

The logo features the letters 'HMI' in a bold, white, sans-serif font. A dark blue sine wave graphic starts from the left edge of the page, passes behind the 'H' and 'M', and ends at the right edge. The background is a dark blue grid with glowing blue dots and faint circuit-like patterns.

# HMI

Frequency Technology

[www.HMinternational.be](http://www.HMinternational.be)

CRYSTALS

OSCILLATORS

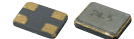
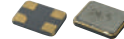
MEMS OSCILLATORS

VCXO

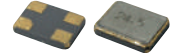
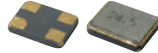
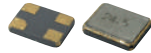
TCXO

VCTCXO

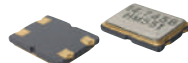
## SMD CRYSTALS



Product	<b>X12</b>	<b>X16</b>	<b>X20</b>	<b>X25</b>
Dimensions (mm)	1.2x1.0x0.35	1.6x1.2x0.35	2.0x1.6x0.50	2.5x2.0x0.60
Frequency Range	36 - 80 MHz	24 - 60 MHz	16 - 72 MHz	12 - 80 MHz



Product	<b>X32</b>	<b>X53</b>	<b>X532</b>	<b>X63</b>
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 - 200 MHz



Product	<b>X632</b>	<b>X75</b>	<b>49SM</b>	<b>49SX3</b>
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 - 70 MHz

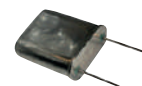
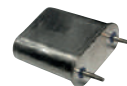


Product	<b>49MJ</b>	<b>UMIMJ</b>	<b>UM5MJ</b>
Dimensions (mm)	13.5x11.0x5.30	8.0x7.8x3.50	6.0x7.8x3.50
Frequency Range	1.8432 - 200 MHz	4 - 200 MHz	10 - 200 MHz

## THRU-HOLE CRYSTALS

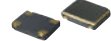


Product	<b>TB39</b>	<b>49U</b>	<b>50U</b>	<b>49S</b>
Dimensions (mm)	3.0x9.0 cylindrical	11.0x4.7x13.50	11.0x4.7x13.50	11.0x4.7x3.50
Frequency Range	3.5 - 70 MHz	1.0 - 200 MHz	1.0 - 200 MHz	3.2 - 70 MHz

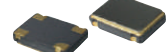
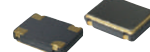
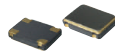


Product	<b>UMI</b>	<b>UM5</b>	<b>48U</b>	<b>51U</b>
Dimensions (mm)	7.8x3.3x8.00	7.8x3.3x6.00	19.4x8.95x19.80	19.4x8.95x19.80
Frequency Range	4 - 200 MHz	10 - 200 MHz	0.8 - 200 MHz	0.8 - 200 MHz

# OSCILLATORS



Product	<b>SX1.</b>	<b>SX2.</b>	<b>SX3.</b>	<b>SX3SS</b>
Dimensions (mm)	2.0x1.6x0.80	2.5x2.0x0.90	3.2x2.5x1.00	3.2x2.5x1.10
Frequency Range	1.0 - 80.0 MHz	1.0 - 175.0 MHz	1.0 - 1450.0 MHz	12.5 - 42.0 MHz
Output Logic	HCMOS-TTL	HCMOS-TTL-LVPECL-LVDS-HCSL	HCMOS-TTL-LVPECL-LVDS-HCSL	HCMOS Low EMI



Product	<b>SX5.</b>	<b>SX5SS</b>	<b>SX7.</b>	<b>SX7SS</b>
Dimensions (mm)	5.0x3.2x1.30	5.0x3.2x1.30	7.0x5.0x1.50	7.0x5.0x1.80
Frequency Range	1.0 - 2100.0 MHz	6.0 - 160.0 MHz	0.5 - 2100.0 MHz	3.5 - 220.0 MHz
Output Logic	HCMOS-TTL-LVPECL-LVDS-HCSL-True Sine	HCMOS Low EMI	HCMOS-TTL-LVPECL-LVDS-HCSL-True Sine	HCMOS Low EMI



Product	<b>SP2.</b>	<b>SP5.</b>	<b>DLH.</b>	<b>DL.</b>
Dimensions (mm)	14.3x8.7x5.50	11.4x9.6x2.50	12.7x12.7x5.08	20.7x12.7x5.08
Frequency Range	0.5 - 800.0 MHz	0.5 - 800.0 MHz	0.5 - 800.0 MHz	0.5 - 800.0 MHz
Output Logic	HCMOS-TTL-LVPECL-LVDS-HCSL	HCMOS-TTL-LVPECL-LVDS-HCSL-True Sine	HCMOS-TTL-LVPECL-LVDS-HCSL	HCMOS-TTL-LVPECL-LVDS-HCSL-True Sine

# PROGRAMMABLE OSCILLATORS



Product	<b>SX2P</b>	<b>SX3P</b>	<b>SX5P</b>	<b>SX7P</b>
Dimensions (mm)	2.5x2.0x0.90	3.2x2.5x1.20	5.0x3.2x1.30	7.0x5.0x1.50
Frequency Range	1.0 - 200.0 MHz	1.0 - 200.0 MHz	1.0 - 200.0 MHz	1.0 - 200.0 MHz
Output Logic	HCMOS-TTL	HCMOS-TTL	HCMOS-TTL	HCMOS-TTL

## KHZ CRYSTALS

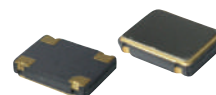
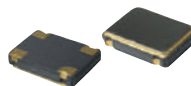
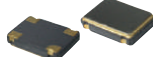


Product	<b>X15</b>	<b>X21</b>	<b>X31</b>	<b>X130C</b>
Dimensions (mm)	1.6x1.0x0.50	2.0x1.2x0.60	3.2x1.5x0.80	6.9x1.4x1.30
Frequency Range	32.768 kHz	32.768 kHz	32.768 kHz	32.768 kHz



Product	<b>SX99</b>	<b>TB26SMD</b>	<b>TB26</b>	<b>TB38</b>
Dimensions (mm)	8.0x3.8x2.50	6.0x2.0 cylindrical	6.0x2.0 cylindrical	8.0x3.0 cylindrical
Frequency Range	32.768 kHz	32.768 kHz	32.768 kHz	32.768 kHz

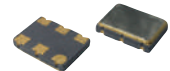
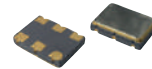
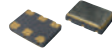
## 32.768 KHZ OSCILLATORS



Product	<b>SX2K</b>	<b>SX3K</b>	<b>SX5K</b>	<b>SX7K</b>
Dimensions (mm)	2.5x2.0x0.90	3.2x2.5x1.20	5.0x3.2x1.30	7.0x5.0x1.50
Frequency Range	32.768 kHz	32.768 kHz	32.768 kHz	32.768 kHz
Output Logic	HCMOS	HCMOS	HCMOS	HCMOS

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# VCXO



Product	<b>SX2.V</b>	<b>SX3.V</b>	<b>SX5.V</b>	<b>SX7.V</b>
Dimensions (mm)	2.5x2.0x0.90	3.2x2.5x1.20	5.0x3.2x1.30	7.0x5.0x1.50
Frequency Range	1.0 - 100.0 MHz	1.0 - 1450.0 MHz	1.0 - 2100.0 MHz	1.0 - 2100.0 MHz
Output Logic	HCMOS-TTL	HCMOS-TTL-LVPECL-LVDS-HCSL	HCMOS-TTL-LVPECL-LVDS-HCSL-True Sine	HCMOS-TTL-LVPECL-LVDS-HCSL-True Sine



Product	<b>SP2.V</b>	<b>SP5.V</b>	<b>DLH.V</b>	<b>DL.V</b>
Dimensions (mm)	14.3x8.7x5.50	11.4x9.6x2.50	12.7x12.7x5.08	20.7x12.7x5.08
Frequency Range	0.75 - 800.0 MHz	1.0 - 800.0 MHz	1.0 - 125.0 MHz	1.0 - 800.0 MHz
Output Logic	HCMOS-TTL-LVPECL-LVDS-HCSL	HCMOS-TTL-LVPECL-LVDS-HCSL-True Sine	HCMOS-TTL-LVPECL-LVDS-HCSL-True Sine	HCMOS-TTL-LVPECL-LVDS-HCSL-True Sine

# 32.768 KHZ VC-TCXO



Product	<b>SX3KTF</b>	<b>SX7K(V)TM</b>
Dimensions (mm)	3.2x2.5x1.30	7.0x5.0x2.30
Frequency Range	32.768 kHz	32.768 kHz
Output Logic	HCMOS	HCMOS
Temperature Stability	± 2.0 ppm	± 0.5 ppm

# MEMS



Product	<b>MX1C</b>	<b>MX2C</b>	<b>MX3C</b>	<b>MX5C</b>
Dimensions (mm)	2.0x1.6x0.75	2.5x2.0x0.75	3.2x2.5x0.75	5.0x3.2x0.75
Frequency Range	1.0 - 137.0 MHz	1.0 - 137.0 MHz	1.0 - 137.0 MHz	1.0 - 137.0 MHz
Output Logic	HCMOS	HCMOS	HCMOS	HCMOS



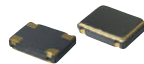
Product	<b>MX7C</b>
Dimensions (mm)	7.0x5.0x0.90
Frequency Range	1.0 - 137.0 MHz
Output Logic	HCMOS

**FOR MEMS VCXO, MEMS TCXO, MEMS LOW EMI, MEMS 32.768 KHZXO: PLEASE CONSULT FACTORY**

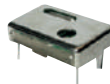
# TCXO - VCTCXO



Product	<b>SXAS.(V)T</b>	<b>SXIS.(V)T</b>	<b>SX2.(V)T</b>	<b>SX3.(V)T</b>
Dimensions (mm)	1.6x1.2x0.60	2.0x1.6x0.70	2.5x2.0x0.90	3.2x2.5x1.00
Frequency Range	19.2 - 52.0 MHz	10.0 - 52.0 MHz	4.0 - 60.0 MHz	4.0 - 1450.0 MHz
Output Logic	Clipped Sine	Clipped Sine	Clipped Sine-HCMOS	Clipped Sine-HCMOS-LVPECL-LVDS
Temperature Stability	± 0.5 ppm	± 0.5 ppm	± 0.5 ppm	± 0.5 ppm



Product	<b>SX5.(V)T</b>	<b>SX7.(V)T</b>	<b>SP4.(V)T</b>	<b>SP2.(V)T</b>
Dimensions (mm)	5.0x3.2x1.20	7.0x5.0x1.80	11.4x9.6x2.50	14.3x8.7x5.50
Frequency Range	4.0 - 2100 MHz	4.0 - 2100 MHz	1.0 - 125.0 MHz	1.0 - 200.0 MHz
Output Logic	Clipped Sine - HCMOS-LVPECL-LVDS-HCSL	Clipped Sine - HCMOS-LVPECL-LVDS-HCSL	Clipped Sine - HCMOS	Clipped Sine - HCMOS
Temperature Stability	± 0.05 ppm	± 0.05 ppm	± 0.5 ppm	± 0.5 ppm



Product	<b>CI8.(V)T</b>	<b>A18.(V)T</b>	<b>DL.(V)T</b>
Dimensions (mm)	18.3x11.7x4.50	18.3x11.7x4.50	20.7x13.1x7.48
Frequency Range	1.0 - 125.0 MHz	1.0 - 125.0 MHz	1.0 - 125.0 MHz
Output Logic	Clipped Sine - HCMOS	Clipped Sine - HCMOS	Clipped Sine - HCMOS
Temperature Stability	± 0.5 ppm	± 0.5 ppm	± 0.5 ppm

**HMI**  
Frequency Technology

[www.HMInternational.be](http://www.HMInternational.be)

Grote Steenweg 36 - 2260 Westerlo - Belgium

Tel: +32 14 54 89 55 - Fax: +32 14 54 94 43 - [info@HMInternational.be](mailto:info@HMInternational.be)

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