Littlebend

Ultra-Flexible High-Performance Cables

HASCO COMPONENTS

Littlebend Cables are manufactured & distributed by HASCO Components

Cable Features:

- Super Flexible with Tight Bend Radius
- High Shielding Effectiveness of >90dB
- High Retention Force of >90N
- Eliminates the Need for Right Angle Connectors
- Phase and Amplitude Stable
- RoHs Compliant

The HASCO HLB098 and HLB055 Littlebend Ultra-Flexible Cable is designed for demanding microwave interconnect requirements, such as dense microwave packaging. The Littlebend cable can replace Right Angle connectors with minimal performance degradation due to its tight bend radius and stainless steel braid.

This selector guide offers critical parameters to identify the best Littlebend cable for your specific application.

HLB098 CABLE ATTENUATION (Typical @ 25°C) & Power (40°C, Sea Level)															
Frequency GHz	1	2	3	4	5	6	8	10	12	14	16	18	26.5	30	40
Attenuation dB/m	0.60	0.86	1.06	1.23	1.38	1.52	1.77	1.99	2.19	2.44	2.64	2.73	3.37	3.81	4.53
Avg. Power W	103	72	59	50	45	41	35	31	28	27	25	23	18	16	14

HLB055 CABLE TYPICAL PERFORMANCE DATA																			
Frequency GHz	1	2	3	4	5	6	8	10	12	14	16	18	26.5	30	40	50	60	67	110
VSWR	1.05	1.07	1.09	1.06	1.13	1.09	1.16	1.11	1.15	1.17	1.23	1.20	1.25	1.21	1.26	1.31	1.25	1.37	1.41
Insertion Loss (dB)	0.34	0.52	0.68	0.77	0.86	0.99	1.13	1.31	1.42	1.58	1.67	1.78	2.12	2.25	2.54	2.83	3.27	3.54	5.07

Littleben

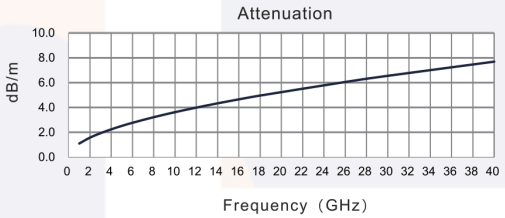
Ultra-Flexible High-Performance Cables

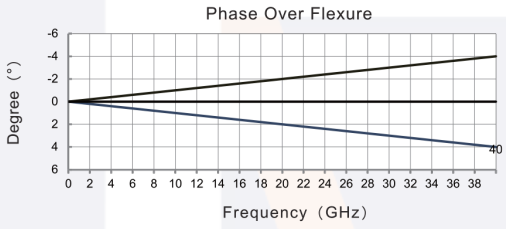
Specifications

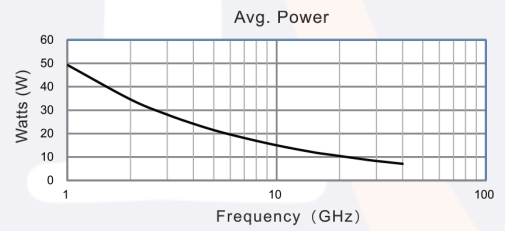
CABLE SPECS	HLB055/055A
IMPEDANCE	50 Ω
VELOCITY OF PROPAGATION	78.7%
TIME DELAY	1.27 ns/ft 4.24 ns/m
CAPACITANCE	25.9 pF/ft (85 pF/m)
WITHSTANDING VOLTAGE	500V
INSULATION RESISTANCE	1,000 MΩ
SHIELDING EFFECTIVENESS	>100dB
PHASE STABILITY VS FLEXURE	± 8° @ 110GHz
AMPLITUDE STABILITY	<± 0.1dB @ 110GHz
DURABILITY	1,000 Cycles Min.
OPERATING TEMP. RANGE	-55° C to +85 ° C
MIN. BEND RADIUS	Armored: .79" (20mm) Non-Armored: 0.2" (5mm)
DURABILITY	1,000 Cycles Min

HLB055/055A CABLE CONSTRUCTION

1. CABLE CENTER CONDUCTOR	Silver Plated Solid Copper
2. CABLE DIELECTRIC	Foamed PTFE
3. CABLE OUTER CONDUCTOR	Silver Plated Copper Strip
4. CABLE OUTER SHIELD	Silver Plated Copper Braid
5. CABLE JACKET	FEP

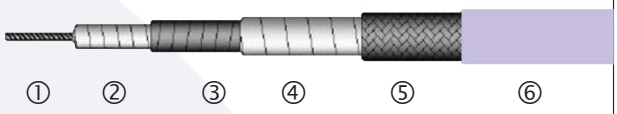




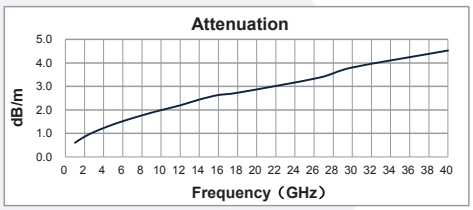


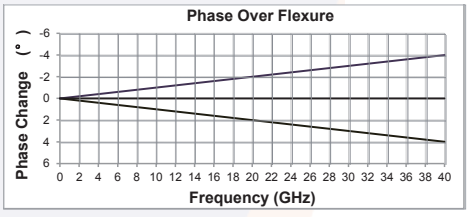
CABLE SPECS	HLB098
IMPEDANCE	50 Ω
VELOCITY OF PROPAGATION	76%
TIME DELAY	1.31 ns/ft (4.39 ns/m)
CAPACITANCE	27.4 pF/ft (90 pF/m)
WITHSTANDING VOLTAGE	900V
INSULATION RESISTANCE	1,000 MΩ
SHIELDING EFFECTIVENESS	<-90dB
PHASE STABILITY VS FLEXURE	±4° @ 40 GHz
AMPLITUDE STABILITY	<±0.05dBm @ 18 GHz
DURABILITY	1,000 Cycles Min.
OPERATING TEMP. RANGE	-65° C to +165 ° C
MIN. BEND RADIUS	Static: 0.2" (5mm) Repeated: 0.4" (10mm)
DURABILITY	1,000 Cycles Min.

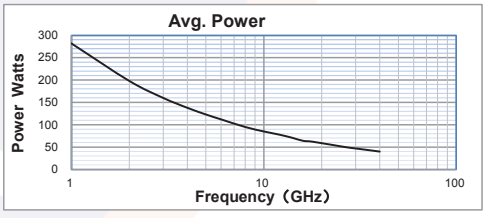
HLB098 CABLE CONSTRUCTION



1. CABLE CENTER CONDUCTOR	Silver Plated Solid Copper
2. CABLE DIELECTRIC	Low Denisty PTFE
3. CABLE OUTER CONDUCTOR	Silver Plated Copper Strip
4. CABLE INTERLAYER	Aluminum Foil
5. CABLE OUTER SHIELD	Stainless Steel Braid
6. CABLE JACKET	FEP







A Quality Source for RF and Microwave Engineers

Littlebend

Ultra-Flexible High-Performance Cables

Available Connectors

How to Configure Littlebend Cables

HLB098-S1-SMPJ -12*

- Length (*In Inches)
- Connector code of end B
- Connector code of end A
- Cable code

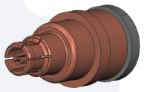
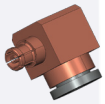
Connector Codes

NP	Type N Male
NJBH	Type N Female Bulkhead
S1	SMA Male
S2BH	SMA Female Bulkhead
SMPJRA	SMP Female Right Angle
SMPPBH	SMP Male Bulkhead
SMPJ	SMP Female
SMPMJ	SMPM Female
SMPMJRA	SMPM Female Right Angle
KP	2.92mm Male
24P	2.4mm Male
VJ	1.85mm Female
VP	1.85mm Male
WJ	*1.0mm Female
WP	*1.0mm Male

Littlebend Ultra-Flexible Cable Series are 100% tested for VSWR and insertion loss and are available in standard lengths from 3 to 48 inches. Additional configurations available by special order.

*1.0mm connectors only available with HLB055(A)
*HLB055(A) only available with 1.0mm connectors

NOTE:
Maximum frequency of final cable configuration will be limited to the maximum frequency of the lowest frequency connector.

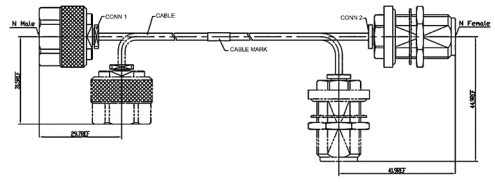
Connector Type	Connector Code	Frequency*	Material	Max VSWR
	Type N Male = **NP**	18 GHz	Stainless Steel	1.35:1
	Type N Female Bulk-head = **NJBH**	18 GHz	Stainless Steel	1.35:1
	SMP Female Right Angle = **SMPJRA**	18 GHz	Brass	1.30:1
	SMP Male Bulkhead = **SMPPBH**	18 GHz	Stainless Steel	1.30:1
	SMA Male = **S1**	26.5 GHz	Stainless Steel	1.25:1
	SMA Female Bulkhead = **S2BH**	26.5 GHz	Stainless Steel	1.30:1
	SMP Female = **SMPJ**	40 GHz	Brass	1.30:1
	SMPM Female = **SMPMJ**	40 GHz	BeCu	1.35:1
	SMPM Female Right Angle = **SMPMJRA**	40 GHz	BeCu	1.35:1
	2.92mm Male = **KP**	40 GHz	Stainless Steel	1.30:1
	2.4mm Male = **24P**	50 GHz	Stainless Steel	1.30:1
	1.85mm Male = **VP**	67 GHz	Stainless Steel	1.40:1
	1.85mm Female = **VJ**	67 GHz	Stainless Steel	1.40:1
	1.0mm Male = **WP**	110 GHz	Stainless Steel	1.50:1
	1.0mm Female = **WJ**	110 GHz	Stainless Steel	1.50:1

Littleben

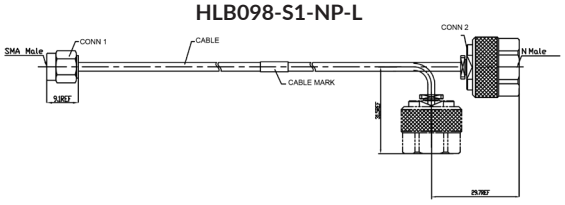
Ultra-Flexible High-Performance Cables

Cable Assembly Sample Outlines

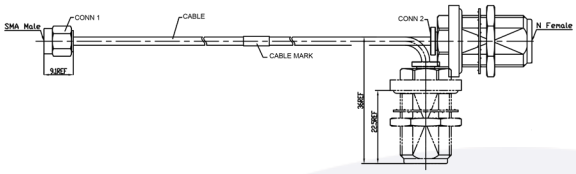
Type N Male to Type N Female Bulkhead
HLB098-NP-NJBH-L



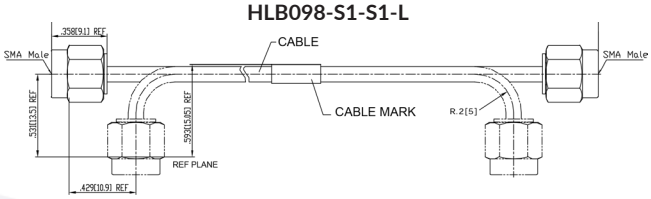
SMA Male to Type N Male
HLB098-S1-NP-L



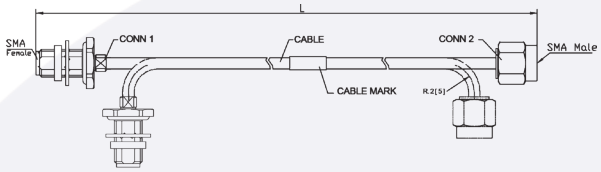
SMA Male to Type N Female Bulkhead
HLB098-S1-NJBH-L



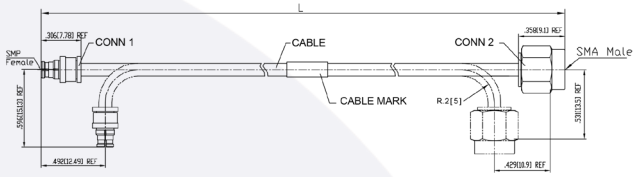
SMA Male to SMA Male
HLB098-S1-S1-L



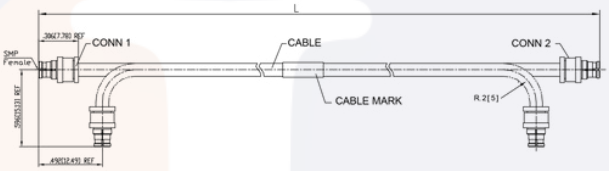
SMA Male to SMA Female Bulkhead
HLB098-S1-S2BH-L



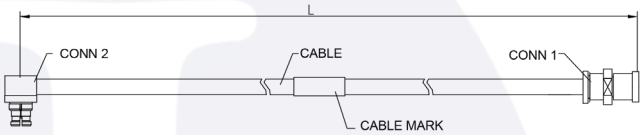
SMA Male to SMP Female
HLB098-S1-SMPJ-L



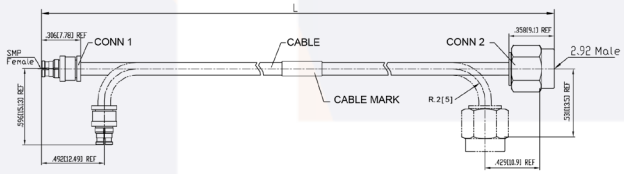
SMP Female to SMP Female
HLB098-SMPJ-SMPJ-L



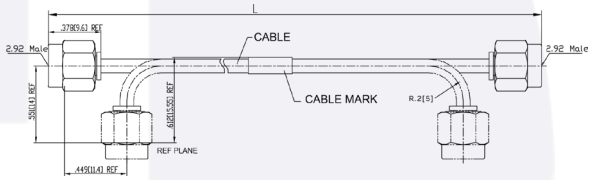
SMP Female Right Angle to SMP Male Bulkhead
HLB098-SMPJRA-SMPPBH-L



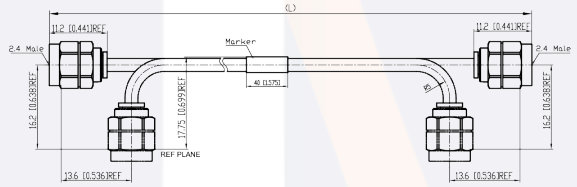
2.92mm Male to SMP Female
HLB098-KP-SMPJ-L



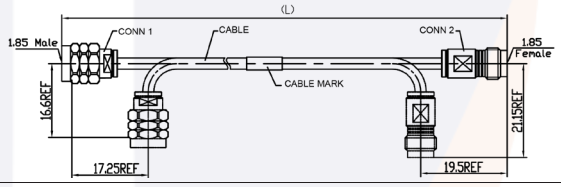
2.92mm Male to 2.92mm Male
HLB098-KP-KP-L



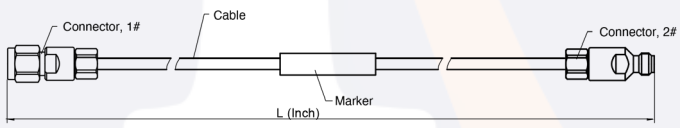
2.4mm Male to 2.4mm Male
HLB098-24P-24P-L



1.85mm Male to 1.85mm Female
HLB098-VP-VJ-L



1.0mm Male to 1.0mm Female
HLB055-WP-WJ-L



1.0mm Male to 1.0mm Female Armored
HLB055A-VP-VJ-L