VIDEO SUB-CARRIER SIGNAL QUADRUPLER

■ GENERAL DESCRIPTION

The NJM2240 is the quadruple oscillator of video band subcarrier frequency with PLL circuit technique. The NJM2240 is suit to standard clock generator of CCD clock and on-screen display.

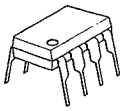
■ FEATURES

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

■ APPLICATION

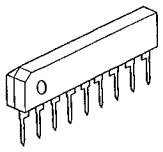
- VCR Video Camera AV-TV Video Disc Player

■ PACKAGE OUTLINE



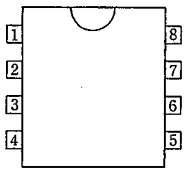
NJM2240D

NJM2240M



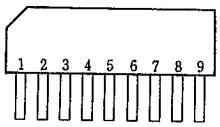
NJM2240S

■ PIN CONFIGURATION



NJM2240D
NJM2240M

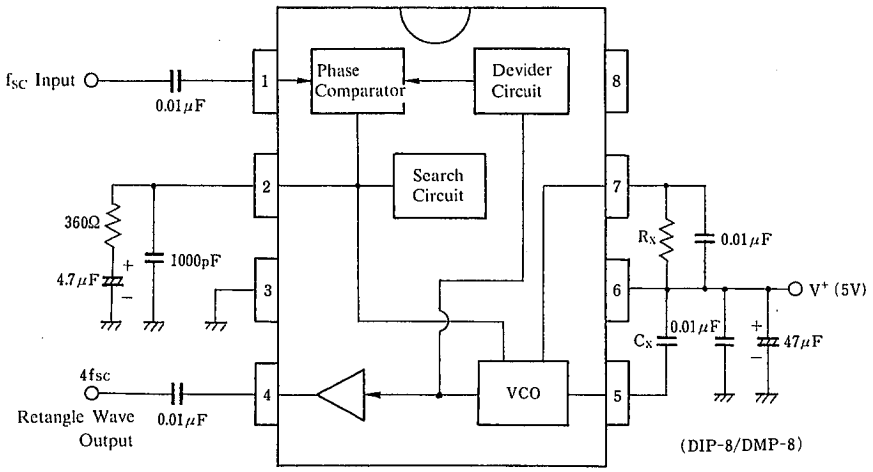
PIN FUNCTION
1. f_{SC} Input
2. Detection Filter
3. GND
4. Oscillator Output
5. Oscillator C
6. V^+
7. Oscillator R
8. NC



NJM2240S

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

■ BLOCK DIAGRAM & EXTERNAL COMPONENTS



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>4pF, Rx>2.7kΩ.

	NTSC	PAL
	4 Multiplier	4 Multiplier
Cx	6 p	5 p
Rx	4.3k	3.3k

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■ 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 Count Current	7	10	13	mA
Input Voltage Swing Range	V_{fsc}	S1=1, S2=1, input Vil : 3.58 or 4.43MHz (sine wave), guaranteed Vil voltage range.	0.12	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.	—	0.05	—	Vp-p
VCO Oscillation Swing	V_{O4}	S1=1, S2=2, input Vil : 3.58MHz, 1.0V_{p-p}	0.7	0.9	1.1	Vp-p
fsc Leakage	L_{fsc}	S1=1, S2=2, input Vil : 3.58MHz, 1.0V_{p-p} V_{O4} (fsc level/4fsc level)	—	−50	—	dB
4fsc Output Duty	D_{4fsc}	S1=1, S2=2, input Vil : 3.58MHz, 1.0Vp-p, V_{O4} output signal duty.	45	50	55	%

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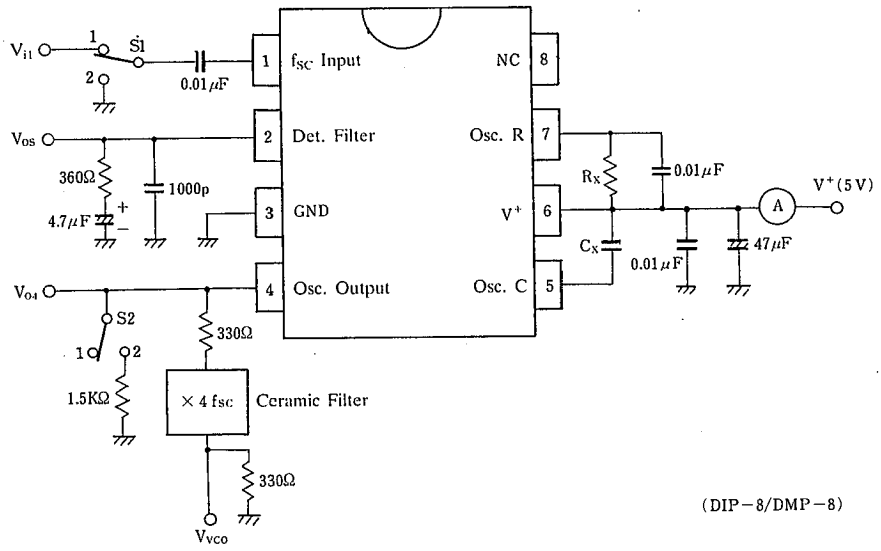
■ TEST CIRCUIT



(DIP−8/DMP−8)

(note 1): Rx, Cx accuracy: less than ±1%
(note 2): Cx is not considered pin5 stray capacitance. VCO free-run frequency is affected by stray capacitance of PC board, socket and others.
(note 3): The NJM2240 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.

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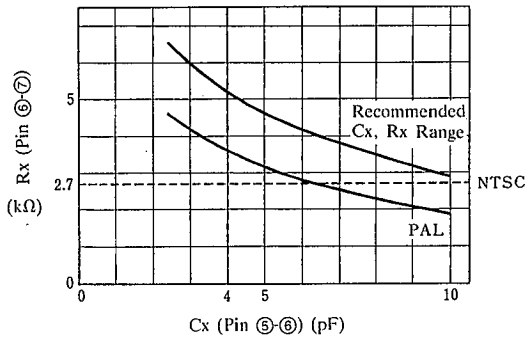
■ TYPICAL CHARACTERISTICS

VCO Oscillator Frequency

(V_{os} = 2V, Ta = 25°C)



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