MAST TECHNOLOGIES

RF Absorbers | Microwave Absorbers | EMI Shielding Elastomers | High Temperature Coatings | Specialty Caulks | Customized Inks

innovative materials for
integrated solutions

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RF Absorbers
Microwave Absorbers
EMI Shielding Elastomers
High Temperature Coatings
Potting Compounds
Specialty Caulks
Customized Inks

MAST Technologies is a global innovator and manufacturer of RF and microwave absorbing materials, EMI solutions, and high temperature coatings. MAST is a customer driven organization that prides itself on the ability to offer prompt and effective solutions from product selection through post sale support. MAST Technologies' products are used by many of the world's largest OEMs in industries from consumer electronics, military vehicles, military electronics, automotive, telecommunications, space, instrumentation, wireless communication, and medical devices.

Demonstrating MAST Technologies' commitment to innovation and new product development, MAST has been the recipient of multiple Small Business Innovation and Research (SBIR) contracts, and is proud to have brought the developed products to market. MAST Technologies was founded on the principles of providing best in class service with the highest quality products at prices that every customer can afford.

CUSTOMER COMMITMENT

MAST Technologies is unequivocally dedicated to the pursuit of one hundred percent customer satisfaction. Our goal is to continue to impress from our first interactions with a customer's design, to prototyping, production, and post sale support. MAST Technologies is committed to prompt delivery of quotations, samples, and orders, commonly within 24 hours.

ENGINEERING SUPPORT

MAST Technologies is committed to providing a cost effective high performance solution. Engineering resources are always made available for customers to utilize whether it is simply for material selection or new product development.

CUSTOMIZATION

MAST Technologies prides itself on being a low cost leader in custom die cutting, kiss cutting, and fabricating products into ship-sets or kits. MAST Technologies also offers material "tuning", wherein a material is optimized for a specific customer frequency, for little or no charge.

SAMPLE KITS

ORDER YOUR FREE SAMPLE KIT TODAY!

MAST Technologies also offers a FREE sample kit program, where customers may evaluate several material options completely free of charge.

ORDER YOUR FREE SAMPLE KIT TODAY!

Please contact a MAST Technologies representative via email at: **sales@masttechnologies.com** or by completing our quick and easy Sample Kit Request Form at: **www.masttechnologies.com**

RF ABSORBERS

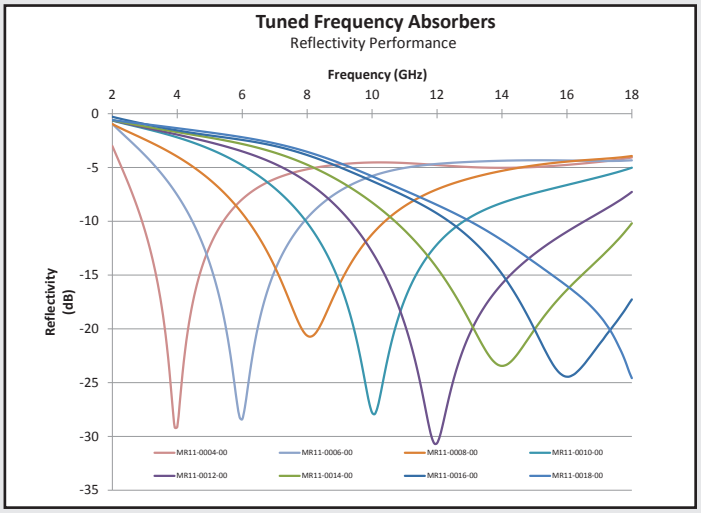
Tuned Frequency Absorbers (MR1 Series)

Tuned Frequency Absorbers, also known as resonant frequency absorbers, provide great reflection loss at a discrete frequency, typically offering 20dB of attenuation in a thin elastomeric solution.

MAST Engineers can tune an absorber to any frequency from 1 to 100 GHz, by simply changing the formulation and thickness.

Performance Specifications			
Thicknesses:	0.010" to 0.150"	Operating Temp (°F):	-60 to 375
RoHS Compliant:	Yes	Sheet Sizes:	12"x12", 24"x24"
UL94-V0 Rated:	Yes	PSA Available:	Standard with -01 suffix

Part Number	Frequency (GHz)	Thickness (in)	Part Number	Frequency (GHz)	Thickness (in)
MR11-0001-00	1.0	0.135	MR11-0010-00	10.0	0.065
MR11-0002-00	2.0	0.128	MR11-0011-00	11.0	0.060
MR11-0003-00	3.0	0.095	MR11-0012-00	12.0	0.056
MR11-0004-00	4.0	0.078	MR11-0013-00	13.0	0.051
MR11-0005-00	5.0	0.081	MR11-0014-00	14.0	0.047
MR11-0006-00	6.0	0.070	MR11-0015-00	15.0	0.045
MR11-0007-00	7.0	0.062	MR11-0016-00	16.0	0.043
MR11-0008-00	8.0	0.053	MR11-0017-00	17.0	0.041
MR11-0009-00	9.0	0.072	MR11-0018-00	18.0	0.040

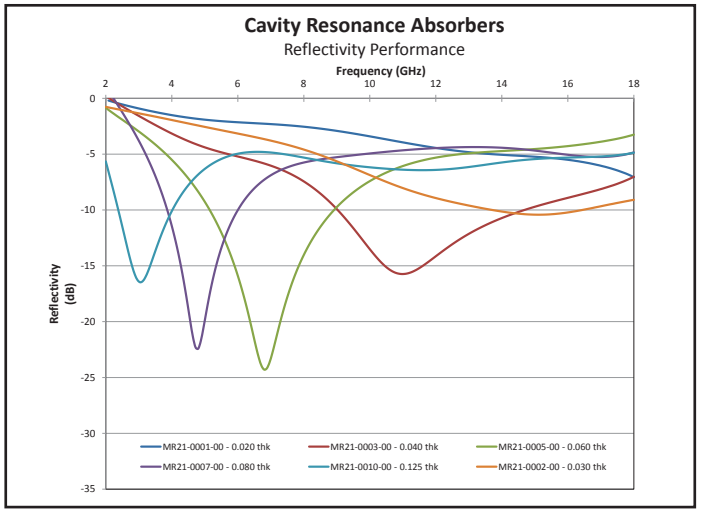


Cavity Resonance Absorbers (MR2 Series)

Cavity Resonance Absorbers are designed to exhibit high loss and are intended to be applied to metal surfaces inside microwave cavities to reduce the Q of the cavity. Cavity Resonance Absorbers attenuate energy at normal and high angles of incidence at frequencies from 1 GHz to 40 GHz.

Performance Specifications			
Thicknesses:	0.010" to 0.150"	Operating Temp (°F):	-60 to 375
RoHS Compliant:	Yes	Sheet Sizes:	12"x12", 24"x24"
UL94-V0 Rated:	Yes	PSA Available:	Standard with -01 suffix

Part Number	Frequency (GHz)	Thickness (in)	Part Number	Frequency (GHz)	Thickness (in)
MR21-0012-00	16-26	0.010	MR21-0006-00	4-7	0.070
MR21-0001-00	14-18	0.020	MR21-0007-00	3-7	0.080
MR21-0002-00	13-17	0.030	MR21-0008-00	2-5	0.090
MR21-0003-00	9-14	0.040	MR21-0009-00	2-5	0.100
MR21-0004-00	6-11	0.050	MR21-0010-00	1-3	0.125
MR21-0005-00	5-9	0.060			

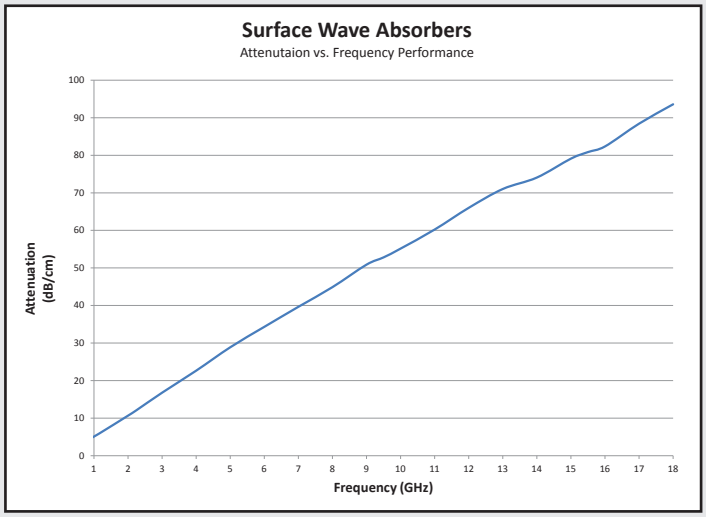


Surface Wave Absorbers (MR3 Series)

Surface Wave Absorbers are designed to exhibit the highest loss and are intended to be applied to metal surfaces for traveling or surface wave attenuation. Surface Wave Absorbers attenuate traveling wave energy at frequencies from 1 GHz to 40 GHz.

Performance Specifications			
Thicknesses:	0.010" to 0.150"	Operating Temp (°F):	-60 to 375
RoHS Compliant:	Yes	Sheet Sizes:	12"x12", 24"x24"
UL94-V0 Rated:	Yes	PSA Available:	Standard with -01 suffix

Part Number	Frequency (GHz)	Thickness (in)	Part Number	Frequency (GHz)	Thickness (in)
MR31-0001-00	14-18	0.020	MR31-0006-00	3-6	0.070
MR31-0002-00	10-14	0.030	MR31-0007-00	3-6	0.080
MR31-0003-00	8-12	0.040	MR31-0008-00	2-4	0.090
MR31-0004-00	5-8	0.050	MR31-0009-00	2-4	0.100
MR31-0005-00	4-7	0.060	MR31-0010-00	1-3	0.125



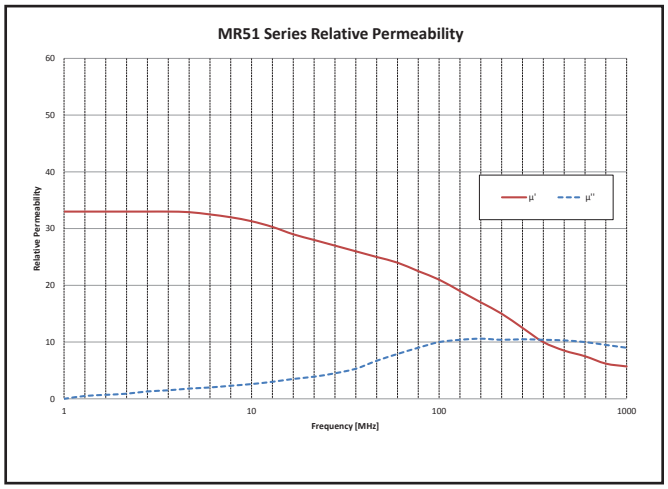
RF ABSORBERS

Low Frequency Absorbers (MR5 Series)

MAST Technologies' Low Frequency EMI Absorber product series is a magnetically loaded sheet stock having high loss at sub-microwave frequencies. Low Frequency Absorbers are designed with shaped magnetic particles that exhibit high permeability at frequencies from 500 MHz to 4 GHz. The Low Frequency Absorber product line is the thinnest of the MR series products, with standard thicknesses of 0.006", 0.010" and 0.020"; other thicknesses and configurations are also available.

Part Number	Frequency (GHz)	Thickness (in)
MR51-0001-00	0.5 - 4.0	0.006
MR51-0002-00	0.5 - 4.0	0.020
MR51-0003-00	0.5 - 4.0	0.010

Performance Specifications			
Thicknesses:	0.006" to 0.040"	Operating Temp (°F):	-60 to 250
RoHS Compliant:	Yes	Sheet Sizes:	12"x12", 12"x24"
UL94-V0 Rated:	Yes	PSA Available:	Standard with -02 suffix

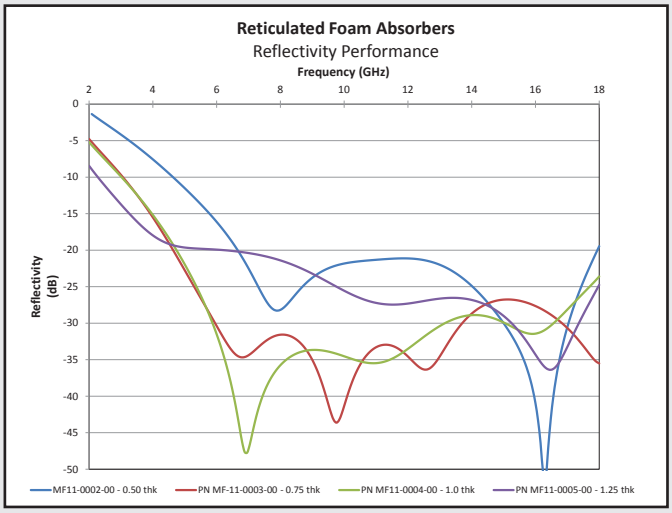


Reticulated Foam Absorbers (MF1 Series)

MAST Technologies' Reticulated Foam Absorber product series is a light-weight conductive carbon loaded sheet stock providing broadband loss at microwave frequencies. Reticulated Foam Absorbers are designed with a continuous gradient coating to exhibit high reflection loss and are in-tended to be applied to metal surfaces inside microwave cavities, housings, radomes, network enclosures, or antennae. Reticulated Foam Absorbers attenuate energy at normal and high angles of incidence at frequencies from 1 GHz to 100 GHz.

Part Number	Frequency (GHz)	Thickness (in)
MF11-0002-00	8-40	0.500
MF11-0003-00	6-40	0.750
MF11-0004-00	5-40	1.000
MF11-0005-00	4-40	1.250

Performance Specifications			
Thicknesses:	0.375" – 2.5"	Operating Temp (°F):	-60 to 250
RoHS Compliant:	Yes	Sheet Sizes:	24"x24"
UL94-V0 Rated:	No	PSA Available:	Standard with -01 suffix

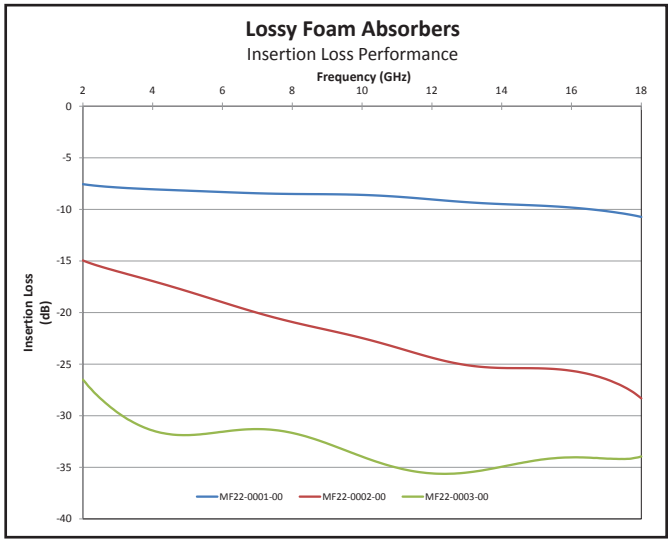


Lossy Foam Absorbers (MF2 Series)

MAST Technologies' Lossy Foam Absorber product series is a lightweight conductive carbon impregnated sheet stock providing broadband insertion loss at microwave frequencies. Lossy Foam Absorbers are designed with a constant coating to exhibit high insertion loss. Lossy Foam absorbers are the lowest cost solution for attenuating energy at frequencies from 1 GHz to 100 GHz.

Part Number	Frequency (GHz)	Thickness (in)
MF22-0001-00	10-18	0.125
MF22-0002-00	6-18	0.250
MF22-0003-00	2-18	0.500

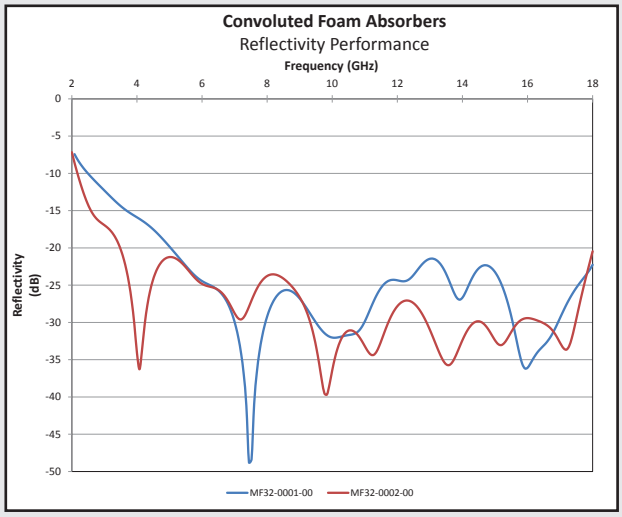
Performance Specifications			
Thicknesses:	0.125" – 2.0"	Operating Temp (°F):	-60 to 250
RoHS Compliant:	Yes	Sheet Sizes:	24"x24"
UL94-V0 Rated:	No	PSA Available:	Standard with -01 suffix



SPECIALTY ABSORBING MATERIALS

Convoluted Foam Absorbers (MF3 Series)

MAST Technologies' Convoluted Foam Absorber product series is a lightweight conductive carbon impregnated sheet stock providing broadband reflection loss at microwave frequencies. Due to the shape of the cones on Convoluted Foam Absorbers, they exhibit high reflection loss and are intended to be applied to metal surfaces inside test boxes, housings, radomes, network enclosures, or antennae. Convoluted Foam Absorbers attenuate energy at normal and high angles of incidence at frequencies from 1 GHz to 100 GHz.



Part Number	Frequency (GHz)	Thickness (in)
MF32-0001-00	10-100	1.500
MF32-0003-00	4-40	3.000

Performance Specifications			
Thicknesses:	1.5" – 4.0"	Operating Temp (°F):	-60 to 250
RoHS Compliant:	Yes	Sheet Sizes:	24"x24"
UL94-V0 Rated:	N	PSA Available:	Standard with -01 suffix

Absorber Compounds (MC10 Series)

MAST Technologies' absorptive compounds are magnetically loaded RF absorber / microwave absorber materials fabricated to be electrically equivalent to the MAST Technologies MR2 Cavity Resonance sheet products, or can be custom tailored to a specific electrical performance. The materials can be manufactured using one or two part systems in a variety of viscosities. Absorber caulk can be used for proto-typing and test, or in production via automated dispensing systems.

Typical Applications:
- Potting Compound
- Electrical Encapsulant
- Form-In-Place
- Caulk
- Sheet Seams

Product Packages:
- SEM-Kits: 1.5, 2.5, 6, 8 oz.
- Quart
- Gallon
- 5 gal Pail

Part Number	Frequency (GHz)
MC10-0014-03	-20 dB @ 6 GHz (0.070")
MC10-0018-03	-20 dB @ 10 GHz (0.065")

Electrically Resistive Compounds (MC10 Series)

MAST Technologies' suite of resistive caulk and ink materials can meet a variety of demanding electrical and environmental specifications. MAST utilizes resistive fillers to achieve specific surface or volume resistivities in a variety of different binder types and viscosities. MAST Technologies has standard off the shelf products but specializes in customizing these materials for targeted applications, levels of resistivity, and environmental conditions.

Part Number	Compound Type	Resin Type	Volume Resistivity (Ω-cm)
MC10-0016-01	Caulk	Silicone	25
MC10-0017-01	Caulk	Silicone	50
MT-3 Series	Water Based Ink	Latex	100-1000
MT-10 Series	Ink	Phenolic	200-1000
MTL-21 Series	Water-Based Ink	Phenolic	200-1000
MT-29 Series	Ink	Polyimide	200-1000

Typical Applications:
- Concealment
- Sprayable Paint
- Caulk
- RF Components
- Resistive Ink

Product Packages:
- SEM-Kits: 1.5, 2.5, 6, 8 oz.
- Quart
- Gallon
- 5 gal Pail
- 30 gal Drum

EMI SHIELDING SOLUTIONS

MAST-O-Shield™ Conductive Elastomers (ME1 Series)

MAST Technologies' MAST-O-Shield™ solid silicone elastomers are specially impregnated with electrically conductive fillers to provide shielding against electromagnetic interference (EMI). These silicone based elastomers offer EMI shielding for extended time and temperature exposure applications while resisting compression set. The nickel graphite impregnated materials offer a moderate cost shielding material that provides excellent shielding effectiveness for aluminum and stainless steel housing gaskets. These materials are available in sheet stock, die-cut, or custom molded forms.

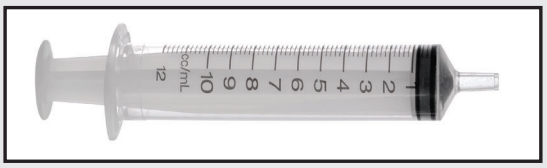
Typical Properties by Compound

	Test Method	SNiG45	SNiG55	SNiG65
Elastomer Type		Silicone	Silicone	Silicone
Conductive Filler		Nickel/Graphite	Nickel/Graphite	Nickel/Graphite
Sheet Thickness (in)		0.020 – 0.125	0.020 – 0.125	0.020 – 0.125
Volume Resistivity (ohm-cm max)	ASTM D991	0.1	0.1	0.1
Hardness (Shore A)	ASTM D2240	45 ±7	55 ±7	65 ±7
Specific Gravity	ASTM D297	2.0	2.2	2.3
Tensile Strength (PSI)	ASTM D412	300	300	300
Elongation (%)	ASTM D412	300	300	300
Tear Strength Die B	ASTM D624	65	65	65
Color		Dark Grey	Dark Grey	Dark Grey

Part Number	Compound	Thickness (in)
ME11-0001-00	SNiG45	0.032
ME11-0002-00	SNiG45	0.062
ME11-0003-00	SNiG45	0.093
ME11-0004-00	SNiG45	0.125
ME11-0005-00	SNiG55	0.032
ME11-0006-00	SNiG55	0.062
ME11-0007-00	SNiG55	0.093
ME11-0008-00	SNiG55	0.125
ME11-0009-00	SNiG65	0.032
ME11-0010-00	SNiG65	0.062
ME11-0011-00	SNiG65	0.093
ME11-0012-00	SNiG65	0.125

Electrically Conductive Compound (MC10 Series)

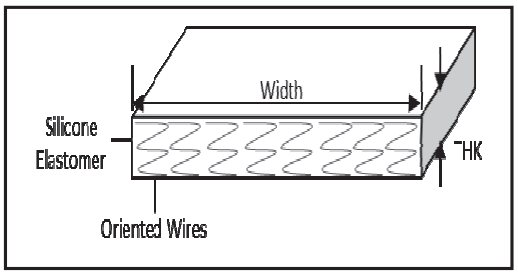
MAST Technologies' suite of conductive caulk and ink materials can meet a variety of demanding electrical and environmental specifications. MAST utilizes electrically conductive fillers to achieve specific surface or volume conductivities in a variety of different binder types and viscosities. MAST Technologies has standard off the shelf products but specializes in customizing these materials for targeted applications, levels of resistivity, and environmental attributes.



Part Number	Volume Resistivity	Elastomer	Filler	Type
MC10-0019-03	<100mΩ-cm	Silicone	Nickel/Graphite	Caulk

Oriented Wire Elastomers (ME2 Series)

MAST Technologies' Oriented Wire Silicone is a solid silicone elastomer filled with micro-wires providing high levels of EMI shielding effectiveness. Each wire is positioned normal to the flange mating surface and is crimped at the end to ensure proper contact with the surface of the elastomer. The outer silicone provides environmental or pressure sealing, making the entire product useful in industrial, military and commercial applications that require EMI shielding and environmental sealing with moderate closure force.



Typical Properties

- Solid Silicone: A-A-59588, Class II, Grade 40
- Thickness: 0.032" or 0.062" (0.81 or 1.58 mm)
- Compression Set (@ 50psi): 2%
- Color/Seal: Grey / Waterproof
- Operating Temperature: -60°C to 260°C
- EMP Survivability: Yes
- Monel Wire: QQ-N-281 Class A
  - Density/sq in.: 900 ±15%
  - Diameter: 0.0035''/0.0045

Part Number	Thickness (in)	Length (in)	Width (in)
ME21-0001-00	0.032	36	3
ME21-0002-00	0.032	36	6
ME21-0003-00	0.032	36	9
ME21-0004-00	0.062	36	3
ME21-0005-00	0.062	36	6
ME21-0006-00	0.062	36	9

MANUFACTURING OPERATIONS

MAST Technologies' manufacturing operations are centered in its San Diego, California, USA state of the art manufacturing facility. MAST Technologies continues to invest in the latest manufacturing technologies providing the following in house production and test capabilities:

- Compression Molding
- Liquid Injection Molding
- Elastomer Compounding
- Two Roll Milling
- Planetary Mixing
- Ball Milling
- High Shear Dispersion
- Spray Coating Application
- Dip Coating Application
- Die Cutting
- Kiss Cutting

MAST Technologies' complete in-house capabilities allow for quick turn prototypes and high volume production while maintaining full accountability and quality. In house die cutting capability allows for MAST to produce high precision die cut and kiss cut parts either in small volume or in mass production.

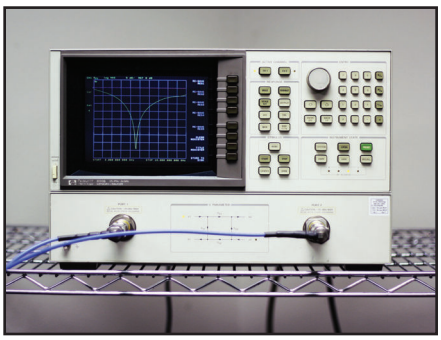
QUALITY

At MAST Technologies, quality begins with product design. Every new design, raw material, manufacturing process, quality inspection, and shipment is held to the highest quality control standards. MAST Technologies believes that quality is not an opportunity, but rather an expectation.

MAST Technologies works closely with customers to establish a quality control program for their specific needs while adhering to the ISO 9001:2008 and AS9100 standards.

MAST Technologies has invested in precision measurement equipment and tools for in process and final product quality control testing. Some of our test capabilities are:

- Vector Network Analyzer (0.2-20 GHz)
- NRL Arch Testing (0.7 – 20 GHz)
- Transmission Tunnel Testing (0.7 – 20 GHz)
- 7mm Airline Testing
- Bulk Resistivity Testing
- Universal Tester - Tensile, Elongation & Tear
- Precision Thickness Mapping
- Durometer
- Box Furnace (RT - 2000°F)
- Hegman Grind Gauge
- Viscometer



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