COAXIAL

Non-Magnetic Flex Cables

141N SERIES

50Ω DC to 6 GHz SMP-Male to SMA-Male

KEY FEATURES

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

Generic photo used for illustration purposes only

APPLICATIONS

- Cryogenic Environment Application
- Test & Measurement
- High-Speed Data Systems
- Instrumentation
- Precision Measurement
- 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 interconnection of coaxial components or sub-systems. The construction includes an unjacketed silver-plated copper-clad center conductor which maintains the shape after bending. The outer shield is tin soaked, silver plated copper braid which minimizes signal leakage and at the same time flexible for easy bending. Connectors have passivated stainless-steel coupling nut over a gold plated connector body and gold plated, brass center conductor.

REV. OR
ECO-028797
141N-XXCSMPMSM
MCL NY
260313

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ELECTRICAL SPECIFICATIONS[1]

Operation Frequency (GHz)	18
Impedance (Ω)	50
Velocity of Propagation (%)	69.5
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]

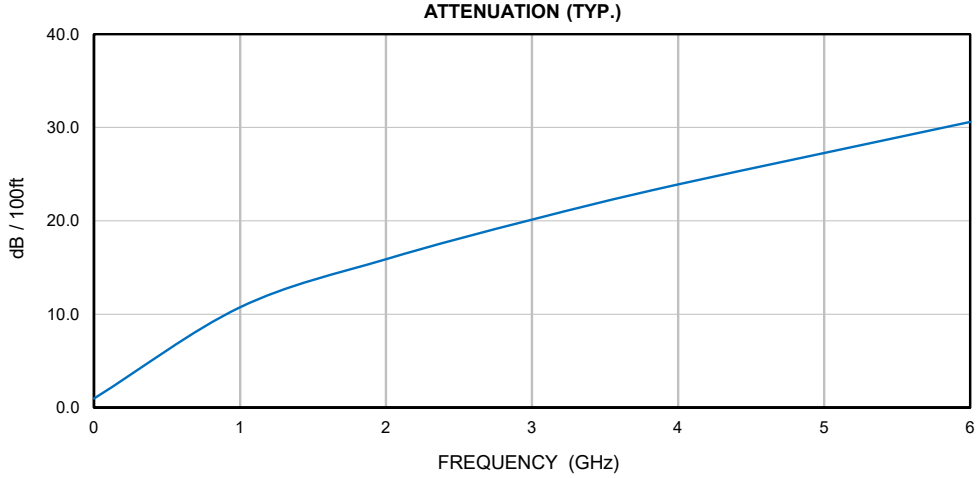
1. Permanent damage may occur if any of these limits are exceeded.

MECHANICAL & ENVIRONMENTAL SPECIFICATIONS[1]

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 3.78 g per cable.

ATTENUATION (TYP.)



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

Frequency (MHz)	1000	2000	3000	4000	5000	6000
dB / 100 m	35.27	25.19	66.09	78.42	89.76	100.39
dB / 100 ft	10.75	15.91	20.14	23.90	27.35	30.59

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 (VSWR = 1.0; +25 °C; Sea Level) W

Frequency (MHz)	1000	2000	3000	4000	5000	6000
Avg. Power (kW)	0.560	0.395	0.320	0.280	0.250	0.225

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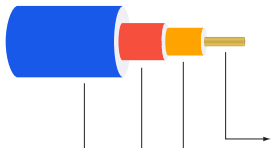
COAXIAL CONNECTIONS

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

CABLE CONSTRUCTION



Center Conductor: Silver-plated Copper

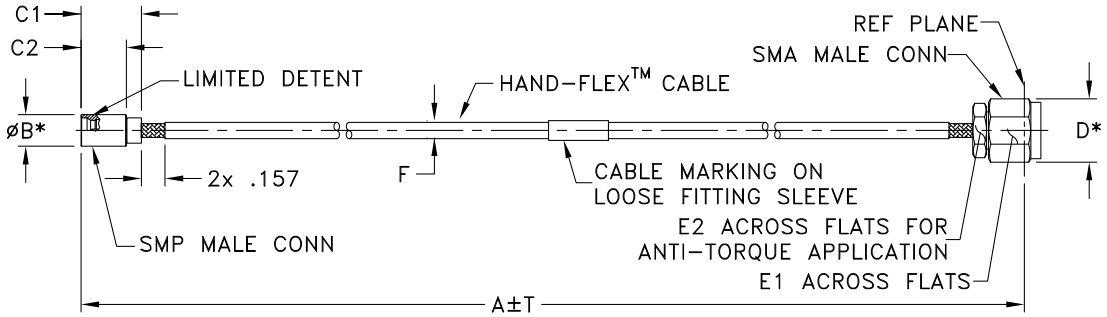
Dielectric: Solid Extruded PTFE

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



* OVERALL CONNECTOR DIMENSION [CONNECTOR SHAPE MAY VARY]

A		B	C1	C2	D	E1	E2	F	T		Wt. (grams)
Inch	mm								Inch	mm	
3.94	100	0.18 (4.60)	0.346 (8.80)	0.260 (6.60)	0.36 (9.14)	.315 (8.00)	.250 (6.35)	.141 (2.31)	±0.05	±1.27	7.68
7.87	200								±0.10	±2.54	11.58
11.81	300								±0.10	±2.54	15.48
19.69	500								±0.15	±3.81	23.28

PRODUCT MARKING*: 141N-XXCSMPMSM

*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	KQ3755
RoHS Status	Compliant
Environmental Ratings	ENV157

NOTES

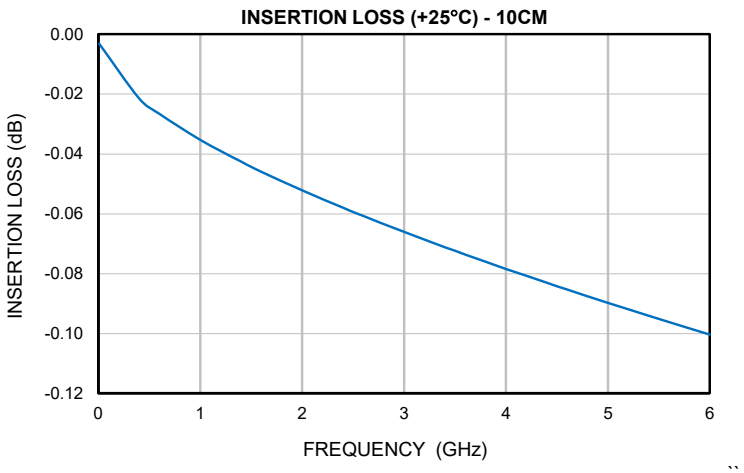
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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

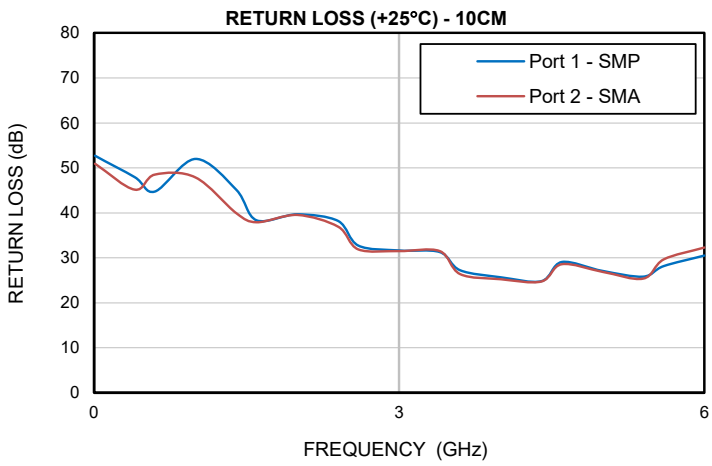
Non-Magnetic Flex Cable SMP Male to SMA Male — 141N-10CSMPMSM

Typical Performance Data

FREQ.	INSERTION LOSS	SMP MALE RETURN LOSS IN	SMA MALE RETURN LOSS OUT
(GHz)	(dB)	(dB)	(dB)
0.0	0.00	52.66	50.90
0.4	0.02	47.95	45.14
0.6	0.03	44.75	48.53
1.0	0.04	52.00	47.87
1.4	0.04	45.09	39.86
1.6	0.05	38.34	37.88
2.0	0.05	39.65	39.50
2.4	0.06	38.15	36.93
2.6	0.06	32.73	31.88
3.0	0.07	31.60	31.51
3.4	0.07	31.29	31.52
3.6	0.07	27.23	26.38
4.0	0.08	25.69	25.21
4.4	0.08	24.79	24.71
4.6	0.09	29.04	28.56
5.0	0.09	27.05	26.87
5.4	0.09	25.81	25.36
5.6	0.10	28.17	29.62
6.0	0.10	30.52	32.30

Typical Performance Curves

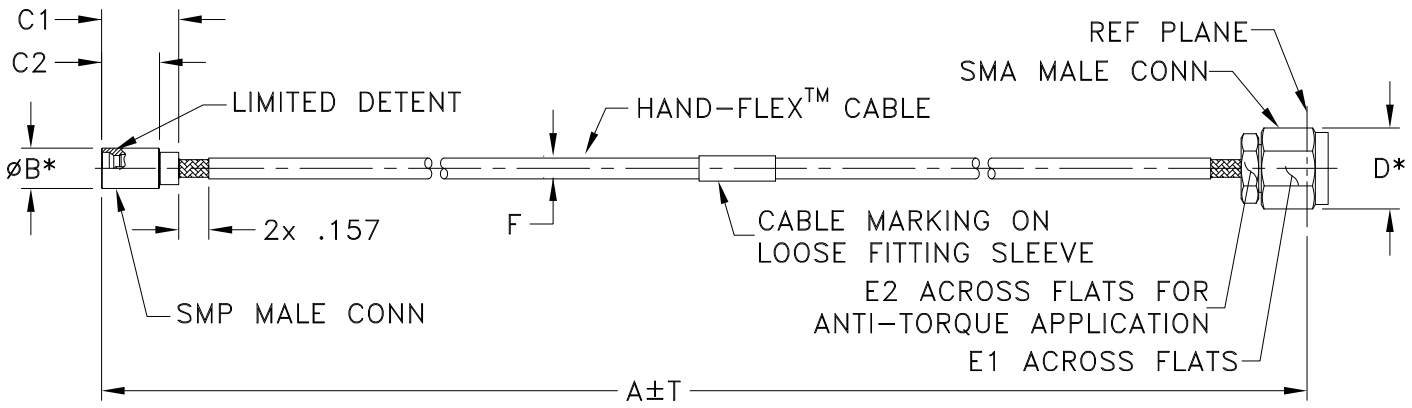




Case Style KQ

Outline Dimensions

KQ3755



* OVERALL CONNECTOR DIMENSION
[CONNECTOR SHAPE MAY VARY]

CASE STYLE #	A		B	C1	C2	D	E1	E2	F		T		WT. (GRAMS)
	INCH	MM							141UC–ASMPMSM+ 141U–ASMPMSM+	141C–ASMPMSM+ 141–ASMPMSM+	INCH	MM	
KQ3755–3.94	3.94	100.00	.18 [4.60]	.346 [8.80]	.260 [6.60]	.36 [9.14]	.315 [8.00]	.250 [6.35]	.141±.003 [3.58±0.07]	.163±.004 [4.14±0.10]	.05	1.27	7.80
KQ3755–7.87	7.87	200.00									.10	2.54	12.30
KQ3755–11.8	11.81	300.00									.10	2.54	16.79
KQ3755–19.7	19.69	500.00									.15	3.81	25.82

Unless Otherwise Specified dimensions are in inches [mm],
Tolerances: 2 Pl.±0.03; 3 Pl. ±0.015 inches

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

Mini-Circuits

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