

Coaxial Connector Frequency Ranges

Coaxial Connector Types:

The coaxial connector types mainly used in upper microwave and millimeter-wave frequency range are summarized in the table below. K connectors and V connectors are the trademarks of Anritsu. Their equivalents are 2.92 mm and 1.85 mm connectors, respectively. SMA is the trademark of Omnispectrum, now, Tyco Electronics.

The inner diameter of the outer conductor “D”, outer diameter of the inner conductor “d” and dielectric constant of the connectors are used to name the connector types, for example, 2.92 mm is the outer connector’s inner diameter. In addition, one can also see that the TEM mode operating frequency range of these connectors is extended beyond what the industry normally uses. For example, the K connector can be operated up to 45 GHz and V connector can be extended to 72 GHz versus specified 67 GHz, respectively, without abrupt performance degradations.

SPECIFICATIONS:

Name	Alter Name	Descriptions	D (min)	d (mm)	ϵ_r	Z (Ω)	TEM Mode Freq. Range (GHz)
SMA(M)	None	SMA male connector	4.40	1.27	2.20	50	DC to 22.71
SMA(F)	None	SMA female connector	4.40	1.27	2.20	50	DC to 22.71
Super SMA(M)	SSMA(M)	Super SMA male connector	3.50	1.08	2.00	50	DC to 29.49
Super SMA(F)	SSMA(F)	Super SMA female connector	3.50	1.08	1.82	50	DC to 30.91
2.92 mm (M)	K(M)	K male connector	2.92	1.27	1.00	50	DC to 45.58
2.92 mm (F)	K(F)	K female connector	2.92	1.27	1.00	50	DC to 45.58
2.4 mm (M)	None	2.4mm male connector	2.40	1.04	1.00	50	DC to 55.50
2.4 mm (F)	None	2.4mm female connector	2.40	1.04	1.00	50	DC to 55.50
1.85 mm (M)	V(M)	V male connector	1.85	0.80	1.00	50	DC to 72.07
1.85 mm (F)	V(F)	V female connector	1.85	0.80	1.00	50	DC to 72.07
1 mm (M)	None	1 mm male connector	1.00	0.43	1.00	50	DC to 133.39
1 mm (F)	None	1 mm female connector	1.00	0.43	1.00	50	DC to 133.39

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