

HMI

Frequency Technology

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CRYSTALS

OSCILLATORS

MEMS OSCILLATORS

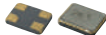
VCXO

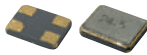
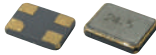
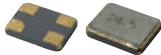
TCXO

VCTCXO



SMD CRYSTALS

				
Product	X12	X16	X20	X25
Dimensions (mm)	1.2x1.0x0.30	1.6x1.2x0.35	2.0x1.6x0.50	2.5x2.0x0.60
Frequency Range	26 - 120 MHz	24 - 80 MHz	16 - 80 MHz	12 - 80 MHz

				
Product	X32	X53	X532	X63
Dimensions (mm)	3.2x2.5x0.70	5.0x3.2x0.90	5.0x3.2x1.20	6.0x3.5x1.10
Frequency Range	8 - 200 MHz	8 - 150 MHz	8 - 80 MHz	7 - 160 MHz

				
Product	X632	X75	49SM	49SX3
Dimensions (mm)	6.0x3.5x1.10	7.0x5.0x1.10	11.4x4.7x4.20	12.9x4.5x4.80
Frequency Range	8 - 50 MHz	6 - 160 MHz	3.2 - 70 MHz	3.2 - 40 MHz

		
Product	49MJ	UMIMJ
Dimensions (mm)	13.5x11.0x5.30	8.0x7.8x3.50
Frequency Range	1.8432 - 200 MHz	8 - 200 MHz

THRU-HOLE CRYSTALS

				
Product	49U	50U	49S	UMI
Dimensions (mm)	11.0x4.7x13.50	11.0x4.7x13.50	11.0x4.7x3.50	7.8x3.3x8.00
Frequency Range	1.0 - 200 MHz	1.0 - 200 MHz	3.2 - 40 MHz	8 - 200 MHz

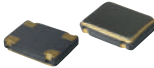
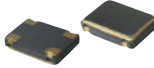
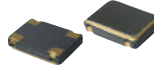
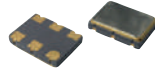
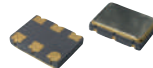
		
Product	48U	51U
Dimensions (mm)	19.4x8.95x19.80	19.4x8.95x19.80
Frequency Range	0.8 - 200 MHz	0.8 - 200 MHz

KHZ CRYSTALS

				
Product	X15	X21	X31	X130C
Dimensions (mm)	1.6x1.0x0.50	2.0x1.2x0.60	3.2x1.5x0.80	6.9x1.4x1.30
Frequency Range	32.768 kHz	32.768 kHz	32.768 kHz	32.768 kHz

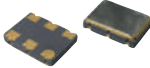
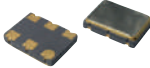
	
Product	SX99
Dimensions (mm)	8.0x3.8x2.50
Frequency Range	32.768 kHz

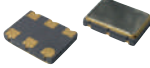
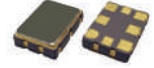
OSCILLATORS

					
	Standard oscillator	Ultra Low jitter oscillator	kHz oscillator	Superb phase noise Differential oscillator	Ultra low jitter Differential oscillator
Product	SX_C	SX_CJ	SX_K	SX_EK SX_LK SX_HK	SX_EJK SX_LJK SX_HJK
Dimensions (mm)	2.0x1.6 2.5x2.0 3.2x2.5 5.0x3.2 7.0x5.0	2.5x2.0 3.2x2.5 5.0x3.2 7.0x5.0	2.5x2.0 3.2x2.5 5.0x3.2 7.0x5.0	2.5x2.0 3.2x2.5 5.0x3.2 7.0x5.0	2.5x2.0 3.2x2.5 5.0x3.2 7.0x5.0
Frequency Range	0.3 - 160 MHz	20 - 50 MHz	27.3 - 100 kHz	13.5 - 220 MHz	100 - 250 MHz
Output type	CMOS	CMOS	CMOS	LVPECL - LVDS - HCSL	LVPECL - LVDS - HCSL
Phase jitter	1.0 ps max	50 fs typ.		100 fs typ.	50 fs typ.

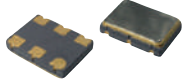
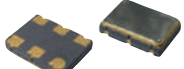
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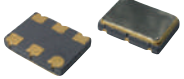
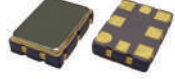
OSCILLATORS

					
	High frequency Differential oscillator	Low EMI oscillators	Superb phase noise oscillator	Quick delivery oscillator	Quick delivery Differential oscillator
Product	SX_EQ SX_LQ	SX_SS	SP2C SP2E SP2L SP2S	SP_F	SX_EP SX_LP
Dimensions (mm)	3.2x2.5 5.0x3.2 7.0x5.0	5.0x3.2 7.0x5.0	14.3x8.7	2.0x1.6 2.5x2.0 3.2x2.5 5.0x3.2 7.0x5.0	3.2x2.5 5.0x3.2 7.0x5.0
Frequency Range	10 - 1500 MHz	3.0 - 200 MHz	10 - 2500 MHz	1 - 200 MHz	10 - 1500 MHz
Output type	LVPECL - LVDS	CMOS	CMOS - LVPECL - LVDS - Sinewave	CMOS	LVPECL - LVDS
Phase jitter	0.6 ps typ.		50 fsec	0.9 ps typ.	1.2 ps typ.

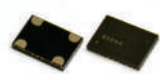
			
	Quick delivery 2 frequencies switchable oscillator	Quick delivery Excellent low jitter Differential oscillator	Quick delivery 4 frequencies switchable oscillator
Product	SX_CQP SX_EQP SX_LQP	SX_EU SX_LU SX_HU	SX7CF SX7EF SX7LF SX7HF
Dimensions (mm)	3.2x2.5 5.0x3.2 7.0x5.0	3.2x2.5 5.0x3.2 7.0x5.0	7.0x5.0
Frequency Range	10 - 1500 MHz	15 - 2100 MHz	15 - 2100 MHz
Output type	CMOS - LVPECL - LVDS	LVPECL - LVDS - HCSL	CMOS - LVPECL - LVDS - HCSL
Phase jitter	1.0 ps typ.	120 fs typ.	150 fs typ.

VCXO

				
	Standard VCXO	High frequency Differential VCXO	Superb phase noise oscillator	Quick delivery Differential VCXO
Product	SX_CV	SX_CQV SX_EQV SX_LQV	SP2CV SP2EV SP2LV SP2SV	SX_CPV SX_EPV SX_LPV
Dimensions (mm)	2.5x2.0 3.2x2.5 5.0x3.2 7.0x5.0	3.2x2.5 5.0x3.2 7.0x5.0	14.3x8.7	3.2x2.5 5.0x3.2 7.0x5.0
Frequency Range	2.5 - 50 MHz	10 - 1500 MHz	10 - 2500 MHz	10 - 1500MHz
Output type	CMOS	CMOS - LVPECL - LVDS	CMOS - LVPECL - LVDS - Sinewave	CMOS - LVPECL - LVDS
Phase jitter	1.0 ps max	0.6 ps typ.	50 fsec typ.	1.2 ps typ.

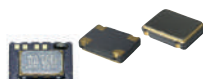
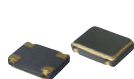
		
	Quick delivery 2 frequencies switchable VCXO	Quick delivery Excellent low jitter Differential VCXO
Product	SX_CQPV SX_EQPV SX_LQPV	SX_EUV SX_LUV SX_HUV
Dimensions (mm)	3.2x2.5 5.0x3.2 7.0x5.0	5.0x3.2 7.0x5.0
Frequency Range	10 - 1500MHz	15 MHz - 2100 MHz
Output type	CMOS - LVPECL - LVDS	LVPECL - LVDS - HCSL
Phase jitter	1.0 ps typ.	120 fs typ.

MEMS

	
	Standard MEMS oscillator
Product	MX_C
Dimensions (mm)	2.0x1.6 2.5x2.0 3.2x2.5 5.0x3.2 7.0x5.0
Frequency Range	1.0 - 137 MHz
Output type	CMOS

**FOR MEMS VCXO, MEMS TCXO:
PLEASE CONSULT FACTORY.**

VC-TCXO



	Standard Clipped Sine VC-TCXO	Standard CMOS VC-TCXO	CMOS TCXO with Tristate function	High stability VC-TCXO	High frequency Differential VC-TCXO
Product	SX_S(V)T	SX_C(V)T	SX_CTE	SX_S(V)TG SX_C(V)TG	SX_C(V)TQ SX_E(V)TQ SX_L(V)TQ
Dimensions (mm)	1.65x1.25 2.0x1.6 2.5x2.0 3.2x2.5 5.0x3.2 7.0x5.0	2.5x2.0 3.2x2.5 5.0x3.2 7.0x5.0	2.0x1.6 2.5x2.0 3.2x2.5	5.0x3.2 7.0x5.0	3.2x2.5 7.0x5.0
Frequency Range	10 - 52 MHz	8.192 - 60 MHz	9.5 - 60 MHz	5 - 52 MHz	10 - 1500 MHz
Output type	Clipped sine	CMOS	CMOS	Clipped sine - CMOS	CMOS - LVPECL - LVDS
Stability	+0.5 ppm -40/+85°C	+1.0 ppm -40/+85°C	+2.5 ppm -40/+85°C	+0.28 ppm -40/+85°C	+1.0 ppm -40/+85°C



	Low power 32.768 kHz TCXO	Superb phase noise VC-TCXO	Quick delivery Differential VC-TCXO	Quick delivery Ultra low jitter VC-TCXO
Product	SX_KTF	SP2S(V)T SP2C(V)T SP2E(V)T SP2L(V)T	SX_C(V)TP SX_E(V)TP SX_L(V)TP	SX_E(V)TJ SX_L(V)TJ SX_H(V)TJ SX_M(V)TJ
Dimensions (mm)	2.1x1.3 3.2x2.5	14.3x8.7	3.2x2.5 7.0x5.0	3.2x2.5 5.0x3.2
Frequency Range	32.768 kHz	1.0 - 200 MHz	10 - 1500 MHz	15 - 2100 MHz
Output type	CMOS	Sinewave - CMOS LVPECL - LVDS	CMOS - LVPECL - LVDS	LVPECL - LVDS - HCSL - CML
Stability	+5.0 ppm -40/+85°C	+0.5 ppm -40/+85°C	+2.5 ppm -30/+85°C	+1.5 ppm -40/+85°C

PLEASE CONSULT FACTORY FOR TCVCXO.