MONITOR PRODUCTS

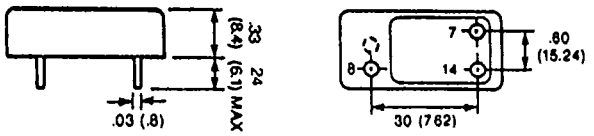
T-50-23
T-50-09

LOW COST INDUSTRIAL TIGHT TOLERANCE CLOCK OSCILLATORS TEMPERATURE COMPENSATED OSCILLATORS

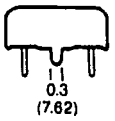
PACKAGE DIMENSIONS

Dimensions in inches and (mm)

PACKAGE 1



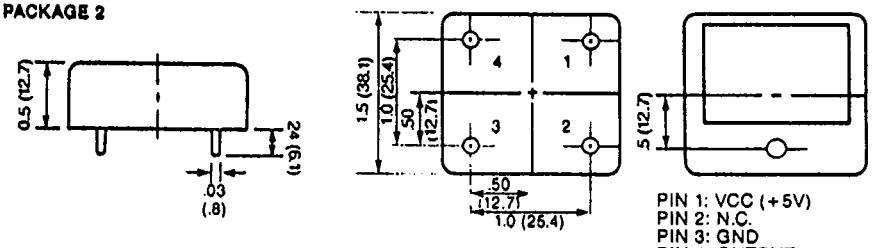
PACKAGE 7



(Tab on Package 7 only)

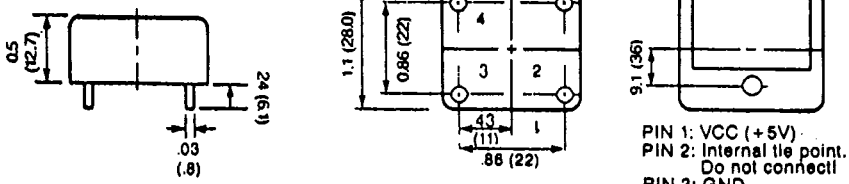
PIN 7: GND
PIN 8: OUTPUT
PIN 14: VCC (+5V)

PACKAGE 2



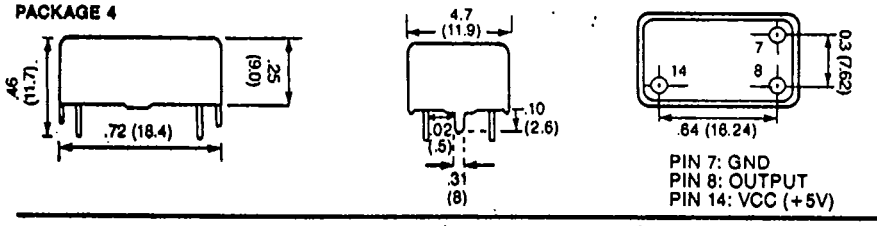
PIN 1: VCC (+5V)
PIN 2: N.C.
PIN 3: GND
PIN 4: OUTPUT

PACKAGE 3



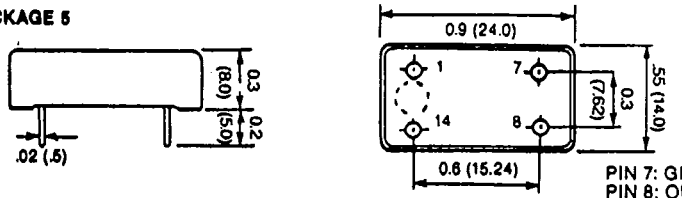
PIN 1: VCC (+5V)
PIN 2: Internal tie point. Do not connect!
PIN 3: GND
PIN 4: OUTPUT

PACKAGE 4



PIN 7: GND
PIN 8: OUTPUT
PIN 14: VCC (+5V)

PACKAGE 5



PIN 7: GND
PIN 8: OUTPUT
PIN 14: VCC (+5V)

All specifications subject to change without notice.

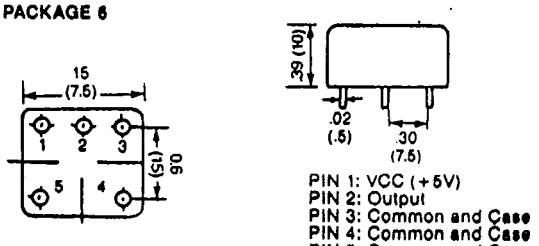
FEATURES

- FEATURES EXTENDED TEMPERATURE OPERATION
- OUTPUT PIN CONFIGURATION COMPATIBLE WITH STANDARD 14 PIN DIP OSCILLATORS
- AVAILABLE IN TTL, CMOS OR SINE WAVE OUTPUT

MONITOR PRODUCTS also offers clock oscillators in TTL, LSTTL, CMOS, ECL and NMOS. Functional logic configurations also available are:

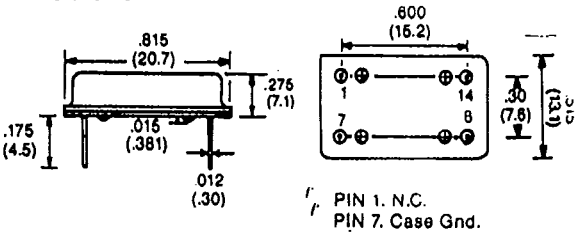
- ENABLE/DISABLE
- TRI-STATE
- DUAL INDEPENDENT FREQUENCY

PACKAGE 6



PIN 1: VCC (+5V)
PIN 2: Output
PIN 3: Common and Case
PIN 4: Common and Case
PIN 5: Common and Case

PACKAGE 8



PIN 1. N.C.
PIN 7. Case Gnd.
PIN 8. Output
PIN 14. +5VDC

MONITOR PRODUCTS COMPANY, INC. *OVER HALF A CENTURY IN FREQUENCY CONTROL*

502 Via Del Monte • Oceanside, CA 92054
Western Phone (619) 433-4510 Eastern FAX (904) 246-9019
Western FAX (619) 434-0255 Telex 62950858

	7400 SPECIFICATIONS			7401 SPECIFICATIONS			7402 SPECIFICATIONS		
PART NUMBER*	7400A1A1	7400B2A1	7400D4A1	7401B2*2	7401B4*2	7401D7*2	7402D7A3	7402C6A3	7402'
OUTPUT FREQUENCY	5MHz to 20MHz			1MHz to 20MHz			1MHz to 20MHz		
FREQUENCY STABILITY VS TEMPERATURE	±0.5 ppm +15°C to +35°C	±1 ppm 0°C to +50°C	±2 ppm -10°C to +60°C	±1 ppm 0°C to +50°C	±1 ppm -10°C to +60°C	±2 ppm -20°C to +70°C	±2 ppm -20°C to +70°C	±1.5 ppm -25°C to +60°C	±3 ppm -30°C to +75°C
FREQUENCY STABILITY VS AGING	±1 ppm/year			±1 ppm/year			±1 ppm/year		
SYMMETRY	60/40			60/40			60/40		
INPUT VOLTAGE	+5VDC ±5%			+5V±5%			±5VDC ±5%		
OUTPUT LEVEL	TTL Compatible			CMOS, TTL			TTL Compatible		
INPUT CURRENT	20mA max			20mA max. 12 typical			20mA max.		
OPERATING TEMPERATURE RANGE	+5°C to +45°C	-10°C to +60°C	-20°C to +70°C	-10°C to +60°C	-20°C to +70°C	-30°C to +75°C	-30°C to +75°C	-25°C to +70°C	-40°C to +80°C
FREQUENCY ADJUSTMENT	±5 ppm min. by means of internal trimmer			±5 ppm min. by means of internal trimmer			±5 ppm min. by means of internal trimmer		
PACKAGE	1	1	1	2	2	2	3	3	3

*TTL OUTPUT = A
CMOS OUTPUT = B
(EX: 7401B2A2 OR 7401B2B2)

	7403 SPECIFICATIONS			7404 SPECIFICATIONS			970TX SPECIFICATIONS
PART NUMBER*	7403G2A7	7403G2A5	7403G2B5	7404D5C7	7404E8C6	7404D8C7	970TX1G@A
OUTPUT FREQUENCY	4MHz to 24MHz		3MHz to 24MHz	8MHz to 20MHz			3MHz to 24MHz
FREQUENCY STABILITY VS TEMPERATURE	±5 ppm 0°C to +50°C			±2 ppm -15°C to +55°C	±2.5 ppm -30°C to +75°C	±2 ppm -30°C to +75°C	±5 ppm 0°C to +50°C
FREQUENCY STABILITY VS AGING	±1 ppm/year			±1 ppm/year			
SYMMETRY	60/40			Output Load 20K OHM/30pf			60/40
INPUT VOLTAGE	+5VDC ±10%			+5V ±5%			±5VDC ±10%
OUTPUT LEVEL	TTL (5 GATES)	TTL (5 GATES)	CMOS (1 TTL)	1.0V Peak To Peak, Clipped Sine Wave			TTL (1-5 GATES)
INPUT CURRENT	20mA max.		15mA max.	5mA max	2mA max		20mA max.
OPERATING TEMPERATURE RANGE**	0°C to +50°C			-30°C to +55°C	-30°C to +80°C		0°C to +70°C
FREQUENCY ADJUSTMENT	±5 ppm min. by means of internal trimmer			±3 ppm min. by means of internal trimmer			N/A
PACKAGE	7	5	5	7	6	5	8

**Frequency stability is guaranteed only over specified temperature range.
"Operating" temperature range is for information only, stability is not assured.

STANDARD FREQUENCIES

2.500 5.000 8.000 10.000 14.31818 16.000

PART NUMBERING KEY

EXAMPLE: 7400A1A1-10.000

7400 A 1 A 1 -- FREQUENCY

FAMILY	FREQUENCY STABILITY	TEMPERATURE RANGE	OUTPUT LEVEL	PACKAGE
7400	A = ±0.5 PPM	1 = +15°C to +35°C	A = TTL	1
7401	B = ±1.0 PPM	2 = 0°C to +50°C	B = CMOS (5 VOLT)	2
7402	C = ±1.5 PPM	3 = 0°C to +70°C	C = SINE WAVE	3
7403	D = ±2.0 PPM	4 = -10°C to +60°C		4
7404	E = ±2.5 PPM	5 = -15°C to +55°C		5
970TX	F = ±3.0 PPM	6 = -25°C to +60°C		6
	G = ±5.0 PPM	7 = -20°C to +70°C		7
		8 = -30°C to +75°C		8

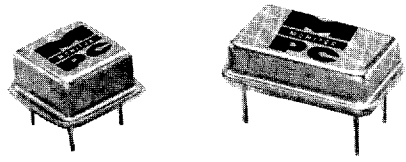
*Part numbers of products on this data sheet cannot be modified. Part number key is provided for information only and cannot be used to construct a custom part number. To satisfy requirements for modified specifications, please contact the factory.

MONITOR PRODUCTS 970 SERIES CLOCK OSCILLATORS

For digital and microprocessor controlled applications, Monitor's 970 Series Clock Oscillators are the pacesetters to rely on for stable signal generation.

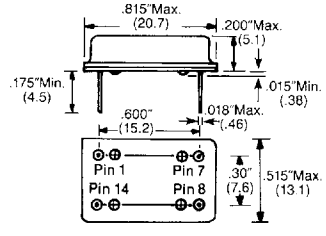
Hermetic Seal
Low R.F. Radiation
TTL, CMOS, HCMOS, ECL
Environmental Protection

Low Cost
Proven Reliability
Special Outputs



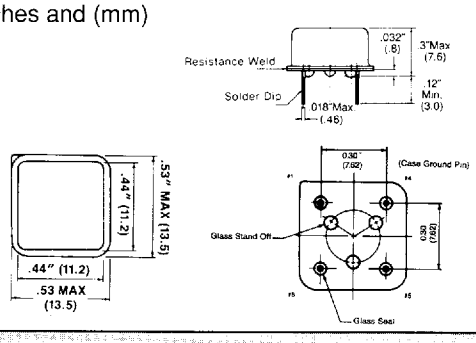
FULL SIZE OSCILLATORS

Dimensions in inches and (mm)



PIN CONNECTION
#1: N.C. #8: OUTPUT
#7: GND #14: + $5V_{DC}$

HALF SIZE OSCILLATORS



PIN CONNECTION
1: RESET OR N.C.
4: GND
5: OUTPUT
#14: V_{DD}

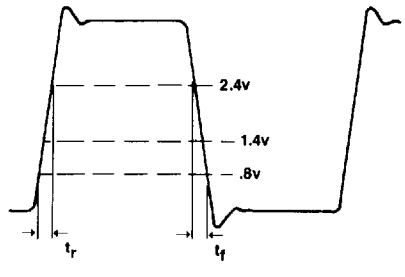
TTL/LSTTL CLOCK OSCILLATORS

4 PRODUCT FAMILIES

250 KHz - 80 MHz

MOST COMMONLY USED FOR MICROPROCESSOR CLOCK SIGNAL APPLICATIONS

TTL 970T
LSTTL 970L
TYPICAL OUTPUT WAVE SHAPE



CMOS/HCMOS CLOCK OSCILLATORS

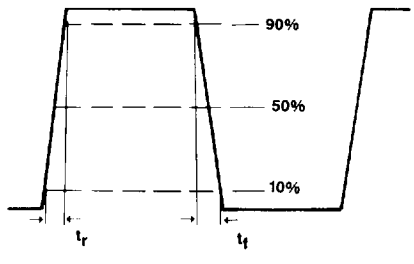
12 PRODUCT FAMILIES

500 KHz - 100 MHz

DUAL OUTPUTS & TRISTATE AVAILABLE

MOST COMMONLY USED IN LOW CURRENT AND HIGH DENSITY APPLICATIONS

HCMOS 970H
TYPICAL OUTPUT WAVE SHAPE

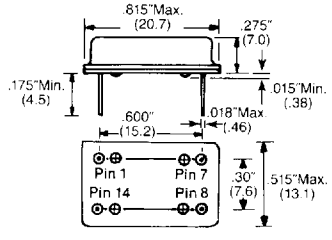


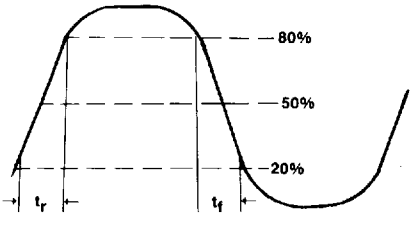
ECL CLOCK OSCILLATORS

3 PRODUCT FAMILIES

30 MHz - 200 MHz

MOST COMMONLY USED IN HIGH SPEED GRAPHICS APPLICATIONS





ECL 970E TYPICAL OUTPUT WAVE SHAPE