

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.

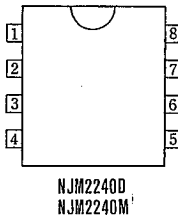
■ FEATURES

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

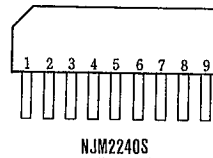
■ APPLICATION

- VCR Video Camera AV-TV Video Disc Player

■ PIN CONFIGURATION

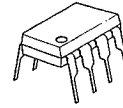


- PIN FUNCTION
1. f_{sc} Input
 2. Detection Filter
 3. GND
 4. Oscillator Output
 5. Oscillator C
 6. V⁺
 7. Oscillator R
 8. NC



- 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

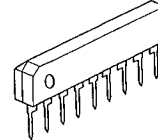
■ PACKAGE OUTLINE



NJM2240D

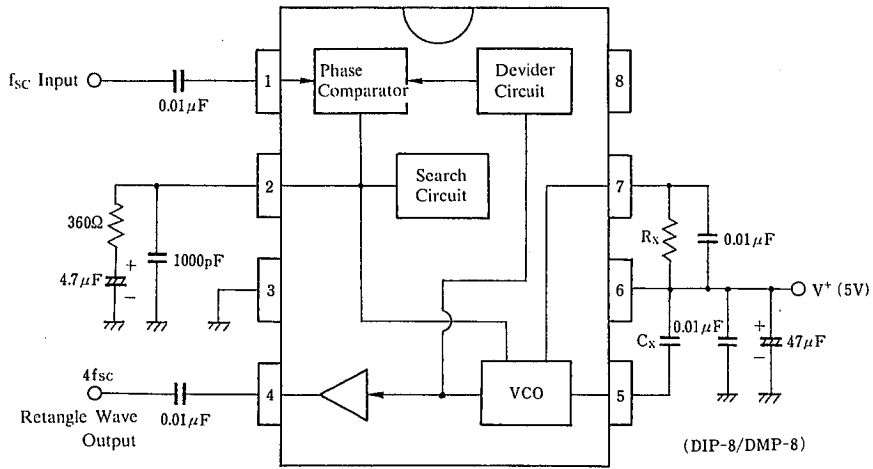


NJM2240M



NJM2240S

■ 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 VCO locked) becomes about 2V. $C_x > 4pF$, $R_x > 2.7k\Omega$.

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

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

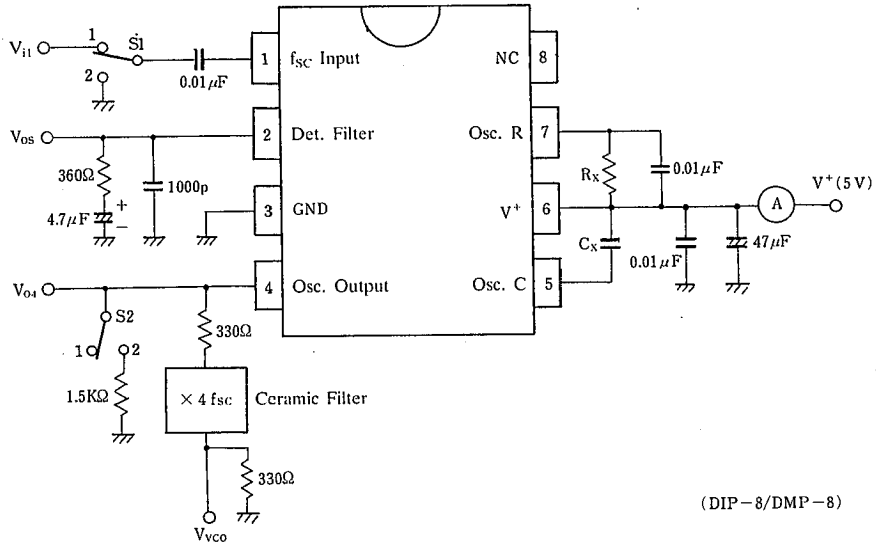
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	8	V
Input Voltage	V _{IN}	GND-0.3~V ⁺ +0.3	V
Power Dissipation	P _D	(DIP8) 500	mW
		(DMP8) 300	mW
		(SIP8) 500	mW
Operating Temperature Range	T _{opr}	-20~+75	°C
Storage Temperature Range	T _{stg}	-40~+125	°C

■ 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 _{il} : 3.58MHz Count Current	7	10	13	mA
Input Voltage Swing Range	V _{fsc}	S1=1, S2=1, input V _{il} : 3.58 or 4.43MHz (sine wave), guaranteed V _{il} voltage range.	0.12	1.0	2.0	V _{p-p}
Input Sensitivity	V _{is}	S1=1, S2=1, input V _{il} : 3.58 or 4.43MHz (sine wave), actually tested minimum V _{il} voltage.	—	0.05	—	V _{p-p}
VCO Oscillation Swing	V _{O4}	S1=1, S2=2, input V _{il} : 3.58MHz, 1.0V _{p-p}	0.7	0.9	1.1	V _{p-p}
fsc Leakage	L _{fsc}	S1=1, S2=2, input V _{il} : 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 _{il} : 3.58MHz, 1.0V _{p-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 pin5 stray capacitance. VCO free-run frequency is affected by stray capacitance of PC board, socket and others.

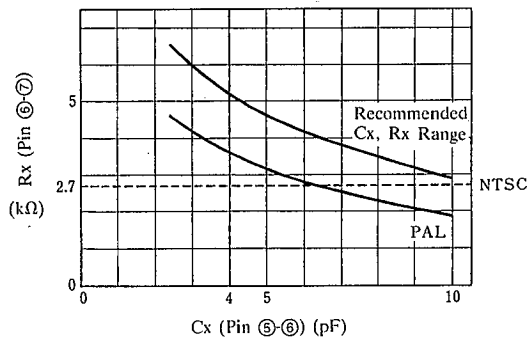
(note 3): The NJM2240 is produced by high frequency wafer process and some of pin may be weak against surge voltage.

(note 4): Pin 2 filter must be connected to ground.

■ TYPICAL CHARACTERISTICS

VCO Oscillator Frequency

($V_{OS} = 2V, T_a = 25^\circ C$)



MEMO

[CAUTION]

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