

# CRYSTAL CLOCK OSCILLATORS

## 1. OUTLINE

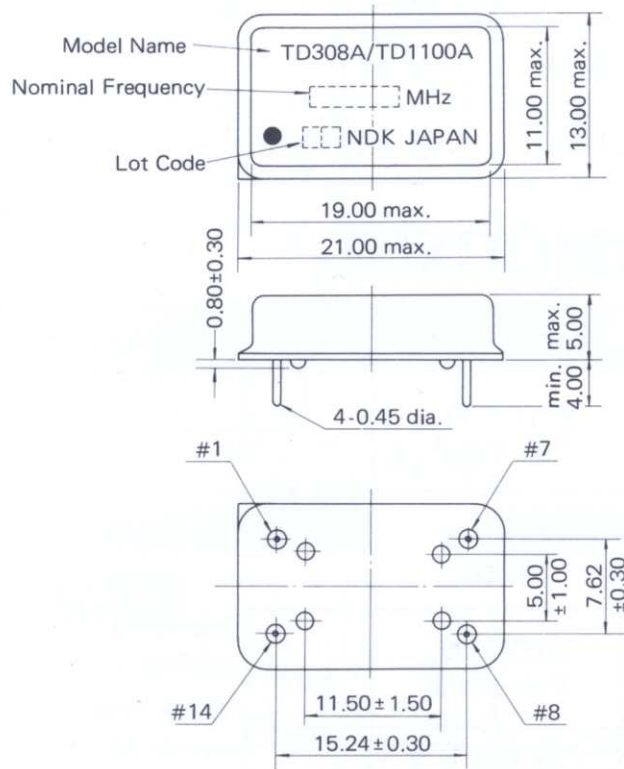


Fig. 33

Model Pin No.	TD308A/ TD1100A Series	TD308C/ TD1100C Series
#1	N.C.	N.C.
#7	GND (N.C. to case)	GND (Ground to case)
#8	Output	Output
#14	+5V D.C.	+5V D.C.

## 2. OPERATING CONDITIONS

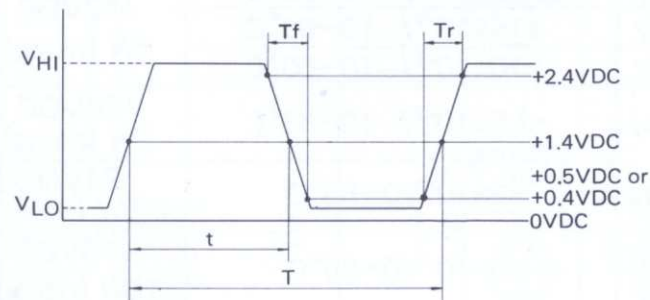
- Input Voltage +5 DC  $\pm 5\%$
- Input Current 50mA max.
- Operating Temperature  $-20^{\circ}\text{C}$  to  $+70^{\circ}\text{C}/0^{\circ}\text{C}$  to  $70^{\circ}\text{C}$

## 3. FREQUENCY CHARACTERISTICS

- Frequency Range 1 MHz to 70MHz  
(250kHz to 1MHz is available upon request)
- Frequency Stability Standard variety of  $\pm 50$  to  $\pm 1000 \times 10^{-6}$   
(Inclusive of calibration tolerance, input volt change, load change, aging, shock and vibration).

TD308A/ TD1100A Series	TD308A/ TD1100A	TD308AB/ TD1114A- TD1148A	TD308AC TD1115A	TD308AD/ TD1145A
TD308C/ TD1100C Series	TD308C/ TD1100C	TD308CB/ TD1114C- TD1148C	TD308CC/ TD1115C	TD308CD/ TD1145C
Frequency Stability	$\pm 100 \times 10^{-6}$	$\pm 500 \times 10^{-6}$	$\pm 1000 \times 10^{-6}$	$\pm 50 \times 10^{-6}$
Operating Temperature	$-20^{\circ}\text{C}$ to $+70^{\circ}\text{C}$			$0^{\circ}\text{C}$ to $+70^{\circ}\text{C}$

## 4. OUTPUT CHARACTERISTICS



- Output Voltage (TTL Level)  $V_{LO}$ : +0.4V max. (less than 40MHz)  
 $V_{LO}$ : +0.5V max. (more than 40MHz)  
 $V_{HI}$ : +2.4V min.

- Output Wave Form: Square Wave

- Duty Cycle 40% to 60% at 1.4V DC Level where duty cycle is determined by following formula.

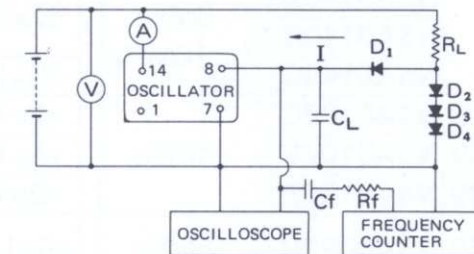
$$\text{Duty Cycle} = \frac{t}{T} \times 100\%$$

- Rise (Tr) and Fall (Tf) Times
 

1MHz to 7.999MHz	15ns. max.
8MHz to 20.999MHz	10ns. max.
21MHz to 29.999MHz	7ns. max.
30MHz to 70.000MHz	5ns. max.

- Output Load 1 to 10 TTL Gates

## 5. TEST CIRCUIT



$C_f$ : 0.047 $\mu\text{F}$   
 $C_L$ : 15pF  
 $D_1 \sim D_4$ : 1S953 or equivalent  
 $R_f$ : 4.7k $\Omega$   
 $R_L$ : 820 $\Omega$  (equivalent to Fun out 5)  
 $I$ : 10mA TTL

Fig. 35