



COAXIAL

Non-Magnetic Flex Cables

141N SERIES

50Ω DC to 18 GHz SMA-Male to SMA-Male

KEY FEATURES

- Nickel-Free Construction, Non-Magnetic
- Broadband
- Reliable Performance

APPLICATIONS

- Cryogenic Environment Applications
- Test & Measurement
- High-Speed Data Systems
- Instrumentation
- Precision Measurements
- Quantum Computing Applications
- High-Volume Production Test
- R&D Labs & Device Characterization
- Circuit-Level Breadboarding



Generic photo used for illustration purposes only

PRODUCT OVERVIEW

The 141N Series Hand-Flex™ Coaxial Cables are ideal for interconnecting coaxial components or sub-systems. The construction includes an unjacketed silver-plated copper-clad center conductor which maintains its shape after bending. The outer shield is a tin-soaked, silver-plated copper braid which minimizes signal leakage while remaining flexible for easy bending. Connectors have passivated stainless-steel coupling nuts over a gold-plated connector bodies and gold plated, brass center conductors.



ELECTRICAL SPECIFICATIONS¹

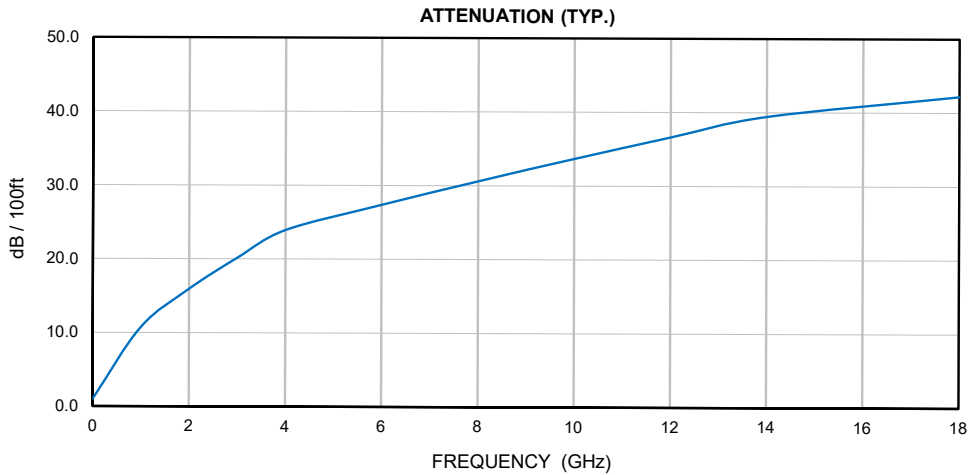
Operating Frequency (GHz)	18
Impedance (Ω)	50
Velocity of Propagation (%)	70
Shielding Effectiveness Min. (dB/m)	100
Voltage Withstand Max. (VDC)	2000
Return Loss Typ. [VSWR]	30.65 dB [1.06:1]
Return Loss Max. [VSWR]	20.08 dB [1.22:1]

1. Permanent damage may occur if any of these limits are exceeded.

MECHANICAL & ENVIRONMENTAL SPECIFICATIONS¹

Operating Case Temperature ²	-45 °C to +125 °C
Storage Temperature	-45 °C to +125 °C
Bend Radius: Installation mm [in]	10 [0.39]
Bend Radius: Repeated mm [in]	40 [1.57]
Cable Weight ³ (g/m) [lbs/1000 ft]	39 [26.2]

2. Temperature extremes are not intended for continuous normal operation.
 3. Total connector weight is 5.6 g per cable.



Attenuation (Typical @ +25 °C & VSWR = 1.0) dB

Frequency (MHz)	1000	2000	3000	4000	6000	8000	10000	12000	14000	18000
dB / 100 m	35.27	25.19	66.09	78.42	100.39	120.14	138.48	155.82	172.39	52.53
dB / 100 ft	10.75	15.91	20.14	23.90	30.59	36.61	42.20	47.48	52.53	62.12

$$\text{Calculate Max Attenuation}^4 = [K1 * \sqrt{FMHz} + K2 * FMHz] * 1.1 \text{ dB}$$

dB / 100 m	K1 =	0.99081	K2 =	0.00394
dB / 100 ft	K1 =	0.30200	K2 =	0.00120

4. For cable only, include 0.5 dB loss for connectors.

Max Power (VSWR = 1.0; +25 °C; Sea Level) W

Frequency (MHz)	1000	2000	3000	4000	6000	8000	10000	12000	14000	18000
Avg. Power (kW)	0.560	0.395	0.320	0.280	0.225	0.195	0.175	0.165	0.150	0.130



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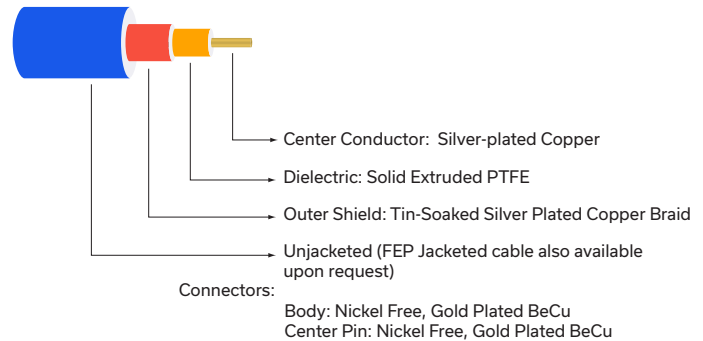
141N SERIES

50Ω DC to 18 GHz SMA-Male to SMA-Male

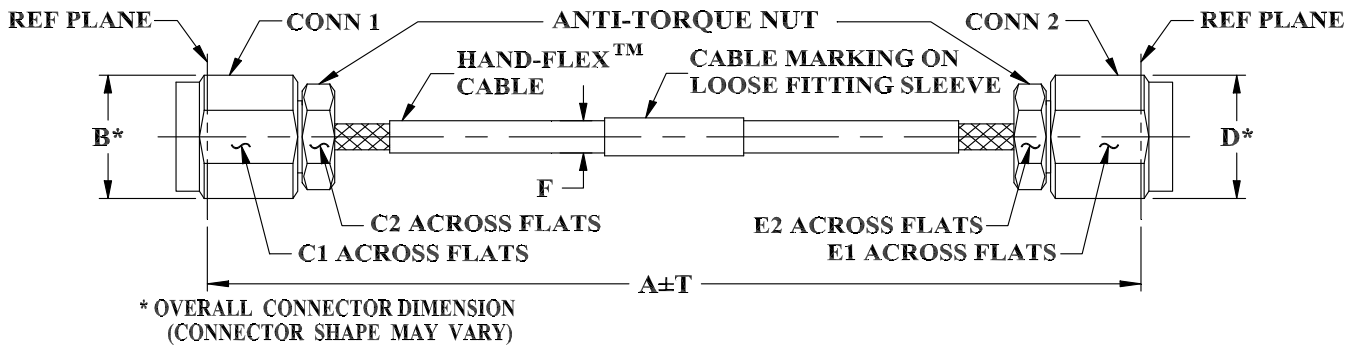
COAXIAL CONNECTIONS

Description	Connector 1	Connector 2
Connector Type	SMA-Male	SMA-Male
Orientation	Straight	Straight

CABLE CONSTRUCTION



CASE STYLE DRAWING



A		B	C1	C2	D	E1	E2	F	T		Wt. (grams)
Inch	mm								Inch	mm	
3.94	100	.36 (9.14)	.315 (8.00)	.250 (6.35)	0.36 (9.14)	.315 (8.00)	0.250 (6.35)	.141 (2.31)	±0.05	±1.27	9.50
7.87	200								±0.10	±2.54	13.40
11.81	300								±0.10	±2.54	17.30
19.69	500								±0.15	±3.81	25.10

PRODUCT MARKING*: 141N-XXCSM

*Marking may contain other features or characters for internal lot control.



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ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD

[CLICK HERE](#)

Performance Data & Graphs	Data Graphs S-Parameter (S2P Files) Data Set (.zip file)
Case Style	KQ1506
RoHS Status	Compliant
Environmental Ratings	ENV157

NOTES

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html

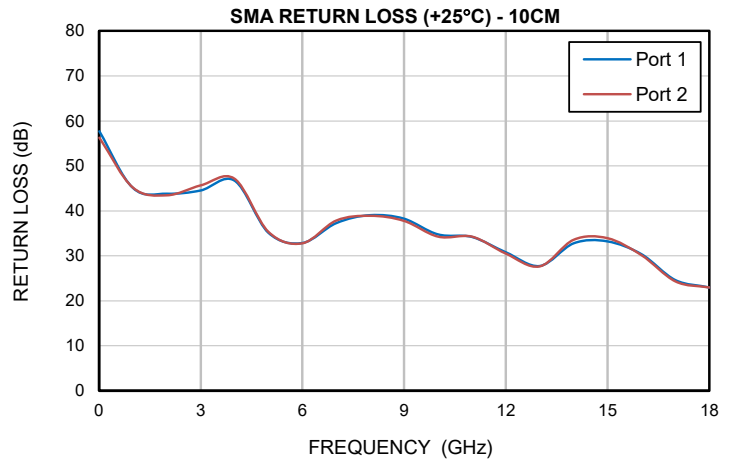
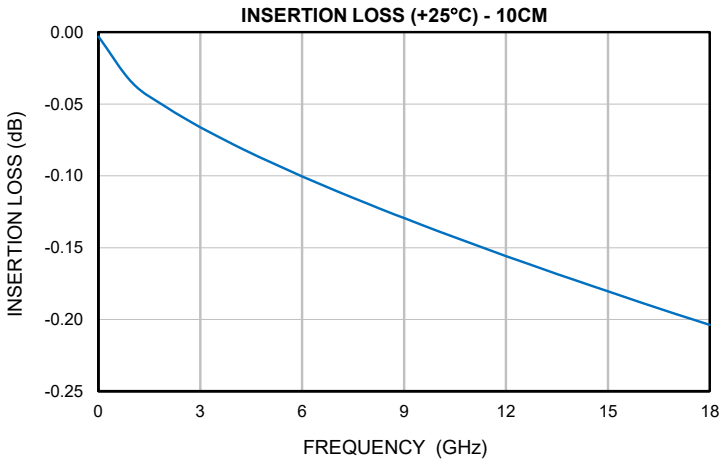


Typical Performance Data

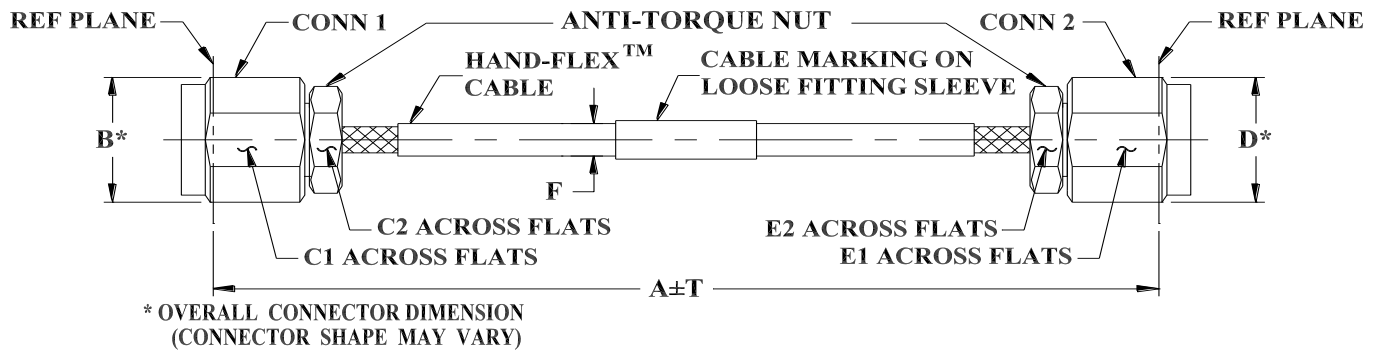
FREQ.	INSERTION LOSS	SMA MALE RETURN LOSS IN	SMA MALE RETURN LOSS OUT
(GHz)	(dB)	(dB)	(dB)
0	0.00	57.65	56.24
1	0.04	45.07	45.17
2	0.05	43.81	43.45
3	0.07	44.51	45.62
4	0.08	46.73	47.13
5	0.09	35.12	35.30
6	0.10	32.87	32.80
7	0.11	37.27	37.84
8	0.12	39.05	38.89
9	0.13	38.22	37.73
10	0.14	34.73	34.24
11	0.15	34.17	34.24
12	0.16	30.75	30.48
13	0.16	27.74	27.63
14	0.17	32.76	33.58
15	0.18	33.19	33.91
16	0.19	30.34	30.14
17	0.20	24.59	24.33
18	0.20	22.95	22.93



Typical Performance Curves



Outline Dimensions



KQ1506 SERIES
SMA MALE (CONN-1)
SMA MALE (CONN-2)

CASE STYLE #	A		B	C1	C2	D	E1	E2	F		T		WEIGHT GRAMS
	INCH	MM							141U-ASM+	141-ASM+	INCH	MM	
KQ1506-2	2.00	50.80	.36 (9.14)	.315 (8.00)	.250 (6.35)	.36 (9.14)	.315 (8.00)	.250 (6.35)	.141±.003 (3.58±0.07)	.163±.004 (4.14±0.10)	.05	1.27	6.89
KQ1506-3	3.00	76.20									.05	1.27	8.03
KQ1506-3.94	3.94	100.00									.05	1.27	9.10
KQ1506-4	4.00	101.60									.05	1.27	9.17
KQ1506-5	5.00	127.00									.05	1.27	10.32
KQ1506-6	6.00	152.40									.05	1.27	11.46
KQ1506-7	7.00	177.80									.10	2.54	12.60
KQ1506-7.87	7.87	200.00									.10	2.54	13.60
KQ1506-8	8.00	203.20									.10	2.54	13.74
KQ1506-9	9.00	228.60									.10	2.54	14.89
KQ1506-10	10.00	254.00							.10	2.54	16.03		
KQ1506-11	11.00	279.40							.10	2.54	17.17		
KQ1506-11.81	11.81	300.00							.10	2.54	18.09		
KQ1506-12	12.00	304.80							.10	2.54	18.32		
KQ1506-13	13.00	330.20							.15	3.81	19.46		
KQ1506-14	14.00	355.60							.15	3.81	20.60		
KQ1506-15	15.00	381.00							.15	3.81	21.75		
KQ1506-16	16.00	406.40							.15	3.81	22.89		
KQ1506-17	17.00	431.80							.15	3.81	24.03		
KQ1506-18	18.00	457.20							.15	3.81	25.17		
KQ1506-19	19.00	482.60	.15	3.81	26.32								
KQ1506-19.7	19.69	500.00	.15	3.81	27.12								
KQ1506-20	20.00	508.00	.15	3.81	27.45								

Unless otherwise specified dimensions are in inches (mm).

Tolerances: 2Pl. ± .03; 3Pl. ± .015

Note:

1. 141 Hand-Flex™ Coaxial Cable.
2. "A" Represents Length of Cable.



INTERNET <http://www.minicircuits.com>

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Mini-Circuits ISO 9001 & ISO 14001 Certified

Outline Dimensions

KQ1506 SERIES
SMA MALE (CONN-1)
SMA MALE (CONN-2)

CASE STYLE #	A		B	C1	C2	D	E1	E2	F		T		WEIGHT GRAMS								
	INCH	MM							141U-ASM+	141-ASM+	INCH	MM									
KQ1506-22	22.00	558.80	.36 (9.14)	.315 (8.00)	.250 (6.35)	.36 (9.14)	.315 (8.00)	.250 (6.35)	.141±.003 (3.58±0.07)	.163±.004 (4.14±0.10)	.15	3.81	29.75								
KQ1506-24	24.00	609.60									.15	3.81	32.03								
KQ1506-26	26.00	660.40									.20	5.08	34.32								
KQ1506-30	30.00	762.00									.20	5.08	38.89								
KQ1506-32	32.00	812.80									.20	5.08	41.18								
KQ1506-36	36.00	914.40									.30	7.62	45.75								
KQ1506-39.4	39.37	1000.00									.30	7.62	49.63								
KQ1506-40	40.00	1016.00									.30	7.62	50.32								
KQ1506-48	48.00	1219.20									.40	10.16	61.75								
KQ1506-50	50.00	1270.00									.40	10.16	72.15								
KQ1506-59.1	59.06	1500.00									.40	10.16	73.18								
KQ1506-60	60.00	1524.00									.40	10.16	73.18								
KQ1506-72	72.00	1828.80									.40	10.16	86.90								
KQ1506-78.7	78.74	2000.00									.40	10.16	94.55								

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All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-45° C to 125° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-45° C to 125° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 125°C, 100 Cycles	MIL-STD-202, Method 107G
Multiple Bend Radius	40 mm, 5 times for 141 series cables 30 mm, 5 times for 086 series cables	
Single Bend Radius	8 mm for 141 series cables 6 mm for 086 series cables	
Connector Durability	500 mating/unmating cycles	MIL-PRF-39012E, PARAGRAPH 4.6.12