

# FREQUENCY CONTROL PRODUCTS



## SAW PRODUCTS

THE SPECIALIST FOR FREQUENCY CONTROL PRODUCTS

# Jauch SAW Products

## THE JAUCH PROGRAM:

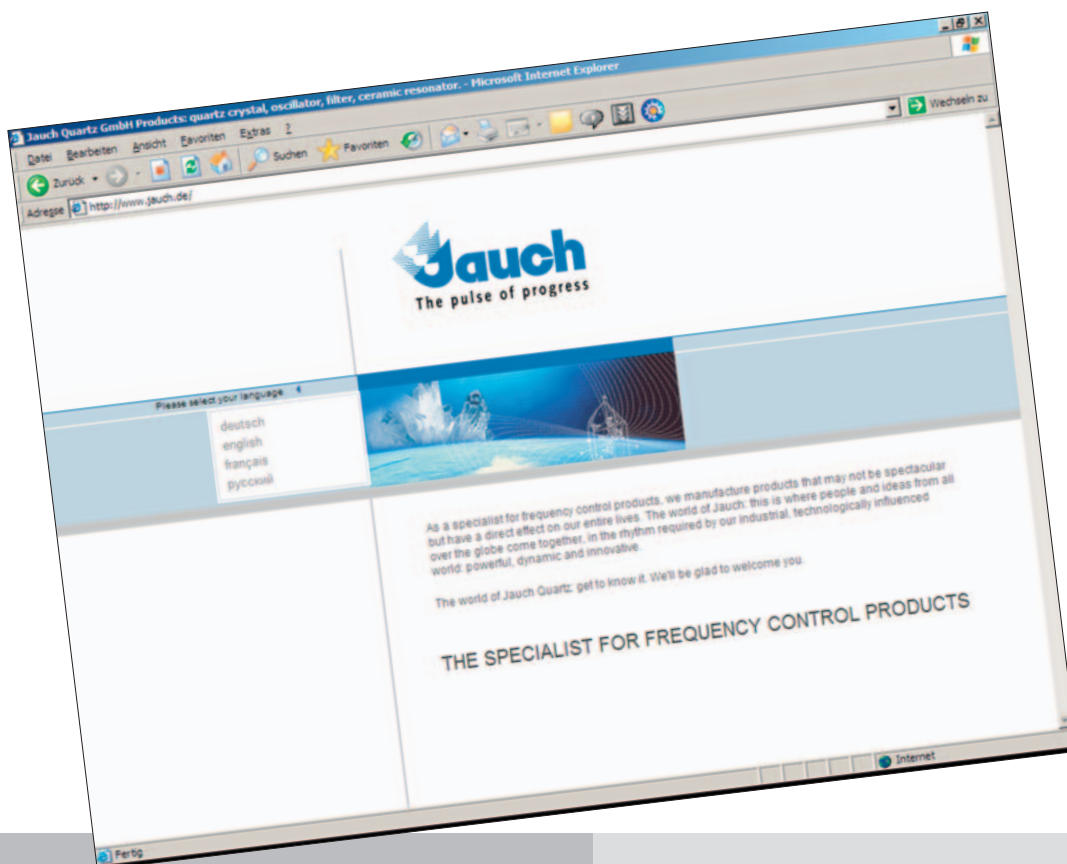
- Quartz Crystals
- Oscillators
- SAW-Filters
- SAW-Resonators

At Jauch Quartz, customer satisfaction is not just an empty phrase, but a living reality. Delivery reliability is a proven fact at Jauch Quartz. Constant deliveries to renowned customers the world over prove that relying on Jauch Quartz means relying on production security. Because for us, overall product quality has always entailed a great deal more than just the product alone. With our Customer Support Center we offer active cooperation in any situation. Even in the concept phase of a development, it's worth discussing an optimal solution with us.

































Jauch offers pre developed as well as custom-made SAW products. Please use the Inquiry-Form on Page 4 to specify your SAW Product.

## THE PULSE OF PROGRESS













- global presence in frequency control products
- company owned & operated production facilities
- specialized application design & integration services
- excellence in technical support
- high availability for standard frequencies
- more than 20 million components off the shelf



## SAW Filters

Type	Version	Frequency Range	LxWxH in mm	RoHS	Page	
	R21	RF	900 ~ 2400 MHz	2.0 x 1.6 x 0.98		6
	R22	RF	130 ~ 2400 MHz	2.5 x 2.0 x 1.0		6
	Q30	RF / IF / Dual	130 ~ 2400 MHz	3.0 x 3.0 x 1.4		7
	Q38	RF / IF / Dual	130 ~ 2400 MHz	3.8 x 3.8 x 1.6		8
	Q50	RF / IF / Dual	130 ~ 2400 MHz	5.0 x 5.0 x 1.7		9
	R75	RF / IF	130 ~ 2400 MHz	7.0 x 5.0 x 1.82		10
	R94	IF	30 ~ 600 MHz	9.1 x 4.8 x 1.5		11
	R13	IF	30 ~ 550 MHz	13.3 x 6.5 x 1.8		11
	R97	RF / IF	30 ~ 2400 MHz	9.1 x 7.1 x 1.95		12
	R19	IF	30 ~ 550 MHz	19.0 x 6.5 x 1.8		13
	SIM	IF	30 ~ 550 MHz	16.3 x 6.3 x 4.0		13
	T3P	RF / IF	30 ~ 2400 MHz	9.35 x 9.35 x 3.6		14
	T4P	IF / Dual	30 ~ 1960 MHz	9.35 x 9.35 x 3.6		15
	F11	RF / IF	30 ~ 2400 MHz	11.1 x 4.6 x 3.2		16
	SIP	IF	30 ~ 550 MHz	13.7 x 4.8 x 2.1		17
	DIM	IF	30 ~ 550 MHz	20.1 x 12.6 x 5.3		17

## SAW Resonators

	Q30	1-port	300 ~ 1400 MHz	3.0 x 3.0 x 1.4		18
	R97	1-port	400 ~ 1100 MHz	9.1 x 7.1 x 1.95		18
	Q38	1-port / 2-port	300 ~ 1400 MHz	3.8 x 3.8 x 1.6		19
	Q50	1-port / 2-port	300 ~ 1400 MHz	5.0 x 5.0 x 1.7		20
	T3P / T4P	1-port / 2-port	300 ~ 1400 MHz	9.35 x 9.35 x 3.6		21
	F11	1-port	300 ~ 1400 MHz	11.1 x 4.6 x 3.2		21

Taping Specifications

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Product Overview, Quartz Crystals and Oscillators

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Company

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Inquiry Form

Please specify the following parameters when inquiring SAW units and send this form to [bce@bce.it](mailto:bce@bce.it)

Company		Address	
First Name		State	
Last Name		Zip Code/City	
E-mail		Country	
Telephone		Fax	
Project		Quantity EAU	

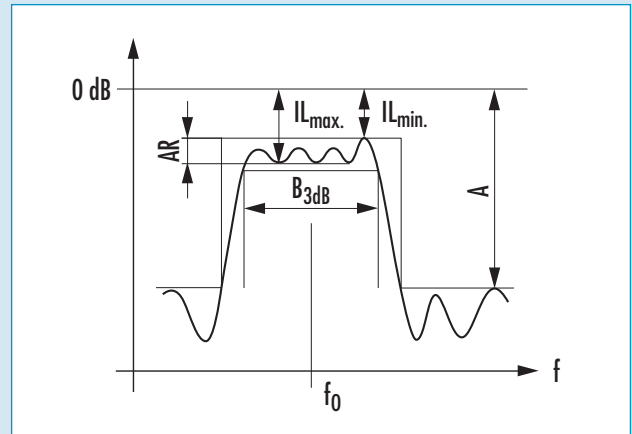
Specification	SAW Filter		SAW Resonator	
	min.	max.	min.	max.
	typical		typical	
Center Frequency $f_0$ (MHz)				
Pass Bandwidth B (MHz)			not applicable	
Insertion Loss IL (dB)				
Stop Band Attenuation A (dB)			not applicable	
Amplitude Ripple AR (dB)	not applicable		not applicable	
Frequency Tolerance (kHz)	not applicable			
Port	not applicable		<input type="checkbox"/> 1-port	<input type="checkbox"/> 2-port
Terminating Impedance	Ohm	pF	Ohm	
Operating Temp. Range (°C)				
Package Type				
Notes, other requirements				

= not applicable

# Definitions

## Electrical Specification

Center Frequency	( $f_0$ / MHz)
Insertion Loss IL	(IL / dB)
Pass Bandwidth B	(B / MHz or kHz)
Stop-Band Attenuation	(A / dB)
Amplitude Ripple	(AR / dB)



## Center Frequency / Nominal Frequency $f_0$ (MHz)

It is the nominal value of the center frequency ( $f_0$ ) and is used as the reference frequency of related standards.

## Insertion Loss (dB)

This is the difference of attenuation when a filter is and isn't inserted. The constant loss is the insertion loss at the nominal frequency. The minimum and maximum loss are the values of minimum and maximum attenuation in the pass band.

## Pass Bandwidth (MHz or kHz)

The pass bandwidth in which the attenuation is equal to or less than the specified value insertion loss.

## Attenuation (Stop-Band Attenuation in dB)

The attenuation of the unwanted signal. (Stop-Band)  
This is the relative attenuation guaranteed in the specified range within attenuation band scope.

## Amplitude Ripple (dB)

This is the maximum value of the difference between the peak value of attenuation in the pass band and the minimum insertion loss.

# SAW Filters

## R21

## R22



RoHS compliant



Pb free



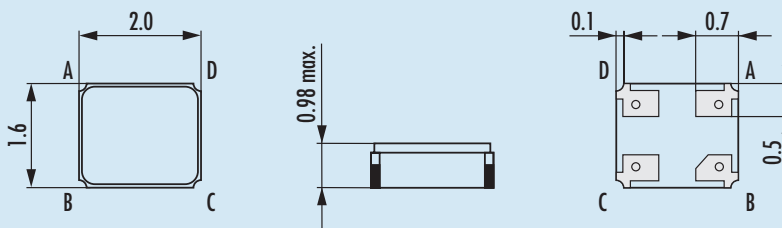
actual size **2.0 x 1.6 mm**



actual size **2.5 x 2.0 mm**

	R21 / RF		R22 / RF	
Type	SAW Filter		SAW Filter	
Frequency	900.0 ~ 2400.0 MHz		130.0 ~ 2400.0 MHz	
Input/Output	Single ended / Balanced	Balanced I/O	Single ended / Balanced	Balanced I/O
Bandwidth	40.0 MHz ~ 110.0 MHz		0.1 MHz ~ 85.0 MHz	
Operating Temp Range	-40 ~ +85 °C		-40 ~ +85 °C	
Typical Applications	Pager, Cordless Phone, GPS, FRS, Cable Modem, RKS, ISM, GSM, EGSM, CDMA, SONET, Wireless Microphone		Pager, Cordless Phone, GPS, FRS, Cable Modem, RKS, ISM, GSM, EGSM, CDMA, SONET, Wireless Microphone	
Features	<ul style="list-style-type: none"> <li>ceramic seam weld package</li> <li>excellent reliability and shock resistance</li> <li>ultra miniature package</li> </ul>		<ul style="list-style-type: none"> <li>ceramic seam weld package</li> <li>excellent reliability and shock resistance</li> <li>ultra miniature package</li> </ul>	
Typical Frequencies	1575.42 MHz 1672.50 MHz		836.5 MHz 881.5 MHz 907.5 MHz 915.0 MHz 940.5 MHz	942.5 MHz 1542.5 MHz 1575.42 MHz 1642.5 MHz 1842.5 MHz

### Dimensions R21

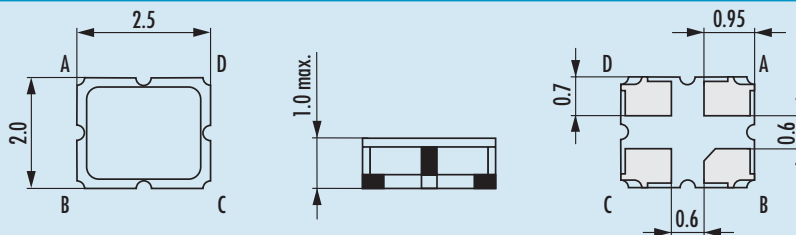


pin connection (example):

- #A: Ground
- #B: Input
- #C: Ground
- #D: Output

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

### Dimensions R22



pin connection (example):

- #A: Ground
- #B: Input
- #C: Ground
- #D: Output

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

# SAW Filter

# Q30



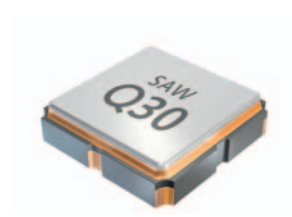
RoHS compliant



Pb free



actual size 3.0 x 3.0 mm



actual size 3.0 x 3.0 mm



actual size 3.0 x 3.0 mm

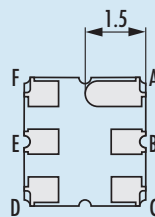
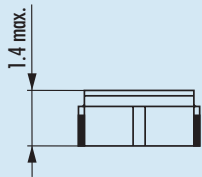
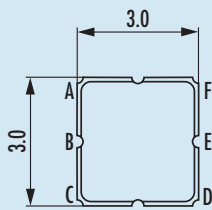
## Q30 / RF

## Q30 / IF

## Q30 / Dual

Type	SAW Filter		SAW Filter		SAW Filter	
Frequency	130.0 ~ 2400.0 MHz		400.0 ~ 600.0 MHz		479.5 ~ 1960.0 MHz	
Input/Output	Single ended/Balanced	Balanced I/O	Single ended/Balanced	Balanced I/O		
Bandwidth	0.1 MHz ~ 85.0 MHz		16.0 MHz ~ 60.0 MHz		18.0 kHz ~ 75.0 kHz	
Operating Temp Range	-40 ~ +85 °C		-40 ~ +85 °C		-40 ~ +85 °C	
Typical Applications	Pager, Cordless Phone, GPS, FRS, Cable Modem, RKS, ISM, GSM, EGSM, CDMA, SONET, Wireless Microphone		WLAN, Cable Modem, AV Sender, DECT, GSM, CDMA, IS-95, W-CDMA		Custom made	
Features	<ul style="list-style-type: none"> <li>■ ceramic seam weld package</li> <li>■ excellent reliability and shock resistance</li> <li>■ SMD miniature package</li> </ul>					
Typical Frequencies	315.0 MHz	915.0 MHz	1542.5 MHz	243.95 MHz	400.0 MHz	1842.5 MHz
	433.92 MHz	940.5 MHz	1575.42 MHz	300.0 MHz	600.0 MHz	1960.0 MHz
	836.5 MHz	942.5 MHz	1842.5 MHz	350.0 MHz	666.667 MHz	
	881.5 MHz	1216.0 MHz	1950.0 MHz			
	907.5 MHz	1260.0 MHz	2442.0 MHz			

## Dimensions



pin connection (example):

- #A: Ground
- #B: Input
- #C: Ground
- #D: Ground
- #E: Output
- #F: Ground

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

# SAW Filter

# Q38



RoHS compliant



Pb free



actual size 3.8 x 3.8 mm



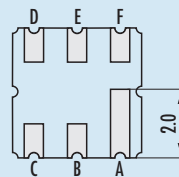
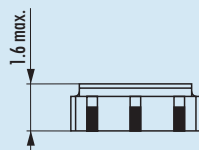
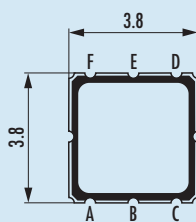
actual size 3.8 x 3.8 mm



actual size 3.8 x 3.8 mm

	Q38 / RF		Q38 / IF		Q38 / Dual	
Type	SAW Filter		SAW Filter		SAW Filter	
Frequency	130.0 ~ 2400.0 MHz		370.0 ~ 600.0 MHz		479.5 ~ 1960.0 MHz	
Input/Output	Single ended/Balanced	Balanced I/O	Single ended/Balanced	Balanced I/O		
Bandwidth	0.1 MHz ~ 85.0 MHz		14.8 MHz ~ 60.0 MHz		18.0 kHz ~ 75.0 kHz	
Operating Temp Range	-40 ~ +85 °C		-40 ~ +85 °C		-40 ~ +85 °C	
Typical Applications	Pager, Cordless Phone, GPS, FRS, Cable Modem, RKE, ISM, GSM, EGSM, CDMA, SONET, Wireless Microphone		WLAN, Cable Modem, AV-Sender, DECT, GSM, CDMA, IS-95, W-CDMA		Custom made	
Features	<ul style="list-style-type: none"> <li>■ ceramic seam weld package</li> <li>■ excellent reliability and shock resistance</li> <li>■ SMD miniature package</li> </ul>					
Typical Frequencies	315.0 MHz 433.92 MHz 836.5 MHz 881.5 MHz 907.5 MHz	915.0 MHz 940.5 MHz 942.5 MHz 1216.0 MHz 1260.0 MHz	1542.5 MHz 1575.42 MHz 1842.5 MHz 1950.0 MHz 2442.0 MHz	190.0 MHz 243.95 MHz 360.0 MHz 374 MHz 403.5 MHz	453 MHz 533.33 MHz	947.5 MHz 1842.5 MHz

## Dimensions



pin connection (example):

- #A: Ground
- #B: Input
- #C: Ground
- #D: Ground
- #E: Output
- #F: Ground

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

# SAW Filter

# Q50



RoHS compliant



Pb free



actual size 5.0 x 5.0 mm



actual size 5.0 x 5.0 mm



actual size 5.0 x 5.0 mm

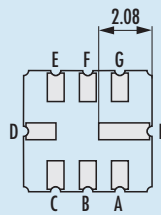
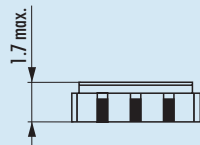
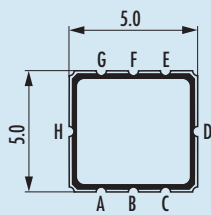
## Q50 / RF

## Q50 / IF

## Q50 / Dual

Type	SAW Filter		SAW Filter		SAW Filter		
Frequency	130.0 ~ 2400.0 MHz		200.0 ~ 600.0 MHz		479.5 ~ 1960.0 MHz		
Input/Output	Single ended/Balanced	Balanced I/O	Single ended / Balanced	Balanced I/O			
Bandwidth	0.1 MHz ~ 85.0 MHz		8.0 MHz ~ 60.0 MHz		18.0 kHz ~ 75.0 kHz		
Operating Temp Range	-40 ~ +85 °C		-40 ~ +85 °C		-40 ~ +85 °C		
Typical Applications	Pager, Cordless Phone, GPS, FRS, Cable Modem, RKS, ISM, GSM, EGSM, CDMA, SONET, Wireless Microphone		WLAN, Cable Modem, AV Sender, DECT, GSM, CDMA, IS-95, W-CDMA		Custom made		
Features	<ul style="list-style-type: none"> <li>■ ceramic seam weld package</li> <li>■ excellent reliability and shock resistance</li> <li>■ SMD miniature package</li> </ul>						
Typical Frequencies	139.0 MHz	284.0 MHz	868.3 MHz	168.5 MHz	352.0 MHz	433.92 MHz	947.5 MHz
	147.0 MHz	315.0 MHz	869.6 MHz	190.0 MHz	360.0 MHz	465.0 MHz	1842.5 MHz
	155.0 MHz	420.0 MHz		210.38 MHz	374.0 MHz		
	171.0 MHz	433.92 MHz		268.4 MHz	402.7 MHz		
	184.0 MHz	465.0 MHz		280.0 MHz	433.42 MHz		

## Dimensions



pin connection (example):

#A: Ground	#F: Output
#B: Input	#G: (Output) Ground
#C: (Input) Ground	#H: (Case) Ground
#D: (Case) Ground	
#E: Ground	

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

# SAW Filter

# R75



RoHS compliant



Pb free



actual size

7.0 x 5.0 mm

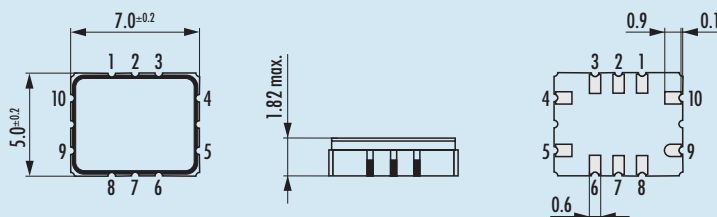


actual size

7.0 x 5.0 mm

	R75 / RF		R75 / IF	
Type	SAW Filter		SAW Filter	
Frequency	130.0 ~ 2400.0 MHz		150.0 ~ 600.0 MHz	
Input/Output	Single ended / Balanced	Balanced I/O	Single ended / Balanced	Balanced I/O
Bandwidth	0.1 MHz ~ 85.0 MHz		6.0 MHz ~ 60.0 MHz	
Operating Temp Range	-40 ~ +85 °C		-40 ~ +85 °C	
Typical Applications	WLAN, Cable Modem, AV-Sender, DECT, GSM, CDMA		WLAN, Cable Modem, AV-Sender, DECT, GSM, CDMA	
Features	<ul style="list-style-type: none"> <li>■ ceramic seam weld package</li> <li>■ excellent reliability and shock resistance</li> <li>■ SMD miniature package</li> </ul>			
Typical Frequencies	168.5 MHz 352.0 MHz 433.92 MHz		168.5 MHz 190.0 MHz 210.38 MHz 268.4 MHz	280.0 MHz 352.0 MHz 360.0 MHz 374.0 MHz
			402.7 MHz 433.42 MHz 433.92 MHz 464.0 MHz	

## Dimensions



pin connection (example):

#1: Ground	#6: Ground
#2: Output	#7: Input
#3: Ground	#8: Ground
#4: Ground	#9: Ground
#5: Ground	#10: Ground

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

# SAW Filters

## R94

## R13



RoHS compliant



Pb free



actual size

9.1 x 4.8 mm



actual size

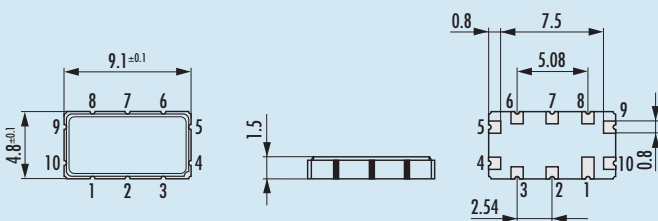
13.3 x 6.5 mm

### R94 / IF

### R13 / IF

Type	SAW Filter		SAW Filter	
Frequency	30.0 ~ 600.0 MHz		30.0 ~ 550.0 MHz	
Input/Output	Single ended / Balanced	Balanced I/O	Single ended / Balanced	Balanced I/O
Bandwidth	0.015 MHz ~ 28.0 MHz		0.015 MHz ~ 28.0 MHz	
Operating Temp Range	-40 ~ +85 °C		-40 ~ +85 °C	
Typical Applications	WLAN, Cable Modem, AV-Sender, DECT, GSM, CDMA		WLAN, Cable Modem, AV-Sender, DECT, GSM, CDMA	
Features	<ul style="list-style-type: none"> <li>■ ceramic seam weld package</li> <li>■ excellent reliability and shock resistance</li> <li>■ SMD package</li> </ul>		<ul style="list-style-type: none"> <li>■ ceramic seam weld package</li> <li>■ excellent reliability and shock resistance</li> <li>■ SMD package</li> </ul>	
Typical Frequencies	Custom-made		70.0 MHz 140.0 MHz	

### Dimensions R94

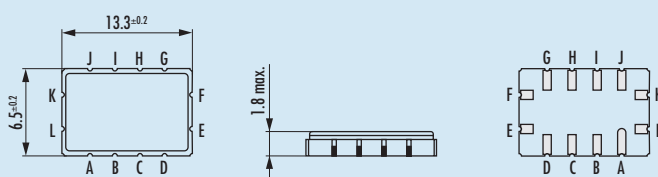


Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

#### pin connection (example):

- |                      |             |
|----------------------|-------------|
| #1: Ground           | #6: Ground  |
| #2: Ground           | #7: Ground  |
| #3: Ground           | #8: Ground  |
| #4: Output or Ground | #9: Input   |
| #5: Output or Ground | #10: Ground |

### Dimensions R13



Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

#### pin connection (example):

- |            |                     |                    |
|------------|---------------------|--------------------|
| #A: Ground | #F: Balanced Output | #J: Ground         |
| #B: Ground | or Output Ground    | #K: Input          |
| #C: Ground | #G: Output          | #L: Balanced Input |
| #D: Ground | #H: Ground          | or Input Ground    |
| #E: Output | #I: Ground          |                    |

# SAW Filter

# R97



RoHS compliant



Pb free



actual size

9.1 x 7.1 mm



actual size

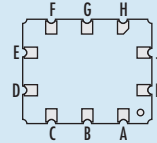
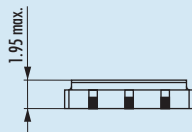
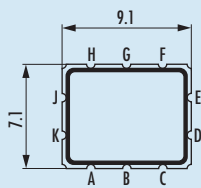
9.1 x 7.1 mm

## R97 / RF

## R97 / IF

Type	SAW Filter		SAW Filter	
Frequency	130.0 ~ 2400.0 MHz		30.0 ~ 600.0 MHz	
Input/Output	Single ended / Balanced	Balanced I/O	Single ended / Balanced	Balanced I/O
Bandwidth	0.1 MHz ~ 85.0 MHz		4.0 MHz ~ 60.0 MHz	
Operating Temp Range	-40 ~ +85 °C		-40 ~ +85 °C	
Typical Applications	Pager, Cordless Phone, GPS, FRS, Cable Modem, RKE, ISM, GSM, EGSM, CDMA, SONET, Wireless Microphone		WLAN, Cable Modem, AV-Sender, DECT, GSM, CDMA	
Features	<ul style="list-style-type: none"> <li>■ ceramic seam weld package</li> <li>■ excellent reliability and shock resistance</li> <li>■ SMD package</li> </ul>			
Typical Frequencies	custom-made		110.592 MHz 112.32 MHz 173.225 MHz	

## Dimensions



pin connection (example):

#A: Input Ground	#F: Output Ground
#B: Input or Output	#G: Output or Input
#C: Ground	#H: Ground
#D: Ground	#J: Ground
#E: Ground	#K: Ground

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

# SAW Filters

# R19

# SIM



RoHS compliant



Pb free



actual size

19.0 x 6.5 mm



actual size

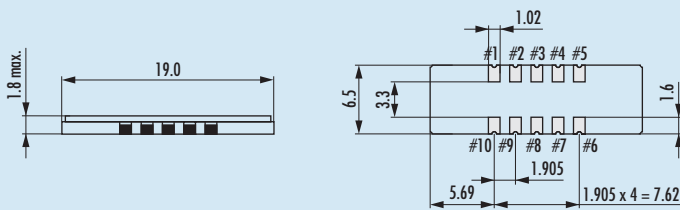
13.6 x 6.5 mm

## R19 / IF

## SIM / IF

Type	SAW Filter		SAW Filter	
Frequency	30.0 ~ 550.0 MHz		30.0 ~ 550.0 MHz	
Input/Output	Single ended / Balanced	Balanced I/O	Single ended / Balanced	Balanced I/O
Bandwidth	0.015 MHz ~ 28.0 MHz		0.015 MHz ~ 28.0 MHz	
Operating Temp Range	-40 ~ +85 °C		-40 ~ +85 °C	
Typical Applications	WLAN, Cable Modem, AV-Sender, DECT, GSM, CDMA		WLAN, Cable Modem, AV-Sender, DECT, GSM, CDMA	
Features	<ul style="list-style-type: none"> <li>■ ceramic seam weld package</li> <li>■ excellent reliability and shock resistance</li> <li>■ SMD package</li> </ul>		<ul style="list-style-type: none"> <li>■ full metal package</li> <li>■ excellent reliability and shock resistance</li> <li>■ SIM (single inline metal) package</li> </ul>	
Typical Frequencies	70.0 MHz 140.0 MHz		36.125 MHz 43.75 MHz	

## Dimensions R19

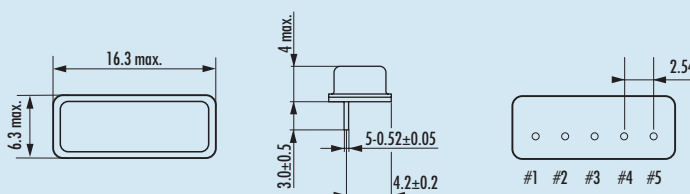


pin connection (example):

- |            |             |
|------------|-------------|
| #1: Input  | #6: Output  |
| #2: Ground | #7: Ground  |
| #3: Ground | #8: Ground  |
| #4: Ground | #9: Ground  |
| #5: Ground | #10: Ground |

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

## Dimensions SIM



pin connection (example):

- |                   |
|-------------------|
| #1: Output        |
| #2: Output Ground |
| #3: Ground        |
| #4: Input Ground  |
| #5: Input         |

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

# SAW Filter

# T3P



RoHS compliant



Pb free pins



actual size



Ø 9.35 mm max.



actual size



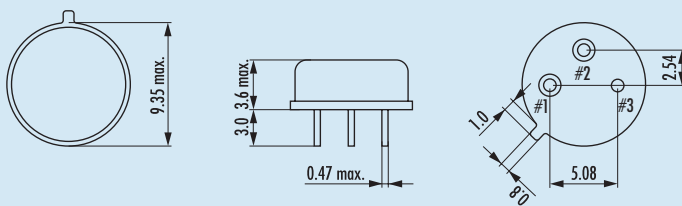
Ø 9.35 mm max.

## T3P / RF

## T3P / IF

Type	SAW Filter		SAW Filter	
Frequency	130.0 ~ 2400.0 MHz		30.0 ~ 550.0 MHz	
Input/Output	Single ended / Balanced	Balanced I/O	Single ended / Balanced	Balanced I/O
Bandwidth	0.1 MHz ~ 85.0 MHz		0.015 MHz ~ 28.0 MHz	
Operating Temp Range	-40 ~ +85 °C		-40 ~ +85 °C	
Typical Applications	Pager, Cordless Phone, GPS, FRS, Cable Modem, RKE, ISM, GSM, EGSM, CDMA, SONET, Wireless Microphone		WLAN, Cable Modem, AV-Sender, DECT, GSM, CDMA	
Features	<ul style="list-style-type: none"> <li>■ metal package</li> <li>■ excellent reliability and shock resistance</li> <li>■ TO-39 package</li> </ul>			
Typical Frequencies	315.0 MHz 315.5 MHz		433.92 MHz 479.5 MHz 480.0 MHz	

## Dimensions



pin connection (example):

#1: Input

#2: Output

#3: Ground

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

# SAW Filter

# T4P



RoHS compliant



Pb free pins



actual size



Ø 9.14 mm



actual size



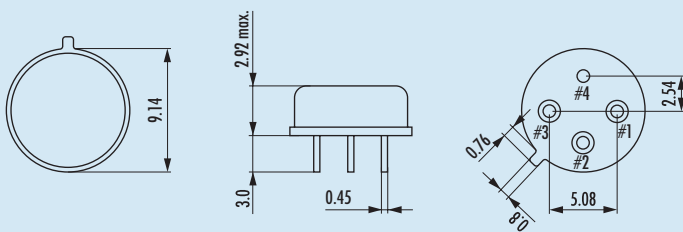
Ø 9.14 mm

## T4P / IF

## T4P / Dual

Type	SAW Filter		SAW Filter	
Frequency	30.0 ~ 550.0 MHz		479.5 ~ 1960.0 MHz	
Input/Output	Single ended / Balanced	Balanced I/O	Single ended / Balanced	Balanced I/O
Bandwidth	0.015 MHz ~ 28.0 MHz		18.0 MHz ~ 75.0 MHz	
Operating Temp Range	-40 ~ +85 °C		-40 ~ +85 °C	
Typical Applications	WLAN, Cable Modem, AV-Sender, DECT, GSM, CDMA		Custom made	
Features	<ul style="list-style-type: none"> <li>■ metal package</li> <li>■ excellent reliability and shock resistance</li> <li>■ TO-39 package</li> </ul>			
Typical Frequencies	433.92 MHz 479.5 MHz 480.0 MHz		479.5 MHz	

## Dimensions



pin connection (example):

- #1: Input
- #2: Output
- #3: Output
- #4: Ground

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

# SAW Filter

# F11



RoHS compliant



Pb free pins



actual size

11.1 x 4.6 mm

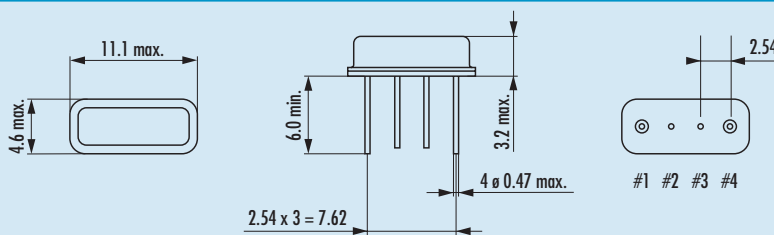


actual size

11.1 x 4.6 mm

	F11 / RF		F11 / IF	
Type	SAW Filter		SAW Filter	
Frequency	130.0 ~ 2400.0 MHz		30.0 ~ 550.0 MHz	
Input/Output	Single ended / Balanced	Balanced I/O	Single ended / Balanced	Balanced I/O
Bandwidth	0.1 MHz ~ 85.0 MHz		0.015 MHz ~ 28.0 MHz	
Operating Temp Range	-40 ~ +85 °C		-40 ~ +85 °C	
Typical Applications	Paging, Cordless Phone, GPS, FRS, Cable Modem, RKE, ISM, GSM, SONET, Wireless Microphone, Remote Control		WLAN, Cable Modem, AV-Sender, DECT, GSM, CDMA	
Features	<ul style="list-style-type: none"> <li>■ metal package</li> <li>■ excellent reliability and shock resistance</li> <li>■ F11 package</li> </ul>			
Typical Frequencies	139.0 MHz 147.0 MHz 155.0 MHz 171.0 MHz 184.0 MHz	284.0 MHz 315.0 MHz 420.0 MHz 433.92 MHz 465.0 MHz	868.3 MHz 869.6 MHz	426.5 MHz

## Dimensions



pin connection (example):







- #1: Input
- #2: Ground
- #3: Ground
- #4: Output

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

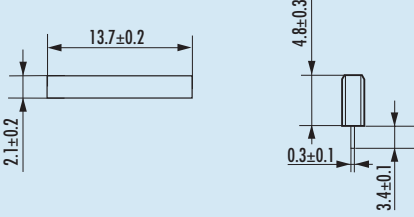
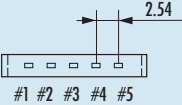
# SAW Filters

# SIP

# DIM

 <p>RoHS compliant</p>  <p>Pb free</p>	  <p>actual size</p> <p>13.7 x 4.8 mm</p>	  <p>actual size</p> <p>20.1 x 12.6 mm</p>
<p><b>SIP / IF</b></p>		<p><b>DIM / IF</b></p>
<p>Type</p>	<p>SAW Filter</p>	
<p>Frequency</p>	<p>30.0 ~ 550.0 MHz</p>	
<p>Input/Output</p>	<p>Single ended / Balanced</p>	<p>Balanced I/O</p>
<p>Bandwidth</p>	<p>0.015 MHz ~ 28.0 MHz</p>	
<p>Operating Temp Range</p>	<p>-40 ~ +85 °C</p>	
<p>Typical Applications</p>	<p>Digital Cable TV, WLAN, Cable Modem, AV-Sender, DECT, GSM, CDMA</p>	<p>WLAN, Cable Modem, AV-Sender, DECT, GSM, CDMA</p>
<p>Features</p>	<ul style="list-style-type: none"> <li>■ plastic package</li> <li>■ excellent reliability and shock resistance</li> <li>■ SIP (single inline plastic) package</li> </ul>	<ul style="list-style-type: none"> <li>■ metal package</li> <li>■ excellent reliability and shock resistance</li> <li>■ DIM (dual inline metal) package</li> </ul>
<p>Typical Frequencies</p>	<p>36.124 MHz 44.0 MHz</p>	<p>70.0 MHz 140.0 MHz</p>

## Dimensions SIP

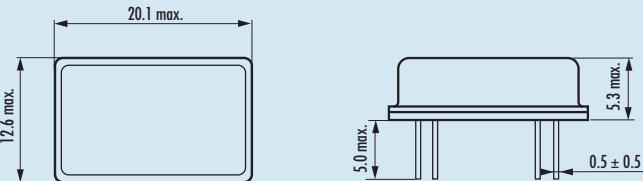
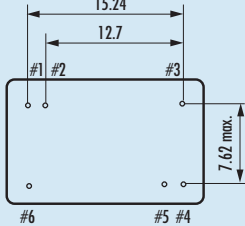



pin connection (example):

- #1: Input
- #2: Input Ground
- #3: Chip carrier-ground
- #4: Output
- #5: Output

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

## Dimensions DIM

pin connection (example):

- #1: Output
- #2: Ground
- #3: Input
- #4: Ground
- #5: Ground
- #6: Ground

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

# SAW Resonators

## Q30

## R97



RoHS compliant



Pb free



actual size

3.0 x 3.0 mm



actual size

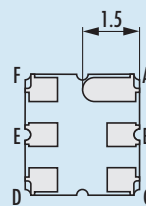
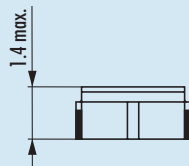
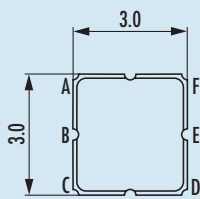
9.1 x 7.1 mm

### Q30 / 1-port

### R97 / 1-port

Type	SAW Resonator	SAW Resonator
Frequency	300.0 ~ 1400.0 MHz	400.0 ~ 1100.0 MHz
Operating Temp Range	-40 ~ +85 °C	-40 ~ +85 °C
Insertion Loss	< 1.5 dB typical	< 1.5 dB typical
Tolerance	±15 kHz ~ ±200 kHz	±75 kHz ~ ±200 kHz
Typical Applications	RKS remote keyless entry systems, wireless remote control units, TV receiver, telecom products, mobile phones, remote sensors, security systems, wireless telemetry	RKS remote keyless entry systems, wireless remote control units, TV receiver, telecom products, mobile phones, remote sensors, security systems, wireless telemetry
Features	<ul style="list-style-type: none"> <li>ceramic seam weld package</li> <li>excellent reliability and shock resistance</li> <li>SMD miniature package</li> </ul>	<ul style="list-style-type: none"> <li>ceramic seam weld package</li> <li>excellent reliability and shock resistance</li> <li>SMD package</li> </ul>
Typical Frequencies	314.95 MHz    433.92 MHz 315.0 MHz    435.7 MHz 315.5 MHz 390.0 MHz	1090.0 MHz

### Dimensions Q30

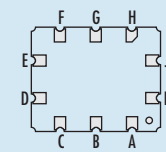
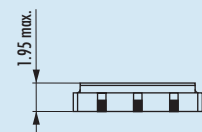
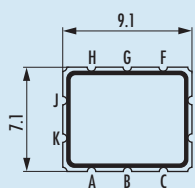


pin connection (example):

- #A: Ground
- #B: Input or Output
- #C: Ground
- #D: Ground
- #E: Output or Input
- #F: Ground

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

### Dimensions R97



pin connection (example):

- #A: Ground
- #B: Input or Output
- #C: Ground
- #D: Ground
- #E: Ground
- #F: Ground
- #G: Output or Input
- #H: Ground
- #J: Ground
- #K: Ground

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

# SAW Resonator

# Q38



RoHS compliant



Pb free



actual size

3.8 x 3.8 mm



actual size

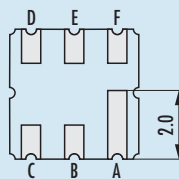
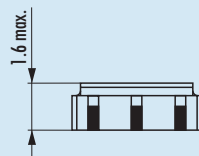
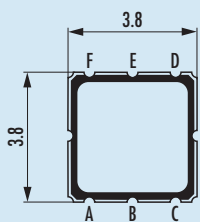
3.8 x 3.8 mm

## Q38 / 1-port

## Q38 / 2-port

Type	SAW Resonator	SAW Resonator
Frequency	300.0 ~ 1400.0 MHz	400.0 ~ 1400.0 MHz
Operating Temp Range	-40 ~ +85 °C	-40 ~ +85 °C
Insertion Loss	< 1.5 dB typical	< 1.5 dB typical
Tolerance	±15 kHz ~ ±200 kHz	±15 kHz ~ ±200 kHz
Typical Applications	RKS remote keyless entry systems, wireless remote control units, TV receiver, telecom products, mobile phones, remote sensors, security systems, wireless telemetry	RKS remote keyless entry systems, wireless remote control units, TV receiver, telecom products, mobile phones, remote sensors, security systems, wireless telemetry
Features	<ul style="list-style-type: none"> <li>■ ceramic seam weld package</li> <li>■ excellent reliability and shock resistance</li> <li>■ SMD miniature package</li> </ul>	
Typical Frequencies	314.95 MHz      433.92 MHz 315.0 MHz      435.7 MHz 315.5 MHz 390.0 MHz	1090.0 MHz

## Dimensions



pin connection (example):

#A: Ground	#E: Input or Output
#B: Output or Input	#F: Ground
#C: Ground	
#D: Ground	

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

# SAW Resonator

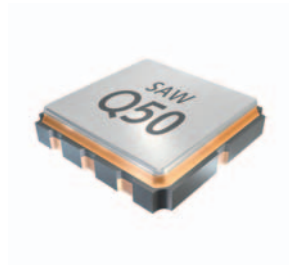
# Q50



RoHS compliant

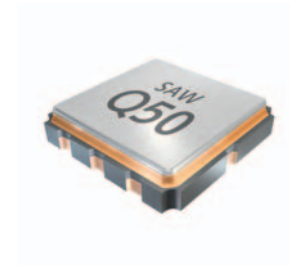


Pb free



actual size

5.0 x 5.0 mm



actual size

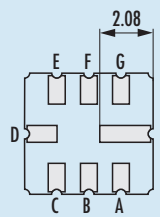
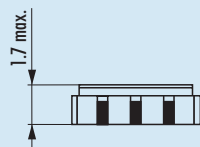
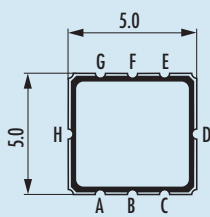
5.0 x 5.0 mm

## Q50 / 1-port

## Q50 / 2-port

Type	SAW Resonator	SAW Resonator
Frequency	300.0 ~ 1400.0 MHz	400.0 ~ 1400.0 MHz
Operating Temp Range	-40 ~ +85 °C	-40 ~ +85 °C
Insertion Loss	< 1.5 dB typical	< 1.5 dB typical
Tolerance	±15 kHz ~ ±200 kHz	±15 kHz ~ ±200 kHz
Typical Applications	RKS remote keyless entry systems, wireless remote control units, TV receiver, telecom products, mobile phones, remote sensors, security systems, wireless telemetry	RKS remote keyless entry systems, wireless remote control units, TV receiver, telecom products, mobile phones, remote sensors, security systems, wireless telemetry
Features	<ul style="list-style-type: none"> <li>■ ceramic seam weld package</li> <li>■ excellent reliability and shock resistance</li> <li>■ SMD miniature package</li> </ul>	
Typical Frequencies	314.95 MHz      433.92 MHz 315.0 MHz      435.7 MHz 315.5 MHz 390.0 MHz	433.92 MHz      1030.0 MHz 434.42 MHz 868.35 MHz 915.0 MHz

## Dimensions



pin connection (example):

- |                     |                     |
|---------------------|---------------------|
| #A: Ground          | #F: Output or Input |
| #B: Input or Output | #G: Ground          |
| #C: Ground          | #H: (Case) Ground   |
| #D: (Case) Ground   |                     |
| #E: Ground          |                     |

Note: please refer to individual datasheet for the actual pin connection and exact dimensions and tolerances

# SAW Resonators

# T3P / T4P

# F11



RoHS compliant



Pb free pins



actual size



T3P Ø 9.35 mm max. / T4P Ø 9.14 mm



actual size



11.1 x 4.6 mm

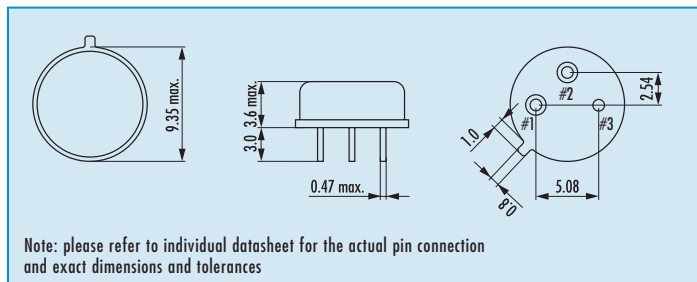
## T3P / T4P 1-port

## T3P / T4P 2-port

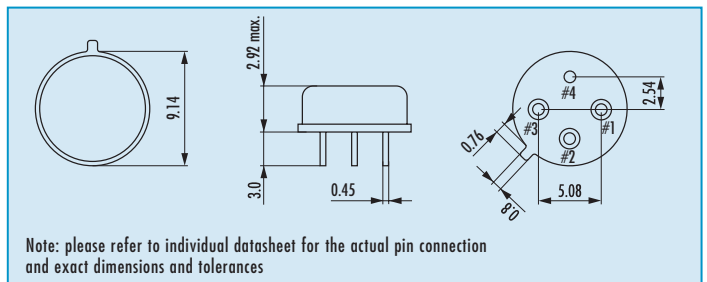
## F11 / 1-port

Type	SAW Resonator	SAW Resonator	SAW Resonator
Frequency	300.0 ~ 1400.0 MHz	400.0 ~ 1100.0 MHz	300.0 ~ 1400.0 MHz
Operating Temp Range	-40 ~ +85 °C	-40 ~ +85 °C	-40 ~ +85 °C
Insertion Loss	< 1.5 dB typical	< 1.5 dB typical	< 1.5 dB typical
Tolerance	±15 kHz ~ ±200 kHz	±15 kHz ~ ±200 kHz	±15 kHz ~ ±200 kHz
Typical Applications	RKS remote keyless entry systems, wireless remote control units, TV receiver, telecom products, mobile phones, remote sensors, security systems, wireless telemetry		RKS remote keyless entry systems, wireless remote control units, TV receiver, telecom products, mobile phones, remote sensors, security systems, wireless telemetry
Features	<ul style="list-style-type: none"> <li>■ T0-39 full metal package</li> <li>■ excellent reliability and shock resistance</li> </ul>		<ul style="list-style-type: none"> <li>■ F11 full metal package</li> <li>■ excellent reliability and shock resistance</li> </ul>
Typical Frequencies	314.95 MHz 315.0 MHz 315.5 MHz 390.0 MHz	403.55 MHz 414.25 MHz 433.92 MHz	314.95 MHz 315.0 MHz 315.15 MHz 390.0 MHz 433.92 MHz

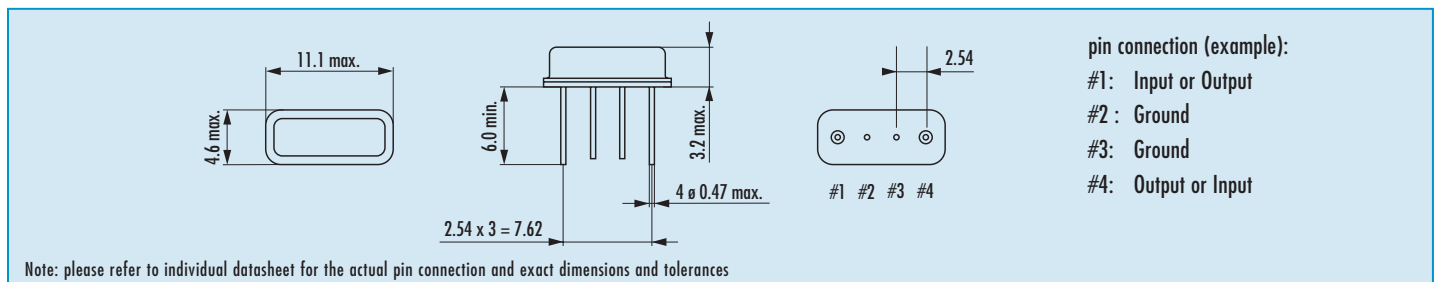
### Dimensions T3P



### Dimensions T4P

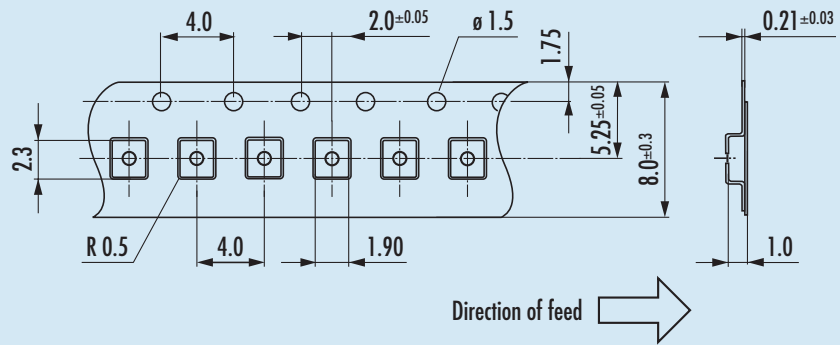


### Dimensions F11

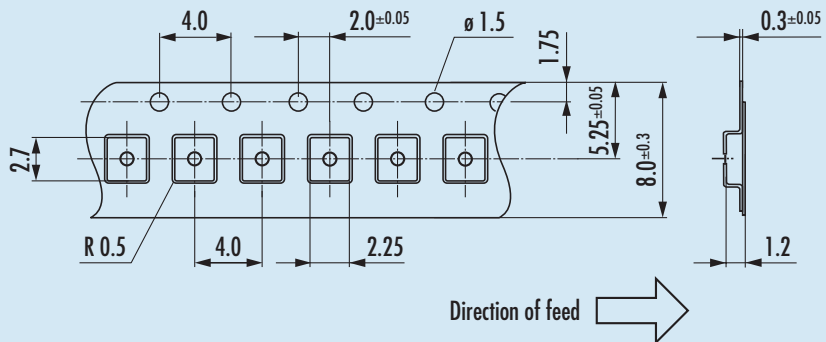


# Taping Specifications

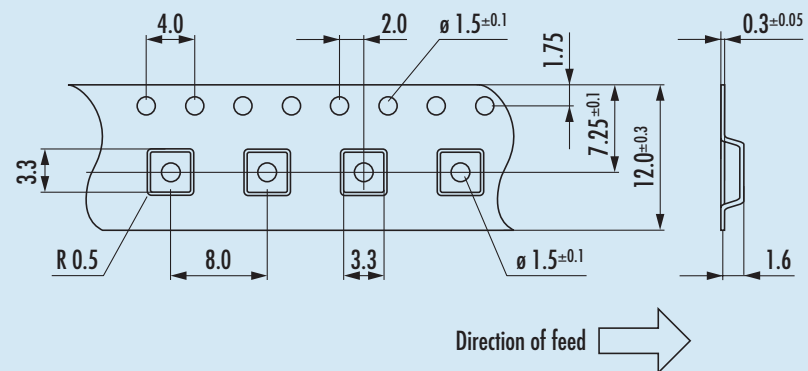
R21  
2.0 x 1.6



R22  
2.5 x 2.0

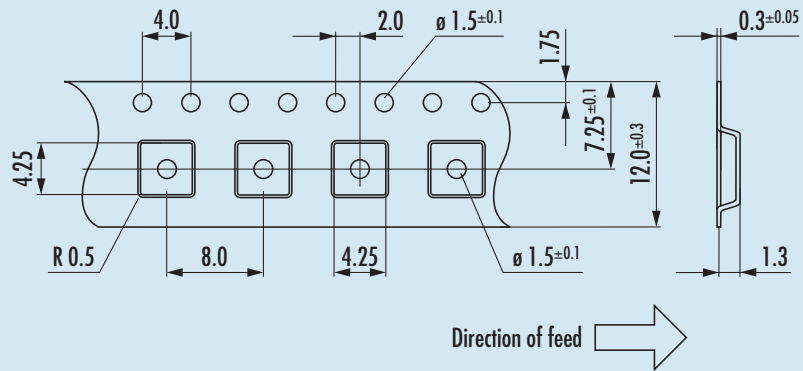


Q30  
3.0 x 3.0

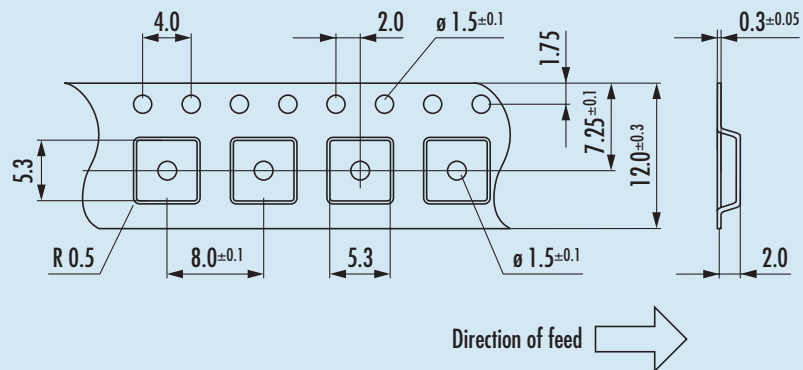


# Taping Specifications

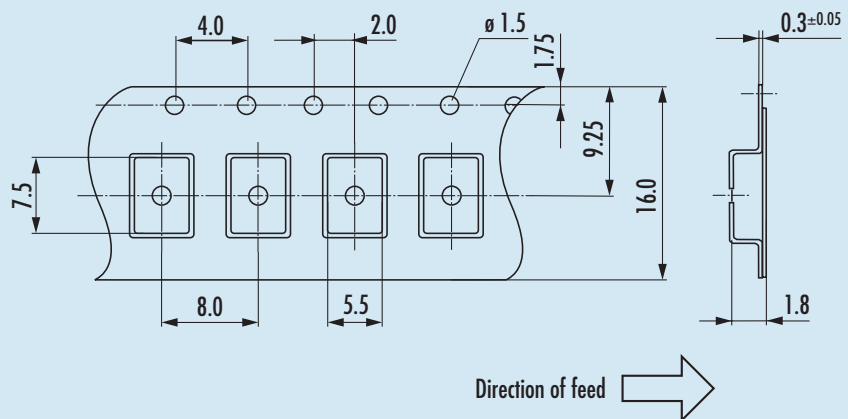
**Q38**  
3.8 x 3.8



**Q50**  
5.0 x 5.0



**R75**  
7.0 x 5.0

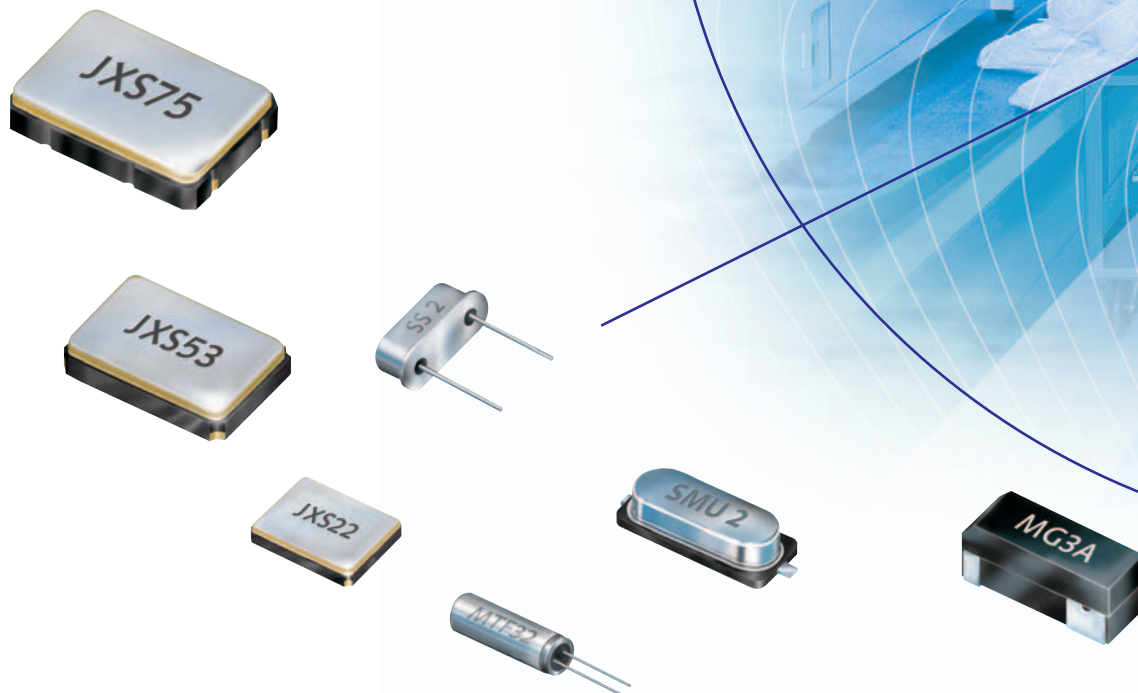


# FREQUENCY CONTROL PRODUCTS FROM JAUCH... ...COMPREHENSIVELY INNOVATIVE

Jauch has always represented a performance spectrum combining variety, competence and service. Our quartz crystals, oscillators, filters and resonators are thus reliable frequency control products wherever it's important that progress bears fruit.

Mass-produced in millions or tailor-made in small and medium batch sizes. Simple structural components or complex customized ones. It's your decision — and we always support you with an efficient solution that precisely suits your needs.

## SMD Quartz Crystals



# Quartz Crystal Oscillators



The screenshot displays the Jauch website's product catalog for Quartz Crystal Oscillators. The page is organized into several sections:

- Navigation:** Home, Produkte & Funktionen, Kontakt, Support.
- Product Categories:**
  - Oscillatoren
  - J0 Serie
  - J1 Serie
  - J2 Serie
  - J3 Serie
  - J4 Serie
  - J5 Serie
  - J6 Serie
  - J7 Serie
  - J8 Serie
  - J9 Serie
  - J10 Serie
  - J11 Serie
  - J12 Serie
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  - J94 Serie
  - J95 Serie
  - J96 Serie
  - J97 Serie
  - J98 Serie
  - J99 Serie
  - J100 Serie
- Product Details Table:**

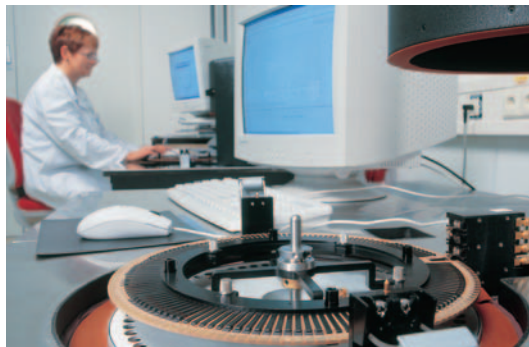
VX3 Serie	XO	Typ	Frequenzbereich	Abmessungen	PDF
		VX3 (0.1V) Triplex Funktion	05 - 107.0MHz	7.0 x 5.0 x 1.6 mm	<ul style="list-style-type: none"> <li>• beidseitiger Top für erweiterten Temperaturbereich</li> <li>• Keramikgehäuse</li> <li>• Gehäusematerial enthält einen geringen Pb Anteil in Übereinstimmung mit der RoHS Richtlinie 2002/95/EC</li> </ul>
		VX3 (0.3V) Triplex Funktion	05 - 70.0MHz	7.0 x 5.0 x 1.6 mm	<ul style="list-style-type: none"> <li>• beidseitiger Top für erweiterten Temperaturbereich</li> <li>• Keramikgehäuse</li> <li>• Gehäusematerial enthält einen geringen Pb Anteil in Übereinstimmung mit der RoHS Richtlinie 2002/95/EC</li> </ul>
		VX3 (0.3V) Stop Funktion	05 - 165.0MHz	7.0 x 5.0 x 1.6 mm	<ul style="list-style-type: none"> <li>• beidseitiger Top für erweiterten Temperaturbereich</li> <li>• Keramikgehäuse</li> <li>• Gehäusematerial enthält einen geringen Pb Anteil in Übereinstimmung mit der RoHS Richtlinie 2002/95/EC</li> </ul>
		VX3 (0.1V) Stop Funktion	05 - 165.0MHz	7.0 x 5.0 x 1.6 mm	<ul style="list-style-type: none"> <li>• beidseitiger Top für erweiterten Temperaturbereich</li> <li>• Keramikgehäuse</li> <li>• Gehäusematerial enthält einen geringen Pb Anteil in Übereinstimmung mit der RoHS Richtlinie 2002/95/EC</li> </ul>

# PRODUCTION WORLDWIDE...

...FOR WORLD-FAMOUS BRANDS

Jauch — the world brand for quartz technology. With our own production facilities, we're present in important electronics centers all over the globe. And everywhere we are bound to the same basic principles: high efficiency, reliable delivery, value for money, and highest quality. Because we know how exacting our customers are. And we also know why.

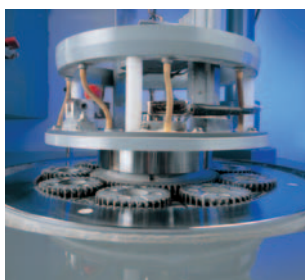
International production,  
guaranteed by  
universal quality standards



From raw quartz crystal production to special short runs to mass production in the millions in ever-constant quality, Jauch Quartz has a lot of performance to offer — and that applies just as much to large groups of companies as to smaller specialists. High flexibility in product design and production amounts enables us to cover a broad customer and business spectrum and thus maintain our independence.



*Technology that makes quality possible: Ultrasonic cleaning of quartz blanks for perfect surfaces.*



*Grinding of quartz blanks: The right surface for the right frequency.*



Jauch has production facilities at many locations around the world — from Europe to Asia. However different the people at these sites are, they all have one thing in common: they all work according to the same system of values. They all belong to the same corporate culture. That is the only way to produce on different continents and retain a uniform standard. Because wherever Jauch products are on the pulse of progress, the rhythm has to be just right.





*The entire quartz crystal processing chain: from raw quartz production...*

*...component production using semi- or fully-automatic production technology depending on the run size...*

*...to series-oriented quality assurance and automated 100-percent testing.*



Version A



B.C.E. S.r.l. □

Via Regina Pacis, nr.54/c - I 41049 Sassuolo (MO) - T. (+39) 0536 811616r.a.- F. (+39) 0536 811500

Email : [bce@bce.it](mailto:bce@bce.it) - Web : [www.bce.it](http://www.bce.it)