



WIRELINE®

FEATURES

- Octave band Performance
- Formability
- Low Loss – Low Cost
- Available in Bulk 5 ft length, Cut & Trimmed Straight, Cut & Trimmed Formed and Connectorized Lengths
- Aerospace and Commercial Heritage
- ROHS compliant (Tin Plated & Bare Finishes Only)

The Wireline® family of products offer unique flexibility and cost advantage to many microwave and RF applications. The product features the performance characteristics of an octave band 3dB quadrature hybrids in a formable construction similar to semi-rigid cable. Installation options include drop-in, surface mount as well as several conventional cable attachment approaches. Although the product is not pick-n-place compatible it continues to be used in many moderate volume applications due to its performance and flexibility advantages. The product boasts a considerable aerospace heritage and is fabricated using military grade materials and processing.

SPECIFICATIONS – ELECTRICAL

Part Number	BHC*1	BJC*1	BHC*2	BJC*2
Bandwidth Optimization	Narrow	Narrow	Octave	Octave
Coupling, Coupled Path (dB)	3.00 ±0.25	3.00 ±0.25	2.65 ±0.25	2.65 ±0.25
Unbalance, max (dB), Coupled Path to Main Line	0.5	0.5	1.3	1.3
Isolation, min (dB)	20	20	20	20
VSWR (Max)	1.2:1	1.2:1	1.2:1	1.2:1
Power, average (W)	100	200	100	200
Power Peak (kW)	2	2	2	2
Phase Quadrature Error, max (°)	± 1	± 1	± 1	± 1
Dielectric Breakdown, min (V RMS)	500	500	500	500

* Shield finish code per Wireline® Part Number Key at end of section.

NOTE: Electrical specifications summarized in the table above are determined by measurements at 300 MHz in a matched 50 Ohm system and are independent of physical length and frequency with the exception of power. At jacket temperatures above 55°C, the power should be de-rated linearly to 50% at 105°C and to 0 at 155°C.

SPECIFICATIONS – MECHANICAL

Part Number	BHC*1	BJC*1	BHC*2	BJC*2
Weight, (grams/inch)	0.55	1.14	0.55	1.14
Bendable / Formable	Yes	Yes	Yes	Yes
C/L Bend Radius, min (in)	0.15	0.30	0.15	0.30
Standard Length, max (in)	58	58	58	58
A Inner Jacket Diameter (in)	0.086	0.125	0.086	0.125
B Outer Shield Diameter (in)	0.105	0.145	0.105	0.145
D Wire diameter (in)	0.0124	0.0201	0.0124	0.0201

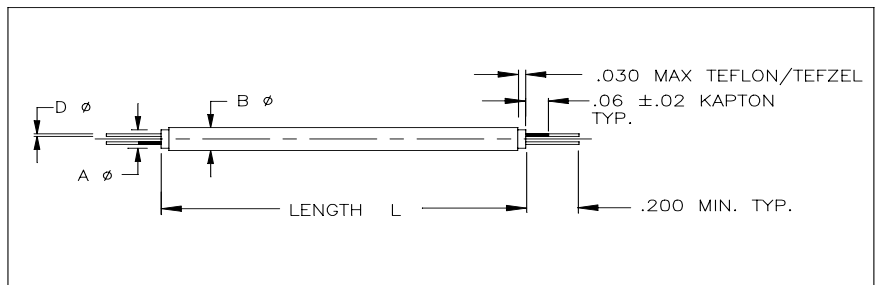


L A B O R A T O R I E S

SPECIFICATIONS – MATERIALS

1. Copper wire per QQ-W-343, silver-plated per ASTM-B-298.
2. Polyimide film per insulation MIL-P-46112 with FEP binder per ASTM-3368.
3. Polytetrafluoroethylene (PTFE) inner jacket material per ASTM-D1457, Tefzel (duPont).
4. Outer shield material (seamless copper alloy tube): copper CDA #ALLOY 122
5. Outer shield plating:
 - B-Bare/unplated
 - T-Tin plate per MIL-T-10727
 - S-Solder plate per MIL-P817
6. Wireline is ROHS compliant when outer shield is Tin plated or Bare /unplated.

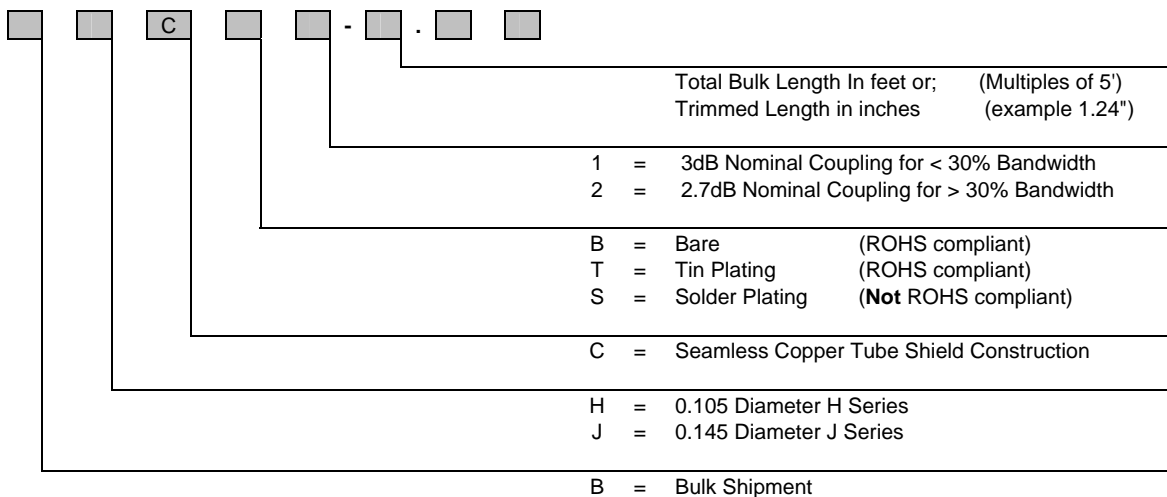
OUTLINE DRAWING



ORDERING INFORMATION

Wireline can be purchased in bulk (5) five foot lengths or precut and trimmed ready for installation. The following ordering key is provided to assist in the creation of ordering part numbers. For trimmed lengths, use the formulas in the next section to determine the length corresponding to your center frequency and coupling values. The maximum trimmed length for Wireline® is 58". Contact the factor for other than straight Cut & Trimmed lengths.

PART NUMBER KEY



L A B O R A T O R I E S

COMPUTING THE LENGTH OF CUT & TRIMMED WIRELINE® 3dB QUADRATURE HYBRIDS:

To determine the length “L” of a 3 dB Wireline® quadrature hybrid:

1. Compute the quarter wavelength frequency (center frequency of your band of use) as follows:

$$F_q \text{ (MHz)} = (F_{\text{min}} + F_{\text{max}}) / 2$$

2. Compute the hybrid length “L” as follows;

$$\text{“L” (inches)} = 1850 / F_q \text{ (MHz)} \quad \text{or} \quad \text{“L” (centimeters)} = 4700 / F_q \text{ (MHz)}$$

Alternately, this function is available in the online calculator provided at www.sagelabs.com.

RECOMMENDED INSTALLATION ALTERNATIVES AND OTHER MOUNTING OPTIONS:

See Trimming, Mounting and Installation Guide.

PRODUCT SAMPLES

Small quantities of Cut & Trimmed parts can be provided free of charge for design prototyping. Contact the Sales department for more information or complete the sample request form provided at www.filss.com.

MISCELLANIOUS:

1. Sage Laboratories Inc. “Standard Warranty and Order Terms and Conditions” apply to all orders.
2. All specifications subject to change without notice.
3. Parts are available from stock. Contact factory for delivery confirmation for all quantities over 10,000.
4. Contact our local Manufacturers Representative for pricing.

Specification Revision – 100809

