

FREQUENCY CONTROL PRODUCTS



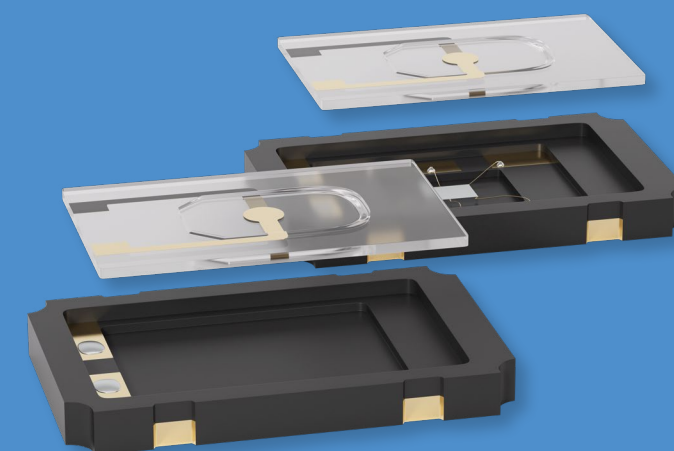
- › Quartz Crystals
- › Crystal Oscillators
- › MEMS Oscillators
- › TCXOs
- › OCXOs
- › BUFFERS



TECHNICAL SUPPORT FROM YOUR LOCAL JAUCH TEAM

- › Consultation
- › Design-In Support
- › Support for application problems
- › Oscillator circuit validation

Talk to us about the optimal clock solution as early as the design phase starts. We will help you through the project-specific preselection of suitable components and calculations for special applications.



Your local sales and technical teams will support you in finding the right frequency control product for you. We will offer support from the beginning, allowing you to minimize your development time and cut unnecessary costs.

WORLDWIDE UNIQUE SERVICE FOR YOUR DEVELOPER

- › Creation of custom specifications for your project
- › Increased operational reliability in series production
- › Cost-optimized component selection and specification for the entire project life
- › Detailed advice and supervision by specialists
- › Validation of your circuit using special testing equipment
- › Samples for pilot productions or prototypes

QUARTZ CRYSTALS – SMD



QUARTZ CRYSTAL • SMD • CERAMIC/METAL PACKAGE

	TYPE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY TOLERANCE*	FREQUENCY STABILITY*	L x W x H in mm
	JXS08	37.40~80.0	-30 °C ~ +85 °C	±10 ppm	±15 ppm	1.0 x 0.8 x 0.3
	JXS10	24.0~80.0	-40 °C ~ +85 °C	±10 ppm	±10 ppm	1.2 x 1.0 x 0.3
	JXS11	24.0~80.0	-40 °C ~ +125 °C	±10 ppm	±10 ppm	1.6 x 1.2 x 0.4
	JXS21	16.0~80.0	-40 °C ~ +125 °C	±10 ppm	±10 ppm	2.0 x 1.6 x 0.5
	JXS22	16.0~66.0	-40 °C ~ +125 °C	±10 ppm	±10 ppm	2.5 x 2.0 x 0.55
	JXS32	8.0~54.0 54.0~125.0 (3rd OT) on request	-40 °C ~ +125 °C	±10 ppm	±10 ppm	3.2 x 2.5 x 0.7
	JXS53	8.0~125.0	-40 °C ~ +125 °C	±10 ppm	±10 ppm	5.0 x 3.2 x 0.8
	JXS75	6.0~54.0	-40 °C ~ +125 °C	±10 ppm	±20 ppm	7.0 x 5.0 x 1.3

QUARTZ CRYSTAL FOR WIRELESS • SMD • CERAMIC/METAL PACKAGE

	TYPE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY TOLERANCE*	FREQUENCY STABILITY*	L x W x H in mm
	JXS21-WA	16.0~52.0	-40 °C ~ +105 °C	±10 ppm	±10 ppm	2.0 x 1.6 x 0.5
	JXS22-WA	16.0~52.0	-40 °C ~ +105 °C	±10 ppm	±10 ppm	2.5 x 2.0 x 0.55
	JXS32-WA	13.56~52.0	-40 °C ~ +105 °C	±10 ppm	±10 ppm	3.2 x 2.5 x 0.7

QUARTZ CRYSTAL • SMD • METAL PACKAGE / MOLDED BASE

	TYPE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY TOLERANCE*	FREQUENCY STABILITY*	L x W x H in mm
	SMU2	4.0~33.0	-40 °C ~ +125 °C	±20 ppm	±20 ppm	11.5 x 4.8 x 3.0
	SMU4	3.2768~40.0	-40 °C ~ +105 °C	±20 ppm	±20 ppm	11.5 x 4.8 x 4.0
	SMU5	3.2768~40.0	-40 °C ~ +125 °C	±20 ppm	±20 ppm	13.1 x 5.0 x 5.0

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QUARTZ CRYSTALS – PIN TYPE AND SMD



QUARTZ CRYSTAL • PIN TYPE • METAL PACKAGE

	TYPE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY TOLERANCE*	FREQUENCY STABILITY*	L x W x H in mm
	SS2	4.0~33.0	-40 °C ~ +125 °C	±20 ppm	±20 ppm	11.3 x 4.7 x 2.5
	SS4	3.2768~40.0	-40 °C ~ +105 °C	±20 ppm	±20 ppm	11.3 x 4.7 x 2.5
	HC49/U	1.843~250.0	-40 °C ~ +125 °C	±3 ppm	±3 ppm	10.8 x 4.5 x 13.0
	HC49/U-SMC	1.843~250.0	-40 °C ~ +125 °C	±3 ppm	±3 ppm	17.5 x 10.8 x 5.3
	MQ1	4.0~250.0	-40 °C ~ +125 °C	±5 ppm	±3 ppm	7.9 x 3.3 x 8.0
	MQ1-SMC	4.0~250.0	-40 °C ~ +125 °C	±5 ppm	±3 ppm	11.7 x 7.8 x 3.4
	MQ5	10.0~250.0	-40 °C ~ +125 °C	±5 ppm	±3 ppm	7.7 x 3.1 x 5.8
	MQ5-SMC	10.0~250.0	-40 °C ~ +125 °C	±5 ppm	±3 ppm	9.7 x 7.7 x 3.4

TUNING FORK CRYSTAL • SMD

	TYPE	FREQUENCY RANGE in kHz	TEMPERATURE RANGE (max.)*	FREQUENCY TOLERANCE*	FREQUENCY STABILITY*	L x W x H in mm
	JTX110	32.7680 kHz	-40 °C ~ +85 °C	±20 ppm	-80 ppm	1.6 x 1.0 x 0.5
	JTX210	32.7680 kHz	-40 °C ~ +125 °C	±20 ppm	-80 ppm	2.0 x 1.2 x 0.6
	JTX310	32.7680 kHz	-40 °C ~ +125 °C	±10 ppm	-80 ppm	3.2 x 1.5 x 0.9
	JTX410	32.7680 kHz	-40 °C ~ +85 °C	±10 ppm	-80 ppm	4.1 x 1.5 x 0.9
	SMQ32SL	32.7680 kHz	-40 °C ~ +85 °C	±10 ppm	-80 ppm	8.0 x 3.8 x 2.4
	SMQ32SN	32.7680 kHz	-40 °C ~ +85 °C	±20 ppm	-80 ppm	7.0 x 1.5 x 1.3
	SM26F	32.7680 kHz	-40 °C ~ +85 °C	±20 ppm	-80 ppm	6.0 x 2.0 x 2.0

TUNING FORK CRYSTAL • PIN TYPE

	TYPE	FREQUENCY RANGE in kHz	TEMPERATURE RANGE (max.)*	FREQUENCY TOLERANCE*	FREQUENCY STABILITY*	L x W x H in mm
	MMTF32	32.7680 kHz	-40 °C ~ +85 °C	±10 ppm	-80 ppm	6.0 x 2.0 x 2.0

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QUARTZ CRYSTALS QUALIFIED TO AEC-Q200



QUARTZ CRYSTALS FOR AUTOMOTIVE APPLICATIONS

	TYPE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY TOLERANCE*	FREQUENCY STABILITY*	L x W x H in mm
	JXS11P4	24.0 ~ 60.0	-40 °C ~ +125 °C	±10 ppm	±15 ppm	1.6 x 1.2 x 0.4
	JXS21P4	16.0 ~ 60.0	-40 °C ~ +125 °C	±10 ppm	±15 ppm	2.0 x 1.6 x 0.55
	JXS22P4	12.0 ~ 54.0	-40 °C ~ +125 °C	±10 ppm	±15 ppm	2.5 x 2.0 x 0.6
	JXS32P4	8.0 ~ 54.0	-40 °C ~ +125 °C	±10 ppm	±15 ppm	3.2 x 2.5 x 0.7
	SMU2	4.0 ~ 33.0	-40 °C ~ +125 °C	±20 ppm	±30 ppm	11.5 x 4.8 x 3.0
	SMU3	3.276 ~ 60.0	-40 °C ~ +125 °C	±20 ppm	±20 ppm	11.5 x 4.8 x 4.0
	JTX310	32.7680 kHz	-40 °C ~ +125 °C	±10 ppm	-80 ppm	3.2 x 1.5 x 0.9
	JTX210	32.7680 kHz	-40 °C ~ +125 °C	±20 ppm	-80 ppm	2.0 x 1.2 x 0.6

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CUSTOMIZED QUARTZ CRYSTALS

- › Extremely tight frequency stabilities
- › Lowest ESR values
- › Special pulling sensitivities

CUSTOMIZED QUARTZ CRYSTALS

	TYPE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY TOLERANCE*	FREQUENCY STABILITY*	L x W x H in mm
	HC49/U	1.8432 ~ 40.0 (fund. AT) 20.0 ~ 105.0 (3rd OT)	-40 °C ~ +125 °C	±3 ppm	±3 ppm	10.8 x 4.5 x 13.0
	HC49/U SMC	50.0 ~ 175.0 (5th OT) 70.0 ~ 250.0 (7th OT)	-40 °C ~ +125 °C	±3 ppm	±3 ppm	17.5 x 10.8 x 5.3
	MQ1	4.0 ~ 40.0 (fund. AT) 20.0 ~ 105.0 (3rd OT)	-40 °C ~ +125 °C	±5 ppm	±3 ppm	7.9 x 3.3 x 8.0
	MQ1-SMC	50.0 ~ 175.0 (5th OT) 70.0 ~ 250.0 (7th OT)	-40 °C ~ +125 °C	±5 ppm	±3 ppm	11.7 x 7.8 x 3.4
	MQ5	10.0 ~ 40.0 (fund. AT) 30.0 ~ 105.0 (3rd OT)	-40 °C ~ +125 °C	±5 ppm	±3 ppm	7.7 x 3.1 x 5.8
	MQ5-SMC	50.0 ~ 175.0 (5th OT) 70.0 ~ 250.0 (7th OT)	-40 °C ~ +125 °C	±5 ppm	±3 ppm	9.7 x 7.7 x 3.4

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QUARTZ CRYSTAL OSCILLATORS SMD



JO11 • OSCILLATOR • HCMOS • SMD - CERAMIC / METAL PACKAGE

	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JO11 (1.8 V ~ 3.3 V)	variable supply voltage	5.0 ~ 60.0	-40 °C ~ +125 °C	±25 ppm	15 pF HCMOS	1.6 x 1.2 x 0.7

JO21 • OSCILLATOR • HCMOS • SMD • CERAMIC / METAL PACKAGE

	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JO21 (1.8 V ~ 3.3 V)	variable supply voltage	1.0 ~ 50.0	-40 °C ~ +125 °C	±25 ppm	15 pF HCMOS	2.0 x 1.6 x 0.8
	JO21 (3.3 V)	Stop Function	0.5 ~ 80.0	-40 °C ~ +125 °C	±25 ppm	12 pF HCMOS	2.0 x 1.6 x 0.8
	JO21 (2.5 V)	Stop Function	0.5 ~ 80.0	-40 °C ~ +125 °C	±25 ppm	12 pF HCMOS	2.0 x 1.6 x 0.8
	JO21 (1.8 V)	Stop Function	0.5 ~ 80.0	-40 °C ~ +125 °C	±25 ppm	12 pF HCMOS	2.0 x 1.6 x 0.8

JO22 • OSCILLATOR • HCMOS • SMD • CERAMIC / METAL PACKAGE

	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JO22 (1.8 V ~ 3.3 V)	variable supply voltage	1.0 ~ 50.0	-40 °C ~ +125 °C	±25 ppm	15 pF HCMOS	2.5 x 2.0 x 0.9
	JO22 (3.3 V)	Stop Function	0.5 ~ 133.0	-40 °C ~ +125 °C	±25 ppm	15 pF HCMOS	2.5 x 2.0 x 0.9
	JO22 (3.0 V)	Stop Function	0.5 ~ 133.0	-40 °C ~ +125 °C	±25 ppm	15 pF HCMOS	2.5 x 2.0 x 0.9
	JO22 (2.5 V)	Stop Function	0.5 ~ 133.0	-40 °C ~ +125 °C	±25 ppm	15 pF HCMOS	2.5 x 2.0 x 0.9
	JO22 (1.8 V)	Stop Function	0.5 ~ 133.0	-40 °C ~ +125 °C	±25 ppm	15 pF HCMOS	2.5 x 2.0 x 0.9
	JO22H (1.8 V / 2.5 V / 3.3 V)	High Stability Type	13.0 ~ 54.0	-40 °C ~ +85 °C	±10 ppm	15 pF HCMOS	2.5 x 2.0 x 0.9

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QUARTZ CRYSTAL OSCILLATORS SMD



JO32 • OSCILLATOR • HCMOS • SMD • CERAMIC / METAL PACKAGE

	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JO32 (1.8 V ~ 3.3 V)	variable supply voltage	1.0 ~ 50.0	-40 °C ~ +125 °C	±25 ppm	15 pF / 30 pF HCMOS	3.2 x 2.5 x 1.1
	JO32 (3.3 V)	Stop Function	0.75 ~ 170.0	-40 °C ~ +125 °C	±25 ppm	15 pF / 30 pF HCMOS	3.2 x 2.5 x 1.1
	JO32 (3.0 V)	Stop Function	0.75 ~ 170.0	-40 °C ~ +125 °C	±25 ppm	15 pF / 30 pF HCMOS	3.2 x 2.5 x 1.1
	JO32 (2.8 V)	Stop Function	0.75 ~ 170.0	-40 °C ~ +125 °C	±25 ppm	15 pF / 30 pF HCMOS	3.2 x 2.5 x 1.1
	JO32 (2.5 V)	Stop Function	0.75 ~ 170.0	-40 °C ~ +125 °C	±25 ppm	15 pF / 30 pF HCMOS	3.2 x 2.5 x 1.1
	JO32 (1.8 V)	Stop Function	0.75 ~ 135.0	-40 °C ~ +125 °C	±25 ppm	15 pF / 30 pF HCMOS	3.2 x 2.5 x 1.1
	JO33H (1.8 V / 2.5 V / 3.3 V)	High Stability Type	10.0 ~ 54.0	-40 °C ~ +85 °C	±10 ppm	15 pF HCMOS	3.2 x 2.5 x 1.0

JO53 • OSCILLATOR • HCMOS • SMD • CERAMIC / METAL PACKAGE

	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JO53 (3.3 V)	Stop Function	0.5 ~ 160.0	-40 °C ~ +125 °C	±20 ppm	15 pF / 30 pF HCMOS	5.0 x 3.2 x 1.4
	JO53 (2.5 V)	Stop Function	0.5 ~ 160.0	-40 °C ~ +125 °C	±20 ppm	15 pF / 30 pF HCMOS	5.0 x 3.2 x 1.4
	JO53 (1.8 V)	Stop Function	0.5 ~ 160.0	-40 °C ~ +125 °C	±20 ppm	15 pF / 30 pF HCMOS	5.0 x 3.2 x 1.4
	JO53 (5.0 V) Stop	Stop Function	1.0 ~ 170.0	-40 °C ~ +85 °C	±20 ppm	15 pF / 30 pF 50 pF HCMOS	5.0 x 3.2 x 1.4

JO75 • OSCILLATOR • HCMOS • SMD • CERAMIC / METAL PACKAGE

	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JO75 (3.3 V)	Stop Function	1.0 ~ 170.0	-40 °C ~ +125 °C	±20 ppm	15 pF / 30 pF HCMOS	7.0 x 5.0 x 1.8
	JO75 (2.5 V)	Stop Function	0.5 ~ 160.0	-40 °C ~ +125 °C	±20 ppm	15 pF / 30 pF HCMOS	7.0 x 5.0 x 1.8
	JO75 (1.8 V)	Stop Function	0.5 ~ 160.0	-40 °C ~ +125 °C	±20 ppm	15 pF / 30 pF HCMOS	7.0 x 5.0 x 1.8
	JO75 (5.0 V) Stop	Stop Function	1.0 ~ 170.0	-40 °C ~ 85 °C	±20 ppm	15 pF / 30 pF 50 pF HCMOS	7.0 x 5.0 x 1.4

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QUARTZ CRYSTAL OSCILLATORS SMD



JV - VCXO - HCMOS - SMD - CERAMIC/ METAL PACKAGE

	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JV32 (3.3 V)	VCXO	1.25 ~ 55.0	-40 °C ~ +85 °C	±25 ppm	15 pF HCMOS	3.2 x 2.5 x 1.0
	JV54 (3.3 V)	VCXO	1.0 ~ 125.0	-40 °C ~ +85 °C	±25 ppm	15 pF HCMOS	5.0 x 3.2 x 1.2
	JV75 (3.3 V)	VCXO	1.0 ~ 125.0	-40 °C ~ +85 °C	±25 ppm	15 pF HCMOS	7.0 x 5.0 x 1.9

TUNING FORK OSCILLATOR - 32.768 kHz - SMD - CERAMIC / METAL PACKAGE

	TYPE	FEATURE	FREQUENCY RANGE in kHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JR032 (1.2 V ~ 5.0 V)	uses tuning Fork Crystal	32.768 kHz	-40 °C ~ +105 °C	±25 ppm	15 pF HCMOS	3.2 x 2.5 x 1.0
	JO32 32.768 kHz	AT-cut	32.768 kHz	-40 °C ~ +125 °C	±25 ppm	15 pF HCMOS	3.2 x 2.5 x 1.0
	JO22 32.768 kHz	AT-cut	32.768 kHz	-40 °C ~ +125 °C	±25 ppm	15 pF HCMOS	2.5 x 2.0 x 0.8

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(VOLTAGE CONTROLLED) TEMPERATURE COMPENSATED CRYSTAL OSCILLATORS



(VC)TCXO - CLIPPED SINE - SMD - CERAMIC / METAL PACKAGE							
	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JT11S(V)	VCTCXO or TCXO	13.0 ~ 52.0	-40 °C ~ +85 °C	±0.5 ppm	10 KΩ // 10 pF > 0.8 Vpp (clipped sine)	1.6 x 1.2 x 0.55
	JT11LE (1.2 ~ 1.8V)	Low Voltage TCXO	13.0 ~ 52.0	-40 °C ~ +85 °C	±0.5 ppm	10 KΩ // 10 pF > 0.8 Vpp (clipped sine)	1.6 x 1.2 x 0.55
	JT11GLE (1.2 ~ 1.8V)	Low Voltage TCXO for GPS	26.0 / 38.40 / 52.0	-40 °C ~ +85 °C	±0.5 ppm	10 KΩ // 10 pF > 0.8 Vpp (clipped sine)	1.6 x 1.2 x 0.55
	JT21S(V)	VCTCXO or TCXO	13.0 ~ 52.0	-40 °C ~ +85 °C	±0.5 ppm	10 KΩ // 10 pF > 0.8 Vpp (clipped sine)	2.0 x 1.6 x 0.8
	JT21GLE (1.2 ~ 1.8V)	Low Voltage TCXO for GPS	26.0 / 38.40 / 52.0	-40 °C ~ +85 °C	±0.5 ppm	10 KΩ // 10 pF > 0.8 Vpp (clipped sine)	2.0 x 1.6 x 0.7
	JT21G	TCXO for GPS	26.0 ~ 38.40	-40 °C ~ +85 °C	±0.5 ppm	10 KΩ // 10 pF > 0.8 Vpp (clipped sine)	2.0 x 1.6 x 0.7
	JT21ET(E)	TCXO and Standby Function	12.0 ~ 52.0	-40 °C ~ +105 °C	±2.0 ppm	10 KΩ // 10 pF > 0.8 Vpp (clipped sine)	2.0 x 1.6 x 0.8
	JT21LE 1.2 ~ 1.8 V	Low Voltage TCXO	13.0 ~ 52.0	-40 °C ~ +85 °C	±0.5 ppm	10 KΩ // 10 pF > 0.8 Vpp (clipped sine)	2.0 x 1.6 x 0.8
	JT22S(V)	VCTCXO or TCXO	10.0 ~ 52.0	-40 °C ~ +85 °C	±1 ppm	10 KΩ // 10 pF > 0.8 Vpp (clipped sine)	2.5 x 2.0 x 0.95
	JT33(V)	VCTCXO or TCXO	10.0 ~ 52.0	-40 °C ~ +85 °C	±1 ppm	10 KΩ // 10 pF > 0.8 Vpp (clipped sine)	3.2 x 2.5 x 1.0
	JT53L(V)	VCTCXO or TCXO	10.0 ~ 52.0	-40 °C ~ +85 °C	±1 ppm	10 KΩ // 10 pF > 0.8 Vpp (clipped sine)	5.0 x 3.2 x 1.05

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(VOLTAGE CONTROLLED) TEMPERATURE COMPENSATED CRYSTAL OSCILLATORS



TCXO - HCMOS - SMD - CERAMIC / METAL PACKAGE							
	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JT21CT	TCXO	13.0 ~ 52.0	-40 °C ~ +105 °C	±2.0 ppm	15 pF HCMOS	2.0 x 1.6 x 0.7
	JT22CT	TCXO	13.0 ~ 52.0	-40 °C ~ +105 °C	±2.0 ppm	15 pF HCMOS	2.5 x 2.0 x 0.8
	JT32CT	TCXO	10.0 ~ 52.0	-40 °C ~ +105 °C	±2.0 ppm	15 pF HCMOS	3.2 x 2.5 x 1.0

(VC)TCXO PRECISION - HCMOS - SMD							
	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JTP53HC(V)	TCXO Precision	9.6 ~ 50.0	-40 °C ~ +105 °C	±0.05 ppm	15 pF HCMOS	5.0 x 3.2 x 1.7
	JTS53HC(V)	Stratum 3 compliant (VC)TCXO	9.6 ~ 50.0	-40 °C ~ +105 °C	±0.05 ppm	15 pF HCMOS	5.0 x 3.2 x 1.7
	JTP75HC(V)	TCXO Precision	9.6 ~ 50.0	-40 °C ~ +105 °C	±0.05 ppm	15 pF HCMOS	7.0 x 5.0 x 2.2
	JTS75HC(V)	Stratum 3 compliant (VC)TCXO	9.6 ~ 50.0	-40 °C ~ +105 °C	±0.05 ppm	15 pF HCMOS	7.0 x 5.0 x 2.2

(VC)TCXO PRECISION - CLIPPED SINE - SMD							
	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JTP32CS(V)	TCXO Precision	9.6 ~ 50.0	-40 °C ~ +85 °C	±0.28 ppm	10 KΩ // 10 pF > 0.6 Vpp (clipped sine)	3.2 x 2.5 x 0.9
	JTS32CS(V)	Stratum 3 compliant (VC)TCXO	9.6 ~ 50.0	-40 °C ~ +85 °C	±0.28 ppm	10 KΩ // 10 pF > 0.6 Vpp (clipped sine)	3.2 x 2.5 x 0.9
	JTS21CS(V)	Stratum 3 compliant (VC)TCXO	9.6 ~ 50.0	-40 °C ~ +85 °C	±0.5 ppm	10 KΩ // 10 pF > 0.6 Vpp (clipped sine)	2.0 x 1.6 x 0.7

OCXO - OSCILLATOR - SINE OR HCMOS							
	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	J0X254	VCOCXO or OCXO	10.0 ~ 100.0	-40 °C ~ +85 °C	±0.5 ppb ~ ±50 ppb	Sine or HCMOS	25.4 x 25.4 x 13

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OSCILLATOR PECL - SMD - CERAMIC / METAL PACKAGE

	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JOE75 MESA	PECL XO	170.0 ~ 320.0	-40 °C ~ +85 °C	±25 ppm	50 Ω at VDC ~ 2.0 V	7.0 x 5.0 x 1.4
	JOE75 30T	PECL XO	65.0 ~ 200.0	-40 °C ~ +85 °C	±25 ppm	50 Ω at VDC ~ 2.0 V	7.0 x 5.0 x 1.5
	JOE32	PECL XO	13.5 ~ 200.0	-40 °C ~ +125 °C	±25 ppm	50 Ω at ~ 1.3 V	3.2 x 2.5 x 0.95
	JOE21 Low Jitter	LVPECL XO	100.0 ~ 160.0	-40 °C ~ +85 °C	±50 ppm	50 Ω (terminus to Vcc-2V)	2.0 x 1.6 x 0.75

OSCILLATOR LVDS - SMD - CERAMIC / METAL PACKAGE

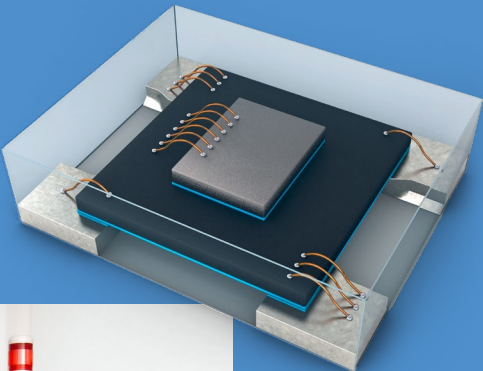
	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JOD75 MESA	LVDS XO	170.0 ~ 320.0	-40 °C ~ +85 °C	±25 ppm	100 Ω differential > 0.33 Vp-p typ. / 0.25 Vp-p min.	7.0 x 5.0 x 1.4
	JOD75 30T	LVDS XO	65.0 ~ 200.0	-40 °C ~ +85 °C	±25 ppm	100 Ω differential > 0.33 Vp-p typ. / 0.25 Vp-p min.	7.0 x 5.0 x 1.5
	JOD32	LVDS XO	13.5 ~ 200.0	-40 °C ~ +125 °C	±25 ppm	100 Ω differential > 0.33 Vp-p typ. / 0.25 Vp-p min.	3.2 x 2.5 x 0.95
	JOD21 Low Jitter	LVDS XO	100.0 ~ 160.0	-40 °C ~ +85 °C	±50 ppm	100 Ω differential > 0.33 Vp-p typ. / 0.25 Vp-p min.	2.0 x 1.6 x 0.75

OSCILLATOR HCSL - SMD - CERAMIC / METAL PACKAGE

	TYPE	FEATURE	FREQUENCY RANGE in MHz	TEMPERATURE RANGE (max.)*	FREQUENCY STABILITY*	OUTPUT AND LOAD	L x W x H in mm
	JOH32	HCSL XO	13.5 ~ 200.0	-40 °C ~ +125 °C	±25 ppm	50 Ω to GND at each output >0.65 Vp-p (3.3 V) / 0.6 Vp-p (2.5 V)	3.2 x 2.5 x 0.95
	JOH21 Low Jitter	HCSL XO	100.0 ~ 160.0	-40 °C ~ +85 °C	±50 ppm	50 Ω to GND at each output >0.65 Vp-p (3.3 V) / 0.6 Vp-p (2.5 V)	2.0 x 1.6 x 0.75

* Please note: best frequency stability is not always available in max. temperature range. Full data can be found online. All specifications are subject to change without notice.

MEMS-BASED SOLUTIONS FROM SiTime PRESENTED BY JAUCH QUARTZ



FACTS ABOUT MEMS TECHNOLOGY:

- › Customized and configurable
- › Fast delivery service for small quantities
- › Extremely high shock and vibration immunity: 50,000 G shock and 70 G vibration
- › Wide operating temperature range: -55 °C ~ +125 °C
- › High frequency stability over the entire operating temperature range: ±20 ppm
- › 100% drop-in replacement for standard QFN packages 2016, 2520, 3225, 5032 and 7050 (QFN = Quad Flatpack No-Lead)
- › MEMS oscillators are produced in semiconductor factories. This ensures the uniformity of the components.
- › Extremely reliable due to the semiconductor production process.
- › A silicon resonator is used inside MEMS oscillators instead of a silicon dioxide resonator which is used inside crystal oscillators.

MEMS OSCILLATORS ORDER

“At Jauch, you can conveniently order MEMS oscillator samples. We specialize in configuring MEMS oscillators to meet your specific requirements and ensure swift delivery. Whether you need small batches or medium quantities, customization is our forte.

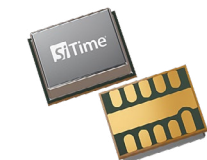
Our advantage lies in Jauch’s proprietary MEMS programming machine, which allows us to program and dispatch components with speed and flexibility. For personalized guidance, our dedicated sales department is ready to assist you.”



SiTime MEMS OSCILLATORS



MEMS OSCILLATORS FOR VERSATILE USE					
FEATURE	FREQUENCY RANGE	TEMPERATURE RANGE (max.)*	BEST FREQUENCY TOLERANCE*	SUPPLY VOLTAGE	PACKAGE OPTIONS
TYPE: MEMS OSCILLATORS MHz LVCMOS					
variable supply voltage	1.0 MHz ~ 137.0 MHz	-55 °C ~ +125 °C	±10 ppm ~ ±50 ppm	1.8 V / 2.5 V / 3.3 V	2016 ~ 7050, SOT23
TYPE: MEMS OSCILLATORS MICROPOWER LVCMOS					
MICROPOWER	1.0 Hz ~ 26.0 MHz	-40 °C ~ +85 °C	±10 ppm ~ ±100 ppm	1.35 V ~ 3.3 V	CSP 1.5 x 0.8, 1.1 x 1.2 x 0.5, 2012

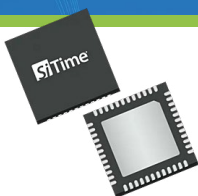


MEMS OCXOS & TCXOS					
FEATURE	FREQUENCY RANGE	TEMPERATURE RANGE (max.)*	BEST FREQUENCY TOLERANCE*	SUPPLY VOLTAGE	PACKAGE OPTIONS
TYPE: MEMS TCXOS / VCTCXOS					
LVCMOS / Clipped Sine	1.0 MHz ~ 220.0 MHz	-40 °C ~ +105 °C	±0.005 ppm ~ ±2.5 ppm	1.8 V / 2.5 V / 2.8 V / 3.0 V / 3.3 V	5032 / 7050
TYPE: MEMS KHZ TCXOS LVCMOS / Nano Drive					
MICROPOWER	32.768 kHz	-40 °C ~ +85 °C	±3 ppm ~ ±20 ppm	1.5 V ~ 3.63 V	CSP 1.5 x 0.8
TYPE: MEMS PPB OCXOS					
LVCMOS / Clipped Sine	10.0 MHz ~ 220.0 MHz	-40 °C ~ +95 °C	±0.001 ppm ~ ±0.005 ppm	1.8 V / 1.62 V ~ 3.63 V	9070



MEMS DIFFERENTIAL & SPREAD SPECTRUM OSCILLATORS					
FEATURE	FREQUENCY RANGE	TEMPERATURE RANGE (max.)*	BEST FREQUENCY TOLERANCE*	SUPPLY VOLTAGE	PACKAGE OPTIONS
TYPE: MEMS OSCILLATORS MHz Differential, Standard Frequencies					
Ultra-low Jitter	25 MHz ~ 644.53125 MHz	-40 °C ~ +105 °C	±20 ppm ~ ±50 ppm	1.8 V / 2.5 V / 3.3 V / 1.71 ~ 3.63 V	2016 ~ 3225
TYPE: MEMS SSXO- (Spread Spectrum)					
Different Spread Profile options	1.0 Hz ~ 150.0 MHz	-55 °C ~ +125 °C	±20 ppm ~ ±50 ppm	1.8 V / 2.5 V ~ 3.3 V	2016 ~ 3225

SiTime MEMS OSCILLATORS



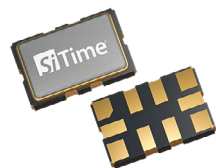
CLOCK BUFFERS					
FEATURE	FREQUENCY RANGE	NUMBER OF INPUTS	NUMBER OF OUTPUTS	SUPPLY VOLTAGE	PACKAGE OPTIONS
TYPE: AEC-Q100-QUALIFIED(-40 °C ~ 125 °C) CLOCK BUFFERS					
LVCMOS Output	< 200 MHz	1	2 ~ 4 Single Ended	1.8 V ~ 3.3 V	DFN 2.0 x2.0
TYPE: HIGH PERFORMANCE BUFFERS (-40 °C ~ 85 °C)					
LVCMOS and Differential Output	< 200 MHz ~ < 2.1 GHz	1 ~ 3	2 ~ 10 Single Ended or Differential	1.8 V ~ 3.3 V	8-pin DFN, 2x2 mm up to 48-pin QFN, 7x7 mm
TYPE: PCIE BUFFERS (-40 °C ~ 85 °C)					
LVCMOS and Differential Output	< 400 MHz	1 HCSL	4 ~ 20 HCSL-LP	1.8 V ~ 3.3 V	32-pin VQFN, 5x5 mm up to 80-pin LGA, 6x6 mm



MEMS OSCILLATORS AEC-Q100 QUALIFIED					
FEATURE	FREQUENCY RANGE	TEMPERATURE RANGE (max.)*	BEST FREQUENCY TOLERANCE*	SUPPLY VOLTAGE	PACKAGE OPTIONS
TYPE: MEMS OSCILLATORS MHz LVCMOS					
variable supply voltage	1.0 MHz ~ 137.0 MHz	-55 °C ~ +125 °C	±20 ppm ~ ±50 ppm	1.5 V / 1.8 V / 2.5 V / 3.3 V	1612 ~ 7050, SOT23
TYPE: MEMS OSCILLATORS MHz Differential					
Ultra-low Jitter	1.0 MHz ~ 920.0 MHz	-40 °C ~ +125 °C	±20 ppm ~ ±50 ppm	1.8 V / 2.5 V / 3.3 V	2016 ~ 7050
TYPE: MEMS TCXOS / VCTCXOS					
LVCMOS / Clipped Sine	1.0 MHz ~ 220.0 MHz	-40 °C ~ +105 °C	±0.1 ppm ~ ±2.5 ppm	2.5 V / 2.8 V / 3.0 V / 3.3 V	5032

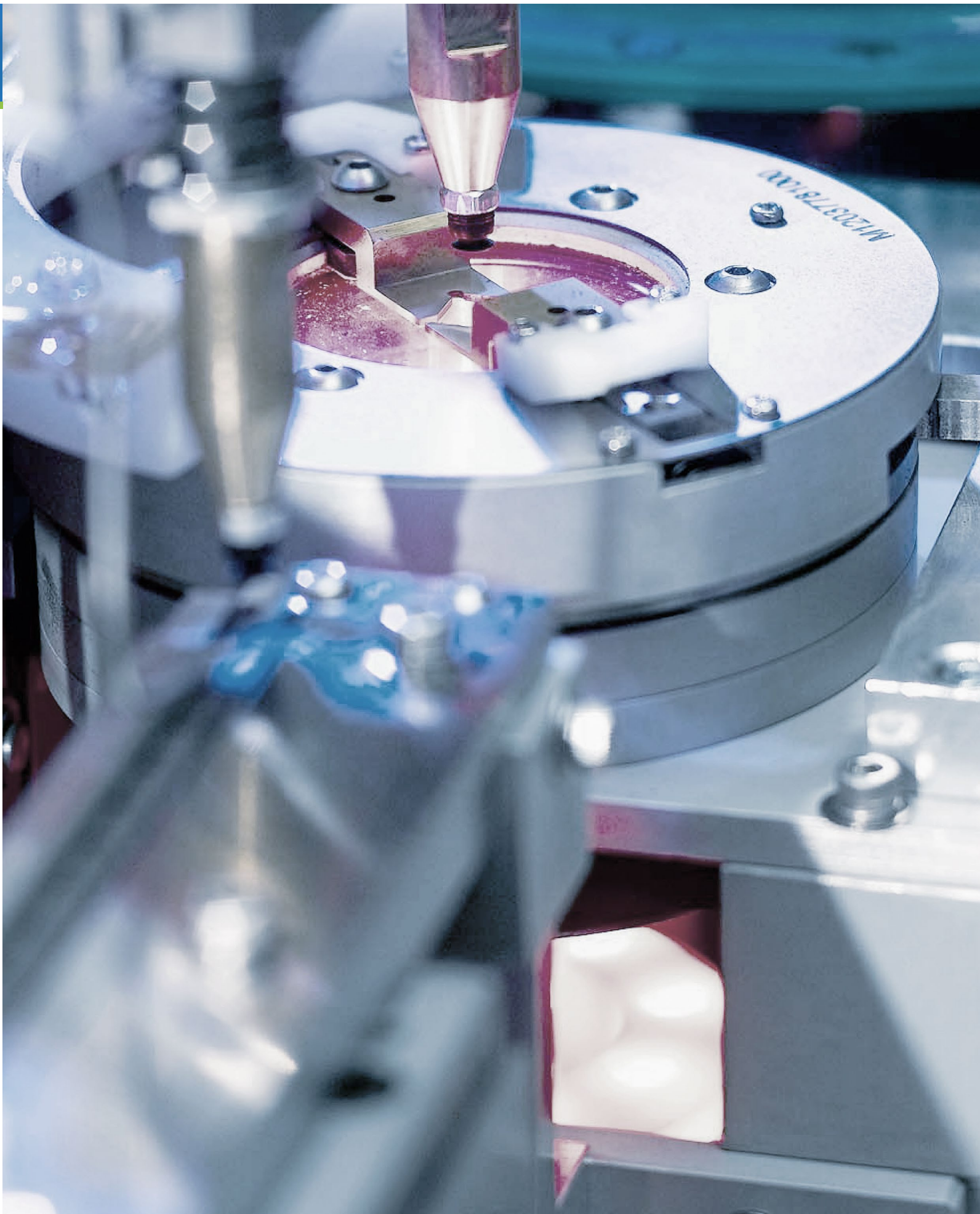
* Please note: best frequency stability is not always available in max. temperature range. Full data can be found online. All specifications are subject to change without notice.

SiTime MEMS OSCILLATORS



MEMS RUGGEDIZED OSCILLATORS					
FEATURE	FREQUENCY RANGE	TEMPERATURE RANGE (max.)*	BEST FREQUENCY TOLERANCE*	SUPPLY VOLTAGE	PACKAGE OPTIONS
TYPE: MEMS OSCILLATORS MHz LVCMOS					
variable supply voltage	1.0 MHz ~ 137.0 MHz	-55 °C ~ +125 °C	±20 ppm ~ ±50 ppm	1.5 V / 1.8 V / 2.5 V / 3.3 V	1612~ 7050, SOT23
TYPE: MEMS OSCILLATORS MHz Differential					
Ultra-low Jitter	1.0 MHz ~ 900.0 MHz	-55 °C ~ +125 °C	±10 ppm ~ ±50 pp	1.8 V / 2.5 V / 3.3 V	2016 ~ 7050
TYPE: MEMS TCXOS / VCTCXOS					
LVCMOS / Clipped Sine	1.0 MHz ~ 220.0 MHz	-55 °C ~ +105 °C	±0.005 ppm ~ ±2.5 ppm	1.5 V / 1.8 V / 2.5 V / 3.3 V	5032 / 7050
TYPE: MEMS KHZ TCXOS					
µPower, Low-Jitter	32.768 kHz	-55 °C ~ +105 °C	±0.1 ppm ~ ±0.4 ppm	1.8V / 1.62 V ~ 3.63 V	2520
TYPE: MEMS MHZ VCXOS, Differential					
Ultra-low acceleration sensitivity, Ultra-low jitter	1.0 MHz ~ 720.0 MHz	-55 °C ~ +105 °C	±15 ppm ~ ±50 ppm	1.5 V / 1.8 V / 2.5 V / 3.3 V	3225 / 5032 / 7050
TYPE: MEMS PPB OCXOS					
LVCMOS / Clipped Sine	10.0 MHz - 220.0 MHz	-40 °C ~ +95 °C	±0.001 ppm ~ ±0.005 ppm	1.5 V / 1.8 V / 2.5 V / 3.3 V	9070

* Please note: best frequency stability is not always available in max. temperature range. Full data can be found online. All specifications are subject to change without notice.

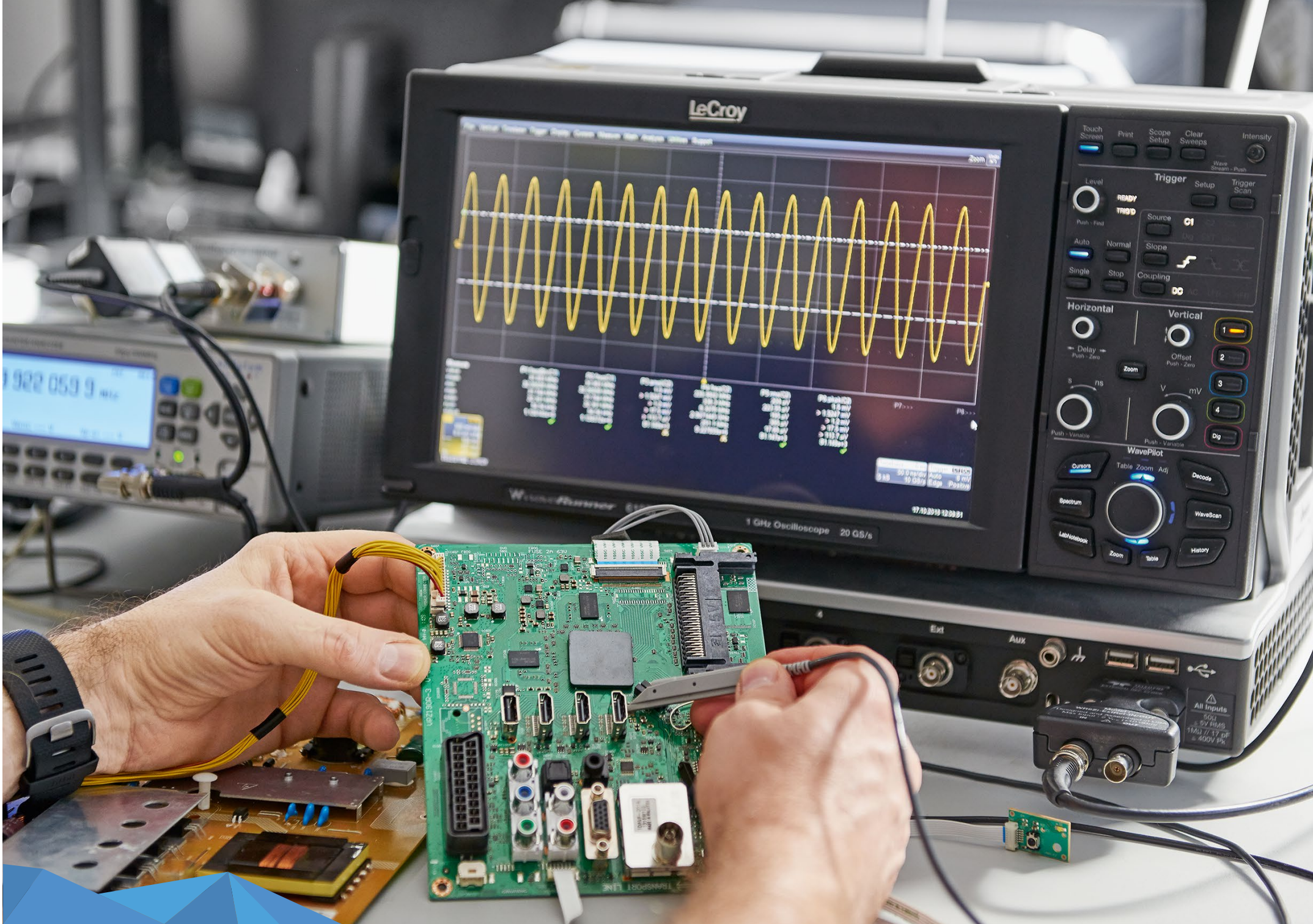


From frequency control products for standard applications to highly stable, shock-resistant components – Jauch products operate reliably in your applications. We ensure this with our quality assurance, which starts even before production does.

JAUCH QUALITY MANAGEMENT

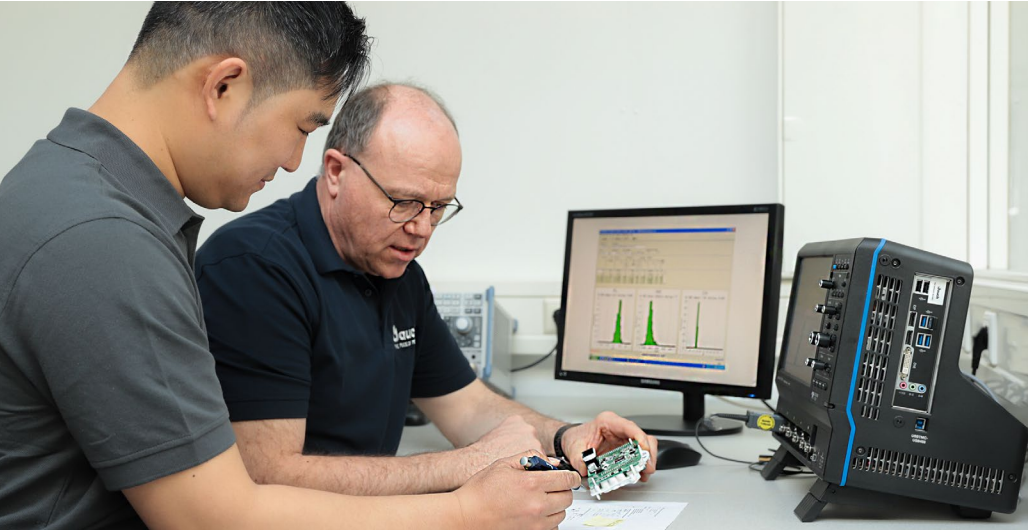
To maintain the consistently high quality of our products and services, we continuously implement measures to safeguard and improve our effectiveness and efficiency. These include internal audits of system, process and procedure workflows as well as audits of our production partners and suppliers.

In addition, important key figures are regularly determined in order to keep a constant eye on quality and make targeted decisions.



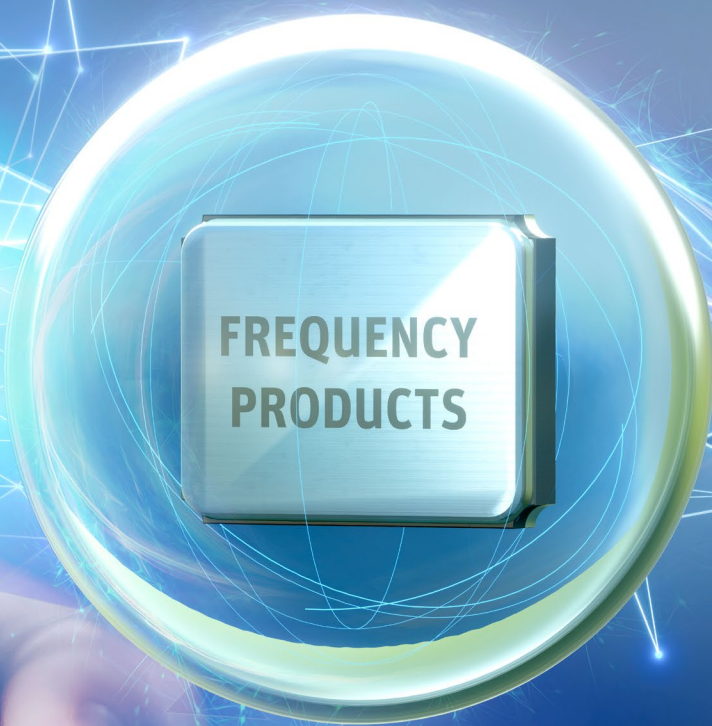
JAUCH QUALITY ASSURANCE

- › ISO 9001:2015, ISO 14001 certification and IATF 16949 for automotive applications
- › Internal & external audit procedure
- › Key figure determination
- › Components qualification
- › Determining the reliability figures of specific components
- › Product verification according to RoHS and REACH
- › Components inspection
- › Incoming and outgoing goods inspection
- › Calibration



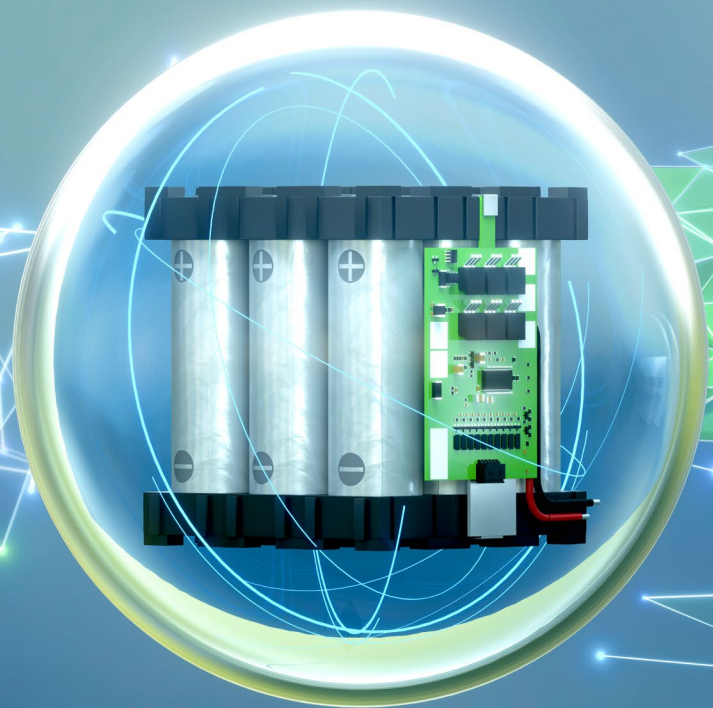
RELIABLE AND SAFE:

FREQUENCY PRODUCTS AND BATTERY SOLUTIONS



ABOUT JAUCH

The Jauch Group is one of the leading specialists for quartz crystals, crystal oscillators, (VC)TCXOs, VCXOs and battery technology. Established in 1954, we are a leading company in the frequency control products industry.



We are also a recognized expert for lithium ion and lithium polymer battery solutions. Along with our subsidiaries in France, Great Britain and the USA, we are able to develop and provide pioneering technology solutions.



Frequency Control and Battery Technology



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