



Quartz Crystal Oscillator

Product Name	Part Number	Package Type	Minimum Quantity* (Pieces)	
			Tube	Tape
CO (TTL / HCMOS / TTL&HCMOS) Full Size	CO_FS	Lead Type	500	-
CO (TTL / HCMOS / TTL&HCMOS) Half Size	CO_HS	Lead Type	500	-
CO (TTL / HCMOS / TTL&HCMOS) SMD	CO_SM	SMD Type	-	1,000
VCXO Full Size	VCXO_FS	Lead Type	500	-
VCXO Half Size	VCXO_HS	Lead Type	500	-
VCXO SMD	VCXO_SM	SMD Type	-	1,000

* The quantity of each delivery / order must be an integral multiple of the "Minimum Quantity"

Dimension

CO_FS / VCXO_FS

Connection	
CO_FS	VCXO_FS
#1	NC/Tri-state
#7	Ground
#8	Output
#14	+5.0V / +3.3V

Unit: mm

CO_HS / VCXO_HS

Connection	
CO_HS	VCXO_HS
#1	NC/Tri-state
#7	Ground
#8	Output
#14	+5.0V / +3.3V

Unit: mm

CO_SM

Connection	
#	Function
#1	Tristate
#2	Ground
#3	Output
#4	VDD

Unit: mm

VCXO_SM

Connection	
#	Function
#1	V Control
#2	INH
#3	Ground
#4	Output
#5	NC
#6	VDD

Unit: mm

Electrical Specifications

Part Number	CO_FS / HS		
	TTL	HCMOS	TTL / HCMOS
Output Pulse Form			
Frequency Range	1MHz~155MHz	0.5MHz~80MHz	1MHz~80MHz
Operating Voltage	5V±10%, 3.3V±10%	5V±10%, 3.3V±10%	5V±10%, 3.3V±10%
Operating Temperature	-20°C~+85°C, 0°C~+70°C, 0°C~+60°C		
Storage Temperature	-40°C~+85°C		
Frequency Stability	±100ppm, ±50ppm, ±25ppm, ±10ppm		
Duty Cycle	40%~60% (1.4V)	40%~60% (1/2 VDD)	
Rise / Fall Time	15ns (0.500~8.99MHz) 10ns (9.000~31.99MHz) 6ns (32.000~155.0MHz)	10ns (0.500~23.99MHz) 6ns (24.000~80.00MHz)	10ns (0.500~23.99MHz) 6ns (24.000~80.00MHz)
Low Voltage	0.4V (0.500~31.99MHz) 0.5V (32.00~155MHz)	10% VDD	
High Voltage	2.4V	90% VDD	
Output Load	1~10TTL	CL=15pF	CL=15pF / 1~10TTL

Part Number	CO_SM
Frequency Range	1MHz~80MHz
Operating Voltage	5V±10%, 3.3V±10%
Input Current	25mA (0~25MHz) 35mA (25~80MHz)
Output Symmetry	45%~55% (1/2 VCC)
Output Load	CMOS 15pF
Frequency Stability	±100ppm, ±50ppm, ±25ppm, ±10ppm
Operating Temperature	-40°C~+85°C, -30°C~+80°C, -20°C~+70°C, 0°C~+70°C
Rise / Fall Time	7ns (5.0V) 5ns (3.3V)
Start-up Time	2ms Max.
Tri-state	Enable / Disable

Other specifications are also available upon request, please consult with our sales representatives.

- For other frequencies or specifications, please consult with our sales representatives for details.

Part Number	VCXO_FS / HS	
Output Pulse Form	HCMOS (15pF)	
Frequency Range	1MHz~45MHz	
Operating Voltage (VCC)	5V±10%, 3.3V±10%	
Frequency Stability	VCXO-1	±30ppm (0°C~+70°C, V1=0V)
	VCXO-2	±30ppm (0°C~+70°C, V1=VDD/2)
Regulating Range	VCXO-1	VDD=5.0V
		VDD=3.3V
	VCXO-2	±150ppm (V1=VDD)
		±80ppm (V1=0V)
VCXO-2	+80ppm (V1=0V)	
	-80ppm (V1=VDD)	
Rise / Fall Time	10ns (10% VDD)	
Duty Cycle	40%~60% (50% VDD)	

Other specifications are also available upon request, please consult with our sales representatives for details.

Part Number	VCXO_SM
Frequency Range	2MHz~36MHz
Operating Voltage	5V±10%, 3.3V±10%
Frequency Stability	±100ppm, ±50ppm, ±25ppm, ±10ppm
Operating Temperature	0°C~+70°C
Output Load	CMOS 15pF
Low Voltage (VOL)	90% VDD Min.
High Voltage (VOH)	10% BDD Max.
Supply Current	35mA
Absolute Pulling Range	Up to ±100ppm over the control voltage range
Control Voltage Range	0V~5V (VDD=5V), 0V~3.3V (VDD=3.3V)
Duty Cycle (at 1/2 VDD)	45%~55%
Tri-state	Enable / Disable

Other specifications are also available upon request, please consult with our sales representatives for details.

