

CTS[®] Reeves **MXO45 Clock Oscillators**

Tri-State Output

Tri-State Logic uses the two standard logic levels of high (logic 1) and low (logic 0) but has added a third state that is not a logic level but an open circuit condition that effectively disconnects the output from your circuit with a high impedance (floating) state. Thereby enabling the use of numerous oscillators on the same bus line. Also, by using the enable pin to control the output, the crystal is still running even when the output is disabled (stand-by mode), thus eliminating any start-up time for the oscillator.

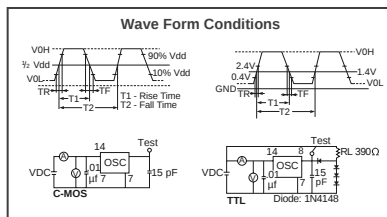
CTS HCMOS/TTL products utilize an Application Specific Integrated Circuit (ASIC) design strategy. Employing a single design family supporting both HCMOS/TTL applications helps in reducing costs and lead times. Utilizing ASIC technology reduces the number of components inside the XO (crystal oscillator), thus increasing reliability and further reducing cost.

Features:

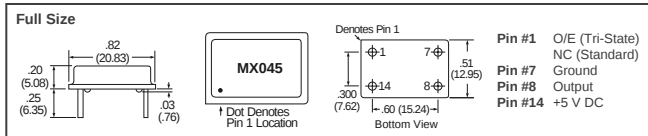
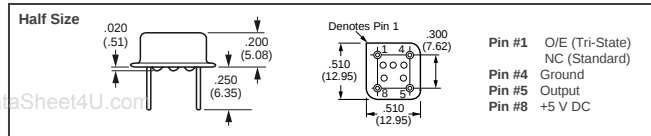
- C-MOS/TTL compatible • Drives up to 10 standard TTL loads • 100 PPM tolerance • Tri-State output • Fully hermetic resistance weld package

Standard Output

- Frequency Tolerance: ± 100 PPM 0°C to 70°C • C-MOS compatible • Fully hermetic resistance weld package • 8/14-pin compatible • Drives up to 10 standard TTL Loads • Input Voltage: +5 V DC $\pm$.5V



Parameter	Symbol	Condition	Minimum	Typical	Maximum	Units
Supply Voltage	VCC	—	4.5	5.0	5.5	V
Supply Current	ICC	1.0->7.0MHz >7.0->25MHz >25->50MHz	—	5 15 30	12 25 40	mA
Output Load	—	—	—	—	10	TTL
Output Current	IOH IOH	VOH = 3.9V VOH = 0.4V	—	—	-16 16	mA
Symmetry	Duty	1.0->50MHz >50->70MHz	45 40	—	55 60	%
Rise & Fall Time	Tr/Tf Tr/Tf	1.0->25MHz >25->70MHz	— —	5 3	8 5	ns
Enable Input V	VIH VIL	—	2.0	—	— 0.8	V
Enable Input Load	Cin	—	—	—	10	pF
Tri-state Leakage	Iz	VIL = 0.8V	—	—	0.05	mA
Jitter	—	Peak-Peak	—	30	50	ps
Temperature	—	—	0-70°C	—	—	—



Frequency (MHz)	Digi-Key Part No.	1	10	Price Each	250	500	CTS Reeves Part No.
Half Size Clock Oscillator with Tri-State Output							
1.00000	CTX180-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-1.000
1.84320	CTX181-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-1.8432
2.00000	CTX182-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-2.000
2.45760	CTX183-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-2.4576
3.68640	CTX184-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-3.6864
4.00000	CTX185-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-4.000
4.91520	CTX186-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-4.9152
5.00000	CTX187-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-5.000
5.06880	CTX188-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-5.0688
6.00000	CTX189-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-6.000
6.14400	CTX190-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-6.144
7.37280	CTX191-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-7.3728
8.00000	CTX192-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-8.000
10.00000	CTX193-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-10.000
12.00000	CTX194-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-12.000
14.31818	CTX195-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-14.31818
16.00000	CTX196-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-16.000
18.43200	CTX197-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-18.432
19.66080	CTX198-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-19.6608
20.00000	CTX199-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-20.000
24.00000	CTX250-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-24.000
25.00000	CTX251-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-25.000
25.17500	CTX252-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-25.175
28.32000	CTX253-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-28.322
32.00000	CTX254-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-32.000
40.00000	CTX255-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-40.000
50.00000	CTX256-ND	2.78	2.47	1.87	1.66	1.42	MXO45HST-50.000
64.00000	CTX257-ND	3.64	3.22	2.45	2.17	1.86	MXO45HST-64.000
66.66660	CTX258-ND	3.64	3.22	2.45	2.17	1.86	MXO45HST-66.6666
80.00000	CTX259-ND	5.85	5.18	3.94	3.49	2.99	MXO45HST-80.000
Half Size Clock Oscillator with Standard Output							
1.00000	CTX150-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-1.0000
1.84320	CTX151-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-1.8432
2.00000	CTX152-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-2.0000
2.45760	CTX153-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-2.4576
3.68640	CTX154-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-3.6864
4.00000	CTX155-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-4.0000
4.91520	CTX156-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-4.9152
5.00000	CTX157-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-5.0000
5.06880	CTX158-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-5.0688
6.00000	CTX159-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-6.0000
6.14400	CTX160-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-6.1440
7.37280	CTX161-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-7.3728
8.00000	CTX162-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-8.0000
10.00000	CTX163-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-10.0000
12.00000	CTX164-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-12.0000
14.31818	CTX165-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-14.31818
16.00000	CTX166-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-16.0000
18.43200	CTX167-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-18.4320
19.66080	CTX168-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-19.6608
20.00000	CTX169-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-20.0000
24.00000	CTX170-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-24.0000
25.00000	CTX171-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-25.0000
25.17500	CTX172-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-25.1750
28.32000	CTX173-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-28.3220
32.00000	CTX174-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-32.0000
40.00000	CTX175-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-40.0000
50.00000	CTX176-ND	2.78	2.47	1.87	1.66	1.42	MXO45HS-50.0000
64.00000	CTX177-ND	3.64	3.22	2.45	2.17	1.86	MXO45HS-64.0000
66.66660	CTX178-ND	3.64	3.22	2.45	2.17	1.86	MXO45HS-66.6666
80.00000	CTX179-ND	5.85	5.18	3.94	3.49	2.99	MXO45HS-80.0000

Frequency (MHz)	Digi-Key Part No.	1	10	Price Each	250	500	CTS Reeves Part No.
Full Size Clock Oscillator with Tri-State Output							
1.00000	CTX139-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-1.000
1.84320	CTX140-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-1.8432
2.00000	CTX141-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-2.000
2.45760	CTX142-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-2.4576
3.68640	CTX143-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-3.6864
4.00000	CTX144-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-4.000
4.91520	CTX145-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-4.9152
5.00000	CTX146-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-5.000
5.06880	CTX147-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-5.0688
6.00000	CTX148-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-6.000
6.14400	CTX200-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-6.144
7.37280	CTX201-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-7.3728
8.00000	CTX202-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-8.000
10.00000	CTX203-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-10.000
12.00000	CTX204-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-12.000
14.31818	CTX205-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-14.31818
16.00000	CTX206-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-16.000
18.43200	CTX207-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-18.432
19.66080	CTX208-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-19.6608
20.00000	CTX209-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-20.000
24.00000	CTX210-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-24.000
25.00000	CTX211-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-25.000
25.17500	CTX212-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-25.175
28.32200	CTX213-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-28.322
32.00000	CTX214-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-32.000
40.00000	CTX215-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-40.000
50.00000	CTX216-ND	2.78	2.47	2.19	1.87	1.66	MXO45T-50.000
64.00000	CTX217-ND	3.64	3.22	2.87	2.45	2.17	MXO45T-64.000
66.66660	CTX218-ND	3.64	3.22	2.87	2.45	2.17	MXO45T-66.6666
80.00000	CTX219-ND	5.85	5.18	4.61	3.94	3.49	MXO45T-80.000
Full Size Clock Oscillator with Standard Output							
1.00000	CTX101-ND	2.78	2.47	2.19	1.87	1.66	MXO45-1.0000
1.84320	CTX103-ND	2.78	2.47	2.19	1.87	1.66	MXO45-1.8432
2.00000	CTX104-ND	2.78	2.47	2.19	1.87	1.66	MXO45-2.0000
2.45760	CTX105-ND	2.78	2.47	2.19	1.87	1.66	MXO45-2.4576
3.68640	CTX106-ND	2.78	2.47	2.19	1.87	1.66	MXO45-3.6864
4.00000	CTX107-ND	2.78	2.47	2.19	1.87	1.66	MXO45-4.0000
4.91520	CTX108-ND	2.78	2.47	2.19	1.87	1.66	MXO45-4.9152
5.00000	CTX109-ND	2.78	2.47	2.19	1.87	1.66	MXO45-5.0000
5.06880	CTX110-ND	2.78	2.47	2.19	1.87	1.66	MXO45-5.0688
6.00000	CTX111-ND	2.78	2.47	2.19	1.87	1.66	MXO45-6.0000
6.14400	CTX122-ND	2.78	2.47	2.19	1.87	1.66	MXO45-6.1440
7.37280	CTX123-ND	2.78	2.47	2.19	1.87	1.66	MXO45-7.3728
8.00000	CTX112-ND	2.78	2.47	2.19	1.87	1.66	MXO45-8.0000
10.00000	CTX114-ND	2.78	2.47	2.19	1.87	1.66	MXO45-10.0000
12.00000	CTX131-ND	2.78	2.47	2.19	1.87	1.66	MXO45-12.0000
14.31818	CTX115-ND	2.78	2.47	2.19	1.87	1.66	MXO45-14.31818
16.00000	CTX116-ND	2.78	2.47	2.19	1.87	1.66	MXO45-16.0000
18.43200	CTX118-ND	2.78	2.47	2.19	1.87	1.66	MXO45-18.4320
19.66080	CTX124-ND	2.78	2.47	2.19	1.87	1.66	MXO45-19.6608
20.00000	CTX119-ND	2.78	2.47	2.19	1.87	1.66	MXO45-20.0000
24.00000	CTX125-ND	2.78	2.47	2.19	1.87	1.66	MXO45-24.0000
25.00000	CTX126-ND	2.78	2.47	2.19	1.87	1.66	MXO45-25.0000
25.17500	CTX127-ND	2.78	2.47	2.19	1.87	1.66	MXO45-25.1750
28.32200	CTX128-ND	2.78	2.47	2.19	1.87	1.66	MXO45-28.3220
32.00000	CTX129-ND	2.78	2.47	2.19	1.87	1.66	MXO45-32.0000
40.00000	CTX120-ND	2.78	2.47	2.19	1.87	1.66	MXO45-40.0000
50.00000	CTX121-ND	2.78	2.47	2.19	1.87	1.66	MXO45-50.0000
64.00000	CTX130-ND	3.64	3.22	2.87	2.45	2.18	MXO45-64.0000
66.66660	CTX137-ND	3.64	3.22	2.87	2.45	2.18	MXO45-66.6666
80.00000	CTX138-ND	5.85	5.18	4.61	3.94	3.49	MXO45-80.0000