

# FTX5 Series High Reliability Thru-Hole CMOS/TTL Clock Oscillator

## Product Features

- Made in the USA
- 0.25MHz to 220 MHz Frequency Range
- 1.8V /2.5V/3.3V/5.0V logic levels
- Wide operating temperature range
- Military and space screening tests available
- High shock resistance(meet 35000G shock)

## Applications

- High shock and vibration environments
- Military and space applications
- Extended temperature applications
- Down-hole drilling Equipments
- Instrumentation and Microprocessor

## HOW TO ORDER

FTX5	-	E	L	B	N		/	100	
Frequency/ Temperature Stability		Voltage		Screening Level		Pin 1 Connection		Package	Frequency
A= 100 ppm over -40°C to +85°C		R=+1.8V		N = No Screening		N=Not connected		F = Full size	KHz/MHz
B= 50 ppm over -40°C to +85°C		N=+2.5V		I = Industrial Std		E=Enable/Disable		H = Half size	
C= 25 ppm over -40°C to +85°C		M=+3.0V		B = MIL-PRF-55310 , level B				M= Full size	
D= 100 ppm over -55°C to +125°C		L=+3.3V		S = MIL-PRF-55310 , level S					
E= 50 ppm over -55°C to +125°C		H=+5.0V		V = 100krad(Si) total dose					
F= 20 ppm over -20°C to +70 °C									

## Package & Size

Mechanical dimensions	Package		
	F Package	M Package	H Package

Pins Connections	PIN 1 – N/C or Tristate Control	PIN 1-6 – No Connected	PIN 1 – N/C or Tristate Control
	PIN 7 – Ground, Case	PIN 7 – Ground, Case	PIN 4 – Ground, Case
	PIN 8 – Output	PIN 8 – Output	PIN 5 – Output
	PIN 14 – Vcc	PIN9-13 – No Connected	PIN 8 – Vcc
		PIN 14 – Vcc	

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## Electrical Performance

	PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT				
Absolute Maximums	Maximum Supply Voltage	$V_{CC}$	-	-0.5	-	7.0	V				
	Storage Temperature	$T_{STG}$	-	-55	-	125	°C				
	Frequency Range	$f_O$	-	0.25	-	220	MHz				
	Frequency Stability (See Note 1 and Ordering Information)	$\Delta f/f_O$	-	-	-	20,25,50 or 100	± ppm				
	Aging	$\Delta f/f_O$	-	-	-	3	± ppm/yr				
	Operating Temperature Commercial Industrial Military	$T_A$	-	-20 -40 -55	25	70 85 125	°C				
Electrical and Waveform Parameters	Supply Voltage	$V_{CC}$	± 10 %	1.62 2.25 2.97 4.50	1.8 2.5 3.3 5.0	1.98 2.75 3.63 5.50	V				
	Supply Current 1.8V	$I_{CC}$		-	-	25	mA				
	2.5V			-	-	35					
	3.3V			-	-	45					
	5V			-	-	55					
	Output Load 1.8V 2.5V 3.3V 5V			$C_L$		-		-	15	pF	
	Output Voltage Levels Logic '1' Level Logic '0' Level	$V_{OH}$ $V_{OL}$	CMOS Load CMOS Load			90% $V_{CC}$ -	- -	- 10% $V_{CC}$	V		
	Output Current Logic '1' Level (1.8V/2.5V/3.3V) Logic '0' Level(1.8V/2.5V/3.3V/5V)	$I_{OH}$ $I_{OL}$	$V_{OH} = 90\%V_{CC}$ $V_{OL} = 10\%V_{CC}$			- -	- -	-2, -4, -8, -16 +2, +4, +8, +16			mA
	Output Duty Cycle	SYM	@ 50% Level	45	-	55	%				
	Rise and Fall Time 1.8V 2.5V 3.3V 5V	$T_R, T_F$		F	-	8	10	ns			
	Start Up Time				$T_S$	Application of $V_{CC}$	-		-	10	ms
	Enable Function Enable Input Voltage 1.8V 2.5V 3.3V 5V	$V_{IH}$		Pin 1 Logic '1', Output Enabled Pin 1 Logic '1', Output Enabled Pin 1 Logic '1', Output Enabled Pin 1 Logic '1', Output Enabled	1.26	-	-	V			
	Disable Input Voltage 1.8V/2.5V/3.3V 5.0V				$V_{IL}$	Pin 1 Logic '0', Output Disabled Pin 1 Logic '0', Output Disabled	-		-	0.5	
	Enable Time						$T_{PLZ}$		Pin 1 Logic '1'	-	-
	Standby Current				$I_{ST}$	Pin 1 Logic '0', Output Disabled	-		-	10	uA
	Period Jitter, Pk-Pk	-	-	-	-	-	100	ps			
	Period Jitter, RMS	-	-	-	-	-	25				
	Phase Jitter, RMS	-	Bandwidth 12 kHz - 20 MHz	-	< 2	-					

Notes:

- Inclusive of initial tolerance at time of shipment, changes in supply voltage, load, temperature and aging.