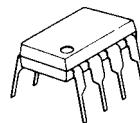


VIDEO SUB-CARRIER SIGNAL QUADRUPLER

■ 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.

■ PACKAGE OUTLINE



NJM2240D



NJM2240M

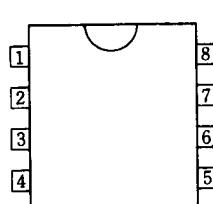
■ FEATURES

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

■ APPLICATION

- VCR Video Camera AV-TV Video Disc Player

■ PIN CONFIGURATION



PIN FUNCTION

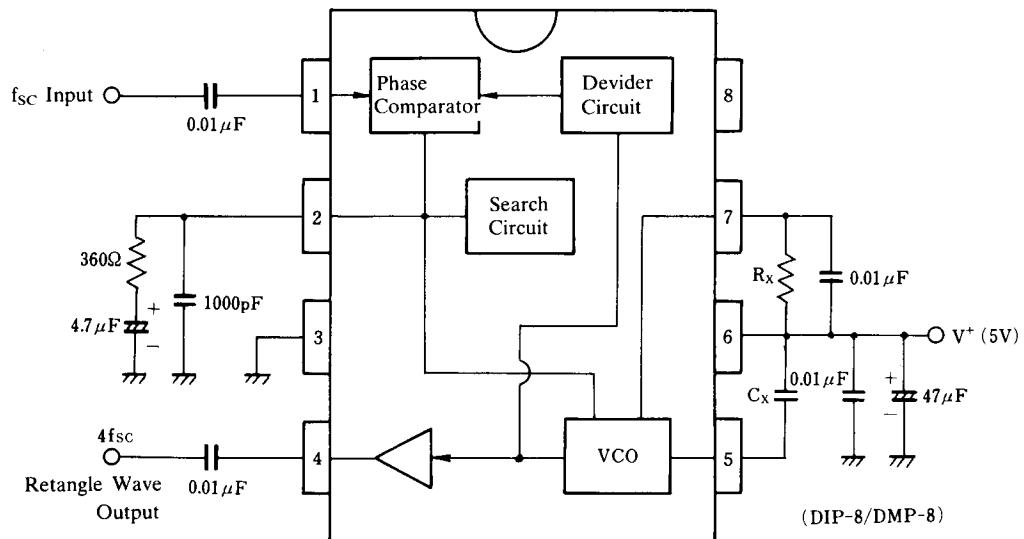
1. f_{SC} Input
2. Detection Filter
3. GND
4. Oscillator Output
5. Oscillator C
6. V^+
7. Oscillator R
8. NC

NJM2240D

NJM2240M

NJM2240

■ 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 VCC locked) becomes about 2V. $Cx > 4\text{pF}$, $Rx > 2.7\text{k}\Omega$

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

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	8	V
Input voltage	V _{IN}	GND-0.3 to V ⁺ +0.3	V
Power Dissipation	P _D	(DIP8) 500 (DMP8) 300	mW mW
Operating Temperature Range	T _{opr}	-20 to +75	°C
Storage Temperature Range	T _{stg}	-40 to +125	°C

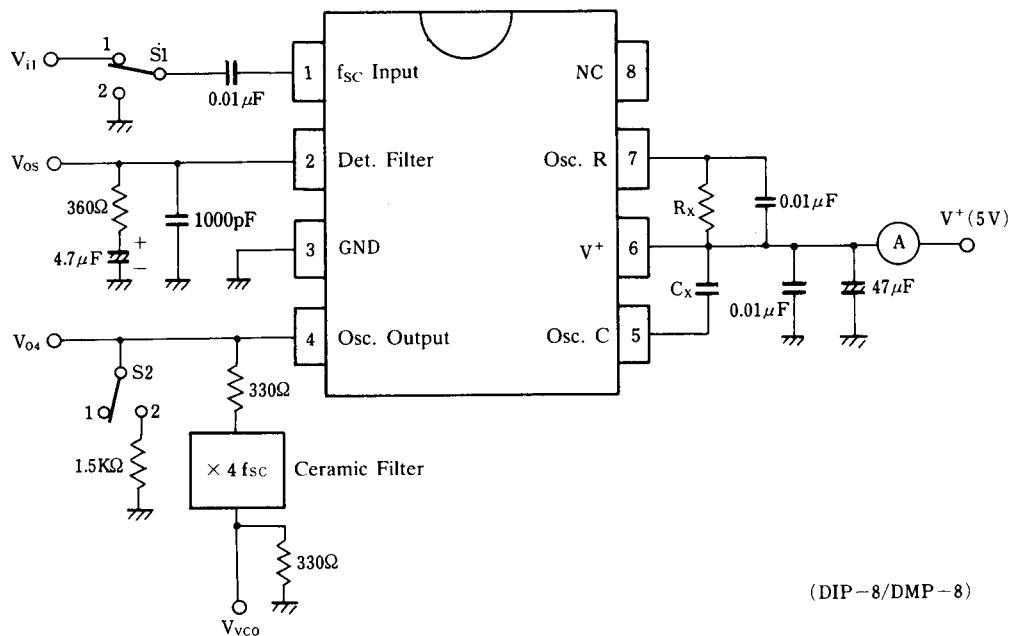
■ ELECTRICAL CHARACTERISTICS

(V⁺=5V, Ta=25°C)

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 V _{i1} : 3.58MHz Count Current	7	10	13	mA
Input Voltage Swing Range	V _{fsc}	S1=1, S2=1, input V _{i1} : 3.58 or 4.43MHz (sine wave), guaranteed V _{i1} voltage range.	0.12	1.0	2.0	V _{p-p}
Input Sensitivity	V _{is}	S1=1, S2=1, input V _{i1} : 3.58 or 4.43MHz (sine wave), actually tested minimum V _{i1} voltage.	-	0.05	-	V _{p-p}
VCO Oscillation Swing	V _{O4}	S1=1, S2=2, input V _{i1} : 3.58MHz, 1.0V _{p-p} .	0.7	0.9	1.1	V _{p-p}
fsc Leakage	I _{fsc}	S1=1, S2=2, input V _{i1} : 3.58MHz, 1.0V _{p-p} . V _{O4} (fsc level/4fsc level)	-	-50	-	dB
4fsc Output Duty	D _{4fsc}	S1=1, S2=2, input V _{i1} : 3.58MHz, 1.0V _{p-p} , V _{O4} output signal duty.	45	50	55	%

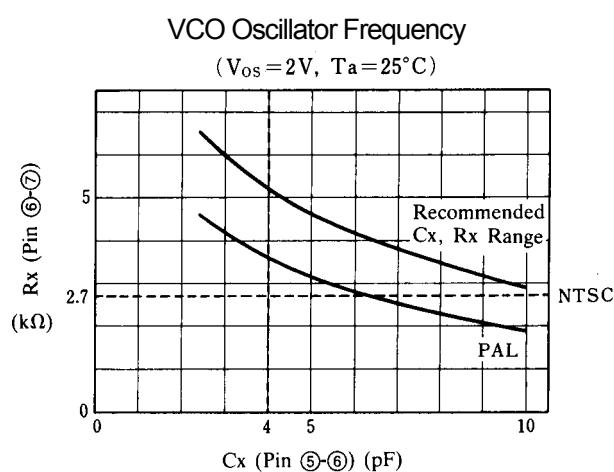
NJM2240

■ TEST CIRCUIT



- (note 1): Rx, Cx accuracy: less than $\pm 1\%$
- (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 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.

■ TYPICAL CHARACTERISTICS



[CAUTION]
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