

High Density Board Connector

Withwave's SMPM Connectors are covering wide frequency ranges from RF to Microwave with excellent frequency performance and high density. The proprietary internal insulator enables simple Structure with higher performance compared to the conventional SMPM connectors.

The best applications could be 5G complex mobile communications modules, systems and various other wireless systems.

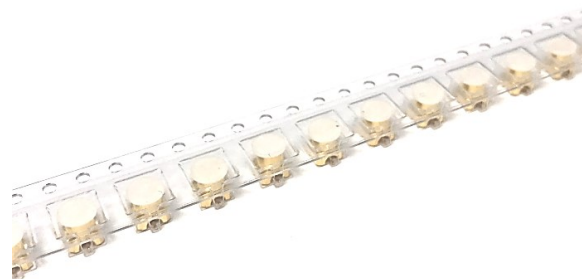


■ Features

- Frequency range : DC to 26.5 GHz & 67 GHz
- High density SMT packaging available
- Push-on mating for quick installation

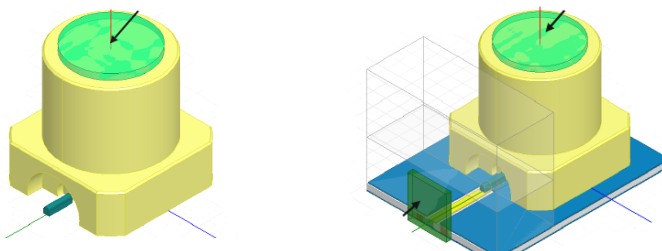
■ Application

- 4G, 5G Telecommunications
- Satellite Communications
- RFIC Chip set evaluation board
- High data rate ASIC and SoC EV module test



■ Design Assistance

- 3D Model for Mechanical Layout (STEP file)
- **ANSYS HFSS models** (version 17.0 or newer) for 3D EM(Electromagnetic) Simulation



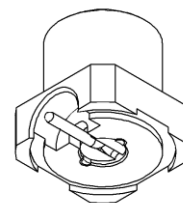
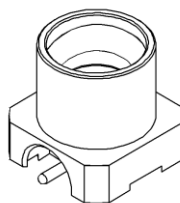
■ Specification

Scope	Items	Specification
Electrical	Freq. range	DC to 26.5 GHz (ST17MS001/ ST17MS003) DC to 67.0 GHz (ST17MS002/ ST17MS004)
	Impedance	50 Ohm
	VSWR(RL, Typical)	1.43:1 (-15dB) to 26.5 GHz (ST17MS001/ST17MS003) 1.43:1 (-15dB) to 40 GHz (ST17MS002/ST17MS004) 1.93:1 (-10dB) to 67 GHz (ST17MS002/ST17MS004)
Material	Mating Cycles	Full Detent : 100(min) Smooth Bore : 500(min)
	Typical Engage(Disengage) Force	Full Detent : 4 lbs typ. (6lbs typ.) Smooth Bore : 2 lbs typ. (1.5lbs typ.)
	Operating Temperature	-40~+125°C

* RoHS Compliant

■ Ordering Information

Application	Freq.(GHz)	Type	Part No.
SMPM, Straight Plug, PCB (Full Detent)	DC to 26.5	Male	ST17MS001
SMPM, Straight Plug, PCB (Smooth Bore)	DC to 26.5	Male	ST17MS003
SMPM, Straight Plug, PCB (Full Detent)	DC to 67.0	Male	ST17MS002
SMPM, Straight Plug, PCB (Smooth Bore)	DC to 67.0	Male	ST17MS004



■ Test Result

SMPM Connector

Substrate : RT/DU5880 (5 mil)

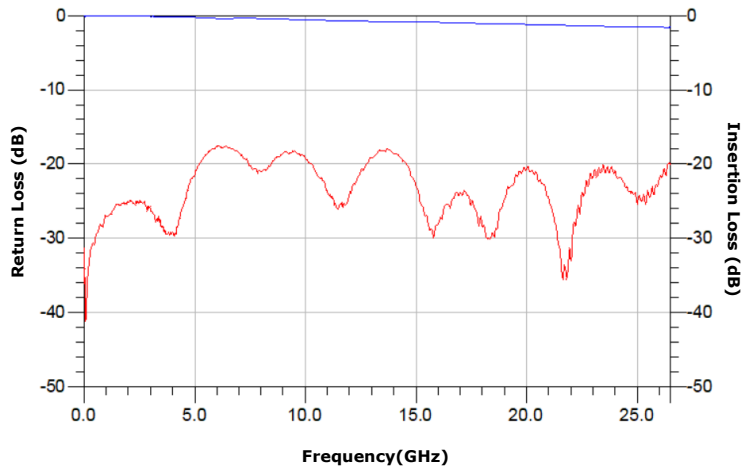
Part No. : ST17MS001

End Launch
2.92 mm Connector



SMPM(26.5 G)

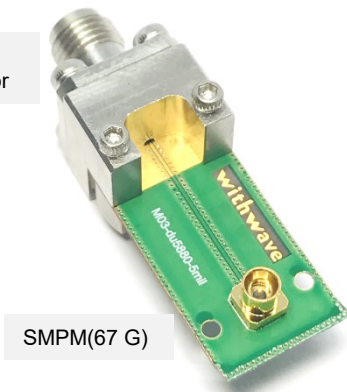
Freq. : 10 MHz to 26.5 GHz



Substrate : RT/DU5880 (5 mil)

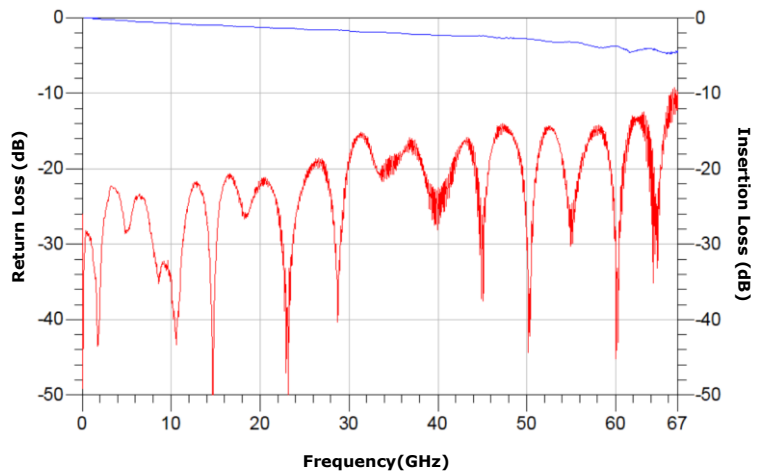
Part No. : ST17MS002

End Launch
1.85 mm Connector



SMPM(67 G)

Freq. : 10 MHz to 67 GHz

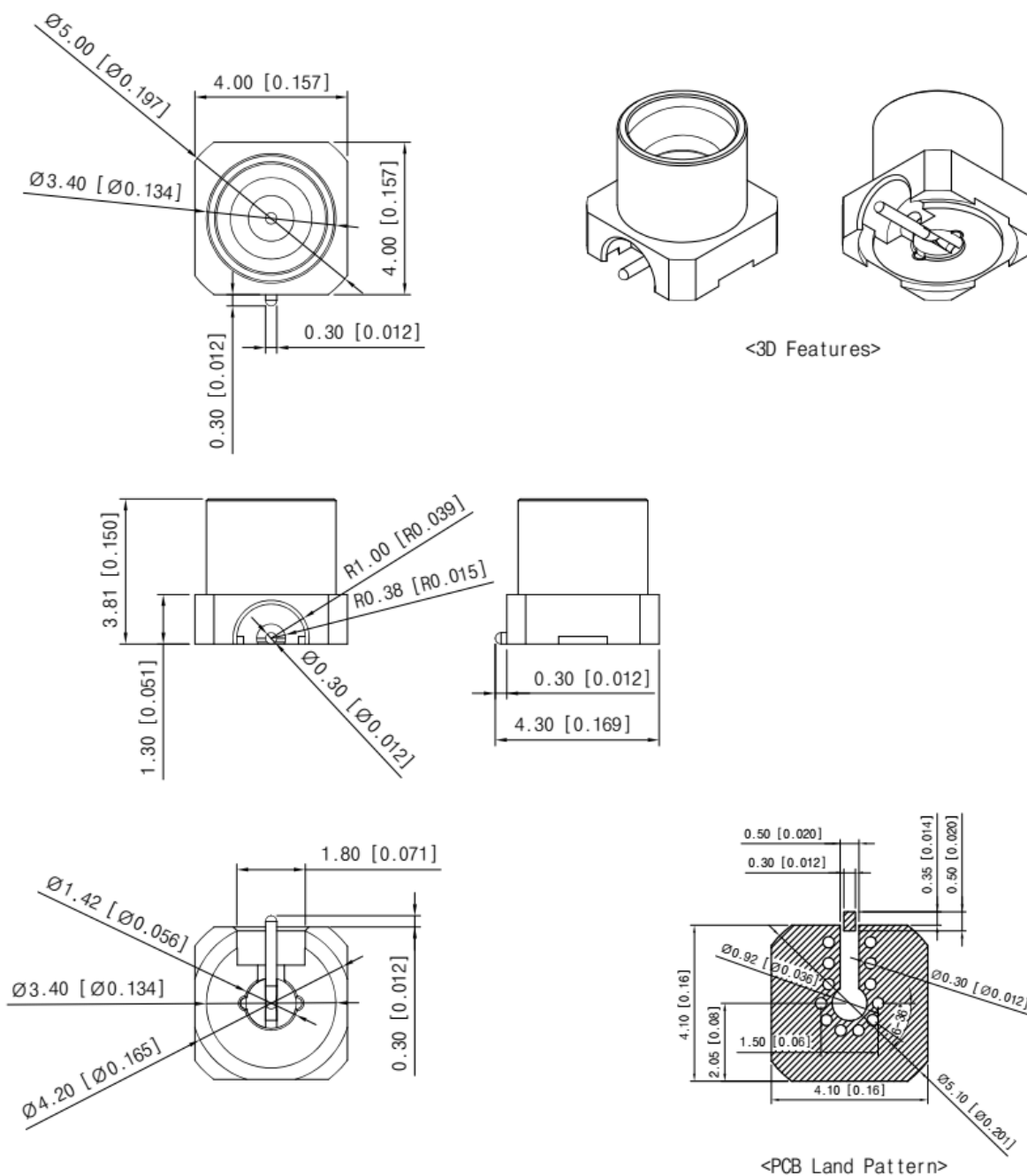


■ Drawing

SMPM Connector

Part No. : ST17MS001/ST17MS003

Unit : mm[inch]

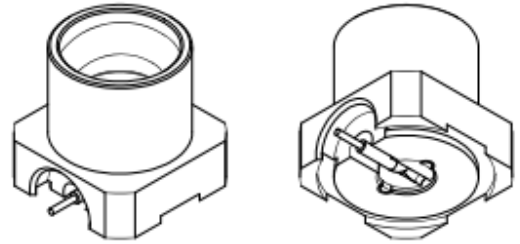
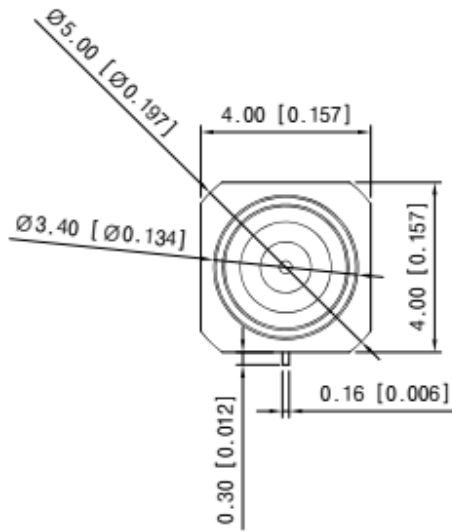


■ Drawing

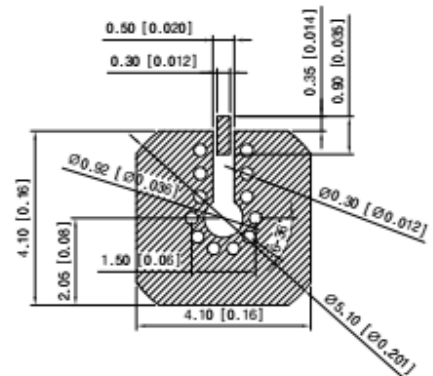
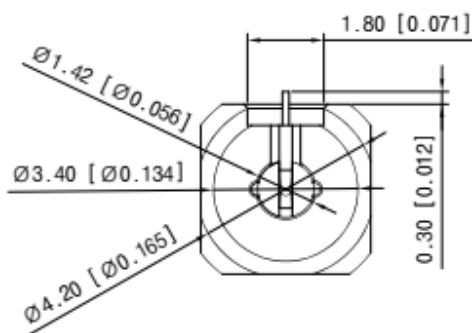
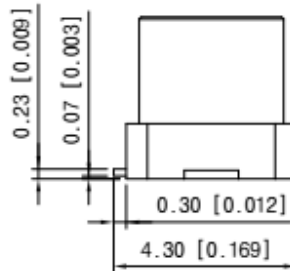
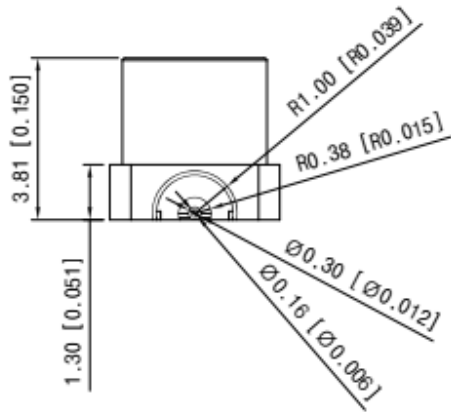
SMPM Connector

Part No. : ST17MS002/ST17MS004

Unit : mm[inch]

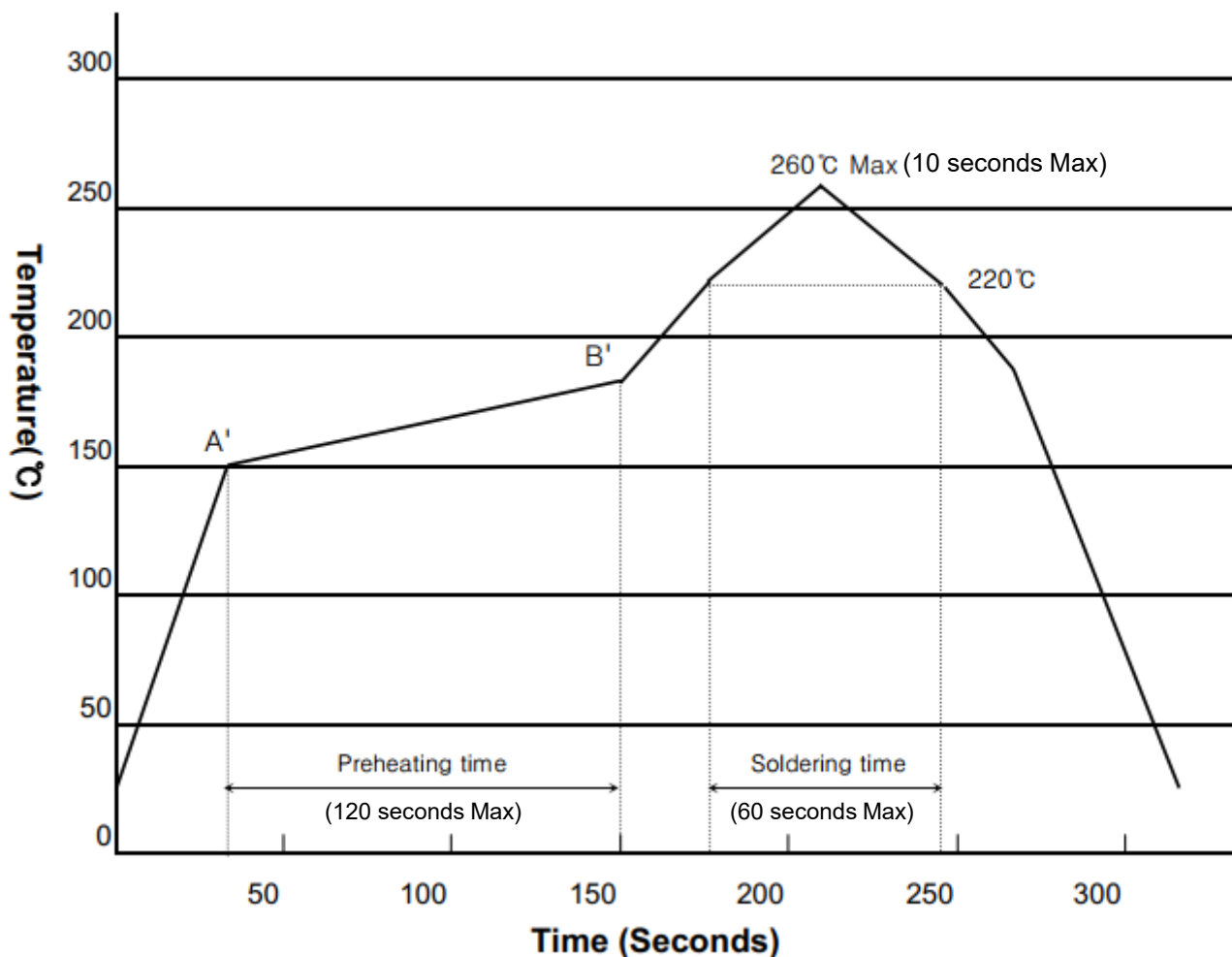


<3D Features>



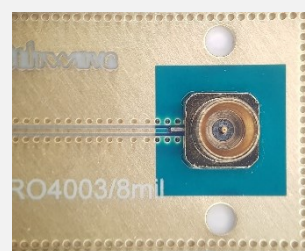
<PCB Land Pattern>

■ Recommended Reflow Profile



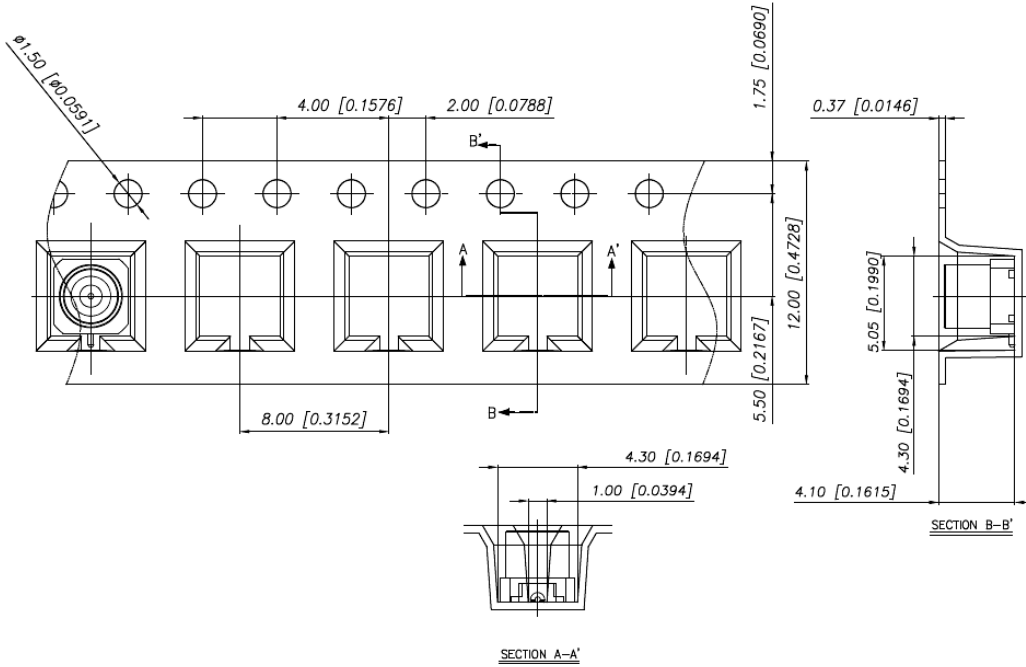
■ Test Condition

- Solder: Cream type Sn / 3 Ag / 0.5 Cu, Flux content 11%wt (SMIC M705 Lead free or Halogen free)
- Metal mask thickness: 0.08 mm
- Preheating time: 150°C~190°C, Max 120seconds
- Soldering time: 260°C Max, 220°C Min, Max 60 seconds (N2 condition recommended)

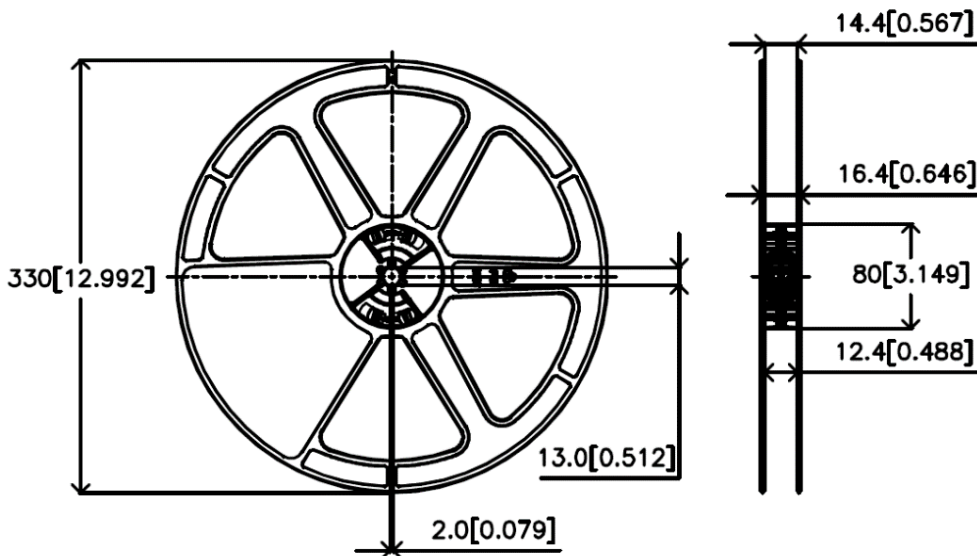


■ Packaging Information

Unit : mm[inch]



Packing Qty 2,000 ea/Reel

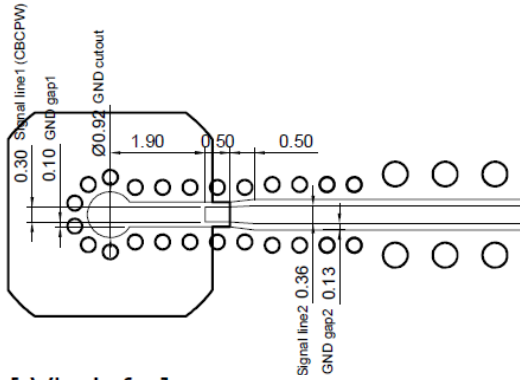


■ Recommended PCB Patterns for Rogers RO4003C 8mil (SMPM 26G)

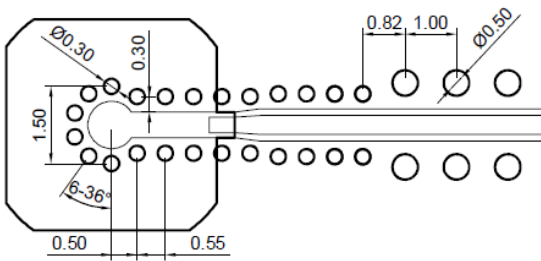
Part No: ST17MS001, ST17MS003

Conductor Backed CPW type

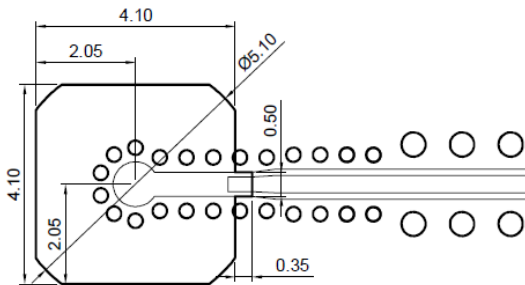
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[Via Info.]

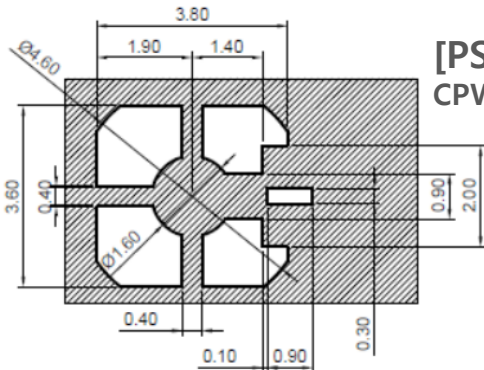


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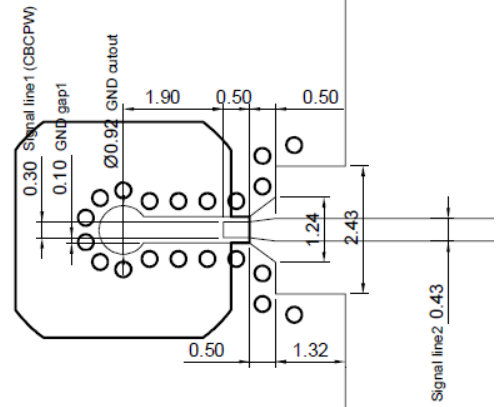
[PSR info.]

CPW = Microstrip

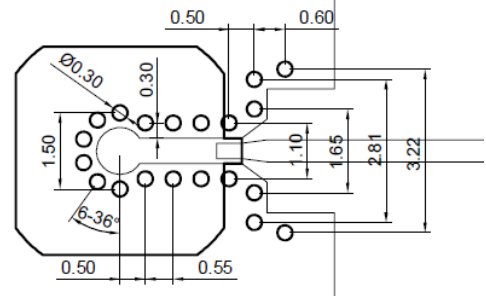


Microstrip type

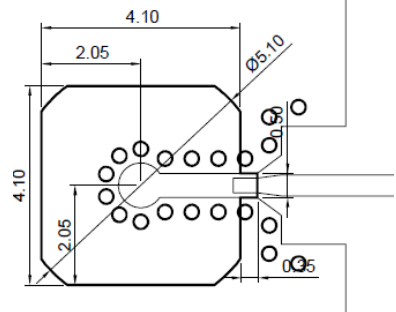
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[Via Info.]



[Solder Mask Info.]

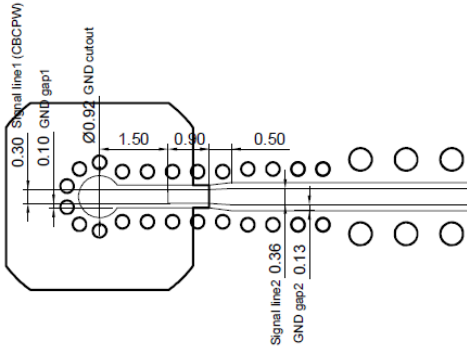


Recommended PCB Patterns for Rogers RO4003C 8mil (SMPM 67G)

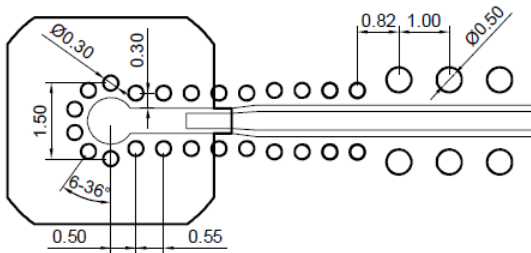
Part No: ST17MS002, ST17MS004

Conductor Backed CPW type

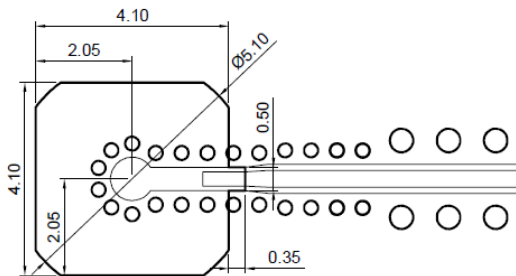
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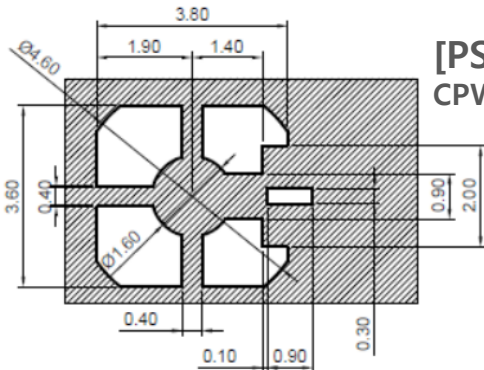
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[Solder Mask Info.]

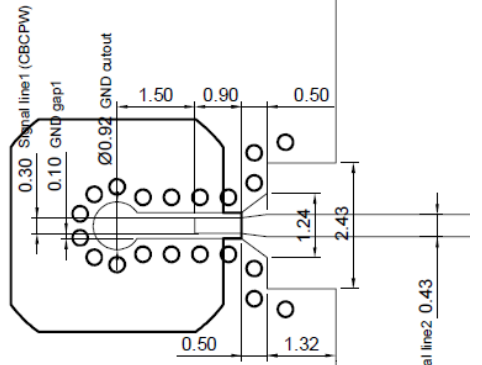


[PSR info.]
CPW = Microstrip

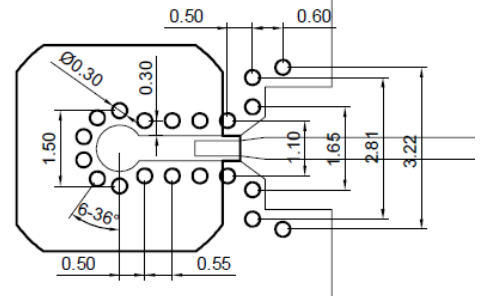


Microstrip type

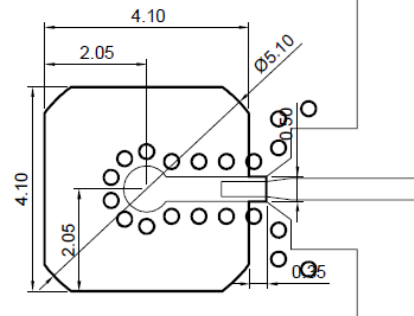
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[Via Info.]



[Solder Mask Info.]

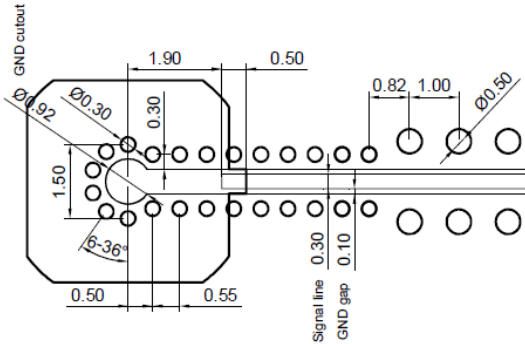


■ Recommended PCB Patterns for Rogers RT/du5880 5 mil (SMPM 26G)

Part No: ST17MS001, ST17MS003

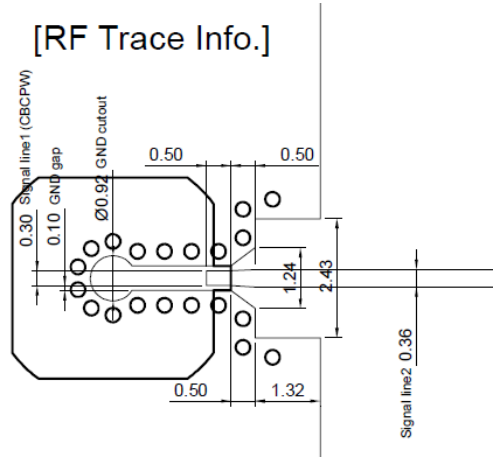
Conductor Backed CPW type

[RF Trace & Via Info.]

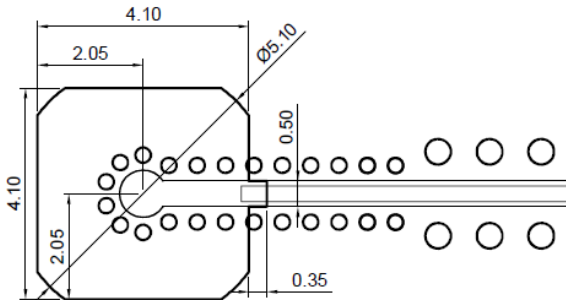


Microstrip type

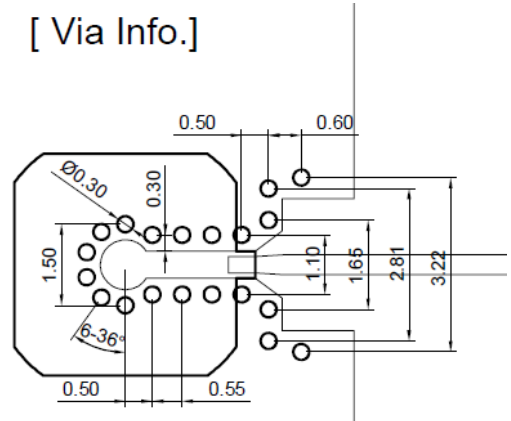
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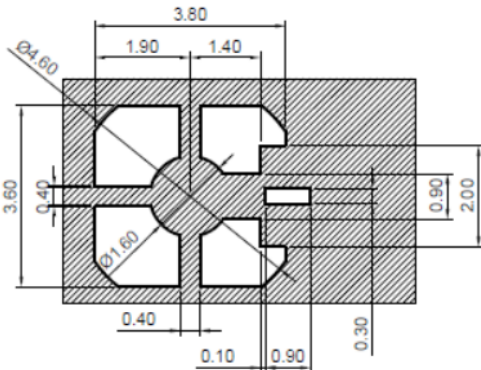


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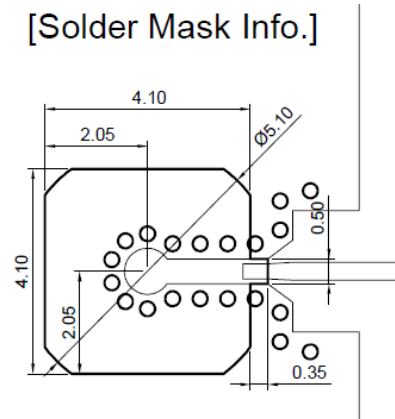


[PSR info.]

CPW = Microstrip



[Solder Mask Info.]

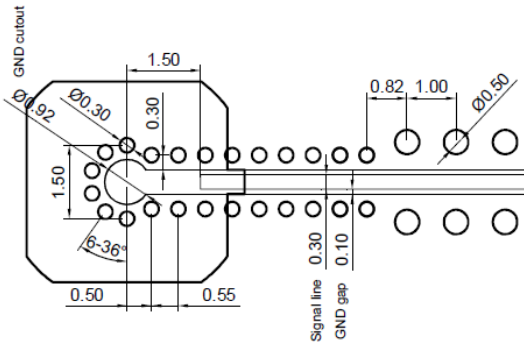


■ **Recommended PCB Patterns for Rogers RT/du5880 5 mil (SMPM 67G)**

Part No: ST17MS002, ST17MS004

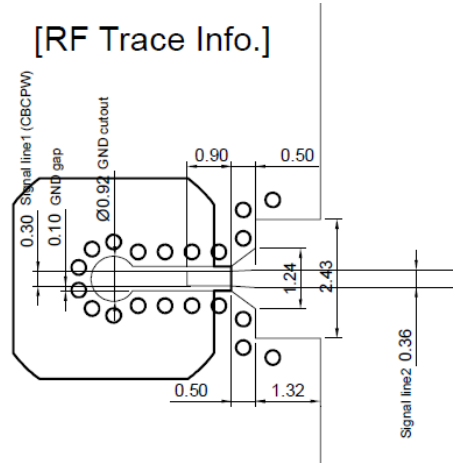
Conductor Backed CPW type

[RF Trace & Via Info.]

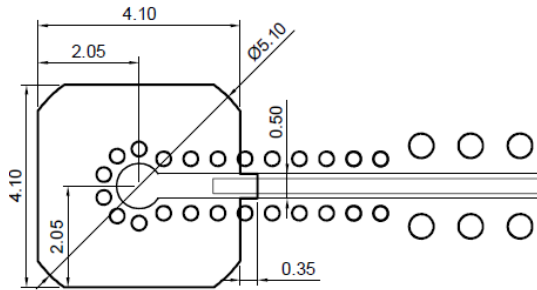


Microstrip type

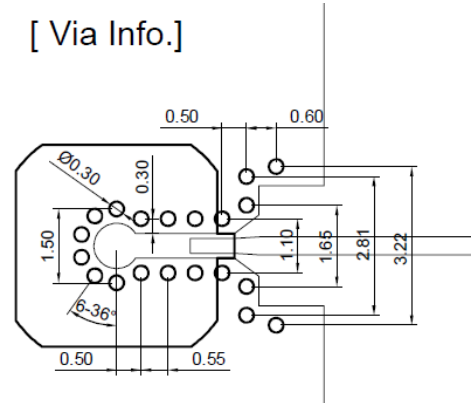
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[Solder Mask Info.]

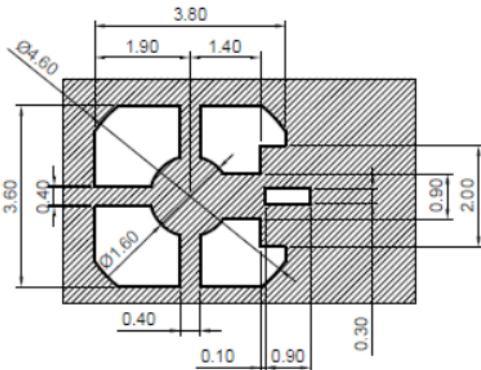


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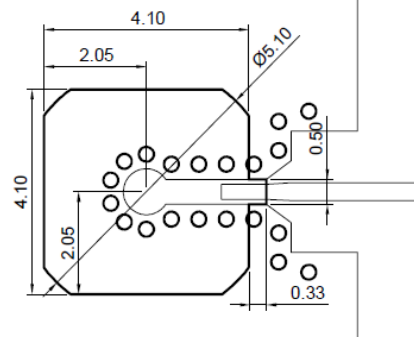


[PSR info.]

CPW = Microstrip



[Solder Mask Info.]

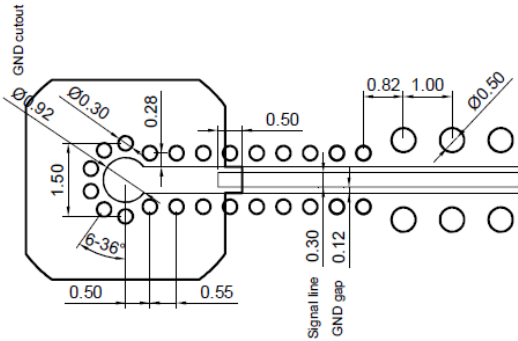


■ **Recommended PCB Patterns for Rogers RO4350B 6.6 mil (SMPM 26G)**

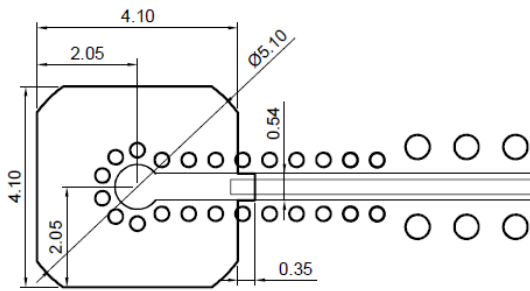
Part No: ST17MS001, ST17MS003

Conductor Backed CPW type

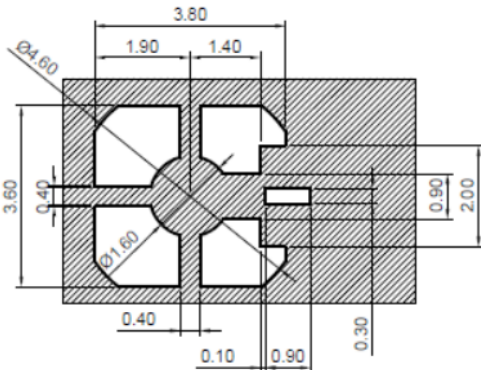
[RF Trace & Via Info.]



[Solder Mask Info.]

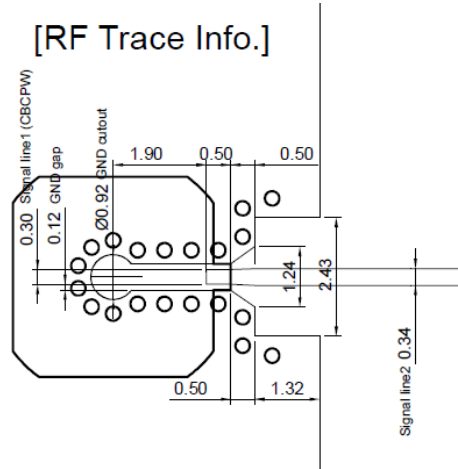


[PSR info.]
CPW = Microstrip

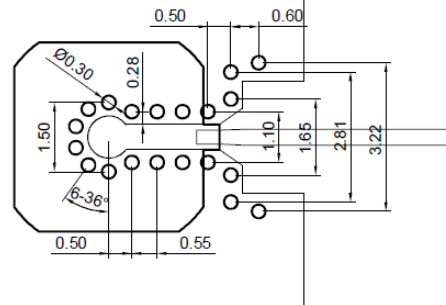


Microstrip type

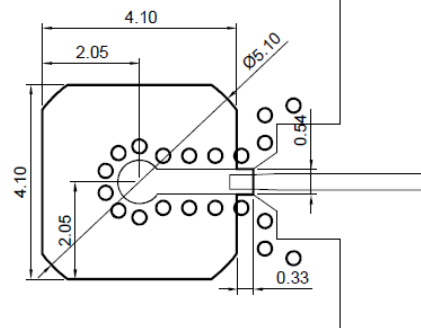
[RF Trace Info.]



[Via Info.]



[Solder Mask Info.]

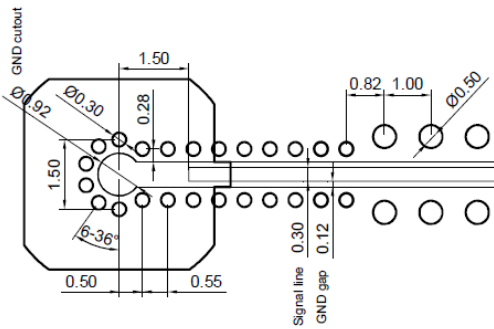


Recommended PCB Patterns for Rogers RO4350B 6.6 mil (SMPM 67G)

Part No: ST17MS002, ST17MS004

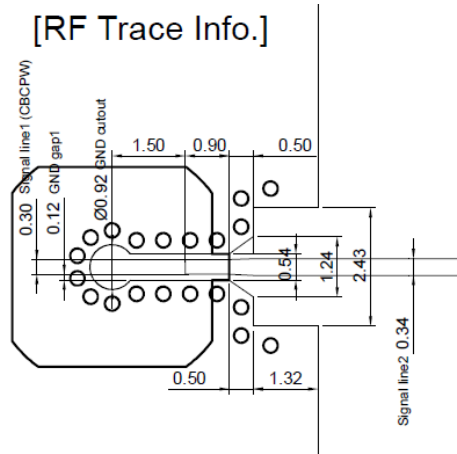
Conductor Backed CPW type

[RF Trace & Via Info.]

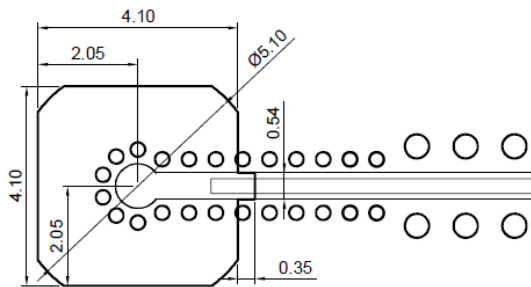


Microstrip type

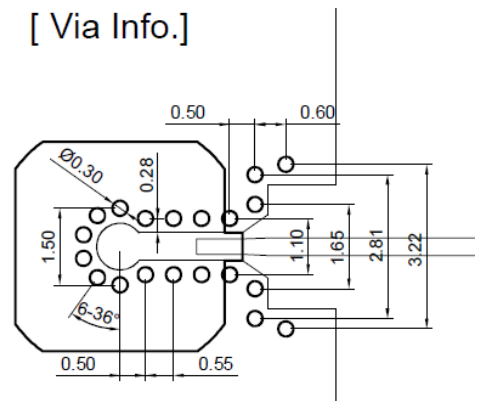
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[Solder Mask Info.]

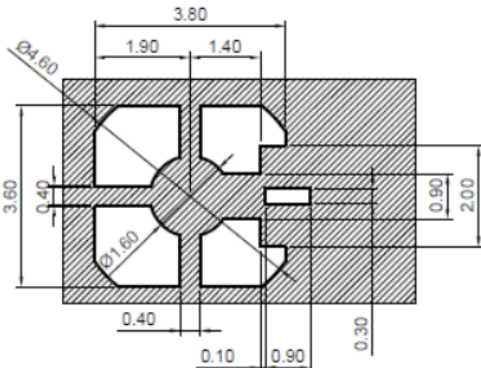


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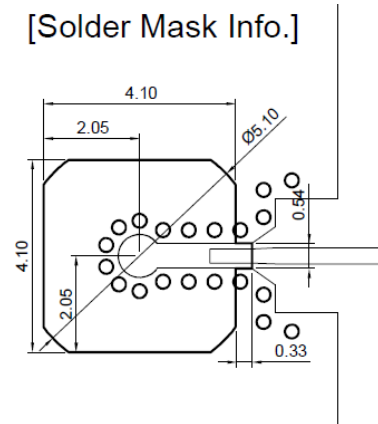


[PSR info.]

CPW = Microstrip



[Solder Mask Info.]



■ Revision History

Revision	Date	Changes
Ver 1.0	2019-09-01	Released SMPM Connectors
Ver 1.1	2020-01-22	Add Recommended PCB Patterns
Ver 1.2	2020-05-25	Add Design Assistance for ANSYS HFSS 3D simulation model & Updated Recommended PCB Patterns
Ver 1.3	2020-12-16	Part numbers for smooth bore type are changed
Ver 1.4	2021-12-27	Add Recommended PSR PCB Pattern information