

Eoulu Sky Series - RF Probes

Novel Features

- Special probe tip design technology, long lifetime, suitable for mass production test *
- Wide operating temperature -60°C to +200°C
- Probe pitch: 50 μm ~ 1250 μm
- Probe tip material: Nickel Alloy, Copper Alloy
- Pad-height deviation up to 25 μm , suitable for testing uneven wafers
- Ultra low Contact Resistance and Insertion Loss

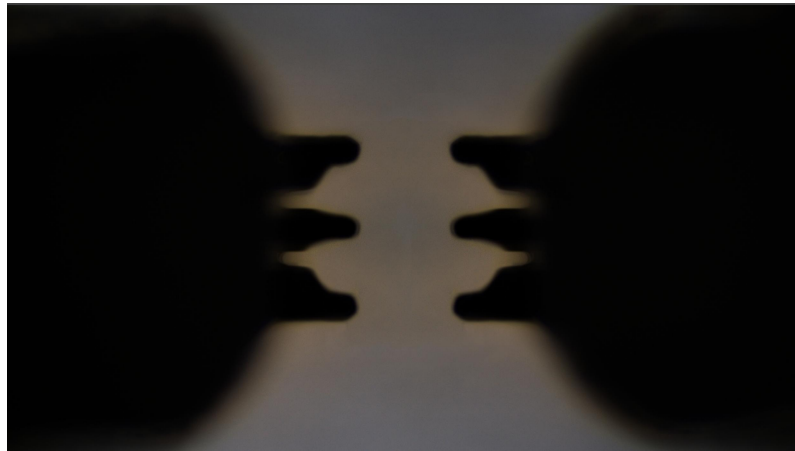
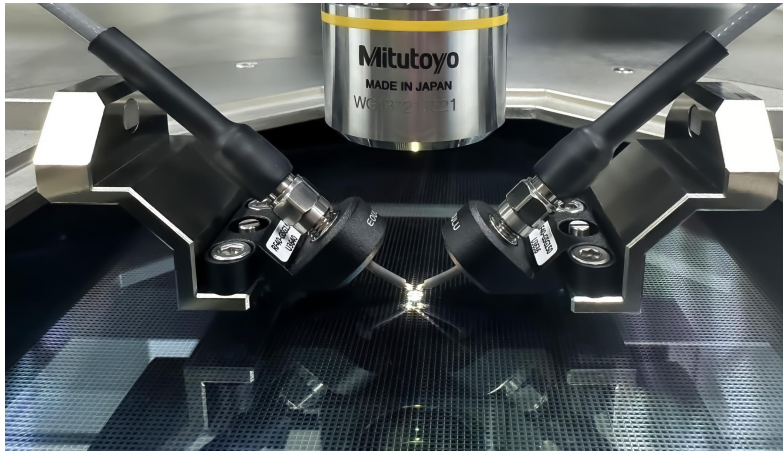


* Suitable for F1 probe station or other probe station with good mechanical properties

* Suitable for semi-automated or fully-automated testing (manual testing not ensured)

Product Advantages

- Sky series - RF probe is an ideal match for wafer level measurement of RF and microwave devices
- Ultra low Contact Resistance
- Superior measurement accuracy and repeatability over-temperature measurements
- Fast delivery, local maintenance



Selection Guide

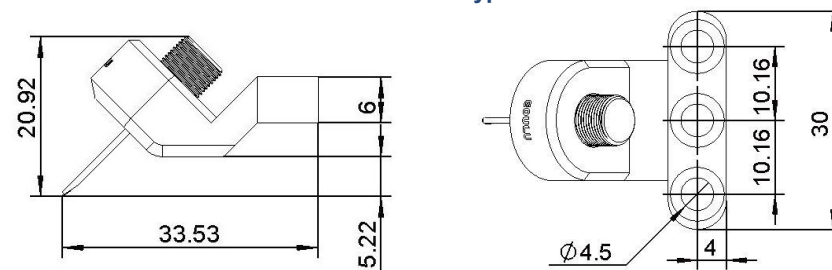
Key Specifications	Single-Signal			Dual-Signal (Differential)		
	LF Series	RF Series	HF Series	LF Series	RF Series	HF Series
Maximum Frequency	50 GHz	110 GHz	110 GHz	67 GHz	110 GHz	110 GHz
Typical Insertion Loss @ 40 GHz ** GSG, 150 µm Pitch, Standard GSGSG, 150 µm Pitch, Standard	- 0.50 dB	- 0.62 dB	- 0.57 dB	- 0.80 dB	- 0.80 dB	- 0.80 dB
Typical Return Loss @ 40 GHz ** GSG, 150 µm Pitch, Standard GSGSG, 150 µm Pitch, Standard	- 20.50 dB	- 17.80 dB	- 18.54 dB	- 13.00 dB	- 13.00 dB	- 13.00 dB
Typical Contact Resistance ***	< 10 mΩ	< 10 mΩ	< 10 mΩ	< 10 mΩ	< 10 mΩ	< 10 mΩ
Tip Configuration	GSG, GS, SG	GSG, GS, SG	GSG, GS, SG	GSGSG, GSSG	GSGSG, GSSG	GSGSG, GSSG
Probe Pitch *****	50 µm ~ 1250 µm (25 µm step)	50 µm ~ 1250 µm (25 µm step)	50 µm ~ 1250 µm (25 µm step)	50 µm ~ 1250 µm (25 µm step)	50 µm ~ 1250 µm (25 µm step)	50 µm ~ 1250 µm (25 µm step)
Typical Lifetime *****	> 1,000,000	> 1,000,000	> 1,000,000	> 1,000,000	> 1,000,000	> 1,000,000
Maximum Temperature	200°C	200°C	200°C	200°C	200°C	200°C
Minimum Pad Size	70 × 70 µm	30 × 30 µm	30 × 30 µm	70 × 70 µm	30 × 30 µm	30 × 30 µm
Features	● Suitable for uneven wafer ● Stable testing ● High repeatability ● Long lifetime ● Fast delivery	● Ultra Low Contact Resistance ● Small contact marks ● Stable testing ● High repeatability	● Ultra low Contact Resistance ● Small contact marks ● Stable testing ● High repeatability	● Suitable for uneven wafer ● Stable testing ● High repeatability ● Long lifetime ● Fast delivery	● Ultra low Contact Resistance ● Small contact marks ● Stable testing ● High repeatability	● Ultra low Contact Resistance ● Small contact marks ● Stable testing ● High repeatability
Recommendation *****	● PCB Board Testing ● Mass Production Testing	● Filter Testing	● Device Modeling Testing ● Characterization Testing	● PCB Board Testing ● Mass Production	● Filter Testing	● Device Modeling Testing ● Characterization Testing

40 GHz Single-Signal : LF40 Series

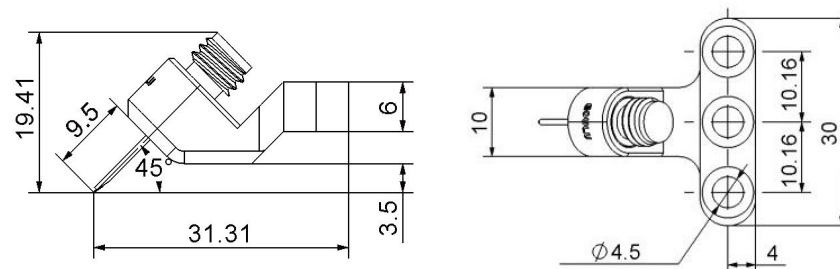
Electrical Specifications				
1	Frequency Range	DC ~ 40 GHz		
2	Insertion Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.39 dB	- 0.50 dB	- 0.60 dB
3	Return Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 17.00 dB	- 20.50 dB	- 28.15 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	3 A		
7	Maximum DC Voltage	200 V		
8	Maximum RF Power ****	Standard	High-power	
		> 4 W @ 40 GHz	> 7 W @ 40 GHz	

Mechanical Specifications		
1	Tip Configuration	GSG, GS, SG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	2.92 mm (female)
4	Probe Tip Material	Nickel Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	70 × 70 μ m
8	Probe Shape	Typical / Mini / Slim
9	Recommended Cable	C40 Series Cables

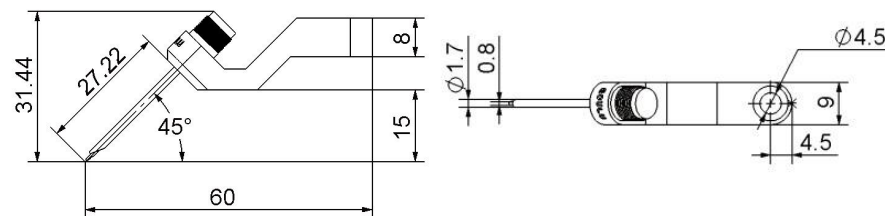
Dimensions — Typical *****



Dimensions — Mini *****



Dimensions — Slim *****

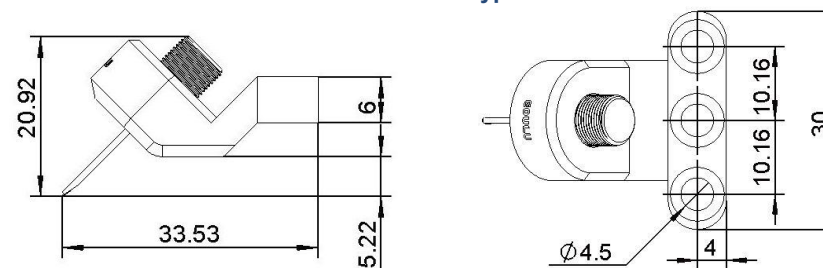


40 GHz Single-Signal : RF40 Series

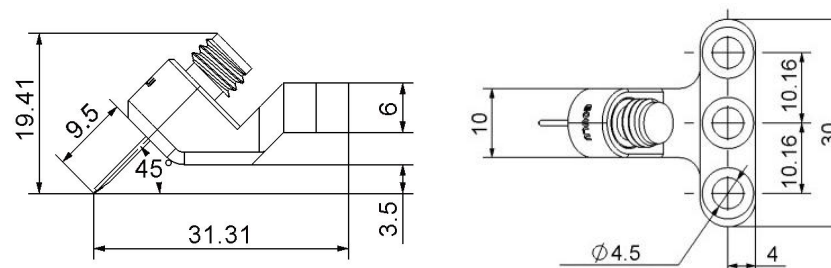
Electrical Specifications				
1	Frequency Range	DC ~ 40 GHz		
2	Insertion Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.43 dB	- 0.62 dB	- 0.69 dB
3	Return Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 15.25 dB	- 17.80 dB	- 19.33 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		
8	Maximum RF Power ****	Standard	High-power	
		> 4 W @ 40 GHz	> 7 W @ 40 GHz	

Mechanical Specifications		
1	Tip Configuration	GSG, GS, SG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	2.92 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 $\times$ 30 μ m
8	Probe Shape	Typical / Mini / Slim
9	Recommended Cable	C40 Series Cables

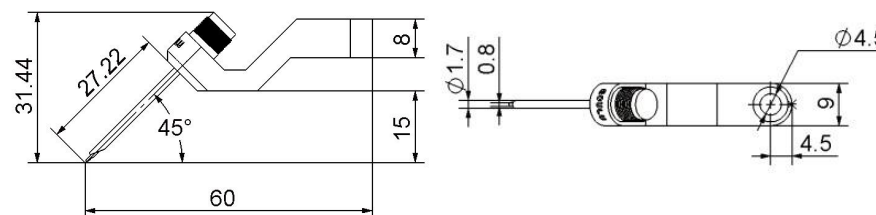
Dimensions — Typical *****



Dimensions — Mini *****



Dimensions — Slim *****

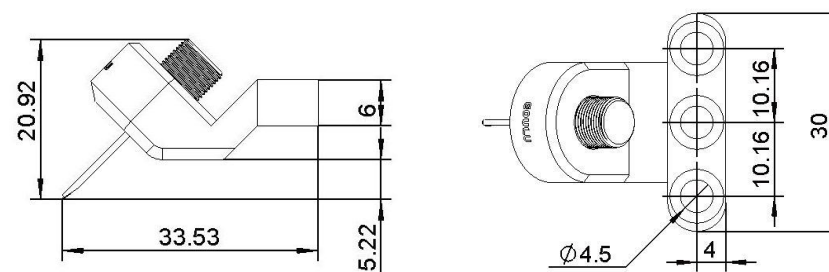


40 GHz Single-Signal : HF40 Series

Electrical Specifications				
1	Frequency Range	DC ~ 40 GHz		
2	Insertion Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.52 dB	- 0.57 dB	- 0.72 dB
3	Return Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 16.13 dB	- 18.54 dB	- 20.45 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		
8	Maximum RF Power ****	Standard	High-power	
		> 4 W @ 40 GHz	> 7 W @ 40 GHz	

Mechanical Specifications		
1	Tip Configuration	GSG, GS, SG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	2.92 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 $\times$ 30 μ m
8	Probe Shape	Typical
9	Recommended Cable	C40 Series Cables

Dimensions — Typical *****

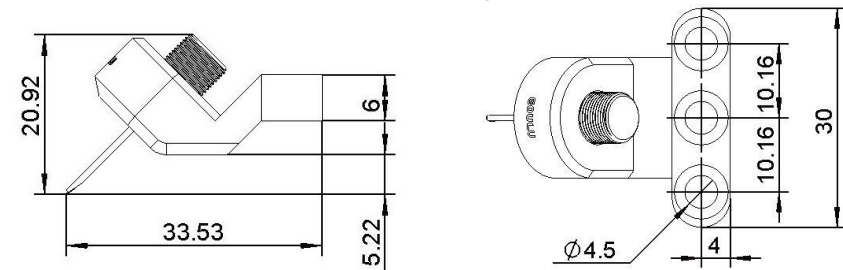


50 GHz Single-Signal : LF50 Series

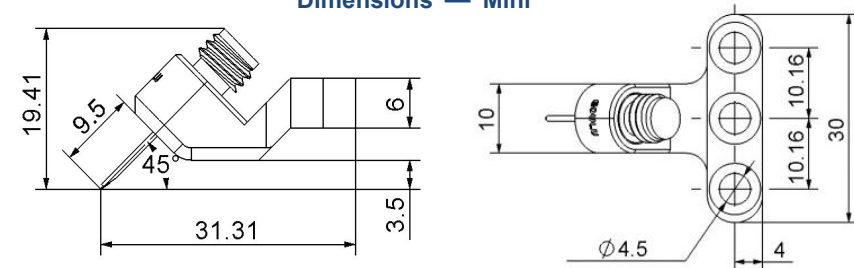
Electrical Specifications				
1	Frequency Range	DC ~ 50 GHz		
2	Insertion Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.48 dB	- 0.70 dB	- 0.90 dB
3	Return Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 10.70 dB	- 15.00 dB	- 20.60 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	3 A		
7	Maximum DC Voltage	200 V		
8	Maximum RF Power ****	Standard	High-power	
		> 3.5 W @ 50 GHz	> 6.5 W @ 50 GHz	

Mechanical Specifications		
1	Tip Configuration	GSG, GS, SG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	1.85 mm (female)
4	Probe Tip Material	Nickel Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	70 × 70 μ m
8	Probe Shape	Typical / Mini / Slim
9	Recommended Cable	C50 Series Cables

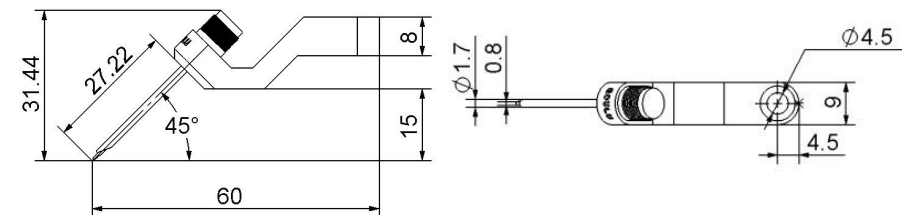
Dimensions — Typical *****



Dimensions — Mini *****



Dimensions — Slim *****

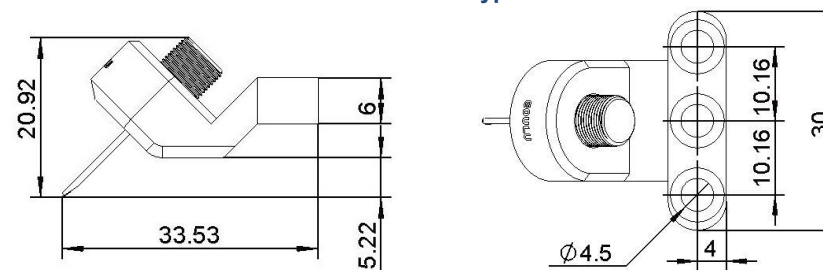


50 GHz Single-Signal : RF50 Series

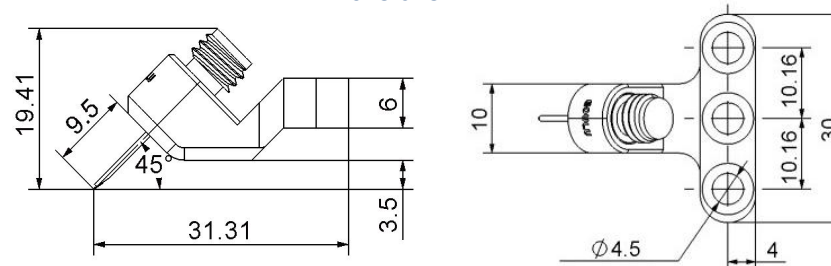
Electrical Specifications				
1	Frequency Range	DC ~ 50 GHz		
2	Insertion Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.53 dB	- 0.59 dB	- 0.63 dB
3	Return Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 14.67 dB	- 17.17 dB	- 20.42 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		
8	Maximum RF Power ****	Standard	High-power	
		> 3.5 W @ 50 GHz	> 6.5 W @ 50 GHz	

Mechanical Specifications		
1	Tip Configuration	GSG, GS, SG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	1.85 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 $\times$ 30 μ m
8	Probe Shape	Typical / Mini / Slim
9	Recommended Cable	C50 Series Cables

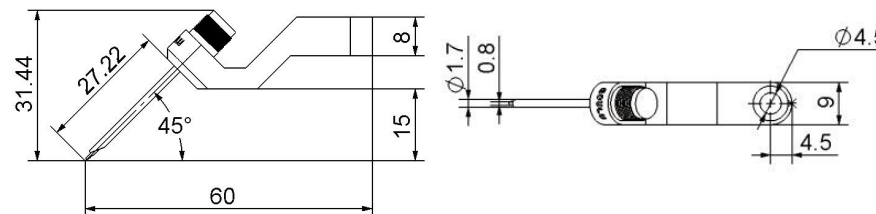
Dimensions — Typical *****



Dimensions — Mini *****



Dimensions — Slim *****

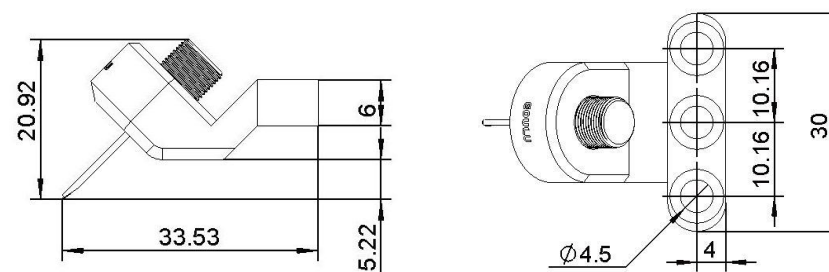


50 GHz Single-Signal : HF50 Series

Electrical Specifications				
1	Frequency Range	DC ~ 50 GHz		
2	Insertion Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.53 dB	- 0.59 dB	- 0.63 dB
3	Return Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 14.67 dB	- 17.17 dB	- 20.42 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		
8	Maximum RF Power ****	Standard	High-power	
		> 3.5 W @ 50 GHz	> 6.5 W @ 50 GHz	

Mechanical Specifications		
1	Tip Configuration	GSG, GS, SG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	1.85 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 $\times$ 30 μ m
8	Probe Shape	Typical
9	Recommended Cable	C50 Series Cables

Dimensions — Typical *****

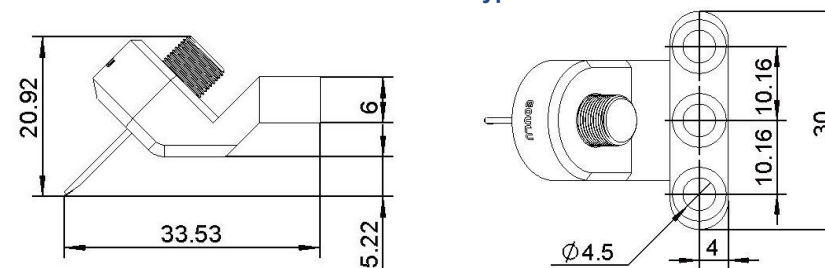


67 GHz Single-Signal : RF67 Series

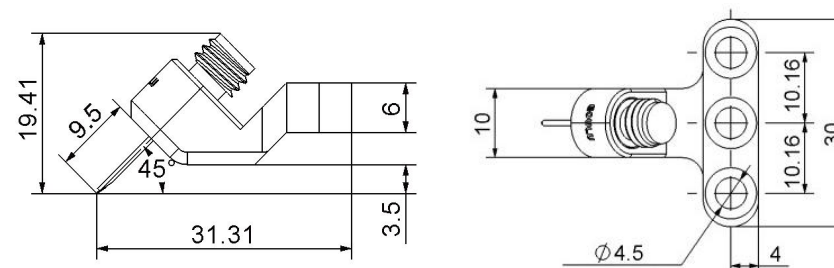
Electrical Specifications				
1	Frequency Range	DC ~ 67 GHz		
2	Insertion Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.65 dB	- 0.87 dB	- 1.09 dB
3	Return Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 12.55 dB	- 15.68 dB	- 18.65 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		
8	Maximum RF Power ****	Standard	High-power	
		> 3 W @ 67 GHz	> 6 W @ 67 GHz	

Mechanical Specifications		
1	Tip Configuration	GSG, GS, SG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	1.85 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 $\times$ 30 μ m
8	Probe Shape	Typical / Mini / Slim
9	Recommended Cable	C67 Series Cables

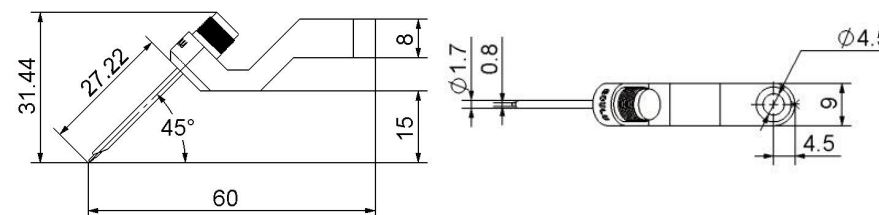
Dimensions — Typical *****



Dimensions — Mini *****



Dimensions — Slim *****

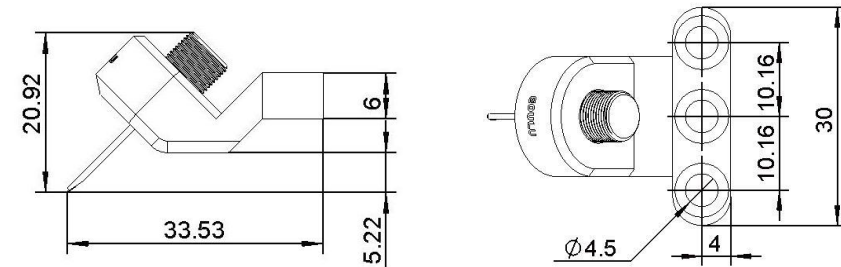


67 GHz Single-Signal : HF67 Series

Electrical Specifications				
1	Frequency Range	DC ~ 67 GHz		
2	Insertion Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.65 dB	- 0.73 dB	- 0.79 dB
3	Return Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 15.22 dB	- 15.50 dB	- 15.77 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		
8	Maximum RF Power ****	Standard	High-power	
		> 3 W @ 67 GHz	> 6 W @ 67 GHz	

Mechanical Specifications		
1	Tip Configuration	GSG, GS, SG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	1.85 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 $\times$ 30 μ m
8	Probe Shape	Typical
9	Recommended Cable	C67 Series Cables

Dimensions — Typical *****

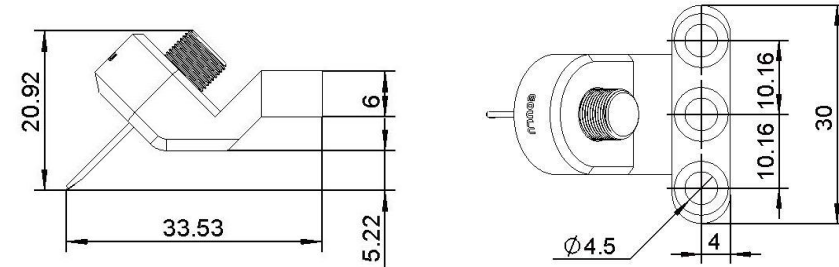


110 GHz Single-Signal : RF110 Series

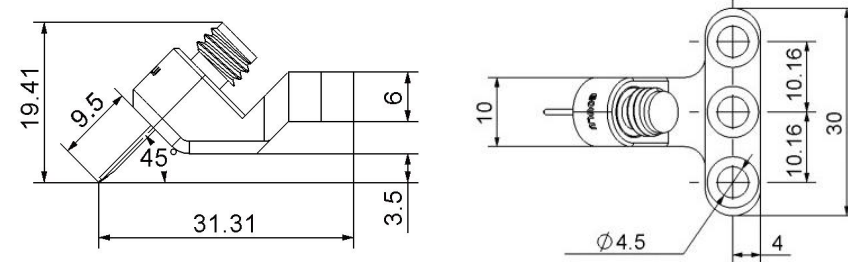
Electrical Specifications				
1	Frequency Range	DC ~ 110 GHz		
2	Insertion Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.96 dB	- 1.13 dB	- 1.37 dB
3	Return Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 11.60 dB	- 16.86 dB	- 19.24 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		

Mechanical Specifications		
1	Tip Configuration	GSG
2	Probe Pitch *****	50 μ m ~ 150 μ m (25 μ m step)
3	Connector	1.0 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 × 30 μ m
8	Probe Shape	Typical / Mini / Slim
9	Recommended Cable	C110 Series Cables

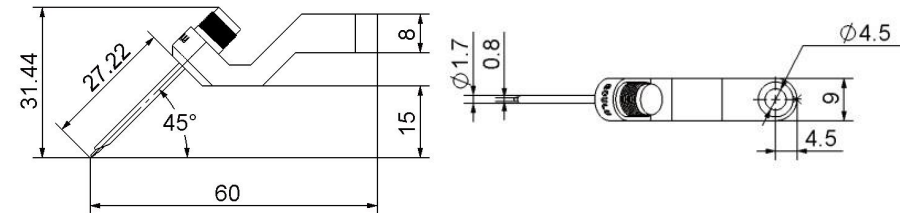
Dimensions — Typical *****



Dimensions — Mini *****



Dimensions — Slim *****

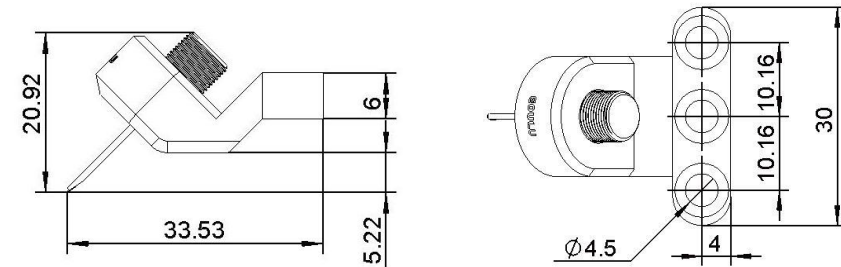


110 GHz Single-Signal : HF110 Series

Electrical Specifications				
1	Frequency Range	DC ~ 110 GHz		
2	Insertion Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.96 dB	- 1.13 dB	- 1.37 dB
3	Return Loss ** (GSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 11.60 dB	- 16.86 dB	- 19.24 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		

Mechanical Specifications		
1	Tip Configuration	GSG
2	Probe Pitch *****	50 μ m ~ 150 μ m (25 μ m step)
3	Connector	1.0 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 × 30 μ m
8	Probe Shape	Typical
9	Recommended Cable	C110 Series Cables

Dimensions — Typical *****

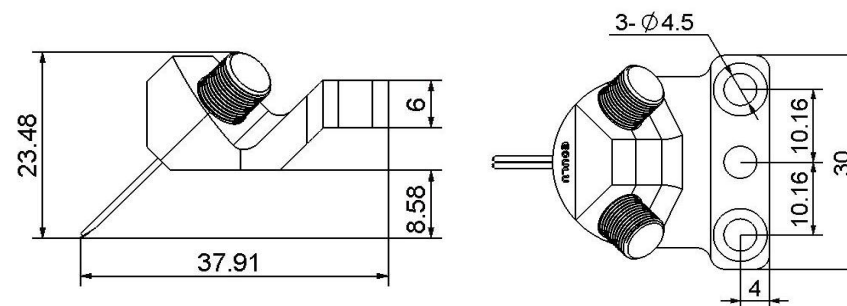


40 GHz Dual-Signal (Differential) : LF40D Series

Electrical Specifications				
1	Frequency Range	DC ~ 40 GHz		
2	Insertion Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.45 dB	- 0.80 dB	- 0.90 dB
3	Return Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 12.00 dB	- 13.00 dB	- 15.40 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	3 A		
7	Maximum DC Voltage	200 V		

Mechanical Specifications		
1	Tip Configuration	GSGSG, GSSG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	2.92 mm (female)
4	Probe Tip Material	Nickel Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	70 $\times$ 70 μ m
8	Probe Shape	Typical
9	Recommended Cable	C40 Series Cables

Dimensions — Typical *****

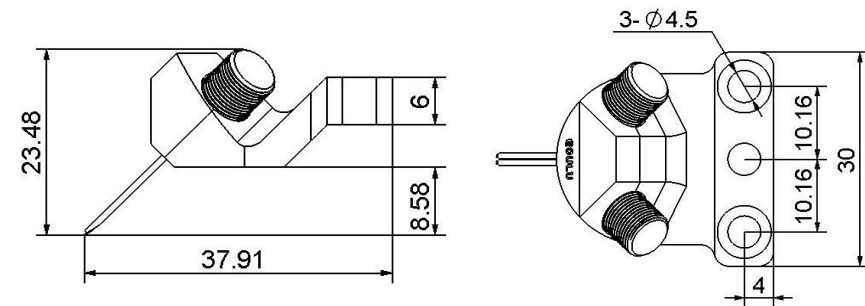


40 GHz Dual-Signal (Differential) : RF40D Series

Electrical Specifications				
1	Frequency Range	DC ~ 40 GHz		
2	Insertion Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.45 dB	- 0.80 dB	- 0.90 dB
3	Return Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 12.00 dB	- 13.00 dB	- 15.40 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		

Mechanical Specifications		
1	Tip Configuration	GSGSG, GSSG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	2.92 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 $\times$ 30 μ m
8	Probe Shape	Typical
9	Recommended Cable	C40 Series Cables

Dimensions — Typical *****

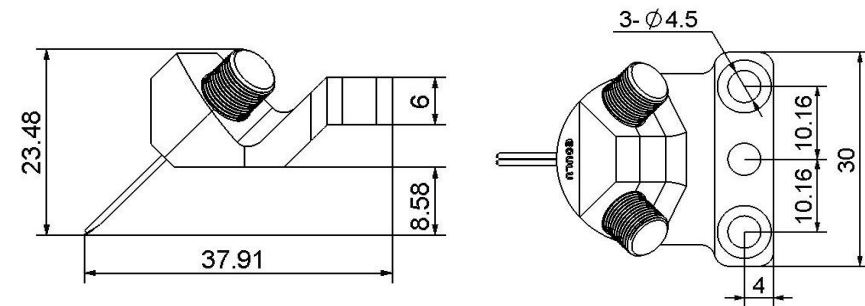


40 GHz Dual-Signal (Differential) : HF40D Series

Electrical Specifications				
1	Frequency Range	DC ~ 40 GHz		
2	Insertion Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.45 dB	- 0.80 dB	- 0.90 dB
3	Return Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 12.00 dB	- 13.00 dB	- 15.40 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		

Mechanical Specifications		
1	Tip Configuration	GSGSG, GSSG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	2.92 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 $\times$ 30 μ m
8	Probe Shape	Typical
9	Recommended Cable	C40 Series Cables

Dimensions — Typical *****

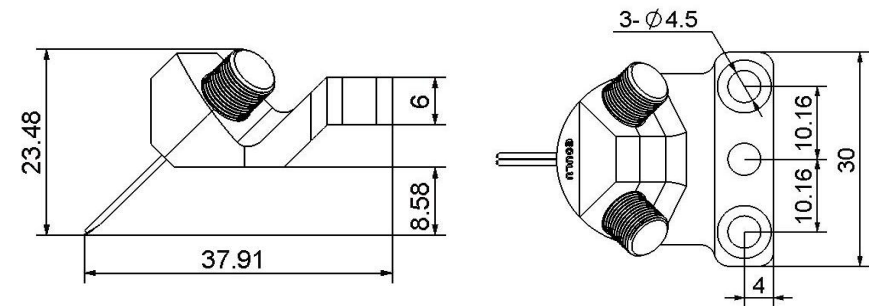


50 GHz Dual-Signal (Differential) : LF50D Series

Electrical Specifications				
1	Frequency Range	DC ~ 50 GHz		
2	Insertion Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.71 dB	- 0.90 dB	- 1.10 dB
3	Return Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 11.00 dB	- 12.80 dB	- 14.60 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	3 A		
7	Maximum DC Voltage	200 V		

Mechanical Specifications		
1	Tip Configuration	GSGSG, GSSG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	1.85 mm (female)
4	Probe Tip Material	Nickel Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	70 $\times$ 70 μ m
8	Probe Shape	Typical
9	Recommended Cable	C50 Series Cables

Dimensions — Typical *****

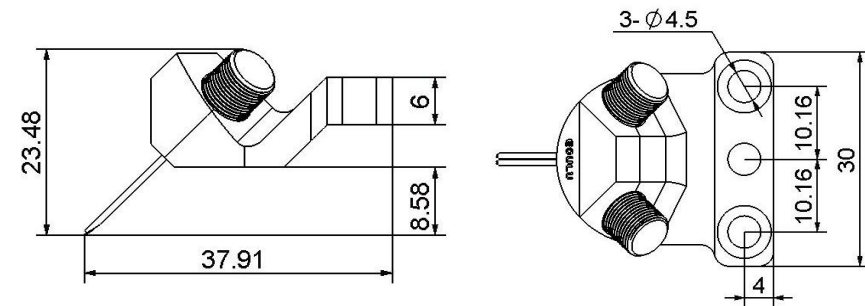


50 GHz Dual-Signal (Differential) : RF50D Series

Electrical Specifications				
1	Frequency Range	DC ~ 50 GHz		
2	Insertion Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.69 dB	- 0.72 dB	- 0.74 dB
3	Return Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 13.36 dB	- 14.39 dB	- 15.41 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		

Mechanical Specifications		
1	Tip Configuration	GSGSG, GSSG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	1.85 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 $\times$ 30 μ m
8	Probe Shape	Typical
9	Recommended Cable	C50 Series Cables

Dimensions — Typical *****

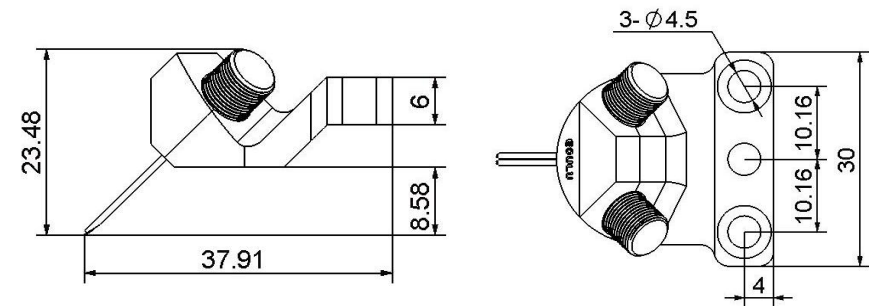


50 GHz Dual-Signal (Differential) : HF50D Series

Electrical Specifications				
1	Frequency Range	DC ~ 50 GHz		
2	Insertion Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.69 dB	- 0.72 dB	- 0.74 dB
3	Return Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 13.36 dB	- 14.39 dB	- 15.41 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		

Mechanical Specifications		
1	Tip Configuration	GSGSG, GSSG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	1.85 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 $\times$ 30 μ m
8	Probe Shape	Typical
9	Recommended Cable	C50 Series Cables

Dimensions — Typical *****

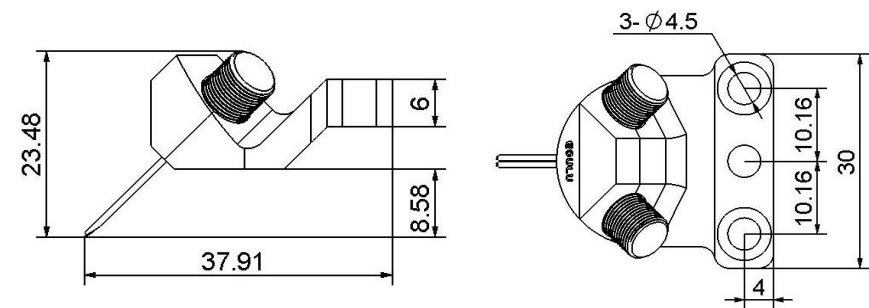


67 GHz Dual-Signal (Differential) : LF67D Series

Electrical Specifications				
1	Frequency Range	DC ~ 67 GHz		
2	Insertion Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.80 dB	- 0.90 dB	- 1.10 dB
3	Return Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 11.00 dB	- 12.80 dB	- 14.60 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	3 A		
7	Maximum DC Voltage	200 V		

Mechanical Specifications		
1	Tip Configuration	GSGSG, GSSG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	1.85 mm (female)
4	Probe Tip Material	Nickel Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	70 $\times$ 70 μ m
8	Probe Shape	Typical
9	Recommended Cable	C67 Series Cables

Dimensions — Typical *****

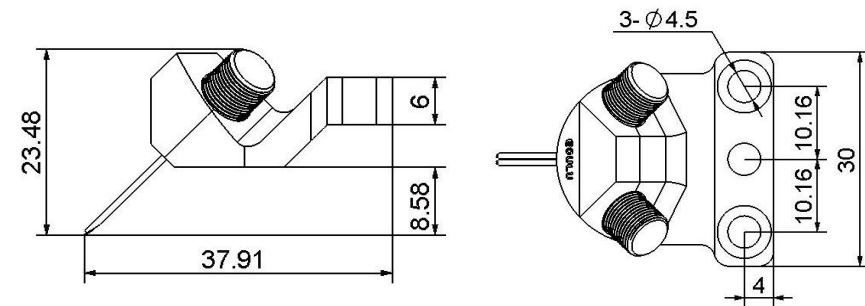


67 GHz Dual-Signal (Differential) : RF67D Series

Electrical Specifications				
1	Frequency Range	DC ~ 67 GHz		
2	Insertion Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.89 dB	- 0.95 dB	- 1.02 dB
3	Return Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 11.19 dB	- 12.00 dB	- 12.82 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		

Mechanical Specifications		
1	Tip Configuration	GSGSG, GSSG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	1.85 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 $\times$ 30 μ m
8	Probe Shape	Typical
9	Recommended Cable	C67 Series Cables

Dimensions — Typical *****

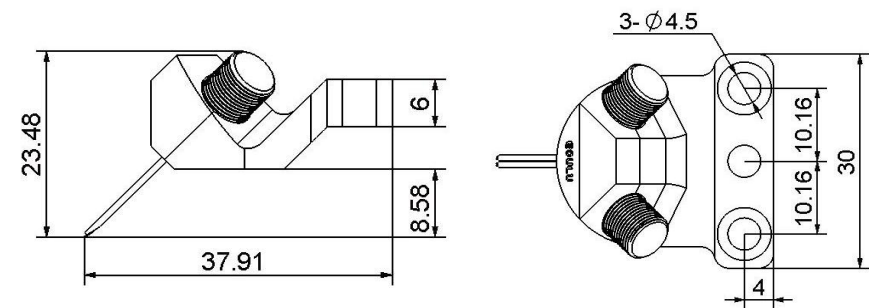


67 GHz Dual-Signal (Differential) : HF67D Series

Electrical Specifications				
1	Frequency Range	DC ~ 67 GHz		
2	Insertion Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 0.89 dB	- 0.95 dB	- 1.02 dB
3	Return Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 11.19 dB	- 12.00 dB	- 12.82 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		

Mechanical Specifications		
1	Tip Configuration	GSGSG, GSSG
2	Probe Pitch *****	50 μ m ~ 1250 μ m (25 μ m step)
3	Connector	1.85 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 $\times$ 30 μ m
8	Probe Shape	Typical
9	Recommended Cable	C67 Series Cables

Dimensions — Typical *****

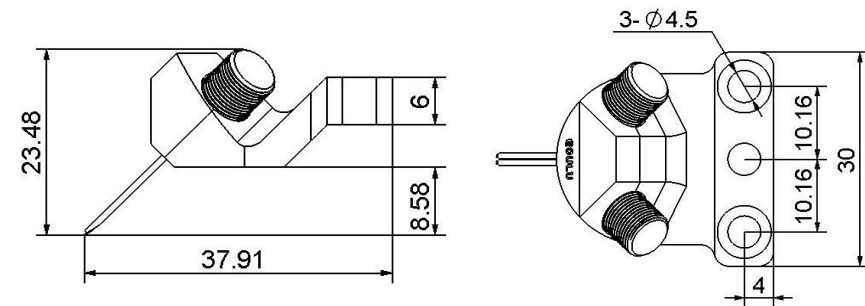


110 GHz Dual-Signal (Differential) : RF110D Series

Electrical Specifications				
1	Frequency Range	DC ~ 110 GHz		
2	Insertion Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 1.23 dB	- 1.29 dB	- 1.36 dB
3	Return Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 13.93 dB	- 14.65 dB	- 15.59 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		

Mechanical Specifications		
1	Tip Configuration	GSGSG, GSSG
2	Probe Pitch *****	50 μ m ~ 150 μ m (25 μ m step)
3	Connector	1.0 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 $\times$ 30 μ m
8	Probe Shape	Typical
9	Recommended Cable	C110 Series Cables

Dimensions — Typical *****

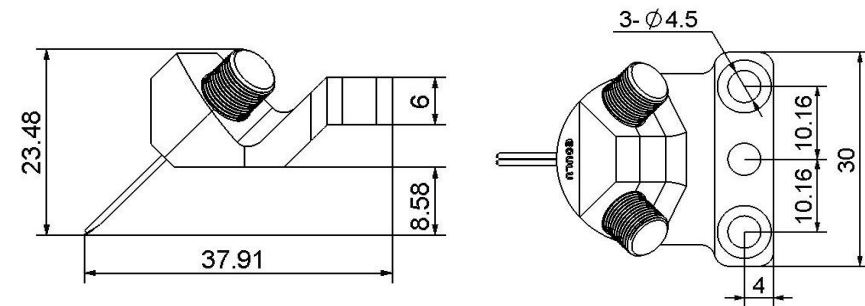


110 GHz Dual-Signal (Differential) : HF110D Series

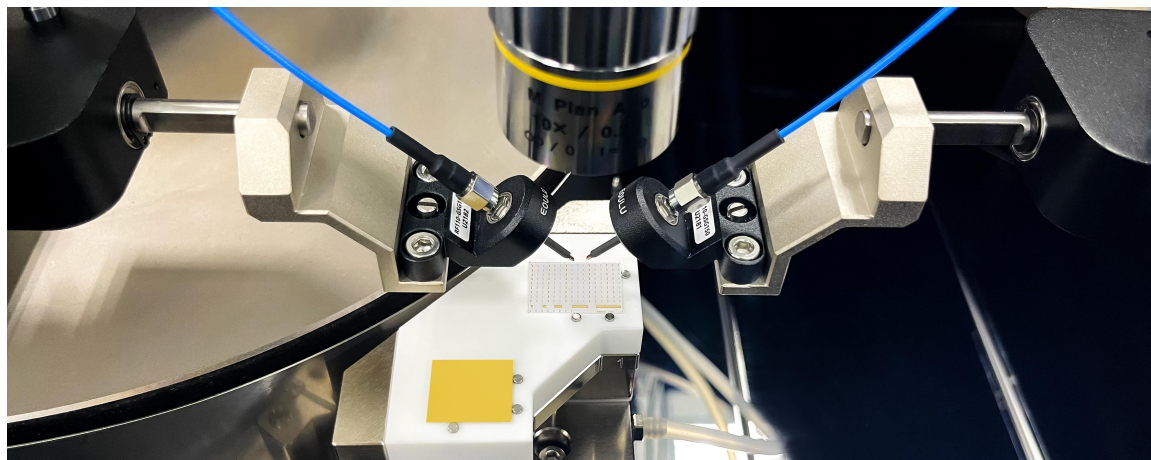
Electrical Specifications				
1	Frequency Range	DC ~ 110 GHz		
2	Insertion Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 1.23 dB	- 1.29 dB	- 1.36 dB
3	Return Loss ** (GSGSG, 150 μ m Pitch, Standard)	Max	Typical	Min
		- 13.93 dB	- 14.65 dB	- 15.59 dB
4	Characteristic Impedance	50 Ω		
5	Contact Resistance ***	< 10 m Ω		
6	Maximum DC Current	2 A		
7	Maximum DC Voltage	200 V		

Mechanical Specifications		
1	Tip Configuration	GSGSG, GSSG
2	Probe Pitch *****	50 μ m ~ 150 μ m (25 μ m step)
3	Connector	1.0 mm (female)
4	Probe Tip Material	Copper Alloy
5	Typical Lifetime *****	> 1,000,000
6	Maximum Temperature	200°C
7	Minimum Pad Size	30 $\times$ 30 μ m
8	Probe Shape	Typical
9	Recommended Cable	C110 Series Cables

Dimensions — Typical *****



- ** The test data and specifications depend on individual process conditions, the data may be different for different probe parameters. Not all specifications are valid at the same time
- ** The recommended standard probe pitch is 75 μm ~ 250 μm
- ** When purchasing and using our RF probe and Calibration Substrate for the first time, it is recommended to purchase on-site installation and calibration training services
- ** For any problems about hardware construction, cable connection, instrument setting, equipment operations, system calibration, test process and data analysis during the test, visit "Service" at the Eoulu official website, and purchase on-site accompaniment services for hardware and software testing, or purchase the Eoulu future series software to simplify test operations and obtain test results easily and quickly
- *** Rc on Au
- **** Power test environment (Watts CW @ 20°C)
- **** The high-power RF probes are customized products, please contact Eoulu for details
- ***** The typical probe pitch 50 μm ~ 1250 μm only applies to 40 GHz / 50 GHz / 67 GHz probes, and the typical probe pitch of 110 GHz and above is 50 μm ~ 150 μm
- ***** 3000 μm (wide pitch) RF probes need to be customized
- ***** Typical lifetime on Al pads, room temperature
- ***** The typical lifetime test of RF probe has been verified in the Eoulu laboratory. For details, please refer to the RF probe lifetime verification video in Eoulu's official website and the *Eoulu RF Probe Lifetime Verification Report*
- ***** The test applications listed in the table are recommended by our company. Applications not listed may still be compatible.
- ***** Probe dimensions are in mm



Eoulu Sky Series - Waveguide Probes

Novel Features

- Wide operating temperature -60°C to +200°C
- Recommended probe pitch: 50 μm ~ 150 μm
- Probe tip material: Nickel Alloy, Copper Alloy
- Pad-height deviation up to 25 μm , suitable for testing uneven wafers
- Fast delivery, local maintenance

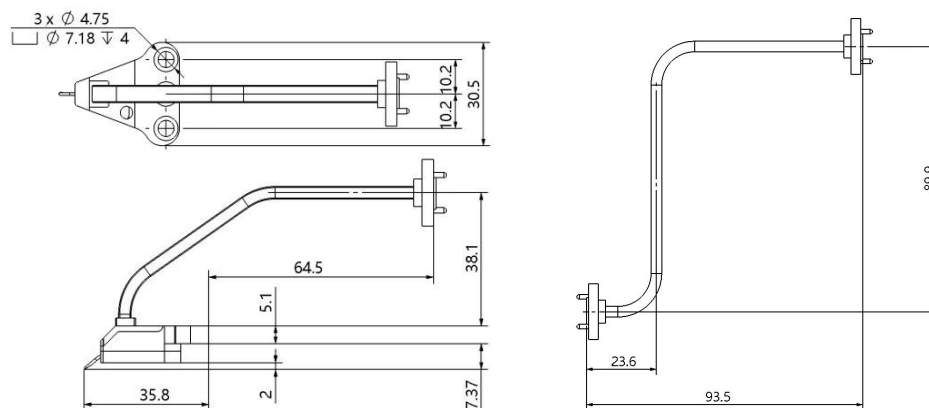


75 GHz Waveguide Probes

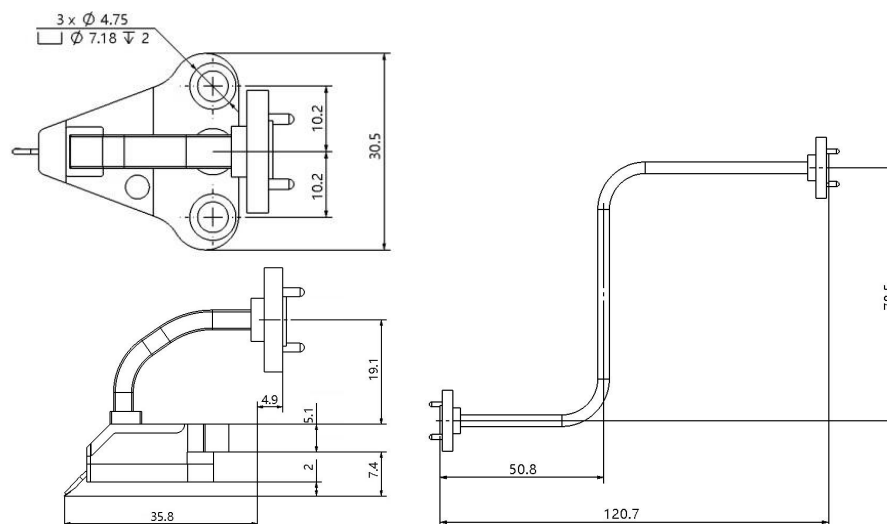
Electrical Specifications			
1	Frequency Range	50 ~ 75 GHz	
2	Insertion Loss (GSG, 150 μ m Pitch)	T Model	S Model
		- 3.0 dB	- 3.0 dB
3	Return Loss (GSG, 150 μ m Pitch)	T Model	S Model
		- 13.0 dB	- 13.0 dB
4	Characteristic Impedance	50 Ω	
5	Contact Resistance *	< 10 m Ω	
6	Maximum DC Current	500 mA	

Mechanical Specifications		
1	Tip Configuration	GSG
2	Recommended Probe Pitch	50 ~ 150 μ m (25 μ m step)
3	Connector	WR-15
4	Minimum Pad Size	70 $\times$ 70 μ m
5	Probe Tip Material	50 ~ 75 μ m: Copper Alloy 100 ~ 150 μ m: Nickel Alloy, Copper Alloy
6	Typical Lifetime **	> 1,000,000
7	Maximum Temperature	200°C
8	Part Number (T Model) ***	RF75T-GSGxxx RF75T-GSGxxxBT
9	Part Number (S Model) ***	RF75S-GSGxxx RF75S-GSGxxxBT

Dimensions — T Model ****



Dimensions — S Model ****

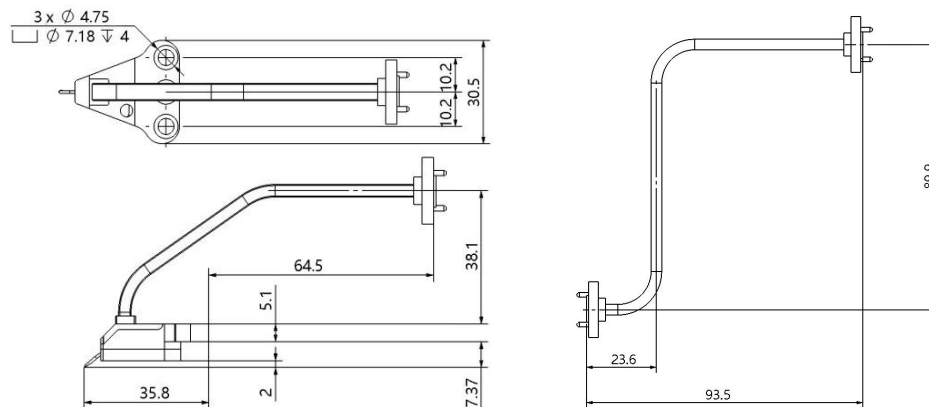


90 GHz Waveguide Probes

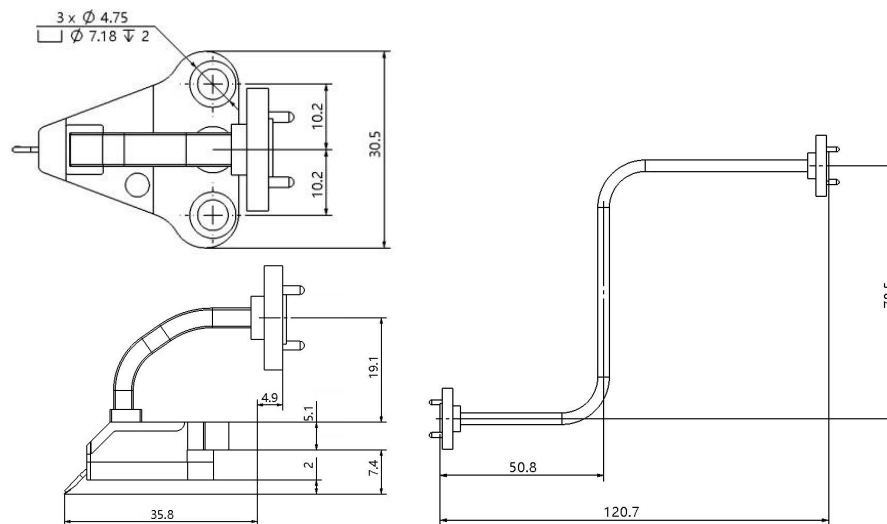
Electrical Specifications			
1	Frequency Range	60 ~ 90 GHz	
2	Insertion Loss (GSG, 150 μ m Pitch)	T Model	S Model
		- 3.0 dB	- 3.0 dB
3	Return Loss (GSG, 150 μ m Pitch)	T Model	S Model
		- 13.0 dB	- 13.0 dB
4	Characteristic Impedance	50 Ω	
5	Contact Resistance *	< 10 m Ω	
6	Maximum DC Current	500 mA	

Mechanical Specifications		
1	Tip Configuration	GSG
2	Recommended Probe Pitch	50 ~ 150 μ m (25 μ m step)
3	Connector	WR-12
4	Minimum Pad Size	70 $\times$ 70 μ m
5	Probe Tip Material	50 ~ 75 μ m: Copper Alloy 100 ~ 150 μ m: Nickel Alloy, Copper Alloy
6	Typical Lifetime **	> 1,000,000
7	Maximum Temperature	200°C
8	Part Number (T Model) ***	RF90T-GSGxxx RF90T-GSGxxxBT
9	Part Number (S Model) ***	RF90S-GSGxxx RF90S-GSGxxxBT

Dimensions — T Model ****



Dimensions — S Model ****

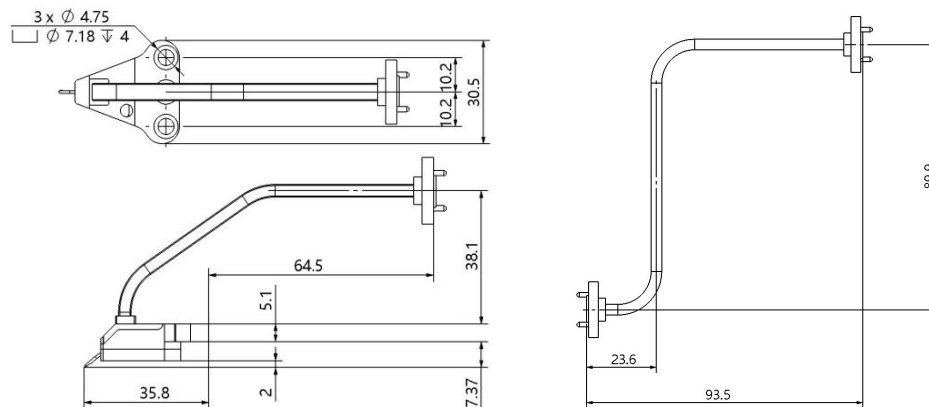


110 GHz Waveguide Probes

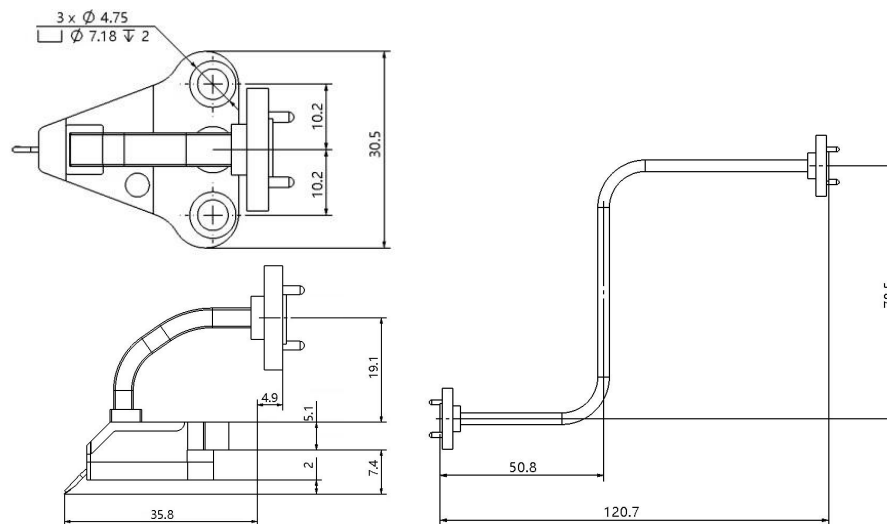
Electrical Specifications			
1	Frequency Range	75 ~ 110 GHz	
2	Insertion Loss (GSG, 150 μ m Pitch)	T Model	S Model
		- 3.0 dB	- 3.0 dB
3	Return Loss (GSG, 150 μ m Pitch)	T Model	S Model
		- 13.0 dB	- 13.0 dB
4	Characteristic Impedance	50 Ω	
5	Contact Resistance *	< 10 m Ω	
6	Maximum DC Current	500 mA	

Mechanical Specifications		
1	Tip Configuration	GSG
2	Recommended Probe Pitch	50 ~ 150 μ m (25 μ m step)
3	Connector	WR-10
4	Minimum Pad Size	70 $\times$ 70 μ m
5	Probe Tip Material	50 ~ 75 μ m: Copper Alloy 100 ~ 150 μ m: Nickel Alloy, Copper Alloy
6	Typical Lifetime **	> 1,000,000
7	Maximum Temperature	200°C
8	Part Number (T Model) ***	RF110T-GSGxxx RF110T-GSGxxxBT
9	Part Number (S Model) ***	RF110S-GSGxxx RF110S-GSGxxxBT

Dimensions — T Model ****



Dimensions — S Model ****

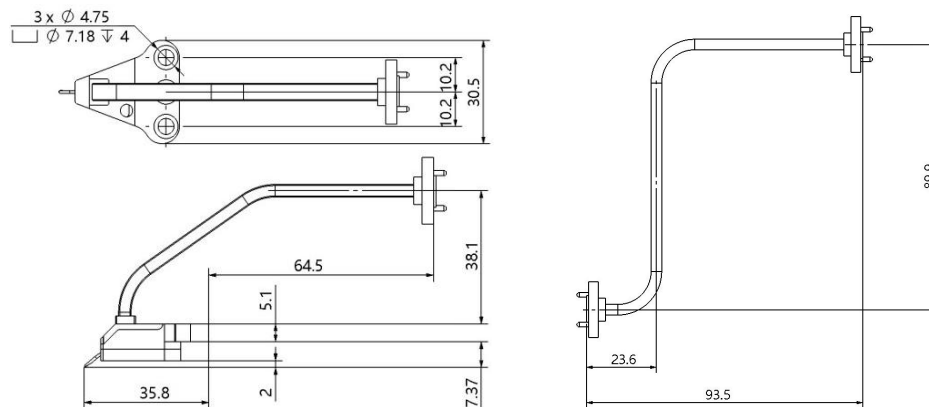


140 GHz Waveguide Probes

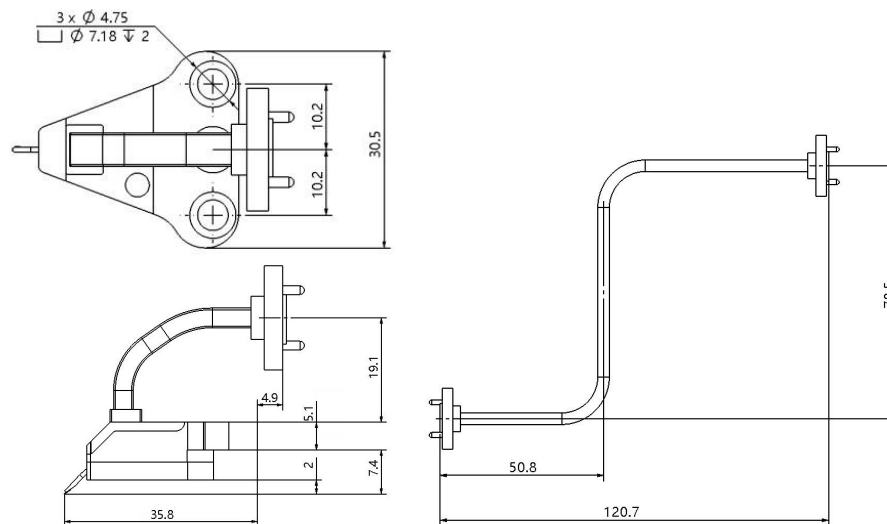
Electrical Specifications			
1	Frequency Range	90 ~ 140 GHz	
2	Insertion Loss (GSG, 150 μ m Pitch)	T Model	S Model
		- 3.0 dB	- 3.0 dB
3	Return Loss (GSG, 150 μ m Pitch)	T Model	S Model
		- 13.0 dB	- 13.0 dB
4	Characteristic Impedance	50 Ω	
5	Contact Resistance *	< 10 m Ω	
6	Maximum DC Current	500 mA	

Mechanical Specifications		
1	Tip Configuration	GSG
2	Recommended Probe Pitch	50 ~ 150 μ m (25 μ m step)
3	Connector	WR-8
4	Minimum Pad Size	70 $\times$ 70 μ m
5	Probe Tip Material	50 ~ 75 μ m: Copper Alloy 100 ~ 150 μ m: Nickel Alloy, Copper Alloy
6	Typical Lifetime **	> 1,000,000
7	Maximum Temperature	200°C
8	Part Number (T Model) ***	RF140T-GSGxxx RF140T-GSGxxxBT
9	Part Number (S Model) ***	RF140S-GSGxxx RF140S-GSGxxxBT

Dimensions — T Model ****



Dimensions — S Model ****

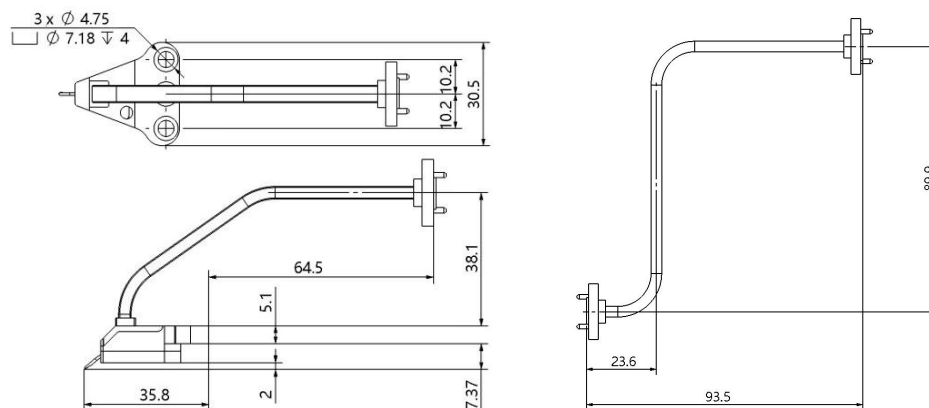


170 GHz Waveguide Probes

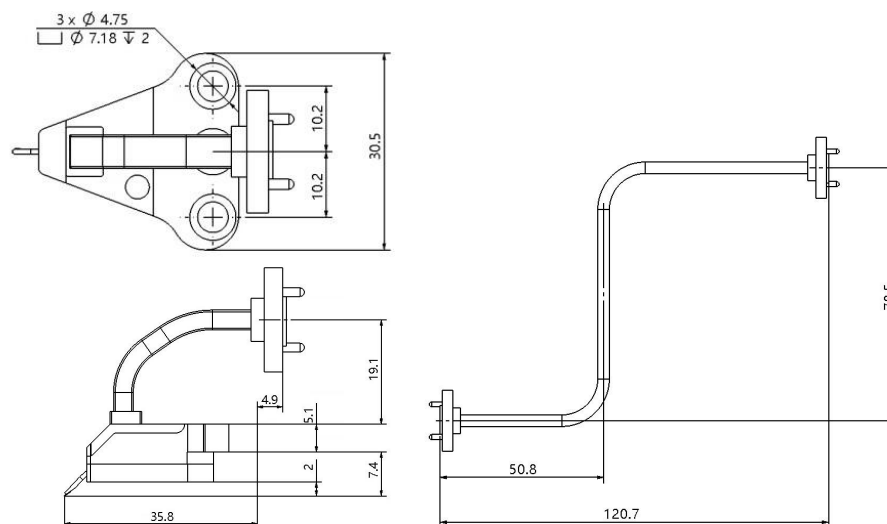
Electrical Specifications			
1	Frequency Range	110 ~ 170 GHz	
2	Insertion Loss (GSG, 150 μ m Pitch)	T Model	S Model
		- 4.7 dB	- 4.0 dB
3	Return Loss (GSG, 150 μ m Pitch)	T Model	S Model
		- 13.0 dB	- 13.0 dB
4	Characteristic Impedance	50 Ω	
5	Contact Resistance *	< 10 m Ω	
6	Maximum DC Current	500 mA	

Mechanical Specifications		
1	Tip Configuration	GSG
2	Recommended Probe Pitch	50 ~ 150 μ m (25 μ m step)
3	Connector	WR-6
4	Minimum Pad Size	70 $\times$ 70 μ m
5	Probe Tip Material	50 ~ 75 μ m: Copper Alloy 100 ~ 150 μ m: Nickel Alloy, Copper Alloy
6	Typical Lifetime **	> 1,000,000
7	Maximum Temperature	200°C
8	Part Number (T Model) ***	RF170T-GSGxxx RF170T-GSGxxxBT
9	Part Number (S Model) ***	RF170S-GSGxxx RF170S-GSGxxxBT

Dimensions — T Model ****



Dimensions — S Model ****

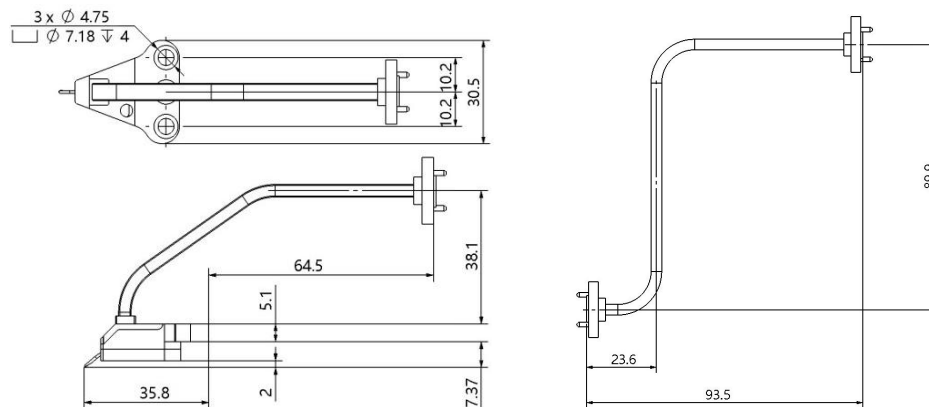


220 GHz Waveguide Probes

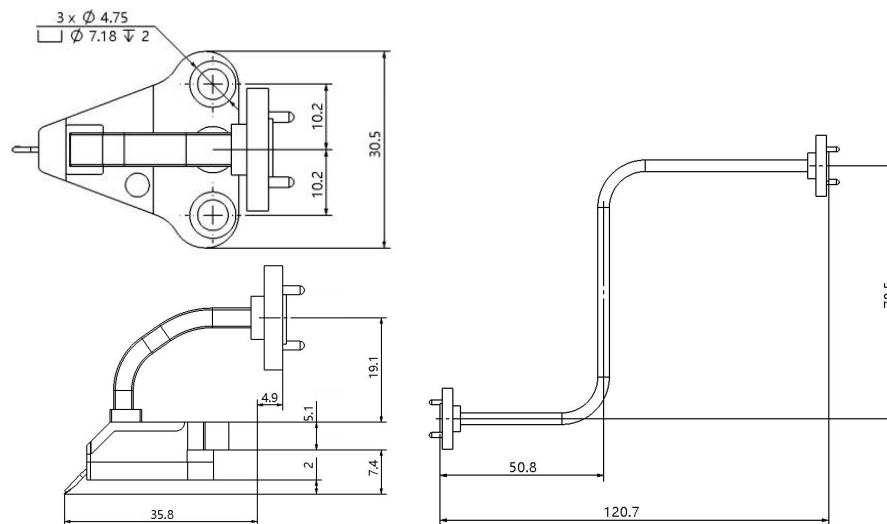
Electrical Specifications			
1	Frequency Range	140 ~ 220 GHz	
2	Insertion Loss (GSG, 150 μ m Pitch)	T Model	S Model
		- 5.2 dB	- 4.0 dB
3	Return Loss (GSG, 150 μ m Pitch)	T Model	S Model
		- 13.0 dB	- 13.0 dB
4	Characteristic Impedance	50 Ω	
5	Contact Resistance *	< 10 m Ω	
6	Maximum DC Current	500 mA	

Mechanical Specifications		
1	Tip Configuration	GSG
2	Recommended Probe Pitch	50 ~ 150 μ m (25 μ m step)
3	Connector	WR-5
4	Minimum Pad Size	70 $\times$ 70 μ m
5	Probe Tip Material	50 ~ 75 μ m: Copper Alloy 100 ~ 150 μ m: Nickel Alloy, Copper Alloy
6	Typical Lifetime **	> 1,000,000
7	Maximum Temperature	200°C
8	Part Number (T Model) ***	RF220T-GSGxxx RF220T-GSGxxxBT
9	Part Number (S Model) ***	RF220S-GSGxxx RF220S-GSGxxxBT

Dimensions — T Model ****



Dimensions — S Model ****

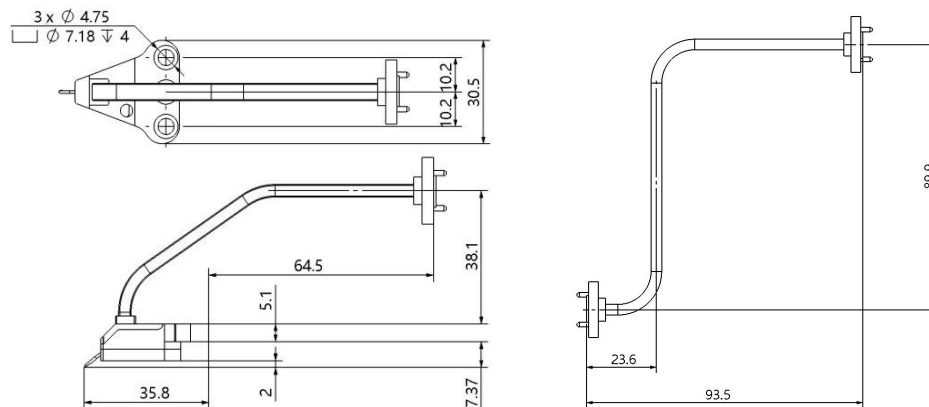


325 GHz Waveguide Probes

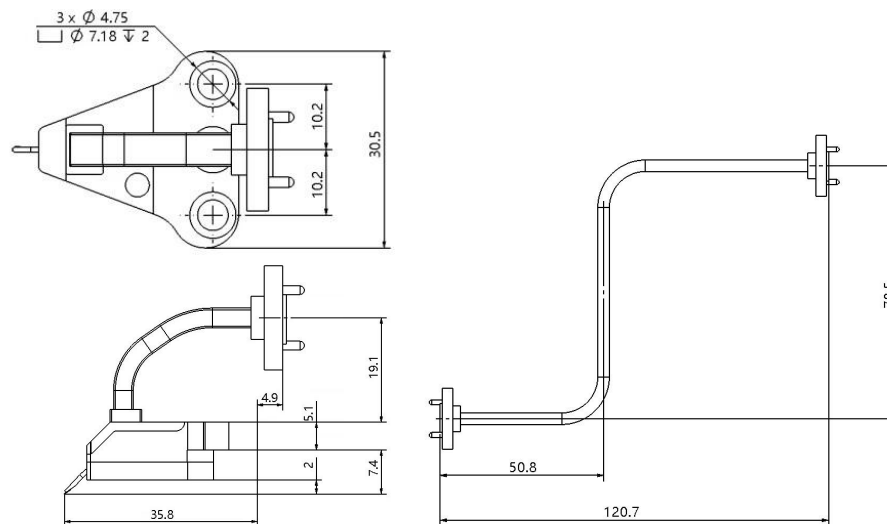
Electrical Specifications			
1	Frequency Range	220 ~ 325 GHz	
2	Insertion Loss (GSG, 150 μ m Pitch)	T Model	S Model
		- 6.5 dB	- 5.0 dB
3	Return Loss (GSG, 150 μ m Pitch)	T Model	S Model
		- 13.0 dB	- 12.0 dB
4	Characteristic Impedance	50 Ω	
5	Contact Resistance *	< 10 m Ω	
6	Maximum DC Current	500 mA	

Mechanical Specifications		
1	Tip Configuration	GSG
2	Recommended Probe Pitch	50 ~ 150 μ m (25 μ m step)
3	Connector	WR-3
4	Minimum Pad Size	70 $\times$ 70 μ m
5	Probe Tip Material	50 ~ 75 μ m: Copper Alloy 100 ~ 150 μ m: Nickel Alloy, Copper Alloy
6	Typical Lifetime **	> 1,000,000
7	Maximum Temperature	200°C
8	Part Number (T Model) ***	RF325T-GSGxxx RF325T-GSGxxxBT
9	Part Number (S Model) ***	RF325S-GSGxxx RF325S-GSGxxxBT

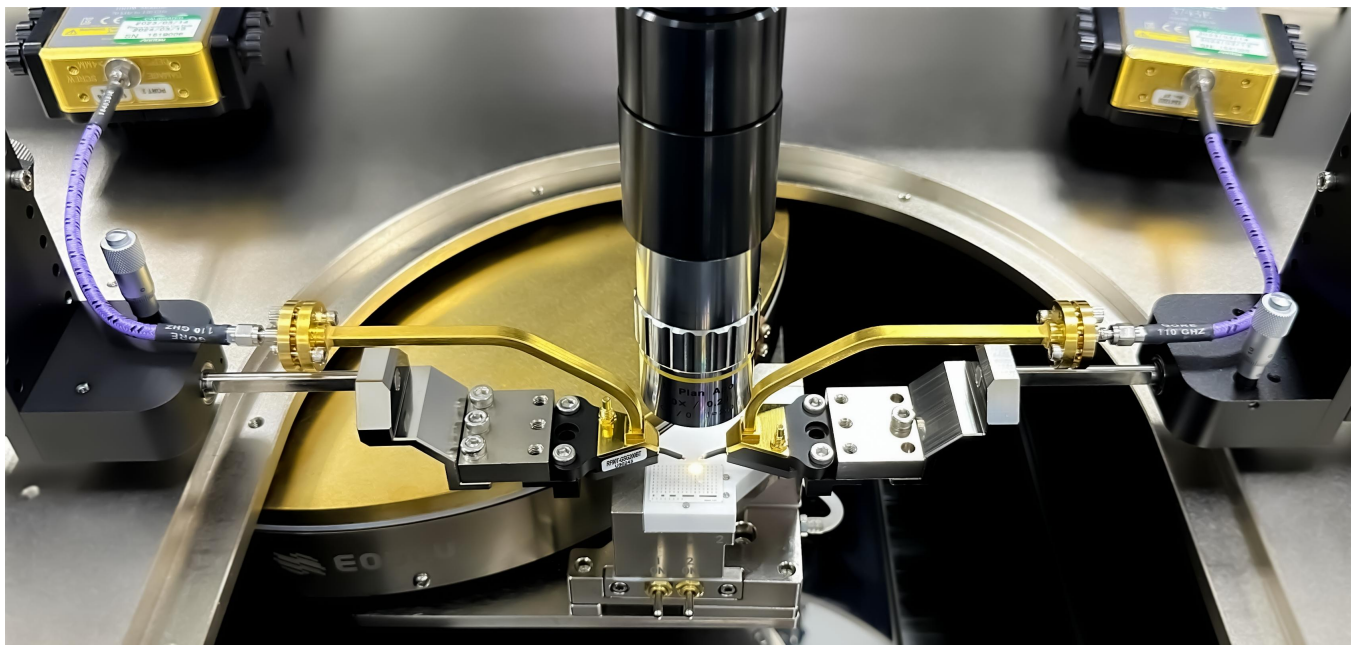
Dimensions — T Model ****



Dimensions — S Model ****

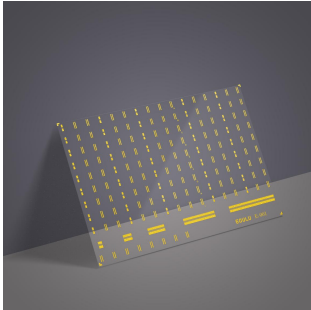


- * Rc on Au
- ** Typical lifetime on Al pads, room temperature
- *** T represents Tall (Tall model), S represents Short (Short model)
- *** The "xxx" in Part Number represents the probe pitch, in 25 μm increments
- *** The "BT" in Part Number represents Bias Tee. If "BT" is not displayed in Part Number, the waveguide probe does not have Bias Tee
- **** Probe dimensions are in mm
- **** The waveguide dimensions are suitable for Eoulu F1 probe station

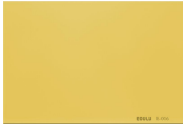


Sea chip Series - Calibration Substrate

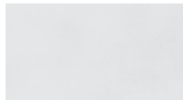
Sea chip Series - Calibration Substrate *

Part Number	Probe Pitch	Available Configuration	Frequency	Dimensions **	Picture
E-001	100 ~ 250 μm	GSG	≤ 67 GHz	20 mm x 14 mm or 22 mm x 15 mm	
E-002	100 ~ 400 μm	GSG, Right Angle	≤ 67 GHz		
E-003	250 ~ 1250 μm	GSG	≤ 67 GHz		
E-004	250 ~ 1250 μm	GS/SG	≤ 40 GHz		
E-005	100 ~ 250 μm	GS/SG	≤ 40 GHz		
E-006	100 ~ 125 μm	GSGSG/GSGS/SGSG/SGS	≤ 67 GHz		
E-007	75 ~ 150 μm	GSG	≥ 110 GHz		
E-008	50 ~ 150 μm	GSG/GS/SG	≤ 67 GHz		
E-009	300 ~ 650 μm	GSGSG	≤ 67 GHz		
	300 ~ 950 μm	GSSG	≤ 67 GHz		
E-012	150 μm	GSGSG	≤ 67 GHz		
E-013	175 ~ 250 μm	GSSG/GSS/ SSG/GS	≤ 67 GHz		
E-015	150 ~ 225 μm	GSGSG/GSGS/SGSG/SGS	≤ 67 GHz		
E-018	100 ~ 150 μm	GSSG	≤ 67 GHz		
E-022	250 μm	GSGSG/GSGS/SGS	≤ 67 GHz		

Sea chip Series - Contact Substrate ***

Part Number	Product Name			Dimensions **	Picture
E-016	Contact Substrate	-	-	20 mm x 14 mm	

Sea chip Series - Probe Cleaning Accessories

Part Number	Product Name			Dimensions **	Picture
E-030	Probe Clean	-	-	20 mm x 12 mm	
E-031	Probe Polish	-	-		

* In some cases, such as using different brands of probes and special pitch probes or testing in special environments, calibration parameters may not be applicable, but this does not mean the quality of the calibration substrates is defective. Please contact Eoulu to confirm and update the parameters

** These dimensions are average values for reference only, and the actual dimensions shall prevail

*** Before the wafer is tested, it is recommended to confirm the scrub mark of the probe and level the tip with the Contact Substrate