VIDEO SUB-CARRIER SIGNAL TRIPLER

■ GENERAL DESCRIPTION

The NJM2238 is a tripler oscillator based on video subcarrier frequency using PLL circuit technique. The NJM2238 is suit to standard clock generator of CCD clock and on-screen display.

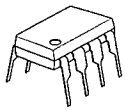
■ FEATURES

- Operating Voltage (+4.7V~+5.3V)
- Maximum Oscillator Frequency
- Tripler Output
- Package Outline DIP8,DMP8,SIP9
- Bipolar Technology

■ APPLICATION

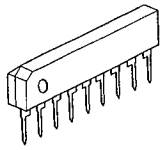
- VCR Video Camera AV-TV Video Disc Player

■ PACKAGE OUTLINE



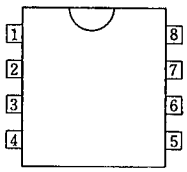
NJM2238D

NJM2238M

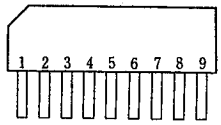


NJM2238S

■ PIN CONFIGURATION



PIN FUNCTION
1. f_{SC} Input
2. Detection Filter
3. GND
4. Oscillator Output
5. Oscillator C
6. V^+
7. Oscillator R
8. NC



PIN FUNCTION
1. f_{SC} Input
2. Detection Filter
3. GND 1
4. Oscillator Output
5. GND 2
6. Oscillator C
7. V^+
8. Oscillator R
9. NC

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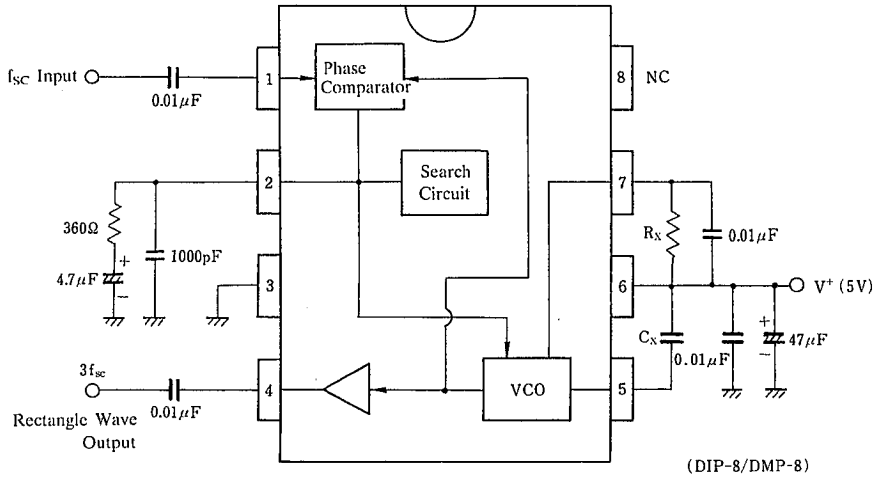
■ BLOCK DIAGRAM & EXTERNAL COMPONENTS



(DIP-8/DMP-8)

There is stray capacity assembled on PC board, and so select Rx, Cx to the value which pin 2 voltage (search voltage at VCO locked) becomes about 2V. Cx>5pF, 5.6kΩ>Rx>3.3kΩ

	NTSC	PAL
Cx	10p	8p
Rx	5.2k	4.4k

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	8	V
Input Voltage	V_{IN}	GND−0.3～V^++0.3	V
Power Dissipation	P_D	(DIP8) 500	mW
		(DMP8) 300	mW
		(SIP8) 500	mW
Operating Temperature Range	T_{opr}	−20～+75	℃
Storage Temperature Range	T_{stg}	−40～+125	℃

■ ELECTRICAL CHARACTERISTICS

(V^+=5V, Ta=25℃)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Recommended Oper. Voltage Range	V^+		4.7	5.0	5.3	V
Operating Current	I_{CC}	S1=1, S2=1, input Vil : 3.58MHz 1.0V_{p-p}. Count Current	5.6	8	10.4	mA
Input Voltage Swing Range	V_{fsc}	S1=1, S2=1, input Vil : 3.58 or 4.43MHz (sine wave), guaranteed Vil voltage range.	0.5	1.0	2.0	Vp-p
Input Sensitivity	V_{is}	S1=1, S2=1, input Vil : 3.58 or 4.43MHz (sine wave), actually tested minimum Vil voltage.	—	0.2	—	Vp-p
VCO Oscillation Swing	V_{O3}	S1=1, S2=2, input Vil : 3.58MHz, 1.0Vp-p.	0.7	0.9	1.1	Vp-p
fsc Leakage	L_{fsc}	S1=1, S2=2, input Vil: 3.58MHz, 1.0Vp-p. V_{O3} (fsc level/3fsc level)	—	−50	—	dB
3fsc Output Duty	D_{3fsc}	S1=1, S2=2, input Vil : 3.58MHz, 1.0Vp-p, V_{O3} output signal duty.	45	50	55	%

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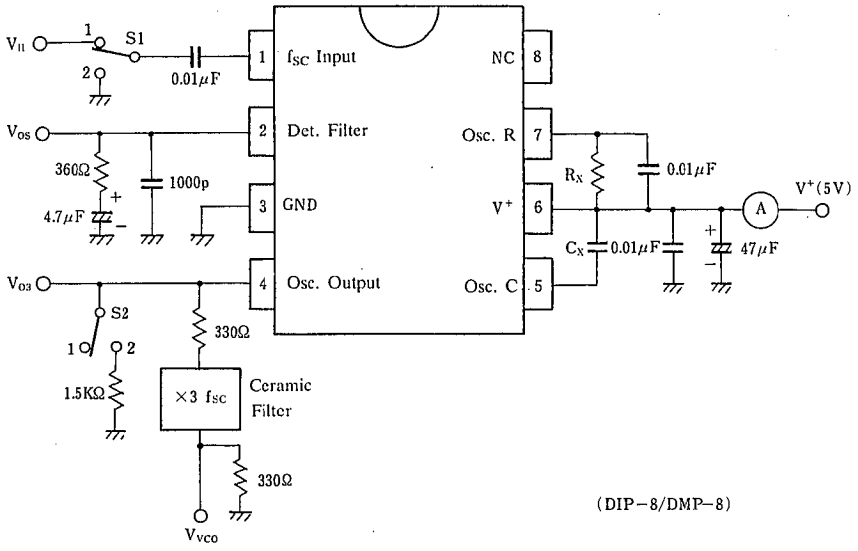
■ TEST CIRCUIT

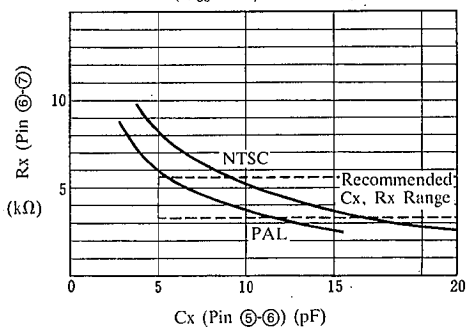


(note 1): Rx, Cx accuracy: less than ±1%
(note 2): Cx is not considered pin 5 stray capacitance. VCO free-run frequency is affected by stray capacitance of PC board, socket and others.
(note 3): The NJM2238 is produced by high frequency wafer process and some of pin may be weak against surge voltage.
(note 4): Pin 2 filter must be connected to ground.

■ TYPICAL CHARACTERISTICS

VCO Oscillator Frequency

(V_{os}=2V, Ta=25°C)



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