

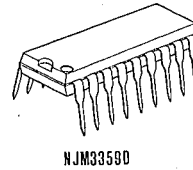
LOW POWER NARROW BAND FM IF

■ 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 detector, 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



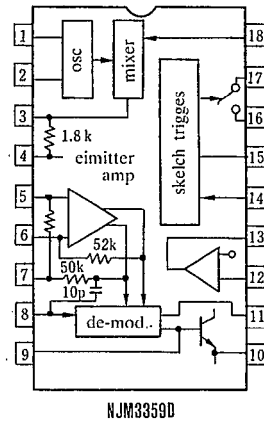
■ FEATURES

- 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



PIN FUNCTION

Pin No.	
1.	crystal
2.	crystal
3.	mixer output
4.	V+
5.	limiter input
6.	de-coupling
7.	de-coupling
8.	detector input
9.	de-modulator input
10.	de-modulator output
11.	AFC
12.	filter input
13.	filter output
14.	squelch input
15.	scan, control
16.	audio muting
17.	GND
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

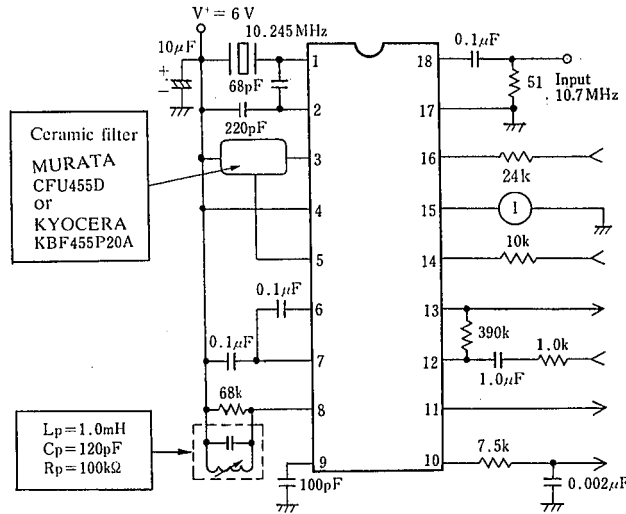
■ ELECTRICAL CHARACTERISTICS

(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	—	μV _{rms}
Input Limiting Voltage (-3dB)		—	2.0	—	μV _{rms}
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} =1.0mV _{rms}	450	700	—	mV _{rms}
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

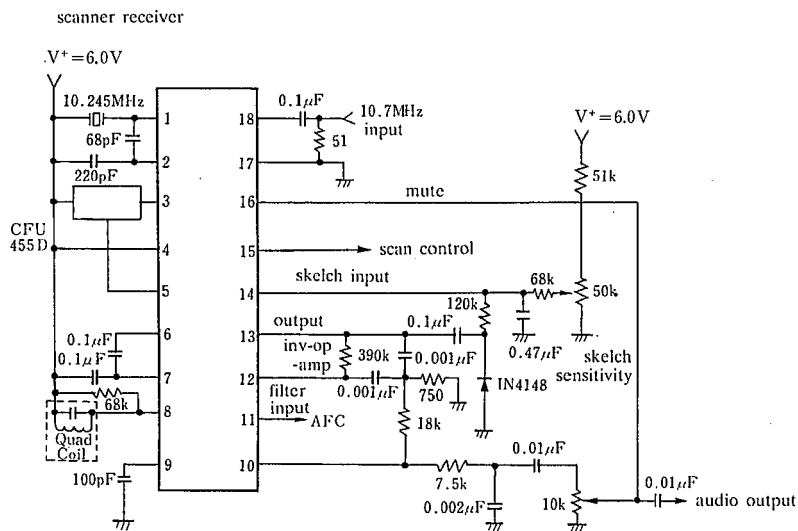
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■ TEST CIRCUIT



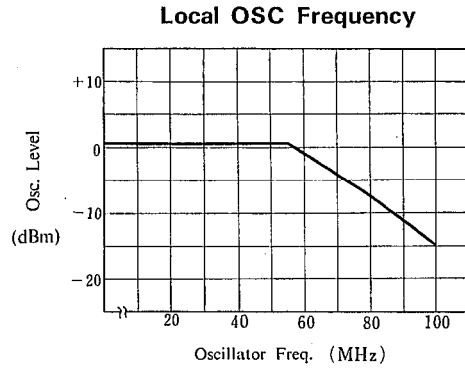
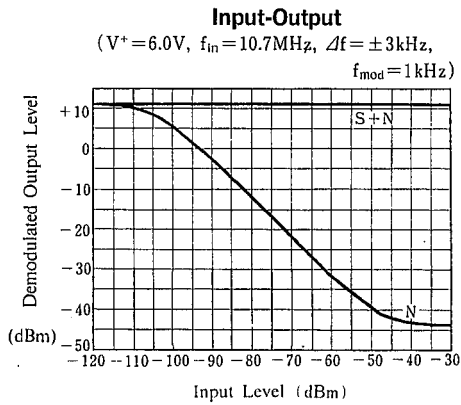
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■ APPLICATION EXAMPLE

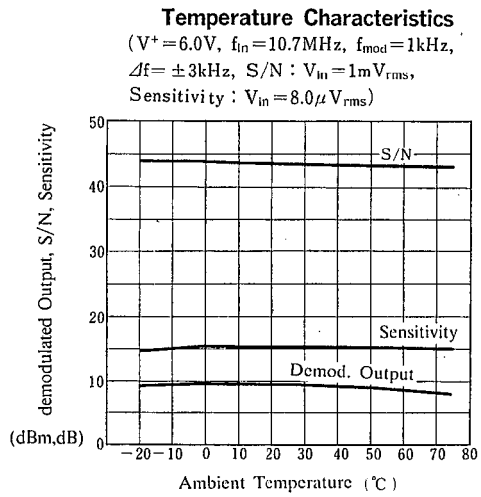
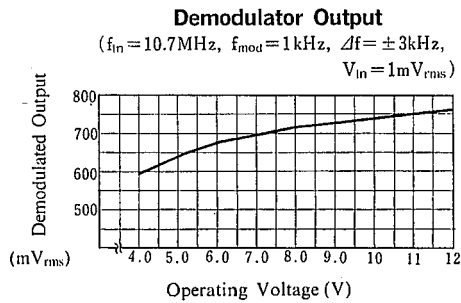
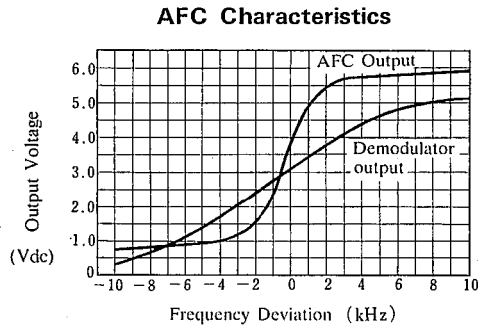
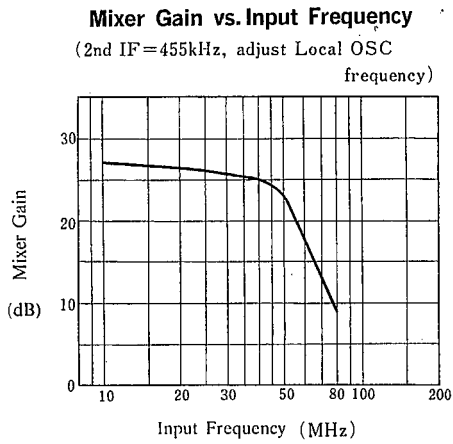


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■ TYPICAL CHARACTERISTICS



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MEMO

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