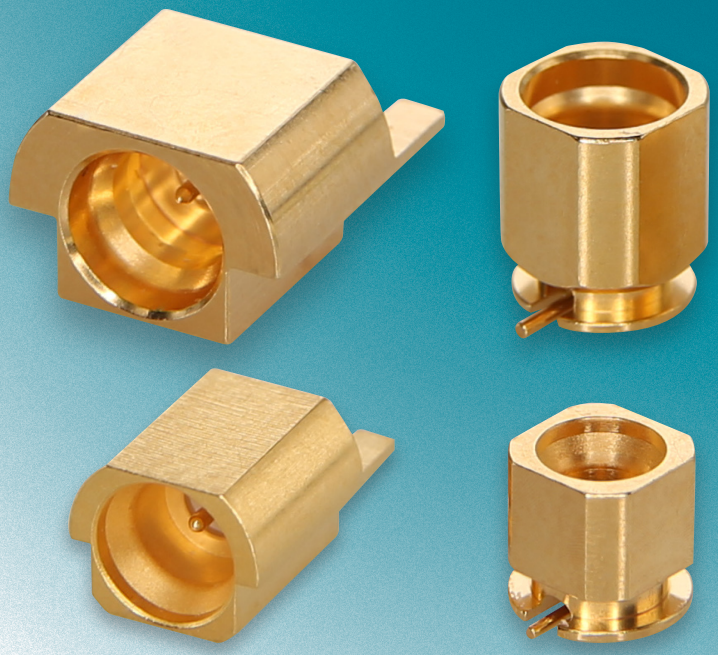
PCB CONNECTORS

EDGE & SURFACE MOUNTED



SOLVING COMPLEX PCB REQUIREMENTS WITH HIGH-PERFORMANCE CONNECTORS

With SMP and SMPM PCB connectors, Teledyne Storm Microwave is able to pair their **superior cable assemblies** into a full path solution. This high-performance path is an ideal match where precision and reliability is needed.

A growing number of applications in **Military systems, commercial test equipment, 5G devices,** and others depend on smaller PCB components to make their new products work.

While the industry trend is moving towards **higher density and higher frequency, excellent electrical performance** is still important to maintain. TSM is able to offer the following advantages:

- *Electrically matched footprint to ensure the PCB transition to connector is optimized*
- *Industry leading support to make sure the soldering process is ideal*
- *Evaluation data to support electrical performance*
- *Sample PCBs to test each connector*

Connectors made and assembled in the U.S.

FEATURES	BENEFITS
~ Low Profile	~ Easier to locate near device under test
~ Tin Dipping Available	~ Simplifies connector attachment to PCB
~ High Frequency	~ Covers large bandwidth up to 40 GHz
~ Custom Versions	~ Contact TSM for a design that matches your application

TELEDYNE
STORM MICROWAVE
Everywhereyoulook™

High value microwave and electronic interconnect solutions.

www.teledynestorm.com

SPECIFICATIONS & PROPERTIES

All assembled connector interfaces are designed in accordance with Mil-STD-348.

EDGE MOUNTED		
Frequency Range		DC ~ 40GHz
Impedance		50 Ohm Nom.
VSWR	SMP	1.40 Max. [Test board (1 inch) Condition]
	SMPM	1.40 Max. [Test board (1 inch) Condition]
Insertion Loss	SMP	0.10 x sqrt (F (F in GHz))
	SMPM	0.10 x sqrt (F (F in GHz))
Mating	SMP Smooth Bore	1000 Cycle Min.
	SMP Full Detent	100 Cycle Min.
	SMPM Smooth Bore	500 Cycle Min.
	SMPM Full Detent	100 Cycle Min.
Operating Temperature		–65° C ~ 165° C

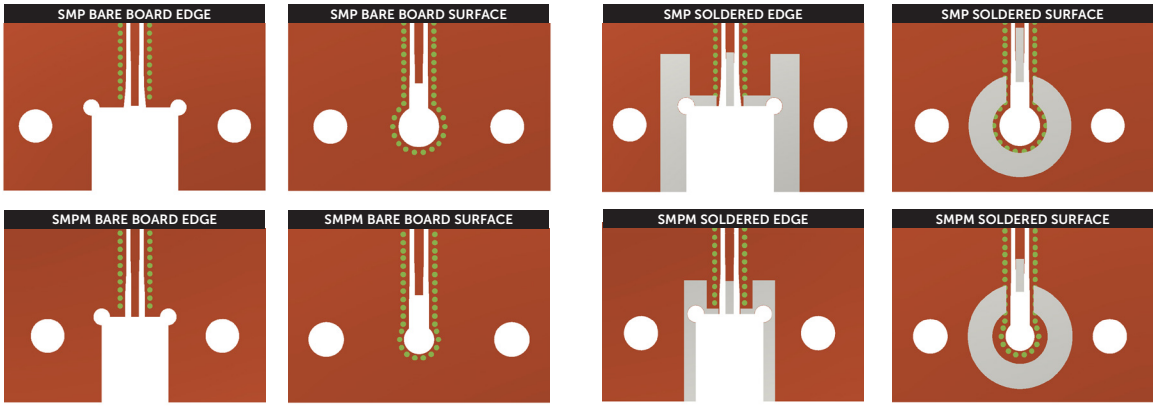
SURFACE MOUNTED		
Frequency Range		DC ~ 40GHz
Impedance		50 Ohm Nom.
VSWR	SMP	1.45 Max. [Test board (1 inch) Condition]
	SMPM	1.40 Max. [Test board (1 inch) Condition]
Insertion Loss	SMP	0.10 x sqrt (F (F in GHz))
	SMPM	0.10 x sqrt (F (F in GHz))
Mating	SMP Smooth Bore	1000 Cycle Min.
	SMP Full Detent	100 Cycle Min.
	SMPM Smooth Bore	500 Cycle Min.
	SMPM Full Detent	100 Cycle Min.
Operating Temperature		–65° C ~ 165° C

EDGE & SURFACE MOUNTED PROPERTIES	
Body	Gold-Plated Beryllium Copper
Insulator	PTFE - Edge Launch | Torlon - Surface Mounted
Center Contact	Gold-Plated Beryllium Copper

ENVIRONMENTAL CHARACTERISTICS

Thermal Shock	MIL-STD-202, Method 107, Condition B
Salt Spray	MIL-STD-202, Method 101
Vibration	MIL-STD-202, Method 204
Shock	MIL-STD-202, Method 213, Condition I
Moisture Resistance	MIL-STD-810H, Method 507.6, Procedure II

CONNECTOR ASSEMBLY INSTRUCTIONS TO PCB

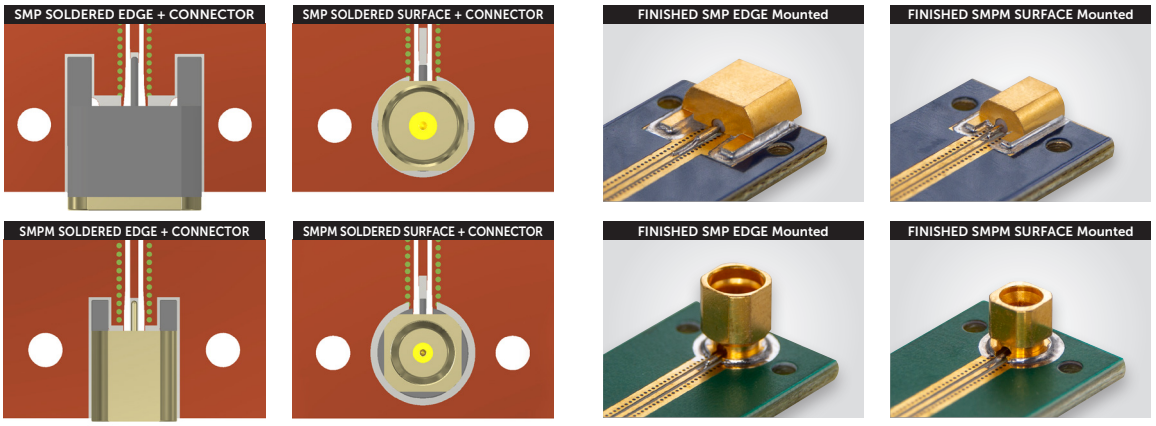


STEP 1

Procure PCB with optimized footprint for specified connector.

STEP 2

Apply solder paste profile for specified connector.



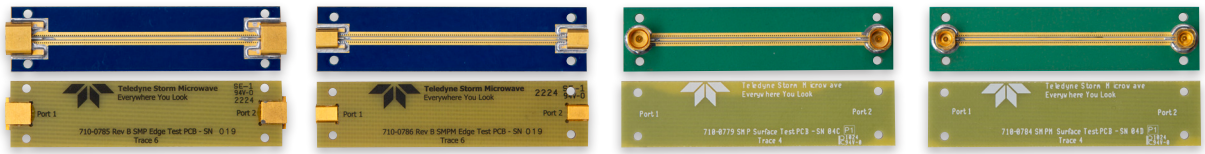
STEP 3

Place connector properly onto PCB allowing contact with the solder paste.

STEP 4

Complete solder reflow profile to create a secured connection.

EVALUATION PCBs



SMP Edge Mount
Part #: 050-3990-XXX

SMPM Edge Mount
Part #: 050-3994-XXX

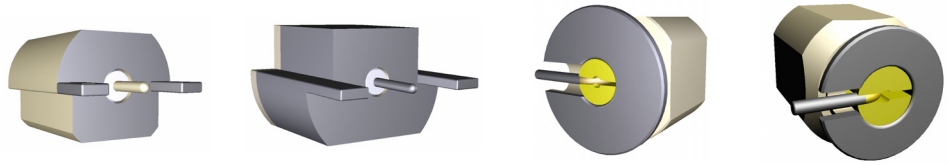
SMP Surface Mount
Part #: 050-3989-XXX

SMPM Surface Mount
Part #: 050-3993-XXX

Evaluation PCBs are available for each connector part number, please contact TSM for more info on how you can design these for your unique system.

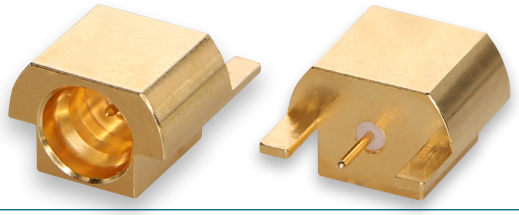
TIN-DIPPED APPLICATIONS

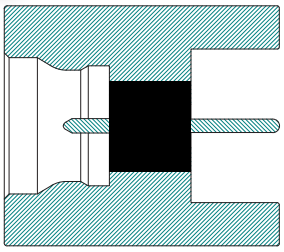
Teledyne Storm Microwave offers tin-dipping on coaxial connectors which improves electrical conductivity and ensures a reliable and durable connection. This application helps reduce the effect of gold embrittlement and provides a smooth, uniform surface for soldering.

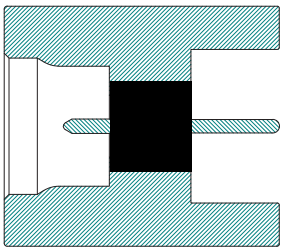


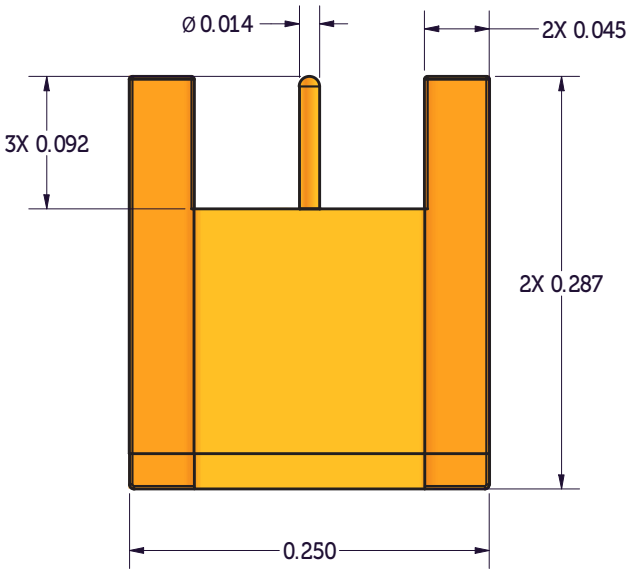
EDGE MOUNT PART NUMBERS & ATTRIBUTES

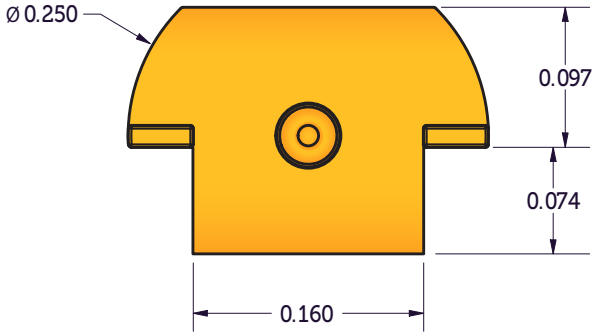
050-3990-XXX	SMP SP EDGE MOUNTED				
	DETENT		PACKAGING		TIN DIP
	Full	Smooth Bore	Bag	Tape & Reel	
001	■		■		None
002	■		■		SN63*
011	■			■	None
012	■			■	SN63*
101		■	■		None
102		■	■		SN63*
111		■		■	None
112		■		■	SN63*

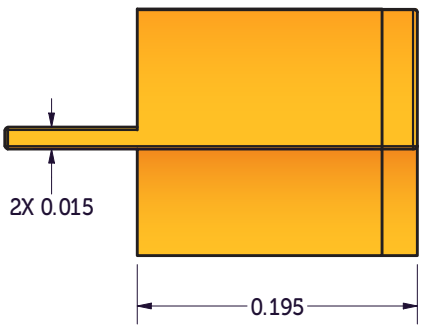










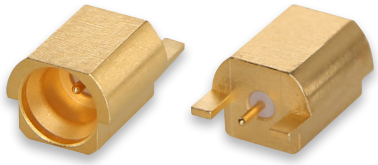


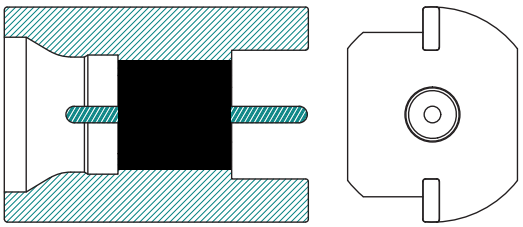
All assembled connector interfaces are designed in accordance with Mil-STD-348.

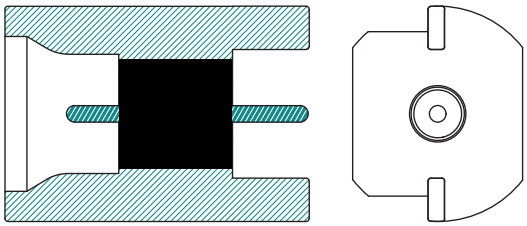
* *Solder coated as shown with solder alloy SN63PB37A per J-STD-006 and J-STD-001. Solder alloy buildup .003 max wall thickness from dimensions shown. This change is caused by thermal expansion during the soldering operation. All dimensions listed apply before solder coating, if applicable. TSM 50-370 standard requirements apply.*

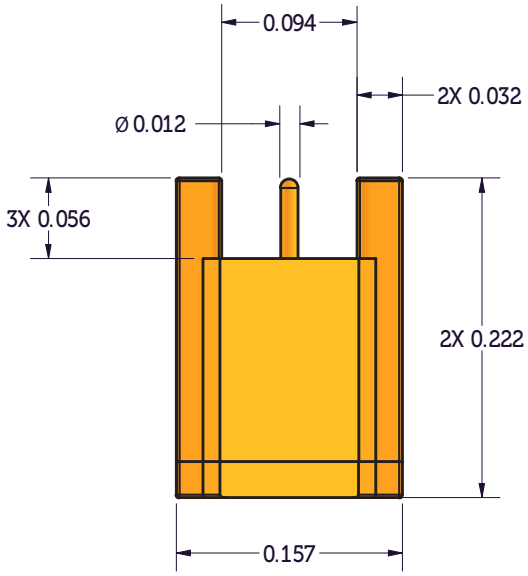
Contact Teledyne Storm Microwave to design layout of your PCB.

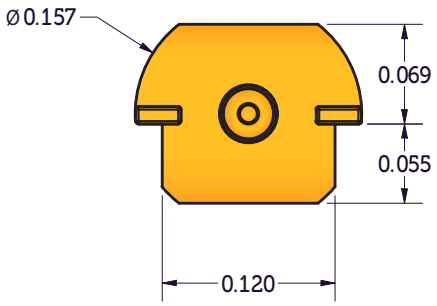
050-3994-XXX	SMPM SP EDGE MOUNTED				
	DETENT		PACKAGING		TIN DIP
	Full	Smooth Bore	Bag	Tape & Reel	
001	■		■		None
002	■		■		SN63*
011	■			■	None
012	■			■	SN63*
101		■	■		None
102		■	■		SN63*
111		■		■	None
112		■		■	SN63*

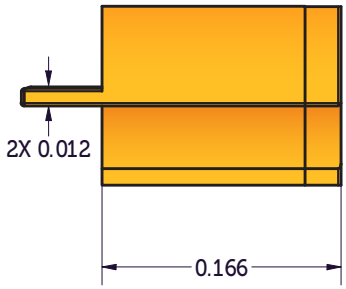












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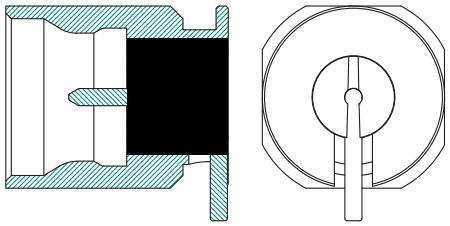
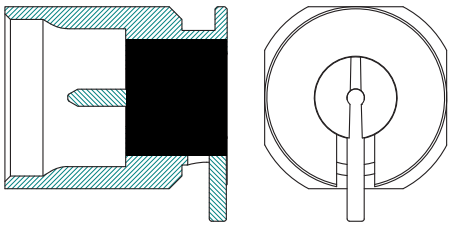
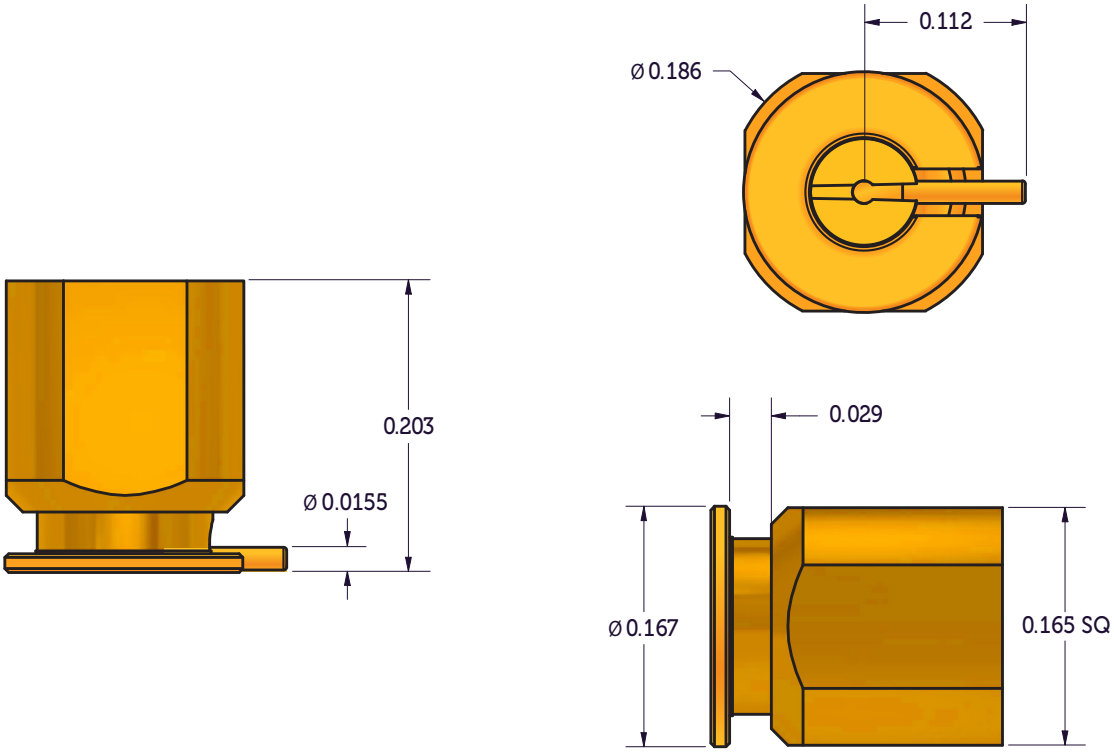
Contact Teledyne Storm Microwave to design layout of your PCB.

SURFACE MOUNT PART NUMBERS & ATTRIBUTES

050-3989-XXX	SMP SP SURFACE MOUNTED				
	DETENT		PACKAGING		TIN DIP
	Full	Smooth Bore	Bag	Tape & Reel	
001	■		■		None
002	■		■		SN63*
011	■			■	None
012	■			■	SN63*
101		■	■		None
102		■	■		SN63*
111		■		■	None
112		■		■	SN63*







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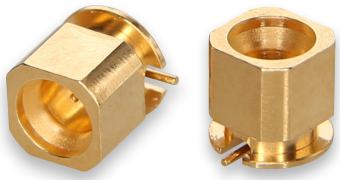
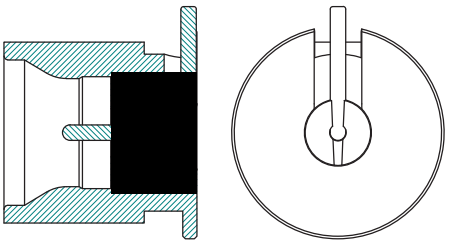
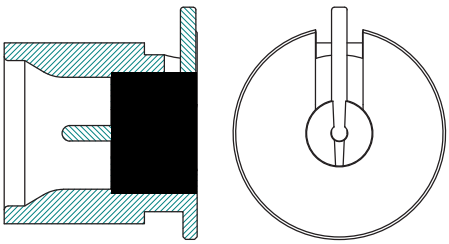
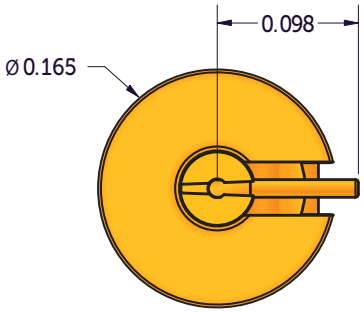
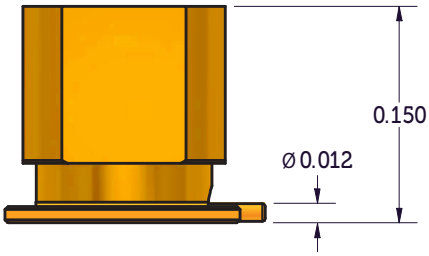
050-3993-XXX	SMPM SP SURFACE MOUNTED				
	DETENT		PACKAGING		TIN DIP
	Full	Smooth Bore	Bag	Tape & Reel	
001	■		■		None
002	■		■		SN63*
011	■			■	None
012	■			■	SN63*
101		■	■		None
102		■	■		SN63*
111		■		■	None
112		■		■	SN63*

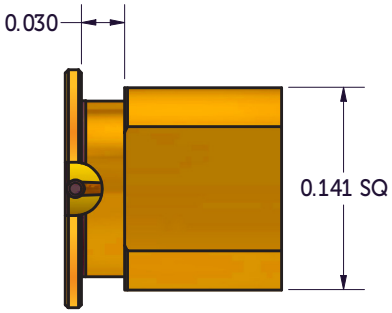












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PCB CONNECTORS

EDGE & SURFACE MOUNTED

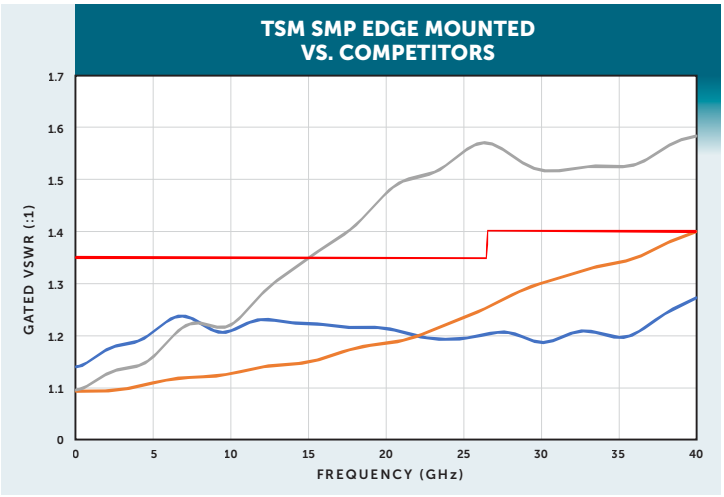
VSWR PROPERTIES

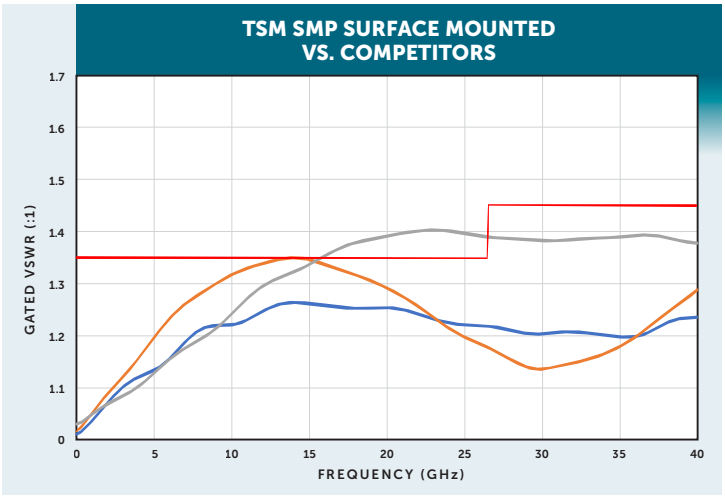
TYPICAL VSWR COMPETITOR COMPARISON

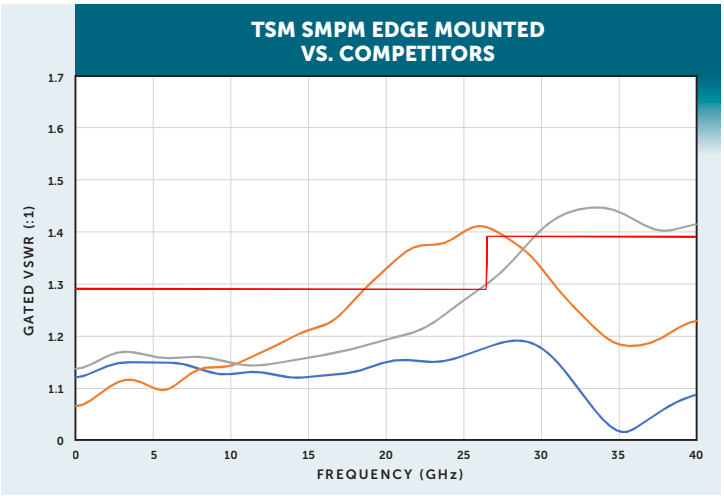
TYPE	TSM	COMPETITOR 1	COMPETITOR 2
SMP Edge Mounted	1.30:1	1.40:1	1.55:1
SMP Surface Mounted	1.26:1	1.35:1	1.40:1
SMPM Edge Mounted	1.26:1	1.30:1	1.40:1
SMPM Surface Mounted	1.23:1	1.30:1	1.35:1

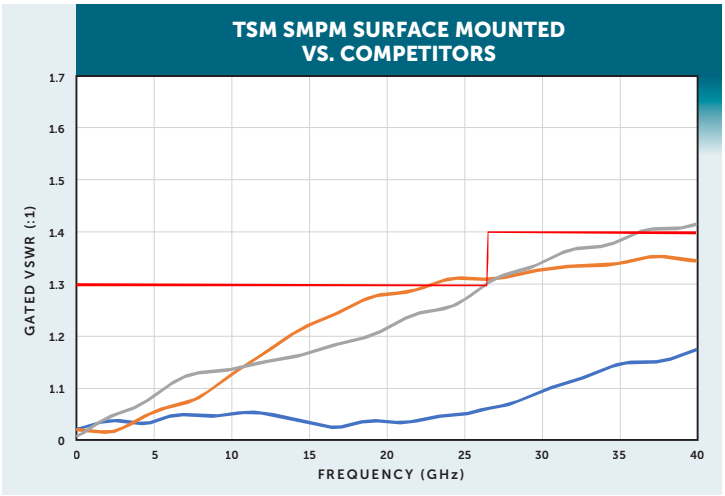
TYPICAL PERFORMANCE

TSM PCB CONNECTORS — COMPETITOR 1 — COMPETITOR 2 — TSM QUALIFICATION LIMIT









Gated VSWR shown has the start gate at the connector interface and the stop gate about 1 inch into the test board.

TELEDYNE STORM MICROWAVE
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AS9100/ISO 9001 REGISTERED

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