of communication equipment. The NJM3359 includes oscillator, limiting amplifier, AFC circuit, quadrature detect, operational amplifier, squelch circuit, scan-control and muting switch.

The NJM3359 is a circuit of NJM3357 plus one stage limiting IF amplifier and AFC output terminal.

■ PACKAGE OUTLINE



NJM3359D

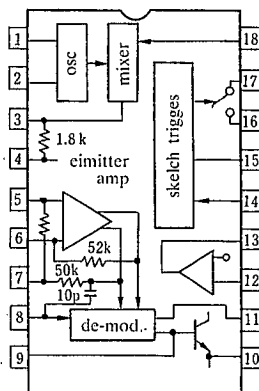
■ FEATURES

- Low Operating Current (3.6mA typ @V⁺=6V)
- Input Limiting Voltage (2.0 μVrms typ @ -3dB)
- Minimum other parts.
- Package Outline DIP18
- Bipolar Technology

■ RECOMMENDED OPERATIONAL CONDITION

- Operating Voltage 4~9V

■ PIN CONFIGURATION



NJM3359D

PIN FUNCTION

Pin No.

- | | |
|-----------------------|-------------------------|
| 1. crystal | 10. de-modulator output |
| 2. crystal | 11. AFC |
| 3. mixer output | 12. filter input |
| 4. V ⁺ | 13. filter output |
| 5. limiter input | 14. sketch input |
| 6. de-coupling | 15. scan, control |
| 7. de-coupling | 16. audio muting |
| 8. detector input | 17. GND |
| 9. de-modulator input | 18. RF input |

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■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

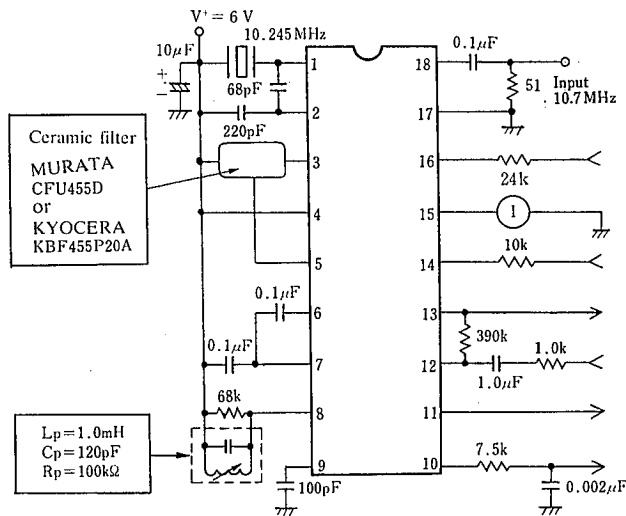
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V*	12	V
Input Voltage	V ₁₈	1.0	V _{rms}
Muting Function	V ₁₆	-0.7 ~ 12	V _{PK}
Operating Temperature Range	T _{opr}	-20 ~ 75	°C
Storage Temperature Range	T _{stg}	-40 ~ 125	°C

■ ELECTRICAL CHARACTERISTICS

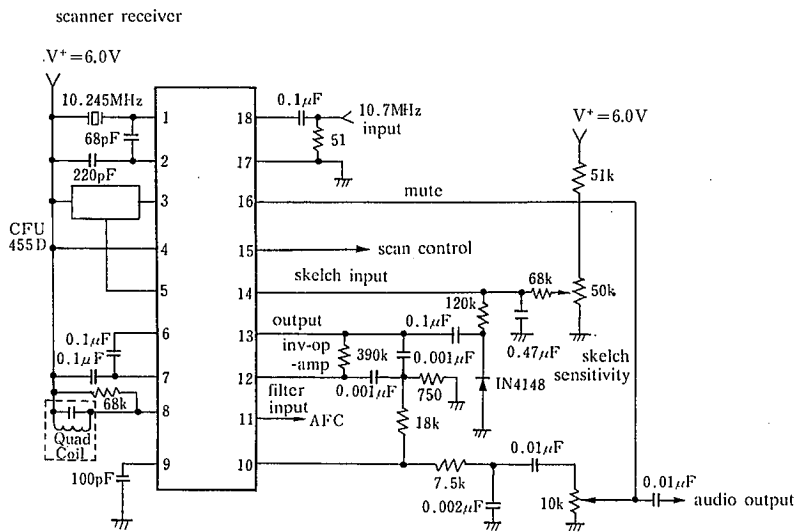
(V*=6V, fo=10.7MHz, Δf=±3.0kHz, fmod=1.0kHz, Ta=25°C)

PARAMETER	PIN	MIN.	TYP.	MAX.	UNIT
Operating Current	P _{IN} 4, 8				
Squelch OFF		—	3.6	6.0	mA
Squelch ON		—	5.4	7.0	mA
Input Sensitivity (S/N: 20dB)		—	8.0	—	μVrms
Input Limiting Voltage (-3dB)		—	2.0	—	μVrms
Mixer Voltage Gain	P _{IN} 18 - P _{IN} 3 Open	—	33	—	dB
Mixer Intercept Point	50Ω input	—	-1.0	—	dBm
Mixer Input Resistance		—	3.6	—	kΩ
Mixer Input Capacitance		—	2.2	—	pF
Recovered Audio Output Voltage	P _{IN} 10, V _{IN} =1.0mVrms	450	700	—	mVrms
Detector Center Frequency Slope	P _{IN} 10	—	0.3	—	V/kHz
AFC Center Frequency Slope	P _{IN} 11, R _L =∞	—	12	—	V/kHz
Filter Gain	f _{in} =10kHz, V _{IN} =5mV	40	51	—	dB
Squelch Threshold Voltage	P _{IN} 14, 10kΩ	—	0.62	—	V _{dc}
Scan Control Current	P _{IN} 15				
	P _{IN} 14 - High	—	0.01	1.0	μA
	- Low	2.0	2.4	—	mA
Mute Switch Impedance	P _{IN} 16 - GND				
	P _{IN} 14 - High	—	5.0	10	Ω
	- Low	—	1.5	—	MΩ

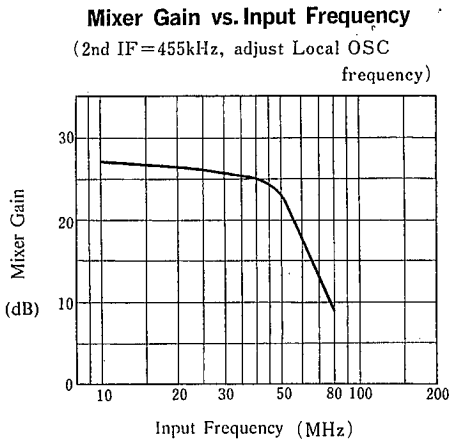
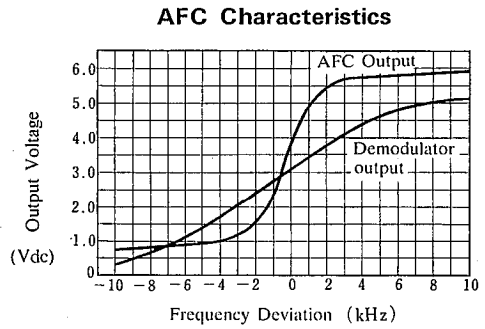
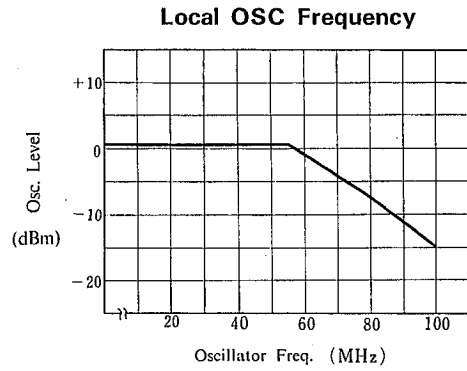
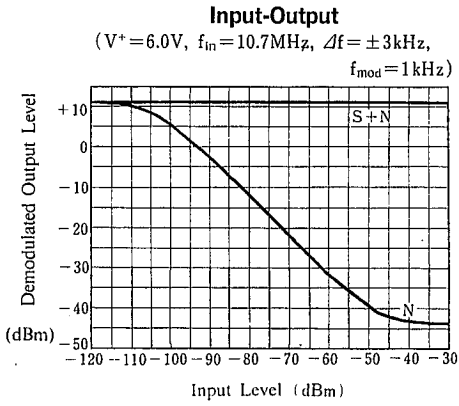
■ TEST CIRCUIT



■ APPLICATION EXAMPLE

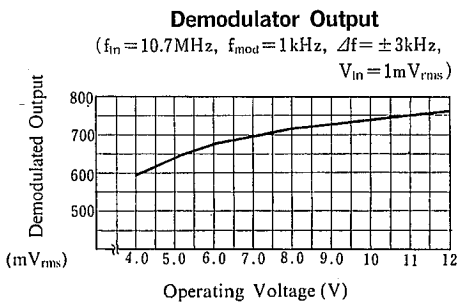
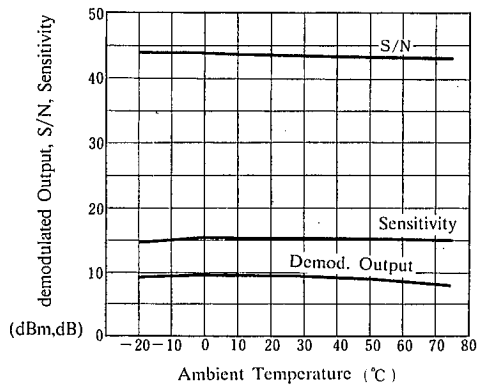


TYPICAL CHARACTERISTICS



Temperature Characteristics

($V^+ = 6.0V$, $f_{in} = 10.7MHz$, $f_{mod} = 1kHz$,
 $\Delta f = \pm 3kHz$, $S/N : V_{in} = 1mV_{rms}$,
 Sensitivity : $V_{in} = 8.0\mu V_{rms}$)



MEMO

[CAUTION]

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