RFMS

Connectivity

SMP-Max

SMP-MAX Development Trend

- Challenge: Saving even for future 5G
- Production Location Transfer TW→ JS

≤2016	2017 2018	2019+	2020+	2020~2021+

SMP-MAX

- All in machined brass
- Insulator machined Teflon
- Gold plated
- Manual or Automation

SMP-MAX EVO

- Bullet—Deep Draw n Body
- PCB— Body PA10T 30%GF, Outer contact in brass, LCP Insulator
- Machined Center Contact
- Gold Plated
- Fully Automation

SMP-MAX EVO II Plus

- Deep Draw n Body
- Stamped Center Contact
- SMP-MAX EVO II Receptacle SMT
  - 73420-6220 Slide Type
  - 73420-6230 SNAP Type
- SMP-MAX EVO II Plus Bullet 9.5mm
  - 73420-6250

SMP-MAX EVO 5

- All types surface plating change Gold--> Tri-Metal
- Center Contact : Gold

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SMP-MAX

- Board To Board Connector
- Connector in 3 pieces
- Allow misalignments
  - Axial
  - Radial
- Application:
  - Telecom
  - IoT
  - All kind of Board to Board application

Machining

SMP-MAX

SMP-MAX Evo

SMP-MAX Evo II

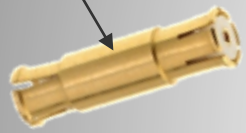
NEXT Generation: SMP-MAX EVO II plus

Stamped

SMP-MAX
Adapter design

deep-drawn

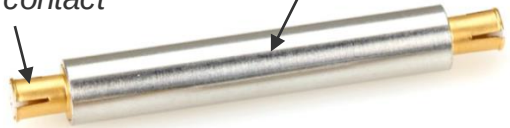
CuBe2, gold plating



SMP-MAX

Deep-drawn outer contact

Brass tube, BBR plating

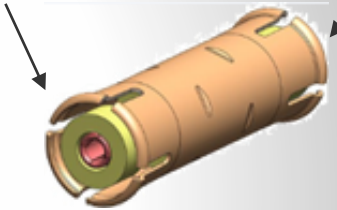


SMP-MAX Evo

- 3-piece body design
- Lower cost: brass vs CuBe2, BBR vs gold
- Higher flexibility for long distance bullets
- Larger outside diameter improves robustness

Stamped center contact

1-piece deep-drawn body



SMP-MAX Evo II

- 1 piece deep-drawn body
- High volume manufacturing, dedicated tool
- Cover wide range of length options, up to 60+mm

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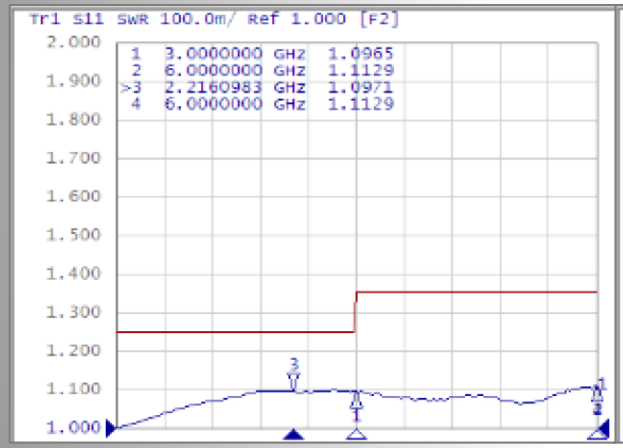
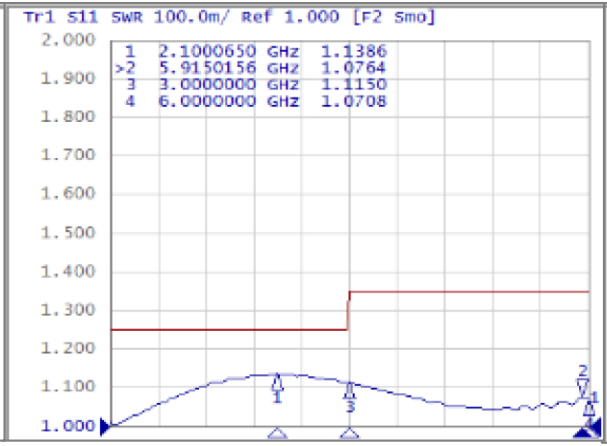
EVO V
RL DVT Data
(9.5mm Bullet)

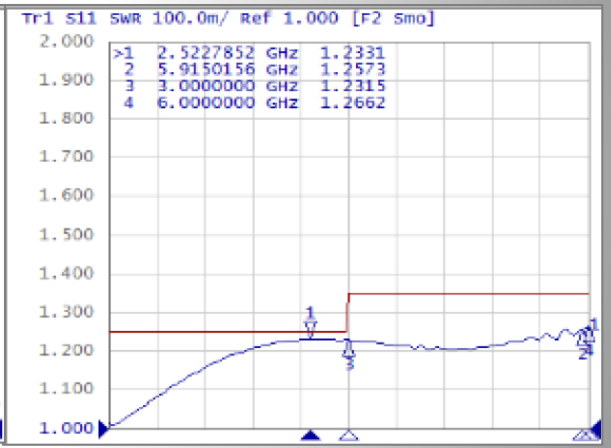
SMP-Max RL Spec: DC-3GHz =1.25 Max; 3-6GHz = 1.35Max



0° Radial Float, 0mm Axial Float
(Ref Planes Engaged)



3° Radial Float, 0mm Axial Float
(Ref Planes Engaged)



3° Radial Float, 2mm Axial Float
(Ref Planes 2mm Apart)

SMP-MAX
Receptacle design

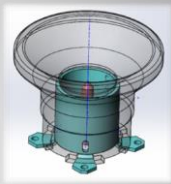
SMP-MAX

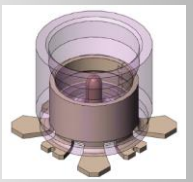
SMP-MAX Evo

LCP molded insulators

- Composite molded Catcher's mitt reduces amount of gold required for plating
- Longer center pin for larger axial misalignment tolerance
- Improved pull-in range

Sliding type: stamped body with over molded catcher's mitt





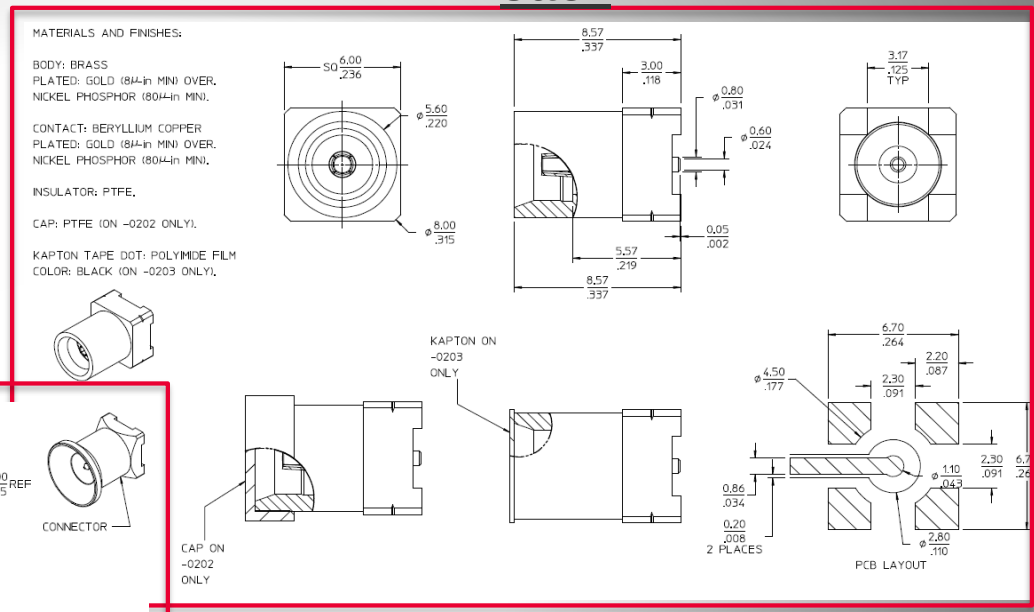
SMP-MAX Evo II

- Reduced body height for cost saving
- Suitable for B2B configurations only (not board to cable)
- LCP insulators provide good center contact captivation and short B2B distance

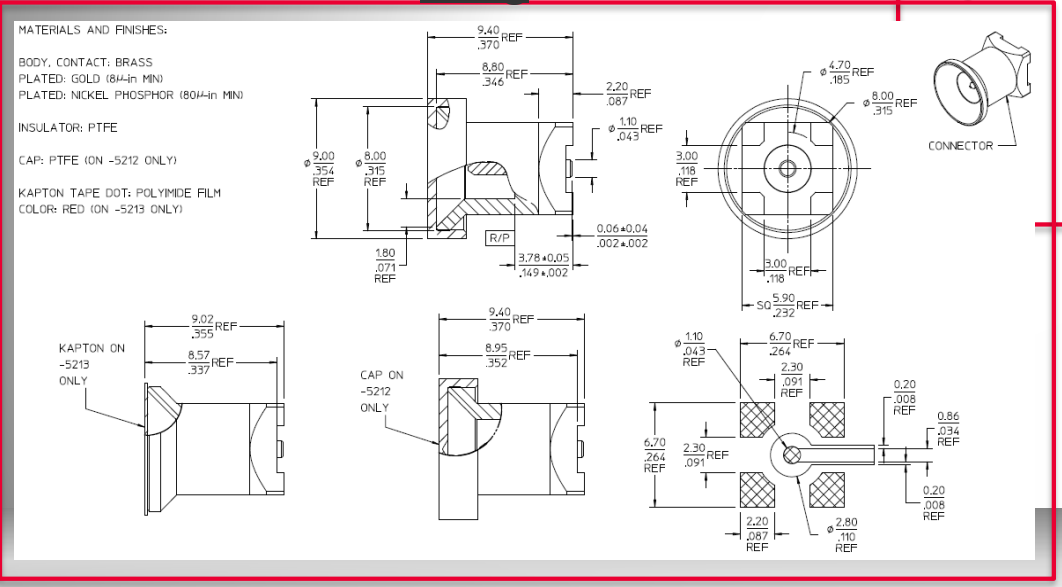
- Snap type:
  - Stamped body with over molded shell

SMP-MAX Dimension

Jack



Plug



Mm/inch

SMP-MAX
Mechanical Misalignment

For bullet height >28.60mm (1.126") max radial misalignment: 1.50mm (.059")

AXIAL (WORKING RANGE)

- 2.5mm (±1mm) (.079" (±.039))

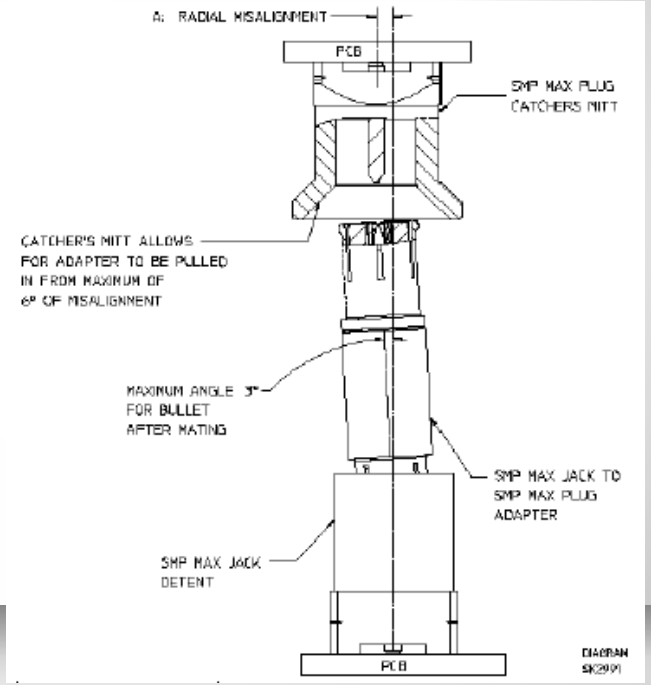
RADIAL (WORKING RANGE)

FORMULA:

A=BxSIN(3 Deg) A=Max Radial Misalignment

B=Bullet Length

3 Deg=Maximum Misalignment Angle



SMP-MAX Specifications

Reference Information

Packaging: Tray, Bulk, Single Bag, Tape and Reel
Designed In: Millimeters
RoHS: Yes
Halogen Free: Yes

Electrical

- Nominal Impedance: 50 Ohms
- Voltage (max.): 330 Vrms
- Frequency Rating: DC to 6 GHz
- Power (50 Ohm Design):
- >300W at 2.7 GHz and 25°C
- >200W at 2.7 GHz and 85°C
- VSWR (max.): 1.20 – DC to 3 GHz
- 1.35 – 3 to 6 GHz
- Insertion Loss (max.): 0.12 – DC to 3 GHz
- 0.25 – 3 to 6 GHz

Mechanical

- Center Contact Retention Force: > 7N
- Force to Engage/Disengage:
- Engagement Force (Typical)
- Detent (Snap-On) – 45N
- Smooth Bore – 14N
- Disengagement Force (Typical)
- Detent (Snap-On) – 9 to 45N
- Smooth Bore (Slide-On) – 9N
- Connector Durability (min.): 100 Cycles
- Insulator: PEEK or Teflon
- Operating Temperature: -55 to +165°C

Physical

- Housing: Brass/Beryllium Copper
- Male Center Contact: Brass
- Female Center Contact: Beryllium Copper
- Plating:
- Body & Contact – Gold Over
- High-Phosphorous Nickel Over Copper



Appendix

Testing Result 9.5mm VSWR

- **Radial 0° axial -1.0mm (Reference Planes Engaged)**

PN	No.	#1	#2	#3	#4	#5
734206250	DC~3GHz	1.1135	1.1142	1.1104	1.1106	1.1084
	3.0~6GHz	1.1231	1.1263	1.1266	1.1188	1.1326
	6.0~10GHz	1.2460	1.2255	1.190	1.2192	1.2120
734205840	DC~3GHz	1.0513	1.0453	1.044	1.0492	1.0510
	3.0~6GHz	1.0724	1.0568	1.065	1.0693	1.0692
	6.0~10GHz	1.3440	1.3162	1.319	1.3108	1.3031
Spec.		DC~3GHz: 1.25 Max 3.0~6GHz: 1.35 Max 6.0~10GHz: NA				

- **Radial 0° axial +1.0mm (2mm displacement from Reference Plane)**

PN	No.	#1	#2	#3	#4	#5
734206250	DC~3GHz	1.2076	1.2281	1.2356	1.2111	1.2114
	3.0~6GHz	1.3329	1.3143	1.3124	1.3295	1.3362
	6.0~10GHz	1.7658	1.9920	2.0071	1.8205	1.788
734205840	DC~3GHz	1.1331	1.1422	1.1382	1.1491	1.1365
	3.0~6GHz	1.3231	1.3457	1.3474	1.3320	1.3468
	6.0~10GHz	2.0787	2.1576	2.0966	2.1833	2.1205
Spec.		DC~3GHz: 1.25 Max 3.0~6GHz: 1.35 Max 6.0~10GHz: NA				

Bullet Part Number List (more available)

Bullet Length	Bullet Type (Machined, EVO 2, EVO5)	Body	Body-Plating	Center Contact	Center Contact-Plating	Molex PN
9.5mm	Deep Drawn Version-EVO2	Deep Drawn	Gold	Machined	Gold	73420-5840
9.5mm	Deep Drawn Version-EVO5	Deep Drawn	Gold	Stamped	Gold	73420-6250
9.5mm	Deep Drawn Version-EVO2	Deep Drawn	Tri-Metal	Machined	Gold	73420-5841
9.5mm	Deep Drawn Version-EVO5	Deep Drawn	Tri-Metal	Stamped	Gold	73420-6251
12.15mm	Deep Drawn Version-EVO2	Deep Drawn	Tri-Metal	Machined	Gold	73420-5861
12.15mm	Deep Drawn Version-EVO5	Deep Drawn	Tri-Metal	Stamped	Gold	73420-6331
12.15mm	Deep Drawn Version-EVO2	Deep Drawn	Gold	Machined	Gold	73420-5860
12.15mm	Deep Drawn Version-EVO5	Deep Drawn	Gold	Stamped	Gold	73420-6330
17.6mm	Deep Drawn Version-EVO5	Deep Drawn	Tri-Metal	Stamped	Gold	73420-6350