

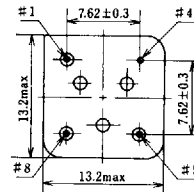
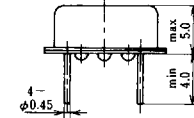
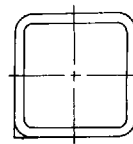
CRYSTAL CLOCK OSCILLATORS

T-50-23

FREQUENCY RANGE VS. OUTPUT LEVEL

■ 1300-1400 series

Model	Frequency		Output Level								
	kHz	MHz	28	1	3	4	7	22	25	70	100
TD1100 series DIP 14pin			TD1100 TTL								
1200 series DIP 14pin	1220 TTL/C-MOS			1230 TTL			1240 C-MOS			1270 TTL	
	1250 TTL/C-MOS										
1300 series DIP 8pin	1320 TTL/C-MOS			1330 TTL			1340 C-MOS				
	1350 TTL/C-MOS										
1400 series DIP 8pin	1420 C-MOS			1430 TTL			1440 C-MOS				



PIN	CONNECTION
#1	NC, STANDBY or OUTPUT
#4	GND(CASE)
#5	OUTPUT
#8	+5V DC

(mm)

TD1100 SERIES

■ TD1100-1200 series

Model	TD1100	
Feature	—	
Output Level	TTL	
Frequency Range	3.9~70MHz	
Frequency Stability ($\times 10^{-6}$)	See Table 1	
Operating Temp. Range(°C)	See Table 1	
Current	TYP	20~30mA
	MAX	50mA
$V_{OL}^{MAX}/V_{OH}^{MIN}$	See Table 2	
T_r^{MAX}/T_f^{MAX}	See Table 3	
Duty Cycle(%)	40~60	
Fan out (gate)	TTL 10	
Stand-by Function	No	
Dual Output	Option No	

Table 1

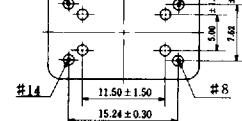
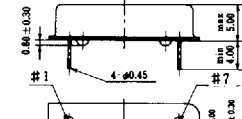
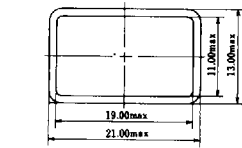
Model	Frequency Stability ($\times 10^{-6}$)	Operating Temp. Range(°C)
TD1100C	± 100	-20~+70
TD1114C	± 500	-20~+70
TD1115C	± 1000	-20~+70
TD1145C	± 50	0~+70
TD1158C	± 100	-40~+85

Table 2

Frequency Range	V_{OL}	V_{OH}
< 40 MHz	0.4V ^{MAX}	2.4V ^{MIN}
≥ 40 MHz	0.5V ^{MAX}	2.4V ^{MIN}

Table 3

Frequency Range	T_r	T_f
~ 8 MHz	15 ns	15 ns
8 ~ 22 MHz	10 ns	10 ns
22 ~ 30 MHz	7 ns	7 ns
30 ~ 70 MHz	5 ns	5 ns



PIN	Connection	
	TD1100 Series	1200 Series
#1	NC	NC or Stand-by or Output (Dual's)
#7	Ground to Case	Ground to Case
#8	OUT PUT	OUT PUT
#14	+5VDC	+5VDC

1200/1300/1400 SERIES

Model	1220 (1221~1229)		1230 (1230~1239)		1240 (1240~1249)		1250 (1251~1259)		1270 (1271~1272)		1420 (1429)		1430 (1431~1437)		1440 (1441~1447)	
	1320 (1321~1329)		1330 (1330~1339)		1340 (1340~1349)		1350 (1351~1359)		—		—		—		—	
Output Level	C-MOS		C-MOS		—		C-MOS		—		C-MOS		C-MOS		—	
	TTL		—		TTL		TTL		TTL		—		—		TTL	
Frequency Range	28kHz~22MHz		22~70MHz		22~70MHz		3~25MHz		70~100MHz		7~22MHz		22~70MHz		22~70MHz	
Frequency Stability ($\times 10^{-6}$)	± 50	± 100	± 50	± 100	± 50	± 100	± 50	± 100	± 200	± 100	± 100	± 100	± 100	± 100	± 100	± 100
Operating Temp. Range(°C)	0~+70	-20~+70	0~+70	-20~+70	0~+70	-20~+70	0~+70	-20~+70	-20~+70	-20~+70	-20~+70	-20~+70	-20~+70	-20~+70	-20~+70	-20~+70
Current	TYP	5mA	13~22mA		13~22mA		11mA		25~35mA		10~30mA		40~80mA		35~80mA	
	MAX	10mA	25~40mA		25~40mA		25mA		50mA		40mA		50~85mA		45~85mA	
$V_{OL}^{MAX}/V_{OH}^{MIN}$	0.5V/ V_{DD} -0.5V		0.5V/ V_{DD} -0.5V		0.4/2.4V or 0.5/2.4V		0.5V/ V_{DD} -0.5V		0.5/2.4V		0.5V/ V_{DD} -0.5V		0.5V/ V_{DD} -0.5V		0.4/2.4V	
T_r^{MAX}/T_f^{MAX}	10/10ns		5/5 ns		5/5 ns		7/7 ns		5/5 ns		6/6 ns		6/6 ns		3.5/3.5ns	
Duty Cycle (%)	40~60 for 1229 and 1329		40~60		40~60		45~55 at 1/2 V_{DD} 40~60 at 1.4V		40~60		45~55		45~55		40~60	
Fan out (gate)	TTL	2	5		5		5		(AS or F) 5		$C_L = 150pF^{MAX}$		$C_L = 150pF^{MAX}$		5	
Stand-by Function	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Dual Output	Option	1229, 1329	No		No		No		No		No		No		No	