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



Generic photo used for illustration purposes only

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

PRODUCT OVERVIEW

The 141N Series Hand-Flex™ Coaxial Cables are ideal for interconnecting coaxial components or sub-systems. The construction includes a silver-plated copper center conductor which maintains its shape after bending. The outer shield is an unjacketed tin-soaked, silver-plated copper round wire braid which minimizes signal leakage while remaining flexible for easy bending. Dielectric is solid, extruded PTFE. The connector coupling nut, body and center contact are nickel-free, gold-plated BeCu.

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ELECTRICAL SPECIFICATIONS[1]

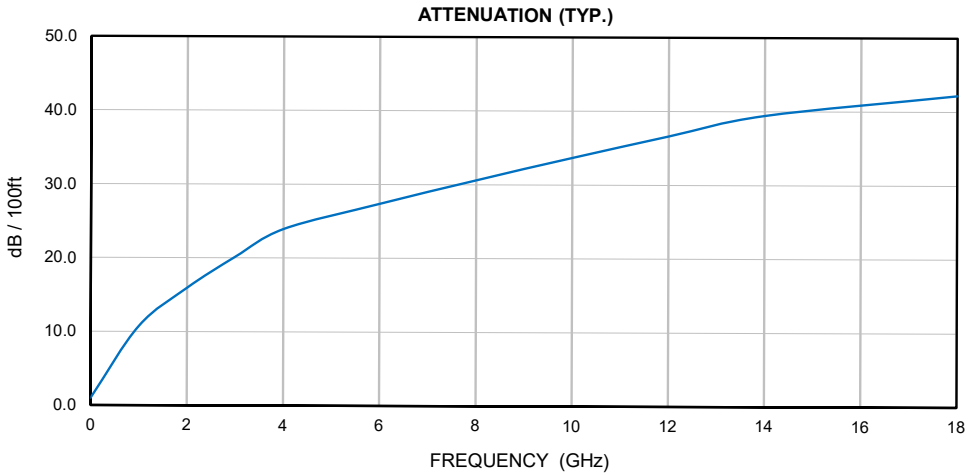
Operating Frequency (GHz)	18
Impedance (Ω)	50
Velocity of Propagation (%)	70
Shielding Effectiveness Min. (dB/m)	100
Voltage Withstand Max. (VDC)	2000
Return Loss Typ. [VSWR Typ.]	25 dB [1.12:1]

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

MECHANICAL & ENVIRONMENTAL SPECIFICATIONS[1]

Operating Case Temperature[2]	-45 °C to +125 °C
Storage Temperature	-45 °C to +125 °C
Bend Radius: Installation mm [in]	8 [0.31]
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) 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

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

COAXIAL

Non-Magnetic Flex Cables

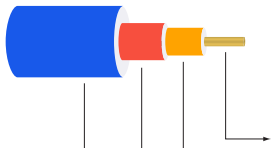
141N SERIES

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



Center Conductor: Silver-plated Copper

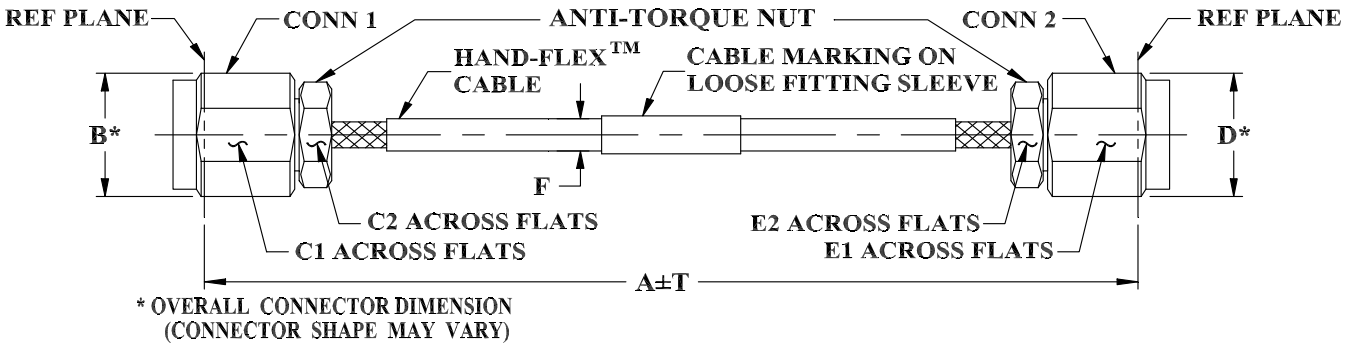
Dielectric: Solid Extruded PTFE

Outer Shield: Tin-Soaked Silver Plated Copper Braid

Unjacketed (FEP Jacketed cable also available upon request)

Connectors:
Body: Nickel Free, Gold Plated BeCu
Center Pin: Nickel Free, Gold Plated BeCu

CASE STYLE DRAWING



Dimensions are in inches [mm]

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)	36 (9.14)	.315 (8.00)	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.

Non-Magnetic Flex Cables

141N SERIES

50Ω DC to 18 GHz SMA-Male to SMA-Male

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

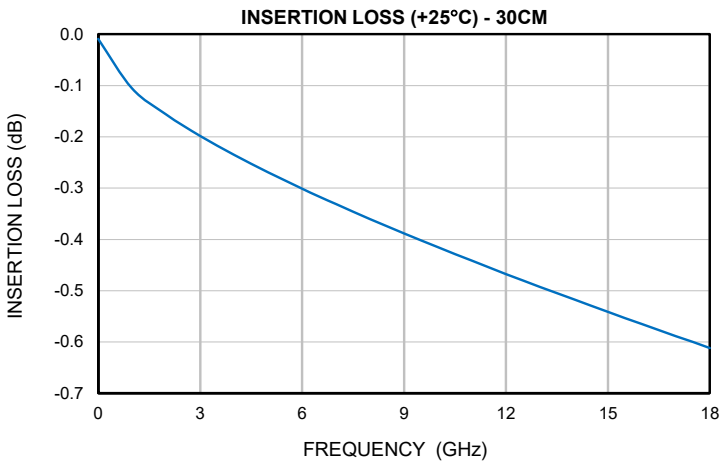
Non-Magnetic Flex Cable SMA Male to SMA Male — 141N-30CSM

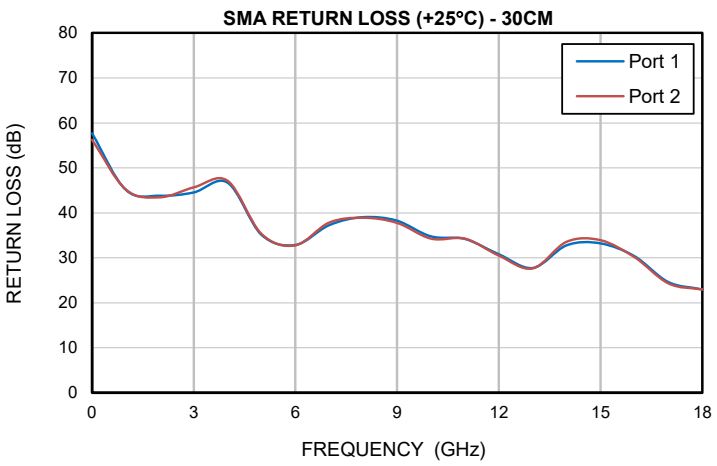
Typical Performance Data

FREQ. (GHz)	INSERTION LOSS (dB)	SMA MALE RETURN LOSS IN (dB)	SMA MALE RETURN LOSS OUT (dB)
0	0.01	57.65	56.24
1	0.11	45.07	45.17
2	0.16	43.81	43.45
3	0.20	44.51	45.62
4	0.24	46.73	47.13
5	0.27	35.12	35.30
6	0.30	32.87	32.80
7	0.33	37.27	37.84
8	0.36	39.05	38.89
9	0.39	38.22	37.73
10	0.42	34.73	34.24
11	0.44	34.17	34.24
12	0.47	30.75	30.48
13	0.49	27.74	27.63
14	0.52	32.76	33.58
15	0.54	33.19	33.91
16	0.57	30.34	30.14
17	0.59	24.59	24.33
18	0.61	22.95	22.93

Non-Magnetic Flex Cable SMA Male to SMA Male 141N-30CSM

Typical Performance Curves

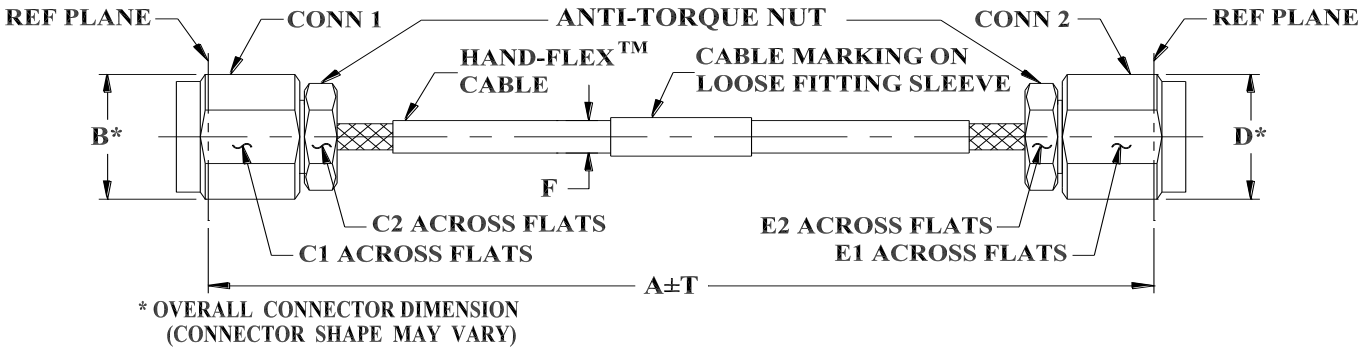




Case Style KQ

KQ1506

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.

Mini-Circuits®
INTERNET http://www.minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010
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Case Style KQ

KQ1506

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	50.0	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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Tolerances: 2Pl. ± .03; 3Pl. ± .015

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Environmental Specifications **ENV157**

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

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