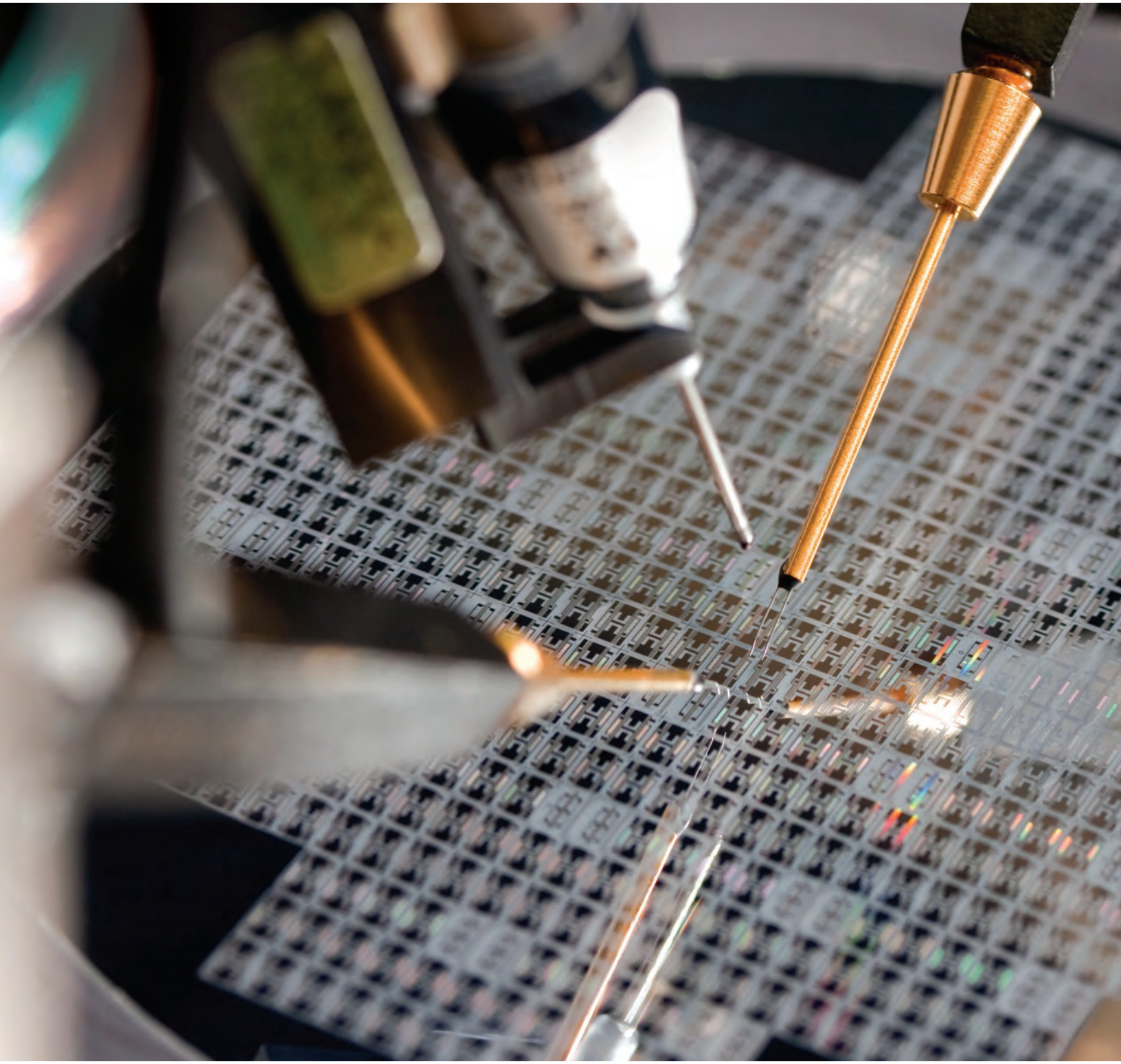
Advanced SAW Filter Technology



api technologies corp.

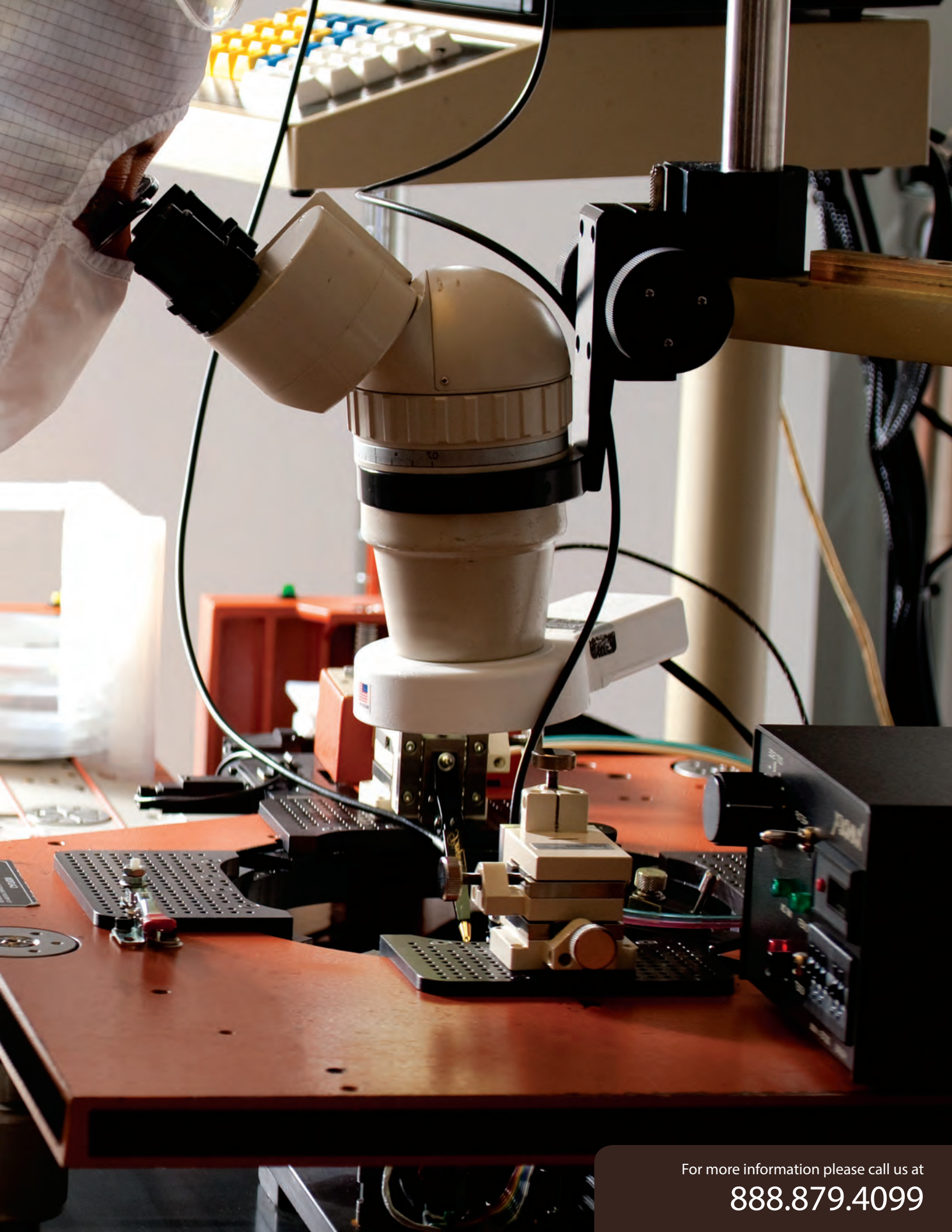
Advanced SAW Filter Technology

Covering frequencies from 20 MHz to 2600 MHz

API Technologies, a leading designer of precision RF and Microwave products, provides high performance SAW filters and delay lines for both military and high-end commercial applications. Offering a wide variety of high-end, dispersive and non-dispersive delay lines as well as premium SAW filters for popular commercial bands, we continue to provide cutting edge solutions for today's SAW filter requirements.

API Technologies provides cutting edge SAW technology for today's military and commercial markets. These SAW filters, in frequencies from 20 MHz to 2600 MHz, offer many outstanding features including:

- **Loss less than 2 dB**
- **Fractional Bandwidths from 0.04 to 60 %**
- **Shape factors below 1.10:1**
- **Hermetically Sealed Packages**



For more information please call us at

888.879.4099

API Technologies
SAW Filter Fabrication

Metal Deposition

During the DC sputter process, each wafer is individually rotated to ensure the best uniformity of the deposited metal. Our system has multiple sputter targets that allow us to provide a variety of metal alloys that can be chosen to suit the filter performance requirement.

High Frequency Lithography

Modern stepper imaging technology enables smaller geometries and uniform finger widths as small as 0.35 microns leading to superior insertion loss and higher frequencies up to 2600 MHz.

Precision Photoresist Distribution

Statistical Process Control is a vital part of all fabrication processes. During our Photoresist application, nine post coat measurements are taken in order to insure consistency and uniformity.

Automated Developer Application

Having state-of-the-art equipment provides maximum production output paving the way for industry leading delivery times.

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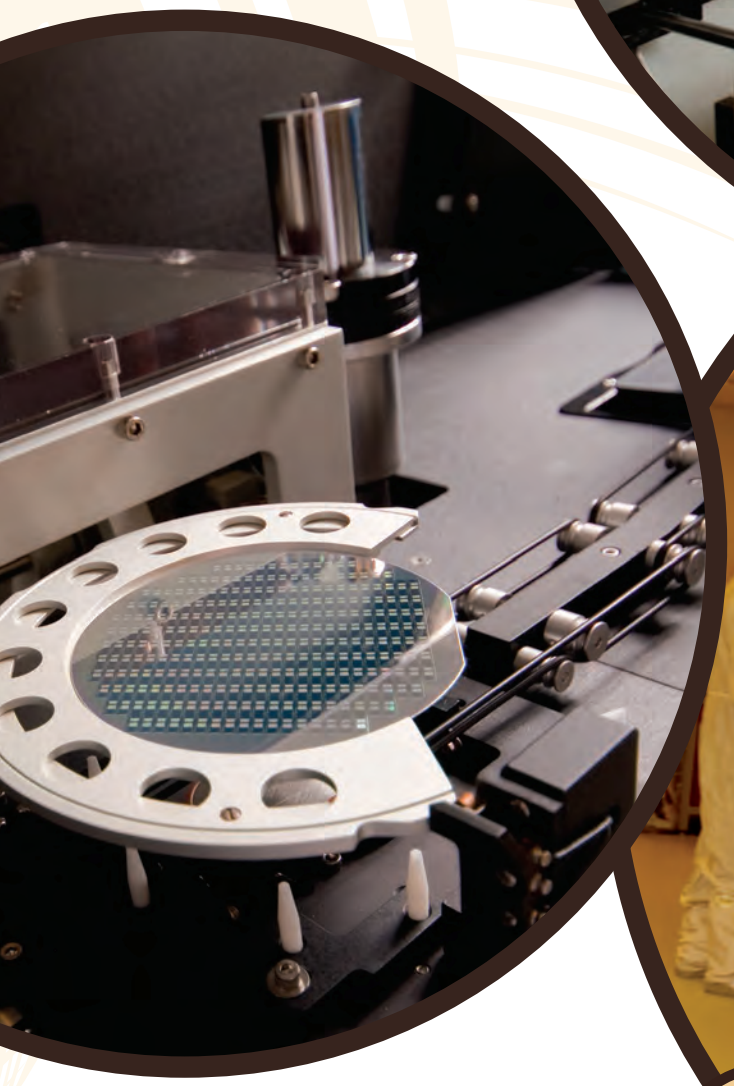

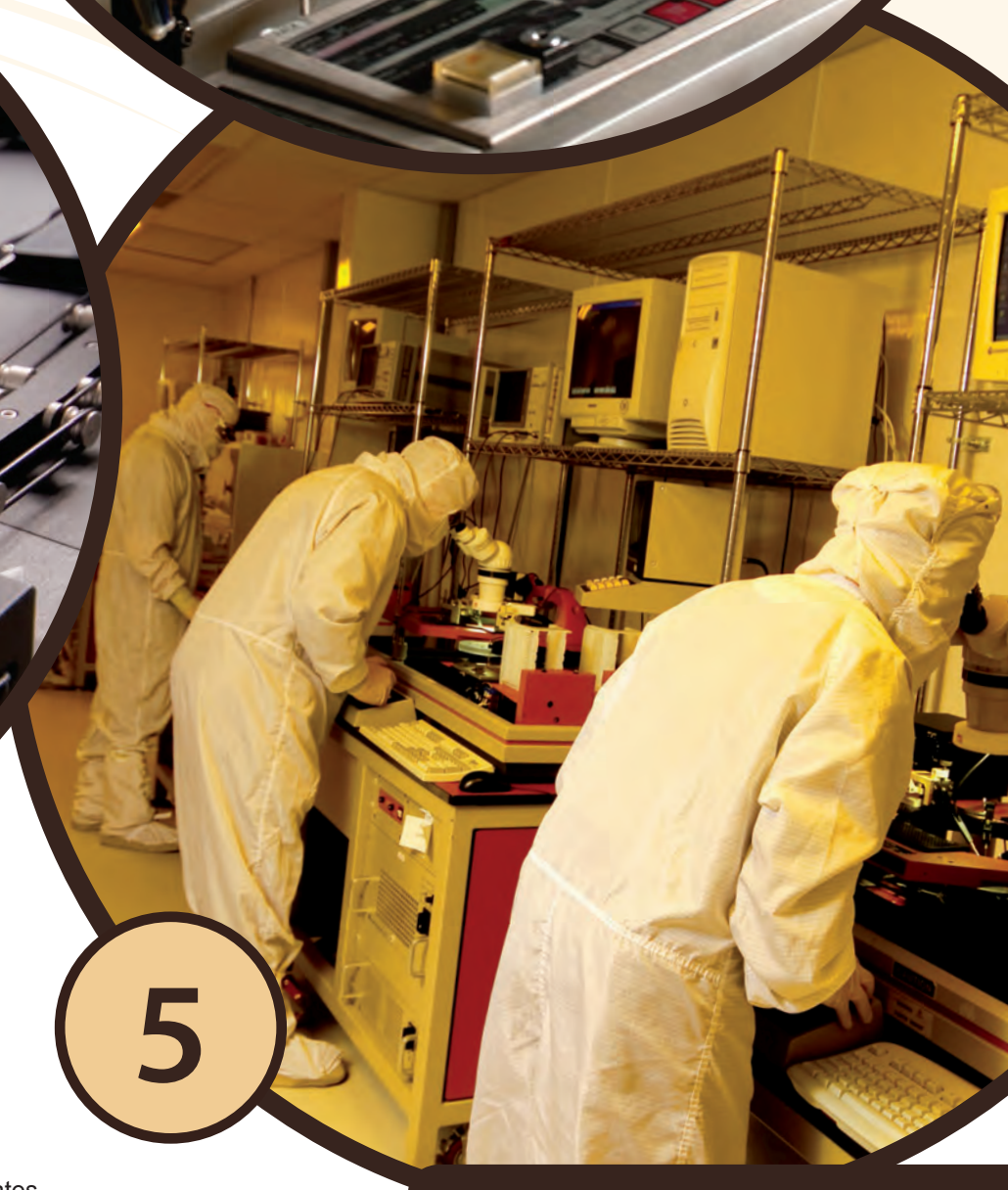

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100% Testing

API Technologies performs 100% on wafer probe testing for every SAW die. This extra step provides superior yield rates and eliminates time wasting rework effort.

For more information please call us at

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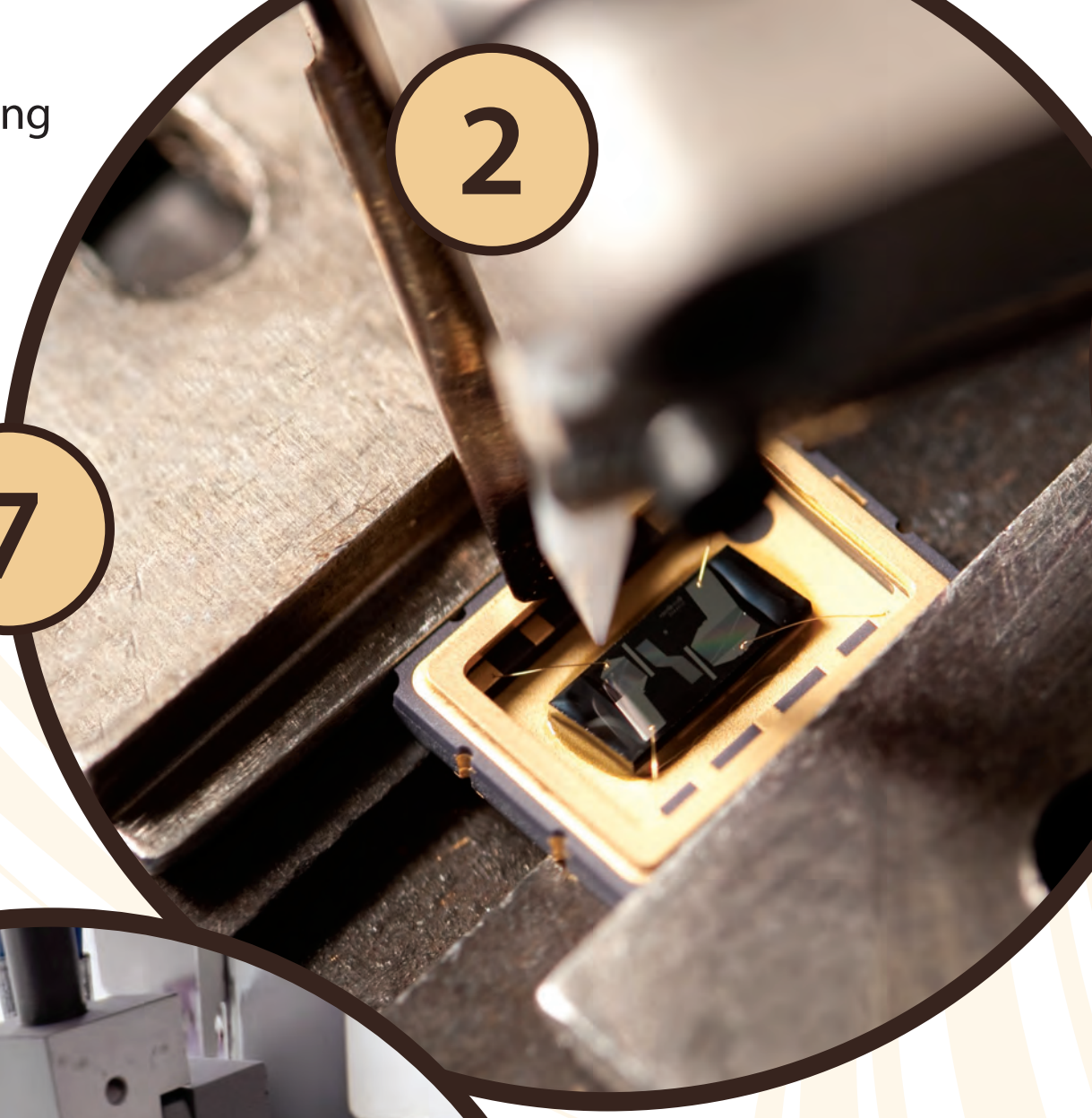
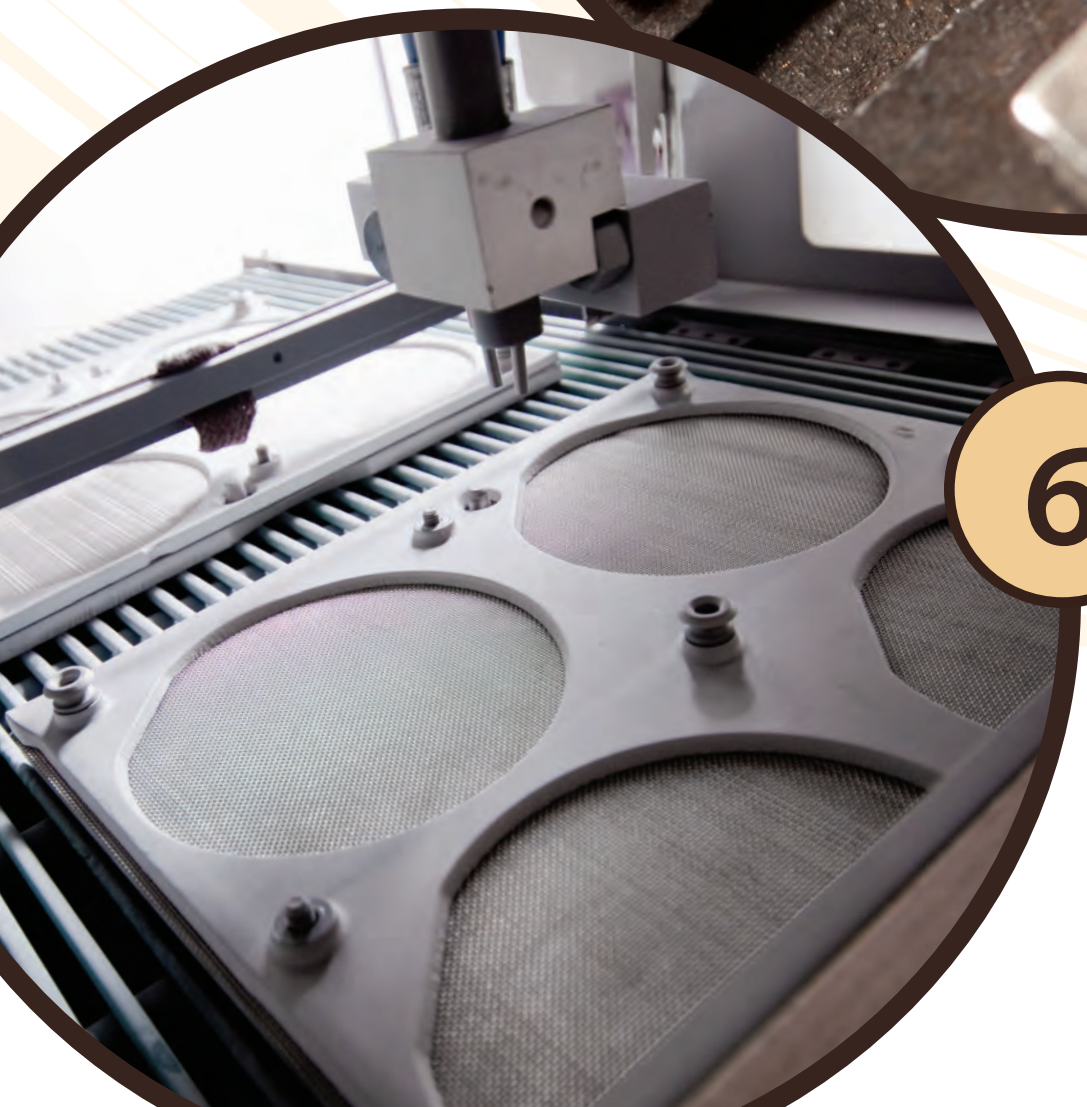
Precision Bonding

In addition to using Gold wires on all ball bonds, API incorporates a silicon based thermo-set resin, which further dampens stray acoustic energy and reduces signal distortion in the passband.





Backside Planar Etching

An important step in minimizing bulk modes while at the same time improving spurious rejection is 100% backside particle impingement. This automated process isolates the traveling wave, further enhancing rejection and lowering loss.

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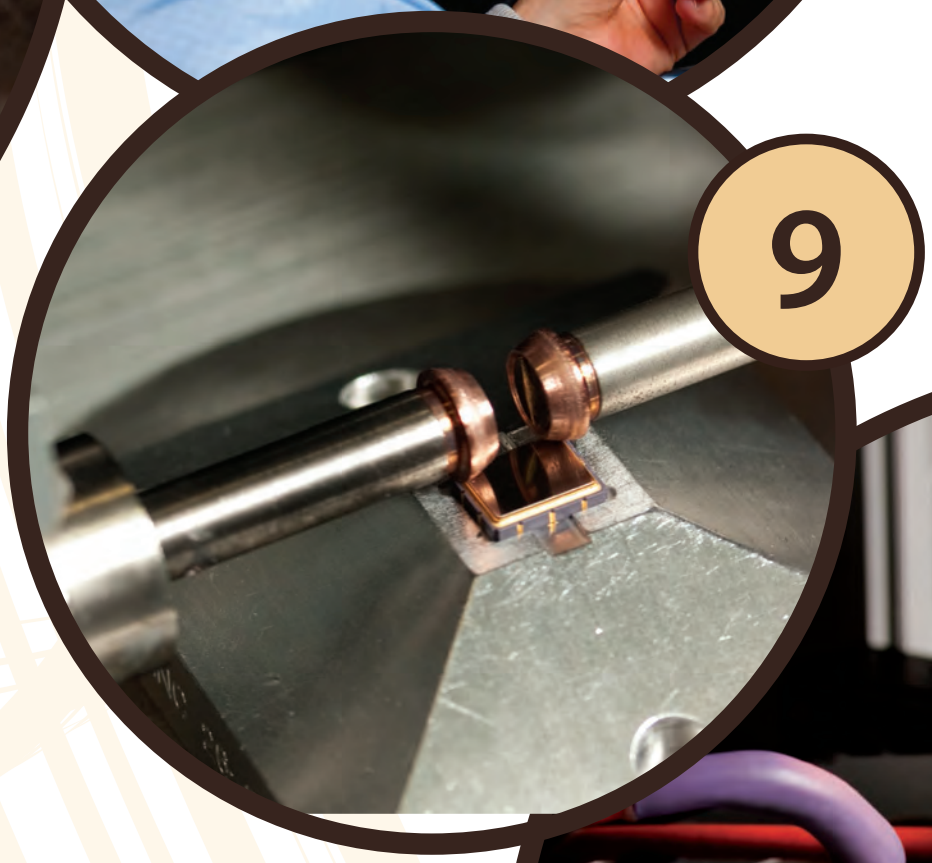
100% Pre-Aging

API Technologies ensures that 100% of its SAW filters are pre-aged at 100°C. This critical stabilization step locks in the center frequency performance to within 0.0005% of the desired value.



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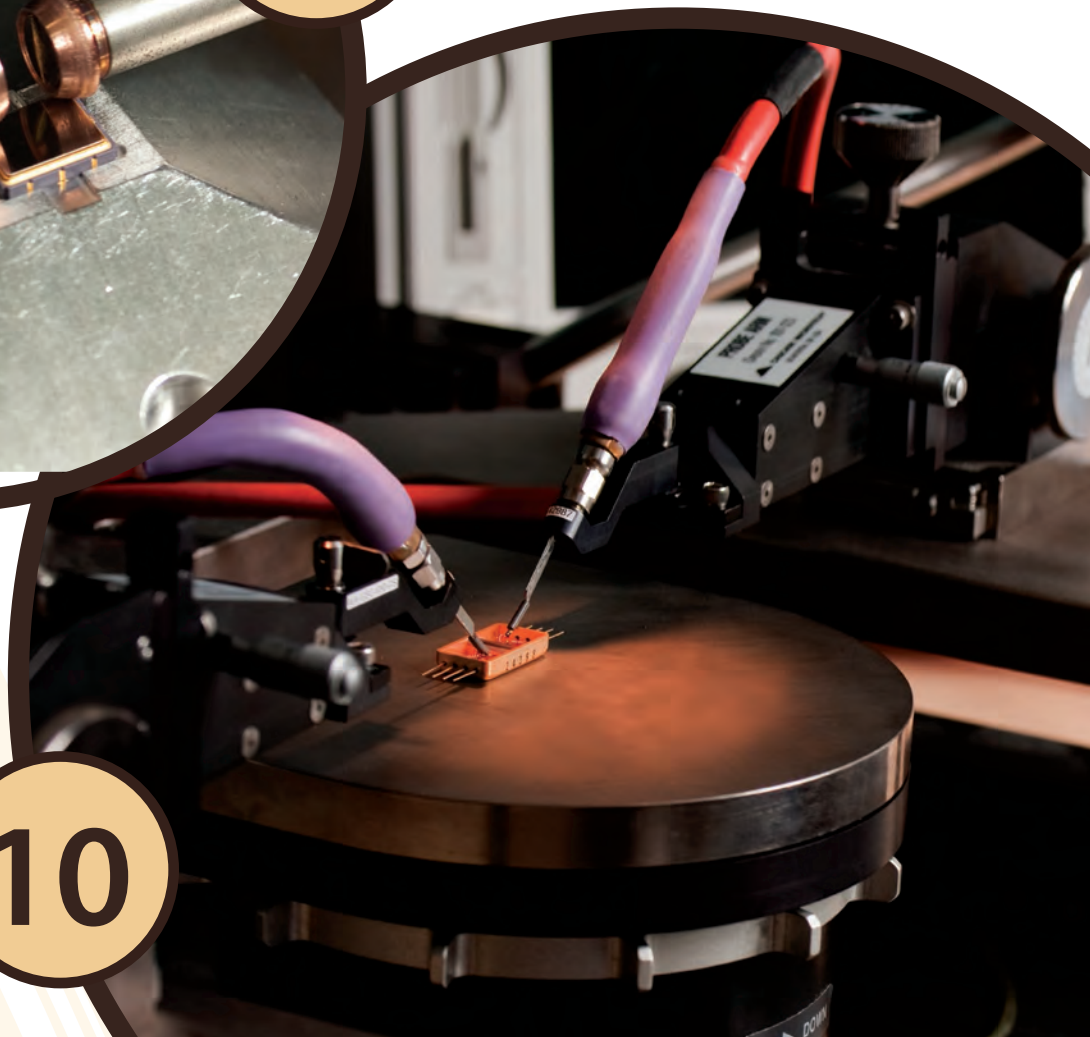
Hermetic Sealing

API Technologies sealing methods include seam sealing which provides a very reliable hermetic seal, while maintaining a stable environment for the package and its sensitive contents. Hermetic seam sealing also maintains environmental integrity to pass the rigors of MIL-STD-883 Method 1014 Conditions A & C for both gross and fine leak detection.



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Final Testing

Automated test equipment driven by in-house developed software electrically tests each SAW filter for critical parameters including center frequency, insertion loss, bandwidth, and rejection.

| Superior Quality |

API Technologies subjects the highest quality control standards to every aspect of production from initial design through the entire manufacturing process. Our Quality Assurance Department maintains tight control of all processes in our ISO 9001:2001 certified facility including both material and screening standards, strict lot traceability, and continuous monitoring over all parameters critical to product quality and development.

AS9100-B (Aerospace) Certification

Whether the application is military or commercial, our AS9100-B Certification requires exacting process control standards on all filters.

SPC for Critical Processes

Maintaining control of key processes results in high yields of reliable products. Our careful attention to SPC data for wirebonding, bond pulls, shear strength, and shear rates leads to exceptional quality and reliabilty.

Meticulous Documentation Methods

All products have complete traceability right down to the components' lot numbers. Whether the application is Military or Commercial, thorough record keeping assures our customers get complete satisfaction in all aspects of quality control.

API Technologies offers a high level of quality and screening including:

- ✓ Certified to ISO 9001:2001 and AS9100-B
- ✓ Quality control system compliant to MIL-I-45208 and MIL-Q-9858
- ✓ ANSI/Z540-1-1994 compliant calibration
- ✓ Screening available to the test methods of MIL-STD-883, MIL-STD-202 and MIL-STD-810

| SAW Filter Guide |

GPS Bands

Part Number	Center Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	Package Size (mm)	Package Type
SF1227BA02649S	1227.00	20	1.3	3.0 x 3.0	Ceramic LCC
SF1227BA02651S	1227.00	20	0.8	3.0 x 3.0	Ceramic LCC
SF1227BA02677S	1227.00	40	1.3	3.0 x 3.0	Ceramic LCC
SF1575BA02505S	1575.00	2.4	1.3	3.0 x 3.0	Ceramic LCC
SF1575DL03104S	1575.00	20	19.3	5.0 x 5.0	Ceramic LCC
SF1575BA02506S	1575.40	55	1.5	2.5 x 2.0	Ceramic LCC
SF1575BA02634S	1575.42	35	1.7	1.4 X 1.1	Ceramic LCC
SF1575BA02532S	1575.42	35	2.7	2.5 x 2.0	Ceramic LCC
SF1575BA02627S	1575.42	43	1.2	1.4 x 1.1	Ceramic LCC
SF1575BA02534S	1575.42	50	1.5	2.0 X 1.6	Ceramic LCC

CDMA Bands

Part Number	Center Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	Package Size (mm)	Package Type
SF0836BA02527S	836.5	25	2.1	3.0 x 3.0	Ceramic LCC
SF0836BA02513S	836.5	35	2.5	3.0 x 3.0	Ceramic LCC
SF0850DL01825T	850	80	24	22.1 x 12.7	DIP
SF0864BA02510S	864	3	2.8	3.8 x 3.8	Ceramic LCC
SF0864BA02511S	864	3	4.0	3.0 x 3.0	Ceramic LCC
SF0866BA02621S	866	19	2.7	3.0 x 3.0	Ceramic LCC
SF0868BA02655S	868	1.6	3.4	3.8 x 3.8	Ceramic LCC
SF0868BA02512S	868	12	3.8	3.8 x 3.8	Ceramic LCC
SF0869BA02618S	869	2	3	3.0 x 3.0	Ceramic LCC
SF0869BA02503S	869	2	3.0	3.8 x 3.8	Ceramic LCC
SF0869BA02656S	869	6	5.9	3.0 x 3.0	Ceramic LCC
SF0869BA02588S	869	11	2.8	3.0 x 3.0	Ceramic LCC
SF0869BA02504S	869	12	3.0	3.0 x 3.0	Ceramic LCC
SF0869BA02630S	869	12.5	2.6	3.8 x 3.8	Ceramic LCC
SF0881DL02211S	881.5	25	21.2	13.3 x 6.5	Ceramic LCC
SF0881BA02514S	881.5	33	3.0	3.0 x 3.0	Ceramic LCC
SF0898BA02546S	897.5	40	2.1	3.0 x 3.0	Ceramic LCC

Low Loss Designs

Part Number	Center Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	Package Size (mm)	Package Type
SF0433BA02629S	433	20	1.4	3.8 x 3.8	Ceramic LCC
SF0434BA02617S	433.92	2	2	3.0 x 3.0	Ceramic LCC
SF0434BA02587S	433.92	7	1.9	3.8 x 3.8	Ceramic LCC
SF0455BA03134S	455	30	2.2	5.0 x 5.0	Ceramic LCC
SF0836BA02527S	836.5	25	2.1	3.0 x 3.0	Ceramic LCC
SF0898BA02546S	897.5	40	2.1	3.0 x 3.0	Ceramic LCC
SF0915BA02531S	915	26	2.2	2.5 x 2.0	Ceramic LCC
SF0948BA02589S	947.5	25	2.4	3.0 x 3.0	Ceramic LCC
SF1575BA02505S	1575	2.4	1.3	3.0 x 3.0	Ceramic LCC
SF1575BA02506S	1575.4	55	1.5	2.5 x 2.0	Ceramic LCC
SF1575BA02634S	1575.42	35	1.7	1.4 X 1.1	Ceramic LCC
SF1575BA02627S	1575.42	43	1.2	1.4 x 1.1	Ceramic LCC
SF1575BA02534S	1575.42	50	1.5	2.0 X 1.6	Ceramic LCC
SF1843BA02675S	1842.5	75	2.2	3.0 x 3.0	Ceramic LCC
SF1843BA02590S	1842.5	75	2.2	3.0 x 3.0	Ceramic LCC
SF1843BA02598S	1842.5	75	2.2	3.0 x 3.0	Ceramic LCC
SF1960BA02525S	1960	60	2.3	3.0 x 3.0	Ceramic LCC
SF2133BA02661S	2132.5	45	2.4	3.0 x 3.0	Ceramic LCC
SF2442BA02648S	2441.8	120.5	2.1	3.0 x 3.0	Ceramic LCC

BTS Bands

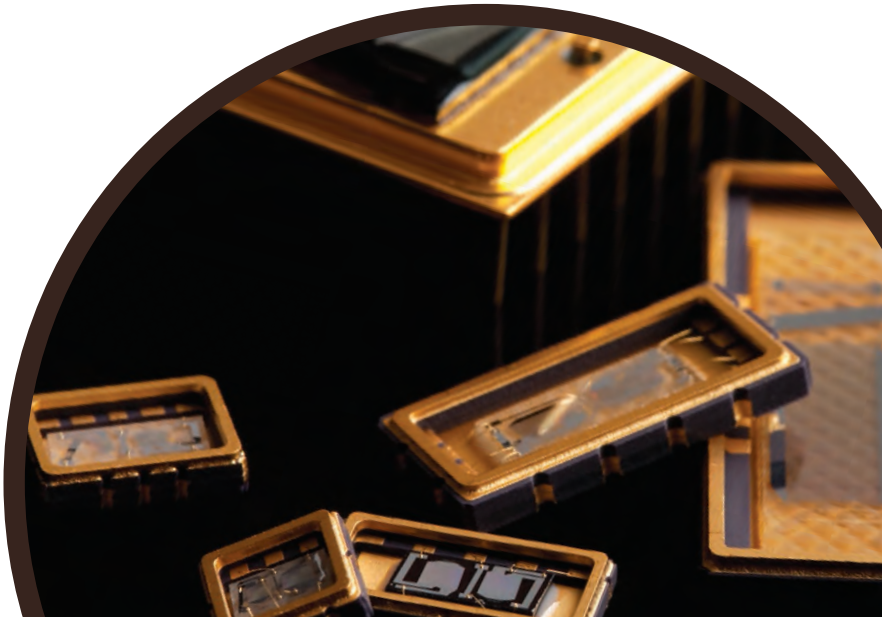
Part Number	Center Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	Package Size (mm)	Package Type
SF1843BA02675S	1842.5	75	2.2	3.0 x 3.0	Ceramic LCC
SF1843BA02590S	1842.5	75	2.2	3.0 x 3.0	Ceramic LCC
SF1843BA02598S	1842.5	75	2.2	3.0 x 3.0	Ceramic LCC
SF1843BA02542S	1842.5	75	2.9	2.5 x 2.0	Ceramic LCC

VSB Bands

Part Number	Center Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	Package Size (mm)	Package Type
SF0035BA01847T	35.375	6.85	27	38.7 x 25.7	DIP
SF0036BA00642T	35.6	7.4	28	35.1 x 20.6	DIP
SF0036BA02217T	35.7	7.4	34	35.1 x 20.6	DIP
SF0036BA11033T	36	5.75	27.5	35.1 x 20.6	DIP
SF0036BA01000T	36	6.55	28	35.1 x 20.6	DIP
SF0036BA02602S	36.125	8	20.3	14.8 x 5.8	SIP
SF0036BA11932S	36.15	8	22.0	24.7 x 9.0	Ceramic LCC
SF0036BA00628T	36.23	7.96	28	35.1 x 20.6	DIP
SF0036BA01072T	36.33	6.8	29.5	35.1 x 20.6	DIP
SF0036BA01967T	36.7	5.75	27	38.7 x 25.7	DIP
SF0036BA01867T	36.7	5.75	30	38.7 x 25.7	DIP
SF0036BA01866T	36.75	5.75	29	38.7 x 25.7	DIP
SF0036BA01033T	36.83	5.82	27.5	35.1 x 20.6	DIP
SF0038BA01943T	38	6	23	35.1 x 20.6	DIP
SF0044BA01382T	43.7	5.6	22	38.7 x 25.7	DIP
SF0043BA02523T	43.75	6	15.0	13.7 x 4.8	SIP
SF0044BA01860T	43.85	5.35	28	38.7 x 25.7	DIP
SF0044CD02283T	44	1.3	18.2	27.2 x 12.7	DIP
SF0044BA02640S	44	3.4	14	13.3 x 6.5	Ceramic LCC
SF0044BA01979T	44	4.93	27	35.1 x 20.6	DIP
SF0044BA01470T	44	5.2	28.5	38.7 x 25.7	DIP
SF0044BA03190S	44	5.4	22.4	24.7 x 9.0	Ceramic LCC
SF0044BA21930T	44	6	21.5	35.1 x 20.6	DIP
SF0044BA01930S	44	6	21.5	24.7 x 9.0	Ceramic LCC
SF0044BA01081T	44	6	28.5	35.1 x 20.6	DIP
SF0044BA02641S	44	6.5	11.5	13.3 x 6.5	Ceramic LCC
SF0044BA01931S	44	8	25.0	24.7 x 9.0	Ceramic LCC
SF0044BA01800T	44.05	5	29	38.7 x 25.7	DIP
SF0044BA01954T	44.1	10	26.5	38.7 x 25.7	DIP
SF0048BA02645S	48	3.5	12.5	13.3 x 6.5	Ceramic LCC
SF0048BA02455S	48	8	20.8	24.7 x 9.0	Ceramic LCC
SF0048BA02644S	48	10	13.5	13.3 x 6.5	Ceramic LCC

Superior Group Delay Performance

Ultra-Flat Group Delay is critical in eliminating linear distortion, a leading cause of interference to digitally modulated signals. Our proprietary design technologies provide superior Group Delay Performance as low as 8 ns.



SAW Filter Selection Guide

Part Number	Center Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	Package Size (mm)	Package Type
SF0035BA01847T	35.375	6.85	27	38.7 x 25.7	DIP
SF0036BA00642T	35.6	7.4	28	35.1 x 20.6	DIP
SF0036BA02217T	35.7	7.4	34	35.1 x 20.6	DIP
SF0036BA11033T	36	5.75	27.5	35.1 x 20.6	DIP
SF0036BA01000T	36	6.55	28	35.1 x 20.6	DIP
SF0036BA02602S	36.125	8	20.3	14.8 x 5.8	SIP
SF0036BA11932S	36.15	8	22.0	24.7 x 9.0	Ceramic LCC
SF0036BA00628T	36.23	7.96	28	35.1 x 20.6	DIP
SF0036BA01072T	36.33	6.8	29.5	35.1 x 20.6	DIP
SF0036BA01967T	36.7	5.75	27	38.7 x 25.7	DIP
SF0036BA01867T	36.7	5.75	30	38.7 x 25.7	DIP
SF0036BA01866T	36.75	5.75	29	38.7 x 25.7	DIP
SF0036BA01033T	36.83	5.82	27.5	35.1 x 20.6	DIP
SF0038BA01943T	38	6	23	35.1 x 20.6	DIP
SF0044BA01382T	43.7	5.6	22	38.7 x 25.7	DIP
SF0043BA02523T	43.75	6	15.0	13.7 x 4.8	SIP
SF0044BA01860T	43.85	5.35	28	38.7 x 25.7	DIP
SF0044CD02283T	44	1.3	18.2	27.2 x 12.7	DIP
SF0044BA02640S	44	3.4	14	13.3 x 6.5	Ceramic LCC
SF0044BA01979T	44	4.93	27	35.1 x 20.6	DIP
SF0044BA01470T	44	5.2	28.5	38.7 x 25.7	DIP
SF0044BA03190S	44	5.4	22.4	24.7 x 9.0	Ceramic LCC
SF0044BA21930T	44	6	21.5	35.1 x 20.6	DIP
SF0044BA01930S	44	6	21.5	24.7 x 9.0	Ceramic LCC
SF0044BA01081T	44	6	28.5	35.1 x 20.6	DIP
SF0044BA02641S	44	6.5	11.5	13.3 x 6.5	Ceramic LCC
SF0044BA01931S	44	8	25.0	24.7 x 9.0	Ceramic LCC
SF0044BA01800T	44.05	5	29	38.7 x 25.7	DIP
SF0044BA01954T	44.1	10	26.5	38.7 x 25.7	DIP
SF0048BA02645S	48	3.5	12.5	13.3 x 6.5	Ceramic LCC
SF0048BA02455S	48	8	20.8	24.7 x 9.0	Ceramic LCC
SF0048BA02644S	48	10	13.5	13.3 x 6.5	Ceramic LCC
SF0060CN02289T	60	0.63	26.7	35.1 x 20.6	DIP
SF0060BA03212T	60	1.26	29.8	35.1 x 20.6	DIP
SF0060CN02290T	60	4.5	31.9	35.1 x 20.6	DIP
SD0060CN02270T	60	6	31	22.1 x 12.7	DIP
SF0060BA03213T	60	6.15	27.9	35.1 x 20.6	DIP
SF0060BA03214T	60	7.8	30.5	35.1 x 20.6	DIP
SF0060CN02291T	60	7.8	31.5	35.1 x 20.6	DIP
SF0063CN02271T	63	0.4	13.1	22.1 x 12.7	DIP
SF0063BA03106S	63	0.55	8.3	19 x 6.5	Ceramic LCC
SF0070CD03108T	69.99	0.8	17.5	73.2 x 20.0	DIP
SF0070CD02386S	69.99	1.26	17.0	24.7 x 9.0	Ceramic LCC
SF0070CD21803T	69.99	1.26	20.2	73.2 x 20.0	DIP
SF0070CF51541T	70	0.25	16	27.2 x 12.7	DIP
SF0070CN02353S	70	0.4	11.5	19 x 6.5	Ceramic LCC
SF0070BA13046S	70	0.5	9.0	13.3 x 6.5	Ceramic LCC
SF0070BA03046S	70	0.5	9.3	13.3 x 6.5	Ceramic LCC
SF0070CF51542T	70	0.5	20	22.1 x 12.7	DIP
SF0070CF51543T	70	0.7	18	27.2 x 12.7	DIP
SF0070CD03096T	70	0.75	18.5	27.2 x 12.7	DIP
SF0070BA03047S	70	1	7.5	19 x 6.5	Ceramic LCC
SF0070CF51544T	70	1	21.5	27.2 x 12.7	DIP
SF0070BA03048S	70	1.5	8.4	19 x 6.5	Ceramic LCC
SF0070BA13048S	70	1.5	9.2	13.3 x 6.5	Ceramic LCC
SF0070BA03049S	70	2	7.9	19 x 6.5	Ceramic LCC
SF0070CF51546T	70	2	24	22.1 x 12.7	DIP
SF0070BA03050S	70	2.5	9.7	19 x 6.5	Ceramic LCC
SF0070BA03027T	70	2.5	17	27.2 x 12.7	DIP
SF0070CF51547T	70	2.5	23	22.1 x 12.7	DIP
SF0070BA02391S	70	2.8	20.6	13.3 x 6.5	Ceramic LCC
SF0070BA03051S	70	3	6.3	13.3 x 6.5	Ceramic LCC
SF0070CF51548T	70	3	25.5	22.1 x 12.7	DIP

Part Number	Center Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	Package Size (mm)	Package Type
SF0070BA03052S	70	3.5	6.4	13.3 x 6.5	Ceramic LCC
SF0070CF51549T	70	3.5	24	22.1 x 12.7	DIP
SF0070MF03053S	70	4	7.1	13.3 x 6.5	Ceramic LCC
SF0070BA03053S	70	4	7.1	13.3 x 6.5	Ceramic LCC
SF0070CF51550T	70	4	21.5	22.1 x 12.7	DIP
SF0070BA03054S	70	4.5	7.2	13.3 x 6.5	Ceramic LCC
SF0070CF51551T	70	4.5	23	22.1 x 12.7	DIP
SF0070BA03055S	70	5	7.3	13.3 x 6.5	Ceramic LCC
SF0070CF51553T	70	5.5	24	22.1 x 12.7	DIP
SF0070BA03056S	70	6	8.5	13.3 x 6.5	Ceramic LCC
SF0070CF51554T	70	6	23.6	22.1 x 12.7	DIP
SF0070BA03057S	70	7	9.5	13.3 x 6.5	Ceramic LCC
SF0070CF51556T	70	7	20.3	22.1 x 12.7	DIP
SF0070BA03028S	70	8	10.5	13.3 x 6.5	Ceramic LCC
SF0070CF51557T	70	8	22.3	22.1 x 12.7	DIP
SF0070BA03031S	70	9	11.5	13.3 x 6.5	Ceramic LCC
SF0070BA03058S	70	10	10.0	13.3 x 6.5	Ceramic LCC
SF0070BA03089S	70	10	11.2	13.3 x 6.5	Ceramic LCC
SF0070CF51475T	70	10	25.8	22.1 x 12.7	DIP
SF0070BA03059S	70	12	11.5	13.3 x 6.5	Ceramic LCC
SF0070CF51842T	70	12	23.7	22.1 x 12.7	DIP
SF0070BA03060S	70	14	13.0	13.3 x 6.5	Ceramic LCC
SF0070BA03061S	70	16	13.0	13.3 x 6.5	Ceramic LCC
SF0070CF51846T	70	16	24.2	22.1 x 12.7	DIP
SF0070BA03062S	70	18	13.7	13.3 x 6.5	Ceramic LCC
SF0070BA03039S	70	20	14.2	13.3 x 6.5	Ceramic LCC
SF0070CF51848T	70	20	25.2	22.1 x 12.7	DIP
SF0070BA03063S	70	22	15.0	13.3 x 6.5	Ceramic LCC
SF0070BA03064S	70	24	15.8	13.3 x 6.5	Ceramic LCC
SF0070BA03065S	70	26	17.2	13.3 x 6.5	Ceramic LCC
SF0070CF51851T	70	26	22.4	22.1 x 12.7	DIP
SF0070BA03045S	70	28	18.2	13.3 x 6.5	Ceramic LCC
SF0070BA03066S	70	30	18.1	13.3 x 6.5	Ceramic LCC
SF0070CF51853T	70	30	22.5	22.1 x 12.7	DIP
SF0070CF51854T	70	32	23	22.1 x 12.7	DIP
SF0070BA02371S	70	34	18.5	13.3 x 6.5	Ceramic LCC
SF0070CF51855T	70	34	23.1	22.1 x 12.7	DIP
SF0070BA03042S	70	35	19.5	13.3 x 6.5	Ceramic LCC
SF0070BA02489S	70	35	24.2	13.3 x 6.5	Ceramic LCC
SF0070CF51856T	70	36	24.1	22.1 x 12.7	DIP
SF0070BA03067S	70	40	22.0	13.3 x 6.5	Ceramic LCC
SF0073BA01983S	72.5	20	16.0	13.3 x 6.5	Ceramic LCC
SF0073BA02447S	72.8	1	6.5	7.0 x 5.0	Ceramic LCC
SF0074BA03225S	73.728	4.5	10.8	13.3 x 6.5	Ceramic LCC
SF0077BA03082S	76.8	14.24	14.2	13.3 x 6.5	Ceramic LCC
SF0077BA02499S	76.8	20	16.2	13.3 x 6.5	Ceramic LCC
SF0077BA03000S	76.8	20	16.2	13.3 x 6.5	Ceramic LCC
SF0077BA03185S	76.8	40	21.4	13.3 x 6.5	Ceramic LCC
SF0077BA03192S	76.8	40	21.8	13.3 x 6.5	Ceramic LCC
SF0078BA03002S	77.8	3.84	12.0	13.3 x 6.5	Ceramic LCC
SF0078BA03111S	77.8	3.84	16.0	13.3 x 6.5	Ceramic LCC
SF0078BA03112S	77.8	9.24	10.1	13.3 x 6.5	Ceramic LCC
SF0078BA03113S	77.8	14.24	15.8	13.3 x 6.5	Ceramic LCC
SF0083BA03199S	82.944	4.5	11.3	13.3 x 6.5	Ceramic LCC
SF0088BA01993S	87.5	30	16.0	13.3 x 6.5	Ceramic LCC
SF0088BA02429S	88.5	1.25	19.5	15.9 x 6.5	Ceramic LCC
SF0088BA02430S	88.5	2.5	22.0	15.9 x 6.5	Ceramic LCC
SF0088BA02432S	88.5	3.65	23.9	15.9 x 6.5	Ceramic LCC
SF0092CD02326S	92.5	1.7	18.2	13.3 x 6.5	Ceramic LCC
SF0096BA02394S	96	4.8	23.5	19 x 6.5	Ceramic LCC
SF0096BA02438S	96	5	13.5	13.3 x 6.5	Ceramic LCC
SF0096BA02458S	96	20	11.3	7.0 x 5.0	Ceramic LCC
SF0096BA03001S	96	20	14.0	13.3 x 6.5	Ceramic LCC

SAW Filter Selection Guide *continued*

Part Number	Center Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	Package Size (mm)	Package Type
SF0108BA03228S	107.52	20	13.2	13.3 x 6.5	Ceramic LCC
SF0108BA03004S	107.6	3.84	13.5	13.3 x 6.5	Ceramic LCC
SF0111BA02639S	110.592	1.44	8.6	7.0 x 5.0	Ceramic LCC
SF0115CD02260T	115	1	17.2	22.1 x 12.7	DIP
SF0115CD01490T	115	1.4	23.5	25.0 x 13.0	DIP
SF0115BA03227S	115.2	3.84	9.8	7.0 x 5.0	Ceramic LCC
SF0115BA03088S	115.25	6	18.9	19 x 6.5	Ceramic LCC
SF0120BA03167S	120	42	14.7	7.0 x 5.0	Ceramic LCC
SF0126BA03086S	126	32	11.5	9.1 x 7.1	Ceramic LCC
SF0127CN02333S	127.5	20	19.8	24.7 x 9.0	Ceramic LCC
SF0130BA03030T	130	9	27	22.1 x 12.7	DIP
SF0130BA02247T	130	18	26.5	22.1 x 12.7	DIP
SF0137BA02305S	137.5	1	11.2	19 x 6.5	Ceramic LCC
SF0140CF51900T	140	0.25	19.5	27.2 x 12.7	DIP
SF0140CF51902T	140	0.75	20.7	27.2 x 12.7	DIP
SF0140CF51904T	140	1.5	23.5	27.2 x 12.7	DIP
SF0140CF51905T	140	2	22	22.1 x 12.7	DIP
SF0140BA02457S	140	2.2	12.0	13.3 x 6.5	Ceramic LCC
SF0140BA03147S	140	2.6	11.7	13.3 x 6.5	Ceramic LCC
SF0140CF51907T	140	3	24.2	22.1 x 12.7	DIP
SF0140BA03069S	140	4	7.2	13.3 x 6.5	Ceramic LCC
SF0140BA02450S	140	4	9.8	13.3 x 6.5	Ceramic LCC
SF0140BA03068S	140	4	12.0	13.3 x 6.5	Ceramic LCC
SF0140BA02433T	140	4.4	19.9	27.2 x 12.7	DIP
SF0140BA02359T	140	4.7	22.5	22.1 x 12.7	DIP
SF0140BA02449S	140	5	12.0	13.3 x 6.5	Ceramic LCC
SF0140BA02486S	140	5	20.5	24.7 x 9.0	Ceramic LCC
SF0140CF51913T	140	6	24	22.1 x 12.7	DIP
SF0140CF51915T	140	7	24	22.1 x 12.7	DIP
SF0140CF51917T	140	8	21.5	22.1 x 12.7	DIP
SF0140CF51919T	140	9	21.4	22.1 x 12.7	DIP
SF0140BA03173S	140	9.3	12.5	13.3 x 6.5	Ceramic LCC
SF0140BA03175S	140	9.3	12.5	13.3 x 6.5	Ceramic LCC
SF0140CD03085T	140	9.37	25.3	27.2 x 12.7	DIP
SF0140BA03107S	140	10	8.3	13.3 x 6.5	Ceramic LCC
SF0140BA03070S	140	10	10.2	13.3 x 6.5	Ceramic LCC
SF0140CF51921T	140	10	22	22.1 x 12.7	DIP
SF0140BA02487S	140	10	22.4	24.7 x 9.0	Ceramic LCC
SF0140BA03115S	140	12	7.3	13.3 x 6.5	Ceramic LCC
SF0140BA03071S	140	12	10.4	13.3 x 6.5	Ceramic LCC
SF0140BA03110S	140	14	8.4	13.3 x 6.5	Ceramic LCC
SF0140CF51925T	140	14	21	22.1 x 12.7	DIP
SF0140BA02434S	140	14.4	19.8	24.7 x 9.0	Ceramic LCC
SF0140BA02370S	140	14.5	20.0	13.3 x 6.5	Ceramic LCC
SF0140BA03114S	140	16	8.3	13.3 x 6.5	Ceramic LCC
SF0140BA03072S	140	16	9.6	13.3 x 6.5	Ceramic LCC
SF0140CF51927T	140	16	22	22.1 x 12.7	DIP
SF0140BA03073S	140	18	10.0	13.3 x 6.5	Ceramic LCC
SF0140BA02167S	140	19.3	16.0	13.3 x 6.5	Ceramic LCC
SF0140BA01992S	140	20	12.7	13.3 x 6.5	Ceramic LCC
SF0140BA02360T	140	20	24.2	22.1 x 12.7	Ceramic LCC
SF0140BA01990S	140	24	11.5	9.1 x 7.1	Ceramic LCC
SF0140CF51933T	140	24	24	22.1 x 12.7	DIP
SF0140CF51935T	140	28	24.8	22.1 x 12.7	DIP
SF0140BA03074S	140	32	11.8	13.3 x 6.5	Ceramic LCC
SF0140CF51937T	140	32	24	22.1 x 12.7	DIP
SF0140BA03008T	140	32	24.5	13.3 x 6.5	Ceramic LCC
SF0140BA01969T	140	41.5	23.5	22.1 x 12.7	DIP
SF0140CF51943T	140	44	23.5	22.1 x 12.7	DIP
SF0140BA03010T	140	64	28.5	22.1 x 12.7	DIP
SF0140BA02393S	140	72	22.5	13.3 x 6.5	Ceramic LCC
SF0141CD11968S	141	1.05	11.8	19 x 6.5	Ceramic LCC
SF0141CD03092S	141	1.25	11.7	19 x 6.5	Ceramic LCC

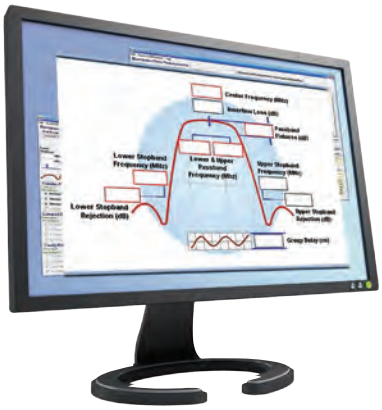
Part Number	Center Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	Package Size (mm)	Package Type
SF0147BA02468S	147	8	3.2	9.1 x 7.1	Ceramic LCC
SF0150BA03095S	150	5.7	19.3	13.3 x 6.5	Ceramic LCC
SF0154BA03191S	153.6	20	8.8	7.0 x 5.0	Ceramic LCC
SF0156BA02421S	156	9.4	20.6	13.3 x 6.5	Ceramic LCC
SF0156BA02422S	156	10	20.2	13.3 x 6.5	Ceramic LCC
SF0160CD02254T	160	4	23.3	22.1 x 12.7	DIP
SF0160BA02299S	160	9.5	19.0	13.3 x 6.5	Ceramic LCC
SF0160BA02329T	160	10	21.3	22.1 x 12.7	DIP
SF0160BA01961S	160	30	12.2	13.3 x 6.5	Ceramic LCC
SF0167CD02292T	167.1	1.05	18.2	73.2 x 20.0	DIP
SF0169BA03169S	168.5	20	9.2	5.0 x 5.0	Ceramic LCC
SF0172CD03076S	172.8	9	11.0	7.0 x 5.0	Ceramic LCC
SF0185BA02302S	185.76	4.5	25.0	9.1 x 7.1	Ceramic LCC
SF0190CD01937S	190	4	11.0	13.3 x 6.5	Ceramic LCC
SF0190BA03154S	190	8	12.9	13.3 x 6.5	Ceramic LCC
SF0199CD02382S	199	0.2	7.0	9.1 x 7.1	Ceramic LCC
SF0239CD03100S	238.5	10	11.5	7.0 x 5.0	Ceramic LCC
SF0240CD21956S	240	1.1	14.0	19 x 6.5	Ceramic LCC
SF0240CD03109S	240	1.23	12.7	24.7 x 9.0	Ceramic LCC
SF0240BA03142S	240	1.55	17.2	13.3 x 6.5	Ceramic LCC
SF0240BA03143S	240	4.8	15.5	13.3 x 6.5	Ceramic LCC
SF0240BA03144S	240	5.7	17.1	13.3 x 6.5	Ceramic LCC
SF0240BA03145S	240	6.7	17.9	13.3 x 6.5	Ceramic LCC
SF0240BA03146S	240	7.6	18.6	13.3 x 6.5	Ceramic LCC
SF0240BA01987S	240	14	7.7	7.0 x 5.0	Ceramic LCC
SF0242BA03188S	242	1.55	17.5	13.3 x 6.5	Ceramic LCC
SF0244CN03098S	243.85	0.3	3.8	11.4 x 3.8	Ceramic LCC
SF0246BA02631S	246	0.2	5.4	7.0 x 5.0	Ceramic LCC
SF0250BA03189S	249.6	5	8.6	9.1 x 4.8	Ceramic LCC
SF0250BA03223S	249.6	10	10.8	9.1 x 4.8	Ceramic LCC
SF0250BA02425S	250	80	19.4	5.0 x 5.0	Ceramic LCC
SF0256BA03148S	256	80	20.8	5.0 x 5.0	Ceramic LCC
SF0258BA02488S	257.5	35	21.4	13.3 x 6.5	Ceramic LCC
SF0266CN02358S	266.66	0.27	6.2	7.0 x 5.0	Ceramic LCC
SF0280BA01984S	280	17	8.6	5.0 x 5.0	Ceramic LCC
SF0300BA01973S	300	3.2	15.0	13.3 x 6.5	Ceramic LCC
SF0300BA02466S	300	6.8	10.9	7.0 x 5.0	Ceramic LCC
SF0300BA02467S	300	20	7.6	7.0 x 5.0	Ceramic LCC
SF0307BA03149S	307.2	80	20.9	5.0 x 5.0	Ceramic LCC
SF0325BA02646S	325	6.7	18.6	7.0 x 5.0	Ceramic LCC
SF0325BA02642S	325	10	8.5	7.0 x 5.0	Ceramic LCC
SF0325BA02633S	325	12	12.8	7.0 x 5.0	Ceramic LCC
SF0326BA03198S	326.4	10	8.2	7.0 x 5.0	Ceramic LCC
SF0326CD21924S	326.4	15	15.5	7.0 x 5.0	Ceramic LCC
SF0350CD03091S	350	1.6	14.4	13.3 x 6.5	Ceramic LCC
SF0350CD03102S	350	2.6	14.0	13.3 x 6.5	Ceramic LCC
SF0350BA03152S	350	5	13.2	7.0 x 5.0	Ceramic LCC
SF0380BA02442S	380	2.5	9.4	7.0 x 5.0	Ceramic LCC
SF0380BA02443S	380	3.7	10.5	7.0 x 5.0	Ceramic LCC
SF0400BA02520S	400	0.3	4.2	5.0 x 5.0	Ceramic LCC
SF0400BA02375S	400	55	22.0	9.1 x 7.1	Ceramic LCC
SF0426BA12365S	426	4.9	18.3	13.3 x 6.5	Ceramic LCC
SF0426BA02365S	426	4.9	18.3	13.3 x 6.5	Ceramic LCC
SF0426CN02357S	426	5.16	20.5	13.3 x 6.5	Ceramic LCC
SF0426BA02436S	426	6.4	21.0	13.3 x 6.5	Ceramic LCC
SF0426BA03153S	426	9.2	21.3	13.3 x 6.5	Ceramic LCC
SF0430BA02508S	430	4	4.0	3.8 x 3.8	Ceramic LCC
SF0433BA02629S	433	20	1.4	3.8 x 3.8	Ceramic LCC
SF0434BA02617S	433.92	2	2	3.0 x 3.0	Ceramic LCC
SF0434BA02587S	433.92	7	1.9	3.8 x 3.8	Ceramic LCC
SF0434BA02507S	434	11	2.5	3.8 x 3.8	Ceramic LCC
SF0455BA03134S	455	30	2.2	5.0 x 5.0	Ceramic LCC
SF0456BA02444S	456	2.5	10.0	7.0 x 5.0	Ceramic LCC

| Custom Solutions |

Whether it is a custom SAW Filter, or an integrated solution involving our SAW Oscillator, BAW Filter or Delay Line technologies, API engineers specialize in solutions which meet customer specifications and exceed their expectations.

Application Engineering

Customer Care is pinnacle to award winning customer service. Our team of dedicated application engineers are here to address all your customized SAW filter questions and application needs.



Web Based Tools

To make it easier for customers to relay their specifications to an API applications engineer, our web based tools give customers the ability to transfer their unique requirements and receive a response the next business day.

Engineering Custom Solutions

Our team of experienced RF engineers customize high-performance SAW filter solutions to meet even the most challenging requirements. Using sophisticated software design tools, our engineers can quickly respond to a customer's unique requirements with both simulations and package suggestions.

Prototyping for Custom SAW Filters

API's engineers simulate new custom designs then construct prototypes of the proposed filter, optimizing certain characteristics while reducing lead time.

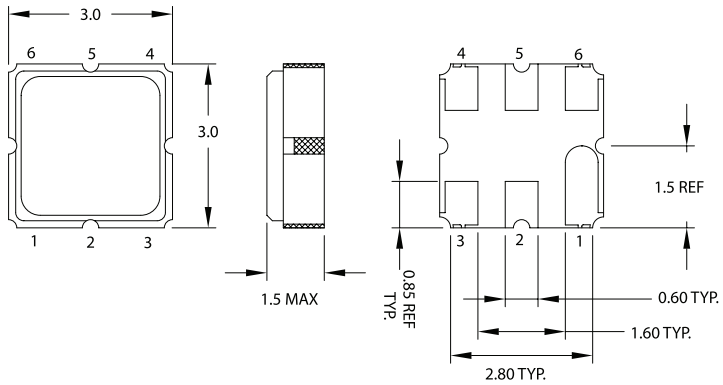
SAW Filter Selection Guide *continued*

Part Number	Center Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	Package Size (mm)	Package Type
SF0456BA02445S	456	3.7	9.0	7.0 x 5.0	Ceramic LCC
SF0464BA02647S	464	5.68	15.5	7.0 x 5.0	Ceramic LCC
SF0465BA02509S	465	6	3.5	3.8 x 3.8	Ceramic LCC
SF0480BA02643S	480	12	15.3	7.0 x 5.0	Ceramic LCC
SF0480CF01977S	480	70	24.0	9.1 x 7.1	Ceramic LCC
SF0500BA03232S	500	1	11.0	9.1 x 7.1	Ceramic LCC
SF0546BA03234S	546	70	23.8	9.1 x 7.1	Ceramic LCC
SF0550BA01964S	549.5	1	8.6	9.1 x 7.1	Ceramic LCC
SF0550BA03156S	550	26	4.3	3.8 x 3.8	Ceramic LCC
SF0570BA03233S	570	17	18.7	7.0 x 5.0	Ceramic LCC
SF0576BA03159S	576	26	4.1	3.8 x 3.8	Ceramic LCC
SF0600BA03183S	600	80	22.0	5.0 x 5.0	Ceramic LCC
SF0601BA03160S	601	26	4.2	3.8 x 3.8	Ceramic LCC
SF0627BA03161S	627	26	4.2	3.8 x 3.8	Ceramic LCC
SF0653BA03162S	653	26	4.2	3.8 x 3.8	Ceramic LCC
SF0678BA03157S	678	26	4.0	3.8 x 3.8	Ceramic LCC
SD0696BA03217S	696.42	1.4	6.9	7.0 x 5.0	Ceramic LCC
SF0704BA03163S	704	26	4.0	3.8 x 3.8	Ceramic LCC
SF0730BA03164S	730	26	4.0	3.8 x 3.8	Ceramic LCC
SF0755BA03158S	755	26	4.1	3.8 x 3.8	Ceramic LCC
SF0836BA02527S	836.5	25	2.1	3.0 x 3.0	Ceramic LCC
SF0836BA02513S	836.5	35	2.5	3.0 x 3.0	Ceramic LCC
SF0850DL01825T	850	80	24	22.1 x 12.7	DIP
SF0864BA02510S	864	3	2.8	3.8 x 3.8	Ceramic LCC
SF0864BA02511S	864	3	4.0	3.0 x 3.0	Ceramic LCC
SF0866BA02621S	866	19	2.7	3.0 x 3.0	Ceramic LCC
SF0868BA02655S	868	1.6	3.4	3.8 x 3.8	Ceramic LCC
SF0868BA02512S	868	12	3.8	3.8 x 3.8	Ceramic LCC
SF0869BA02618S	869	2	3	3.0 x 3.0	Ceramic LCC
SF0869BA02503S	869	2	3.0	3.8 x 3.8	Ceramic LCC
SF0869BA02656S	869	6	5.9	3.0 x 3.0	Ceramic LCC
SF0869BA02588S	869	11	2.8	3.0 x 3.0	Ceramic LCC
SF0869BA02504S	869	12	3.0	3.0 x 3.0	Ceramic LCC
SF0869BA02630S	869	12.5	2.6	3.8 x 3.8	Ceramic LCC
SF0881DL02211S	881.5	25	21.2	13.3 x 6.5	Ceramic LCC
SF0881BA02514S	881.5	33	3.0	3.0 x 3.0	Ceramic LCC
SF0898BA02546S	897.5	40	2.1	3.0 x 3.0	Ceramic LCC
SF0903BA02593S	902.5	25	2.9	3.0 x 3.0	Ceramic LCC
SF0915BA02620S	914.5	16	2.8	3.8 x 3.8	Ceramic LCC
SF0915BA02531S	915	26	2.2	2.5 x 2.0	Ceramic LCC
SF0915BA02502S	915	26	2.8	3.0 x 3.0	Ceramic LCC
SF0915BA02501S	915	37	2.8	3.8 x 3.8	Ceramic LCC
SF0915BA03171S	915.3	21.8	2.8	3.8 x 3.8	Ceramic LCC
SF0943BA02541S	942.5	35	2.8	3.0 x 3.0	Ceramic LCC
SF0943BA02515S	942.5	35	3.8	3.0 x 3.0	Ceramic LCC
SF0948BA02589S	947.5	25	2.4	3.0 x 3.0	Ceramic LCC
SF0948BA02516S	947.5	25	2.8	3.0 x 3.0	Ceramic LCC
SF0948BA03155S	948	8	3.1	3.8 x 3.8	Ceramic LCC
SF1216BA02526S	1216	8	3.8	3.0 x 3.0	Ceramic LCC
SF1220BA02539S	1220	3.4	3.4	3.0 x 3.0	Ceramic LCC
SF1220BA02521S	1220	8	4.6	3.8 x 3.8	Ceramic LCC
SF1500BA03201S	1500	6	3.9	3.8 x 3.8	Ceramic LCC
SF1575BA02505S	1575	2.4	1.3	3.0 x 3.0	Ceramic LCC
SF1575DL03104S	1575	20	19.3	5.0 x 5.0	Ceramic LCC
SF1575BA02506S	1575.4	55	1.5	2.5 x 2.0	Ceramic LCC
SF1575BA02634S	1575.42	35	1.7	1.4 X 1.1	Ceramic LCC
SF1575BA02532S	1575.42	35	2.7	2.5 x 2.0	Ceramic LCC
SF1575BA02627S	1575.42	43	1.2	1.4 x 1.1	Ceramic LCC
SF1575BA02534S	1575.42	50	1.5	2.0 X 1.6	Ceramic LCC
SF1843BA02675S	1842.5	75	2.2	3.0 x 3.0	Ceramic LCC
SF1843BA02590S	1842.5	75	2.2	3.0 x 3.0	Ceramic LCC
SF1843BA02598S	1842.5	75	2.2	3.0 x 3.0	Ceramic LCC
SF1843BA02542S	1842.5	75	2.9	2.5 x 2.0	Ceramic LCC
SF1880BA02524S	1880	60	2.45	3.0 x 3.0	Ceramic LCC
SF1960BA02525S	1960	60	2.3	3.0 x 3.0	Ceramic LCC
SF1960BA03204S	1960	60	39.7	3.0 x 3.0	Ceramic LCC
SF2133BA02661S	2132.5	45	2.4	3.0 x 3.0	Ceramic LCC
SF2140BA02540S	2140	60	2.4	2.5 x 2.0	Ceramic LCC
SF2442BA02648S	2441.8	120.5	2.1	3.0 x 3.0	Ceramic LCC

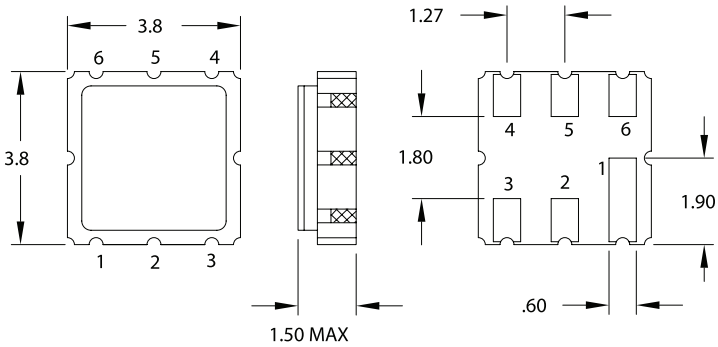
API, a leader in SAW filter technology, maintains that role by providing cutting edge SAW filters to commercial markets including:

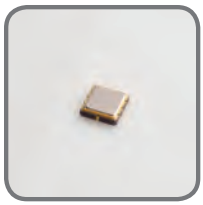
- ✓ GPS
- ✓ ISM
- ✓ VSB
- ✓ WiMax
- ✓ BTS
- ✓ WLAN
- ✓ DECT
- ✓ CDMA

3 x 3 mm
Ceramic LCC Surface Mount

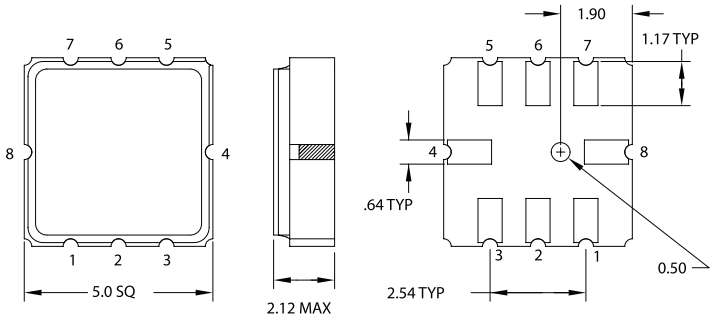


3.8 x 3.8 mm
Ceramic LCC Surface Mount

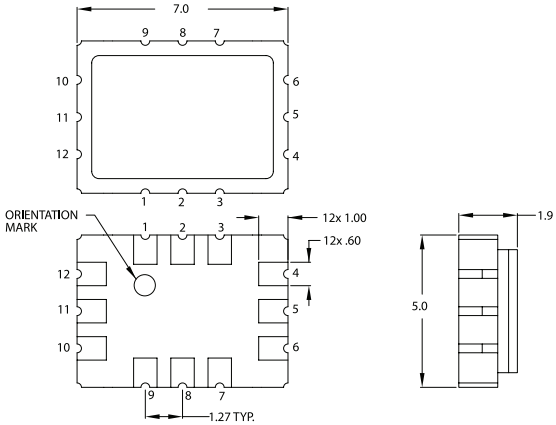




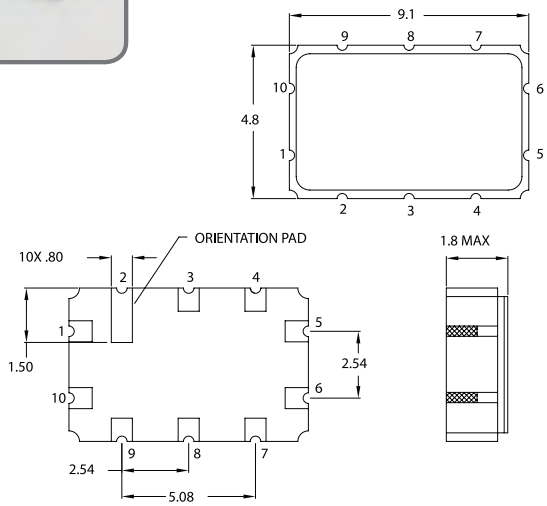
5 x 5 mm
Ceramic LCC Surface Mount

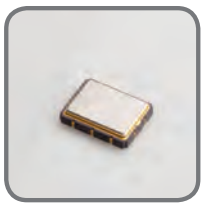


7 x 5 mm
Ceramic LCC Surface Mount

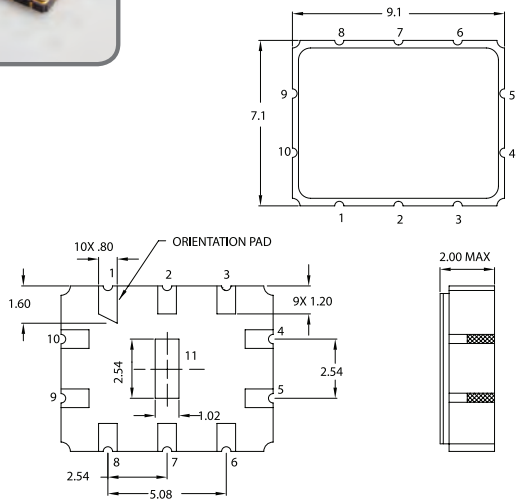


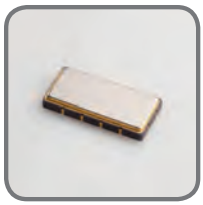
9.1 x 4.8 mm
Ceramic LCC Surface Mount



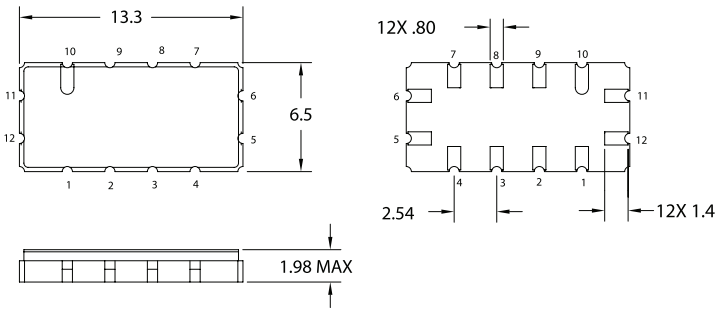


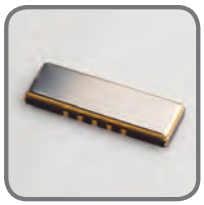
9.1 x 7.1 mm
Ceramic LCC Surface Mount



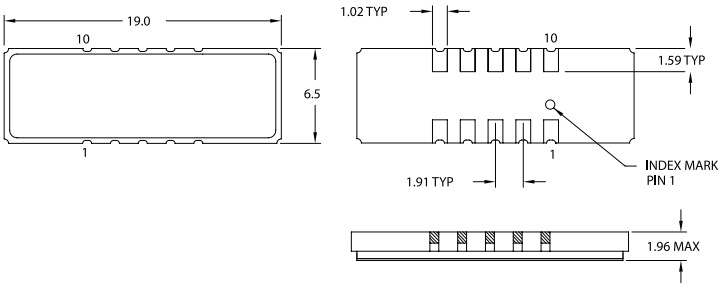


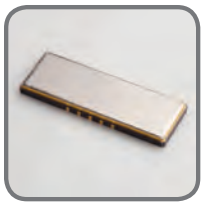
13.3 x 6.5 mm
Ceramic LCC Surface Mount



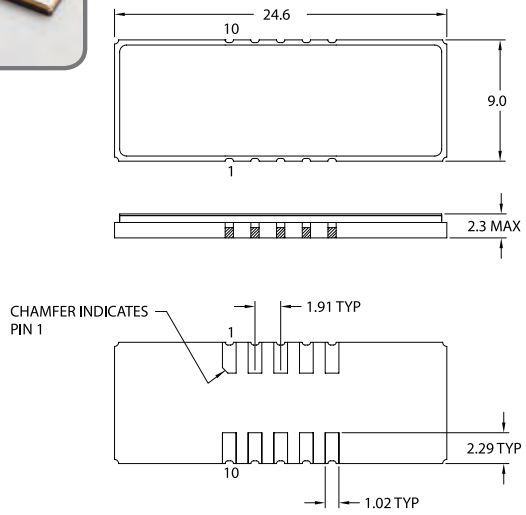


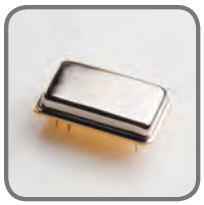
19 x 6.5 mm
Ceramic LCC Surface Mount



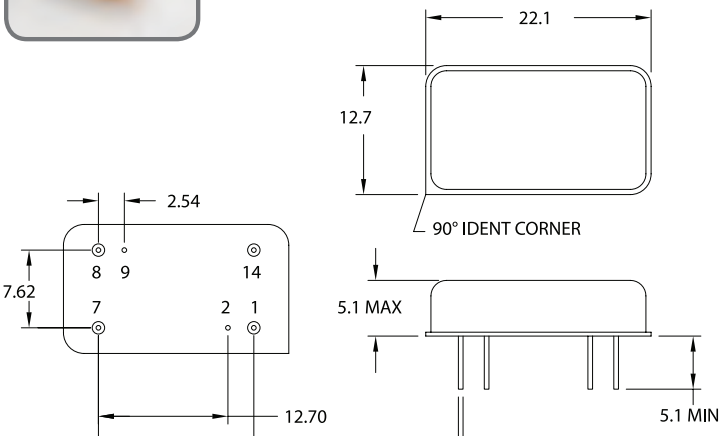


24.6 x 9 mm
Ceramic LCC Surface Mount

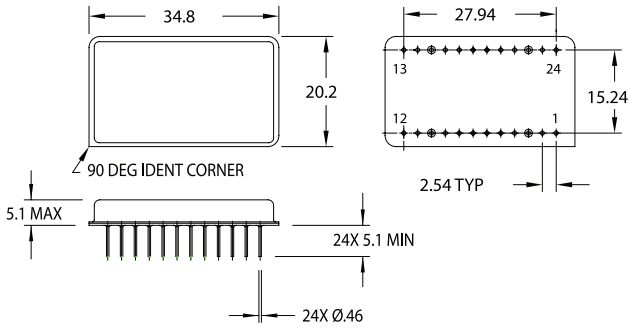


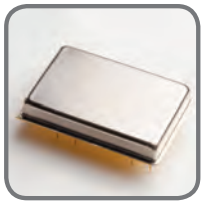


22.1 x 12.7 mm DIP

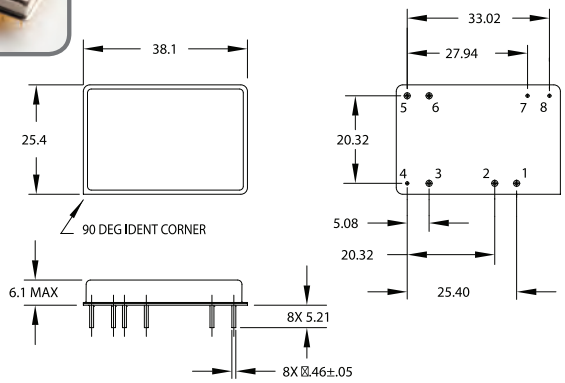


34.8 x 20.2 mm DIP





38.1 x 25.4 mm DIP



Popular Package Outlines

Please see individual datasheet for pin-out configuration

All dimensions are in mm

API Technologies
Design & Development Process

1

Knowledgeable Customer Service Professionals

Teamwork takes center stage with our business philosophy. Every territory teams up an outside regional manager with an inside sales associate. Together, their job is to provide timely quotations, order status and any special requests during and after the sale of the product.

API Technologies' careful adherence to ISO controlled standard processes guarantees that from conception to design development and into production and final inspection that an API team member is providing the proper oversight and monitoring at each stage in the process.

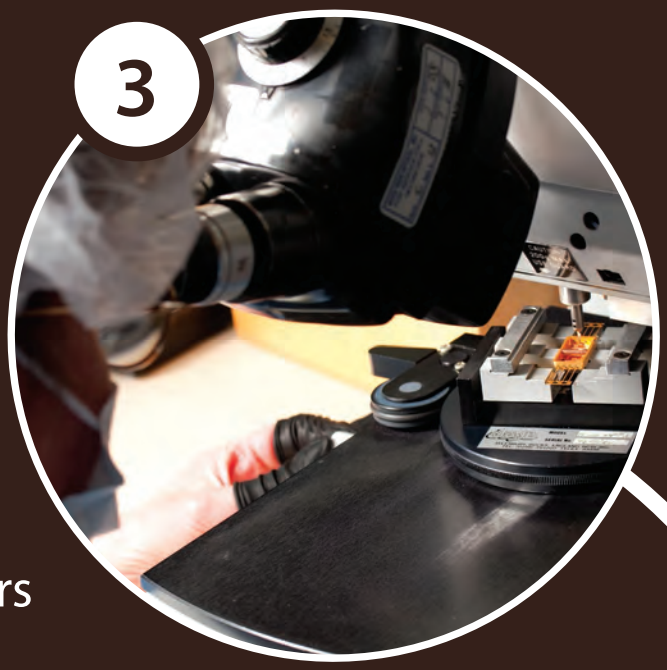
Quality Assurance

- Product screening and qualification to test methods of MIL-STD-883
- ISO 9001:2001 and AS9100-B Registered
- Screening available to the test methods of MIL-STD-883, MIL-STD-202 and MIL-STD-810
- API Technologies performs 100% on-wafer probe testing for every SAW die
- This extra step provides superior yield rates and eliminates time wasting re-work effort

2

Talented Engineers

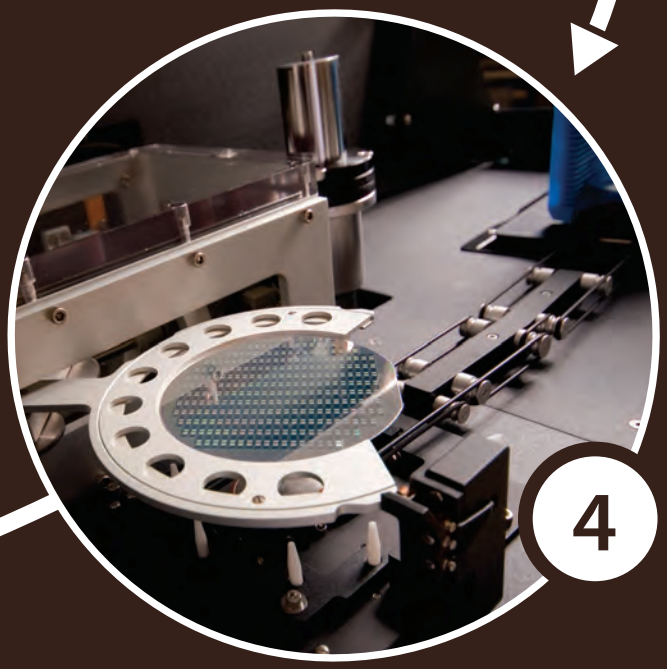
The core of our business is designing SAW Filter solutions for our microwave customers. With a staff of talented SAW filter engineers at your service, it is no wonder the RFindustry's engineers turn to API Technologies for their high performance SAW filter requirements.



3

Rapid Prototyping

API Technologies' engineers simulate new designs then construct prototypes of the proposed filter, optimizing certain characteristics while reducing lead time. State-of-the-art tools such as, Cadence Allegro, SolidWorks, AutoCAD, and our own proprietary in-house software guide the decision making processes.



4

State-of-the-Art Production

- ✓ Class 100 Clean Rooms
- ✓ Critical Dimension tolerances to +/- 0.05 µm
- ✓ Stepper Lithography line widths to 0.35 µm
- ✓ 8,000 SAW die per hour throughput rates

5

For more information please call us at

888.879.4099

| Design Resources |

micro.apitech.com

API Technologies' website features complete information on all standard products with updated versions of more than 900 product datasheets. API's customers enjoy FREE engineering tools, tours, application notes, white papers, and the ability to create a custom designed product per individual specifications.

Cascade Design Suite

With over 750 datasheets on API Technologies' Amplifiers, Mixers, Oscillators & Control Products, this CD also offers the industry's best manufacturer's cross reference. The System Simulator lets you optimize your design by viewing an individual component's contribution to overall system performance. You can also quickly evaluate trade-offs in component selection and their impact on system performance (e.g. Gain, Noise, P1dB, IP3, Dynamic Range,.....)

api technologies corp.

API Technologies Corp. is a trusted provider of RF/microwave, microelectronics, and security solutions for critical and high-reliability applications. The company designs, develops and manufactures electronic components, modules, systems and products for technically demanding defense, commercial/industrial and aerospace applications. API Technologies' customers include many leading Fortune 500 companies, as well as a majority of NATO governments. While API was founded in 1981, our heritage brands have served the demanding, hi-rel marketplace for more than 60 years. API Technologies trades on the NASDAQ under the symbol ATNY.

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