

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.

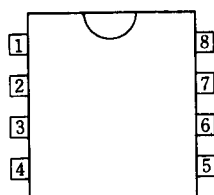
■ FEATURES

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

■ APPLICATION

- VCR Video Camera AV-TV Video Disc Player

■ PIN CONFIGURATION



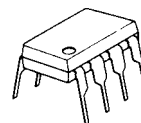
PIN FUNCTION

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

NJM2240D

NJM2240M

■ PACKAGE OUTLINE



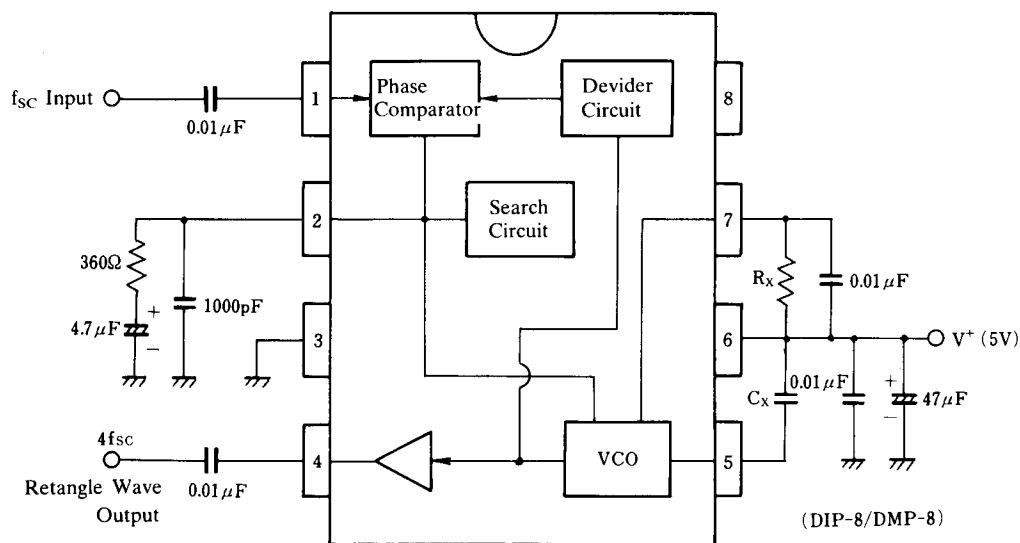
NJM2240D



NJM2240M

NJM2240

■ BLOCK DIAGRAM & EXTERNAL COMPONENTS



There is stray capacity assembled on PC board, and so select R_x , C_x to the value which pin 2 voltage (search voltage at VCC locked) becomes about 2V. $C_x > 4\text{pF}$, $R_x > 2.7\text{k}\Omega$

	NTSC	PAL
	4 Multiplier	4 Multiplier
C_x	6p	5p
R_x	4.3k	3.3k

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

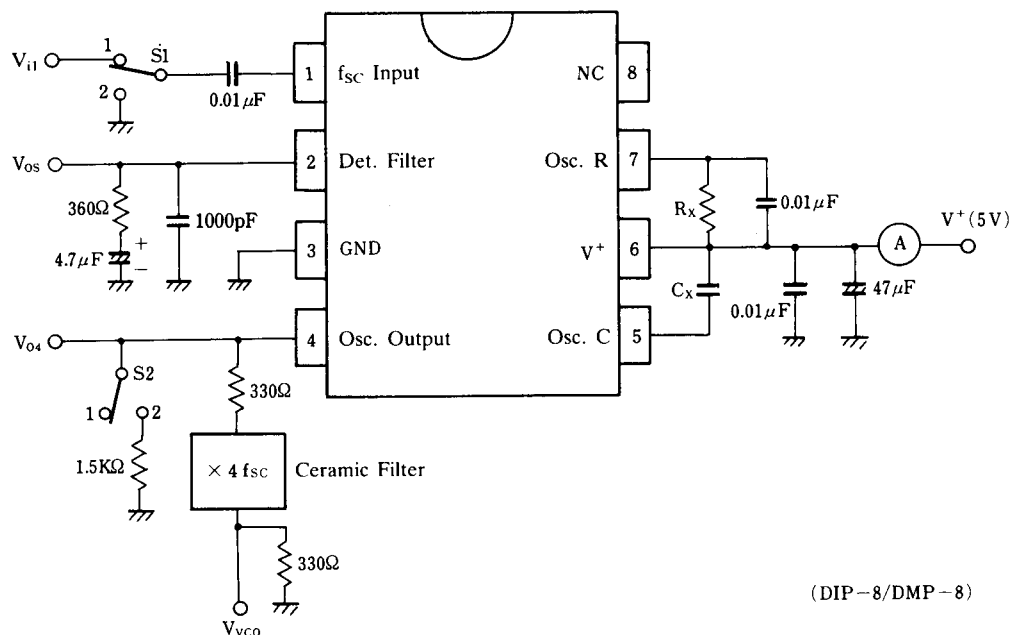
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	8	V
Input voltage	V_{IN}	GND-0.3 to V^+ +0.3	V
Power Dissipation	P_D	(DIP8) 500 (DMP8) 300	mW mW
Operating Temperature Range	T_{opr}	-20 to +75	°C
Storage Temperature Range	T_{stg}	-40 to +125	°C

■ 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 Vi1 : 3.58MHz Count Current	7	10	13	mA
Input Voltage Swing Range	V_{fsc}	S1=1, S2=1, input Vi1 : 3.58 or 4.43MHz (sine wave), guaranteed Vi1 voltage range.	0.12	1.0	2.0	Vp-p
Input Sensitivity	V_{is}	S1=1, S2=1, input Vi1 : 3.58 or 4.43MHz (sine wave), actually tested minimum Vi1 voltage.	-	0.05	-	Vp-p
VCO Oscillation Swing	V_{O4}	S1=1, S2=2, input Vi1 : 3.58MHz, 1.0Vp-p.	0.7	0.9	1.1	Vp-p
fsc Leakage	L_{fsc}	S1=1, S2=2, input Vi1 : 3.58MHz, 1.0Vp-p. V_{O4} (fsc level/4fsc level)	-	-50	-	dB
4fsc Output Duty	D_{4fsc}	S1=1, S2=2, input Vi1 : 3.58MHz, 1.0Vp-p, V_{O4} output signal duty.	45	50	55	%

■ TEST CIRCUIT



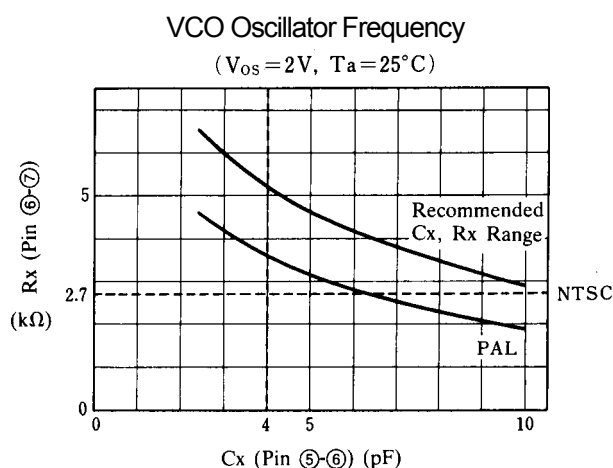
(note 1): R_x , C_x accuracy: less than $\pm 1\%$

(note 2): C_x 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]
The specifications on this databook are only given for information, without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.