

SAW Filters

Category	Model	Package Size	Frequency Range							
			1MHz	100MHz	500MHz	1000MHz	2000MHz	2600MHz		
RF Filters	TA series	5.0X 5.0mm		100MHz			1000MHz			
	TA series	3.8X 3.8mm		250MHz				2700MHz		
	TA series	3.0X 3.0mm		300MHz				2800MHz		
	TA series	2.5X 2.0mm		400MHz				2700MHz		
	TA series	2.0X 1.6mm		700MHz				2700MHz		
	TA series	1.4X 1.1mm		700MHz				2700MHz		
IF Filters	TA series	1.1X0.9mm		750MHz				2700MHz		
	TB series	25X 9.0mm	30MHz				200MHz			
	TB series	19.0X 6.5mm	30MHz				200MHz			
	TB series	13.3X 6.5mm	30MHz				900MHz			
	TB series	11.4X 5.0mm	70MHz				200MHz			
	TB series	9.0X 7.0mm	70MHz				200MHz			
	TB series	7.0X 5.0mm	100MHz				1000MHz			
	TB series	5.0X 5.0mm	100MHz				1000MHz			
	TB series	3.8X 3.8mm	150MHz				1000MHz			
	TB series	3.0X 3.0mm	150MHz				1000MHz			
SAW Duplexer	TF	5.0X 5.0mm		400MHz				2700MHz		
	TF	3.8X 3.8mm		400MHz				2700MHz		
	TF	2.5X 2.0mm		400MHz				2700MHz		
	TF	2.0X 1.6mm		400MHz				2700MHz		

Crystal Filters

Model	Package Size	Frequency Range							
		1MHz	100MHz	500MHz	1000MHz	2000MHz	2600MHz		
TY series	7.0X 5.0mm		21.4MHz		90MHz				

SAW Resonators

Model	Package Size	Frequency Range						
		1MHz	100MHz	500MHz	1000MHz	2000MHz	2600MHz	
TC series	5.0X 5.0mm		250MHz			1100MHz		
TC series	5.0X 3.5mm		250MHz			1100MHz		
TC series	3.8X 3.8mm		250MHz			1100MHz		

SAW Resonators

Model	Package Size	Frequency Range					
		1MHz	100MHz	500MHz	1000MHz	2000MHz	2600MHz
TC series	3.0X 3.0mm		250MHz			1100MHz	
TC series	2.5X 2.0mm		500MHz			2400MHz	
TC series	TO39		200MHz			1000MHz	
TC series	F-I I		200MHz			1000MHz	

Front End Module

Model	Package Size	Frequency Range					
		1000MHz	1200MHz	1400MHz	1600MHz	1800MHz	2000MHz
TN Series	2.5X2.5X0.535mm			1575MHz		1666MHz	
TN Series	3.3X2.1X1.1mm			1575MHz			
TN Series	1.5X1.1X0.5mm			1575MHz		1666MHz	

Crystal Resonators

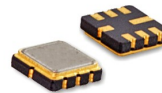
Model	Package Size	Frequency Range					
		1MHz	100MHz	500MHz	1000MHz	2000MHz	2600MHz
TZ series	HC49SMD		4MHz			90MHz	
TZ series	HC49US		4MHz			90MHz	
TZ series	8.0X 4.5mm		6MHz			70MHz	
TZ series	7.0X 5.0mm		6MHz			100MHz	
TZ series	6.0X 3.5mm		10MHz			80MHz	
TZ series	5.0X 3.2mm		8MHz			100MHz	
TZ series	4.0X 2.5mm		12MHz			50MHz	
TZ series	3.2X 2.5mm		12MHz			123MHz	
TZ series	2.5X 2.0mm		12MHz			66MHz	
TZ series	2.0X 1.6mm		16MHz			52MHz	
TZ series	1.6X 1.2mm		24MHz			48MHz	
TZ series	8.0X 3.8mm	32.768KHz					
TZ series	8.0X 3.0mm	32.768KHz					
TZ series	7.0X 1.5mm	32.768KHz					
TZ series	6.5X 2.0mm	32.768KHz					
TZ series	5.2X 1.5mm	32.768KHz					
TZ series	4.1X 1.5mm	32.768KHz					
TZ series	3.2X 1.5mm	32.768KHz					
TZ series	2.0X1.2mm	32.768KHz					
TSX (TM series)	2.5X2.0mm	19.2MHz			52MHz		
TSX (TM series)	2.0X1.6mm	19.2MHz			52MHz		

Model	Package Size	Frequency Range					
		1MHz	100MHz	500MHz	1000MHz	2000MHz	2600MHz
SAW Oscillators	13.7X 9.4mm	156MHz			1000MHz		
SAW Oscillators	7.0X 5.0mm PECL	212.5MHz			700MHz		
SAW Oscillators	7.0X 5.0mm CMOS	156MHz			1000MHz		
SAW Oscillators	7.0X 5.0mm LVDS	150MHz			700MHz		
SAW Oscillators	7.0X 5.0mm	315MHz			868.35MHz		
VCXO	13.7X 9.4mm	156MHz			1000MHz		
VCXO	7.5X 5.0mm	156MHz			1000MHz		
Crystal Oscillators	7.0X 5.0mm PECL	50MHz			800MHz		
Crystal Oscillators	7.0X 5.0mm CMOS	2MHz			200MHz		
Crystal Oscillators	5.0X 3.2mm	2MHz			72MHz		
Crystal Oscillators	3.2X 2.5mm	2MHz			72MHz		
Crystal Oscillators	2.5X 2.0mm	2MHz			72MHz		
Crystal Oscillators	2.0X 1.6mm	2MHz			72MHz		
TCXO	7.0X 5.0mm	10MHz			52MHz		
TCXO	5.0X 3.2mm	10MHz			52MHz		
TCXO	3.2X 2.5mm	10MHz			52MHz		
TCXO	2.5X 2.0mm	10MHz			52MHz		
TCXO	2.0X 1.6mm	10MHz			52MHz		
TCXO	7.0X 5.0mm	32.768kHz					
TCXO	3.2X 2.5mm	32.768kHz					
VCXO	7.0X 5.0mm	50MHz			800MHz		
VCXO	5.0X 3.2mm	10MHz			80MHz		
OCXO	9.0X 11.0mm	10MHz			80MHz		
OCXO	25.8X25.8mm	5MHz			100MHz		
OCXO	35.8X27mm	5MHz			100MHz		
OCXO	25.4X22mm	5MHz			40MHz		
OCXO	20.7X12.7mm	2.048MHz			40MHz		
PXO	7.0X 5.0mm	up to 200MHz					
PXO	5.0X 3.2mm	up to 200MHz					
PXO	3.2X 2.5mm	up to 200MHz					
PXO	2.5X 2.0mm	up to 200MHz					
VCO	9.0X 11mm	up to 200MHz	50MHz		800MHz		
VCO	8.2X 6.0mm	up to 200MHz		800MHz		2400MHz	
VCO	5.5X 4.8mm	up to 200MHz		800MHz		2400MHz	

5.0X5.0 / 3.8X3.8 / 3.0X3.0

RoHS Compliant
Lead-free soldering

RoHS Compliant
Lead free
Lead-free soldering

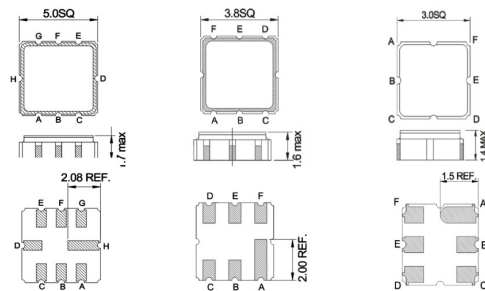


Features

- Ceramic Seam-Welded Package
- Excellent Reliability
- Ultra Miniature Package
- Suitable for Surface Mount Technology and IR Reflow Process
- For application in wireless communications system

Type(TA)	SAW Filter
Size(mm)	5.0X5.0 / 3.8X3.8 / 3.0X3.0
Frequency(MHz)	100 ~ 2800
Input / Output	Single or Balanced
Bandwidth	0.1MHz ~ 110MHz
Operating Temp Range(°C)	-40 ~ +85
Applications	Pager, Cordless Phone, GPS, FRS, Cable Modem, RKE, ISM, GSM, EGSM, DCS, PCS, CDMA, W-CDMA, SONET, Wireless Microphone, Industry Remote Control

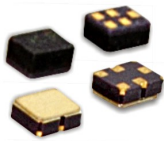
Consult our sales representative for other specifications.



2.5X2.0 / 2.0X1.6 / 1.4X1.1 / 1.1X0.9

RoHS Compliant
Lead-free soldering

RoHS Compliant
Lead-free
Lead-free soldering

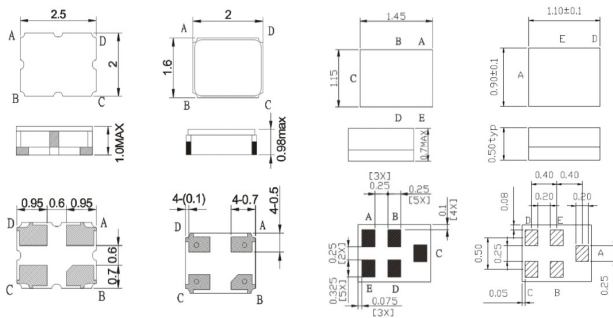


Features

- Ceramic Seam-Welded Package / 1.4X1.1 Advanced CSP Package
- Excellent Reliability
- Ultra Miniature Package
- Suitable for Surface Mount Technology and IR Reflow Process
- For application in wireless communications system

Type(TA)	SAW Filter
Size(mm)	2.5X2.0 / 2.0X1.6 / 1.4X1.1 / 1.1X0.9
Frequency(MHz)	700 ~ 2600
Input / Output	Single or Balanced
Bandwidth	0.1MHz~110MHz
Operating Temp Range(°C)	-40 ~ +85
Applications	Pager, Cordless Phone, GPS, FRS, Cable Modem, RKE, ISM, GSM, EGSM, DCS, PCS, CDMA, W-CDMA, SONET, Wireless Microphone, Industry Remote Control

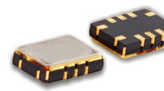
Consult our sales representative for other specifications.



13.3X6.5 / 7.0X5.0 / 5.0X5.0

RoHS Compliant
Lead-free soldering

RoHS Compliant
Lead-free
Lead-free soldering

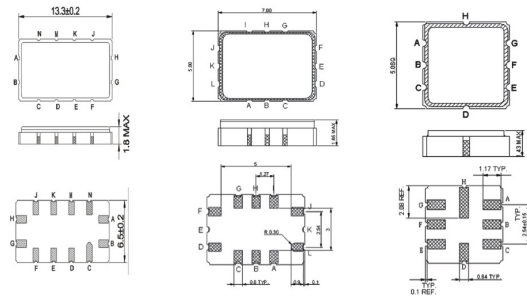


Features

- Ceramic Seam-Welded Package
- Excellent Reliability
- Ultra Miniature Package
- Suitable for Surface Mount Technology and IR Reflow Process
- For application in wireless communications system

Type(TB)	SAW Filter
Size(mm)	13.3X6.5 / 7.0X5.0 / 5.0X5.0
Frequency(MHz)	70~1000
Input / Output	Single or Balanced
Bandwidth	0.015MHz~150MHz
Operating Temp Range(°C)	-40 ~ +85
Applications	WLAN, Cable Modem, AV Sender, DECT, GSM, CDMA, IS-95, W-CDMA

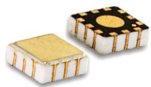
Bandwidth is for the typical application only for wider bandwidth device, the Insertion loss can be higher. Please consult factory for special requirements.



5.0X5.0 / 3.8X3.8 / 2.5X2.0 / 2.0X1.6

RoHS Compliant
Lead-free soldering

RoHS Compliant
Lead free
Lead-free soldering

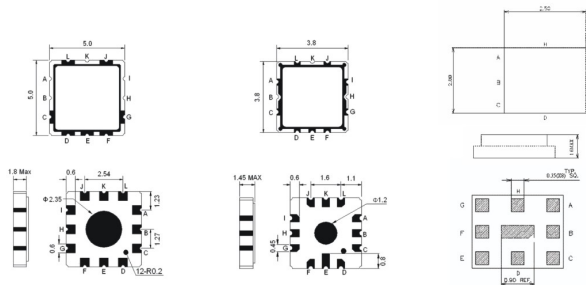


Features

- Ceramic Seam-Welded Package
- Excellent Reliability
- Ultra Miniature Package
- Suitable for Surface Mount Technology and IR Reflow Process
- For application in wireless communications system

Type(TF)	Duplexer
Size(mm)	5.0X5.0/3.8X3.8/2.5X2.0/2.0X1.6
Frequency(MHz)	400~2655
Input / Output	Single or Balanced
Bandwidth	4.5MHz~70MHz
Operating Temp Range(°C)	-40 ~ +85
Applications	CDMA450, CDMA800, WCDMA/UMTS

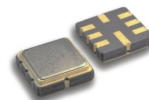
Consult factory representative for special requirements.



5.0X5.0 / 5.0X3.5/3.8X3.8/3.0X3.0/2.5X2.0

RoHS Compliant
Lead-free soldering

RoHS Compliant
Lead free
Lead-free soldering



Features

- Ceramic Seam-Welded Package
- Excellent Reliability
- Ultra Miniature Package
- Suitable for Surface Mount Technology and IR Reflow Process
- For application in wireless communications system

Type(TC)	SAW Resonator
Size(mm)	5.0X5.0 / 5.0X3.5 / 3.8X3.8/3.0X3.0/2.5X2.0
Frequency(MHz)	300~2400
Port	I
Insertion Loss	< 1.5dB Typical
Tolerance	±15KHz ~ ±200KHz
Operating Temp Range(°C)	-40 ~ +85

Applications

provides reliable, fundamental mode, quartz frequency stabilization i.e. in transmitters or local oscillators

