



## Data Sheet

## Cri/oFlex<sup>®</sup> 1

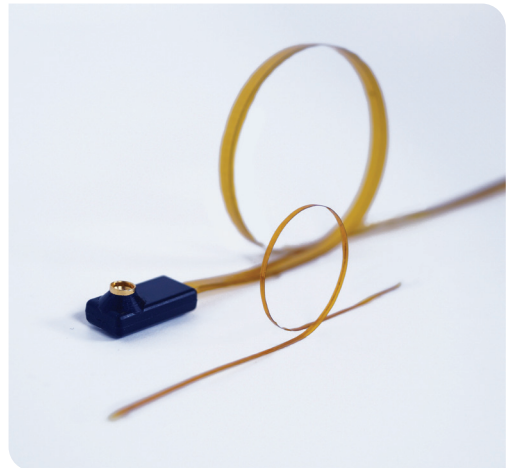
### Combine RF and vibration isolation in one solution!

Cri/oFlex<sup>®</sup> (CF) i/o channels enable high frequency microwave transmission on a flexible substrate. Our CF1 product line subsequently brings vibration isolation to the next level. Driven by a strong focus on extreme flexibility, our CF1 products are the most flexible high frequency transmission lines on the market. Additionally it is UHV compatible, has low-thermal load, whilst maintaining a small form-factor, making the CF1 the perfect match for any vibration sensitive cryogenic setup. Similar to our other CF products, we offer a selection of conventional connector types, as well as customizations to suit your specific setup upon request.

### Features

- Exceptional vibration isolation
- Excellent phase stability
- Small form-factor
- Low thermal load
- High frequency bandwidth
- Resilient against thermal cycling
- Customizable connectors

General Properties	
Connector	
Connector Type	SMA, SMP, Mini-SMP (All male and customizable)
Connector Material	Goldplated Brass, PEEK
Housing	Stycast 2850
Flex	
Transmission Line Type	Stripline
Length	200 to 600 mm
Width	1 mm
Thickness	0.3 mm
Materials	Polyimide & Silver (Ag)



Comparison Cri/oFlex<sup>®</sup> CF2 versus CF1

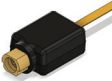
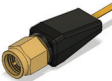



Thermal Properties	
Operating Temperature	$10^{-3}$ K → 400 K
Heat Load @ 4k ( $\Delta T$ : 4 - 40 K), L = 0.4m	< 125* $\mu$ W
Expected Heat Load @ 10 mK ( $\Delta T$ : 10 - 350 mK), L = 0.2m	~ 20* nW

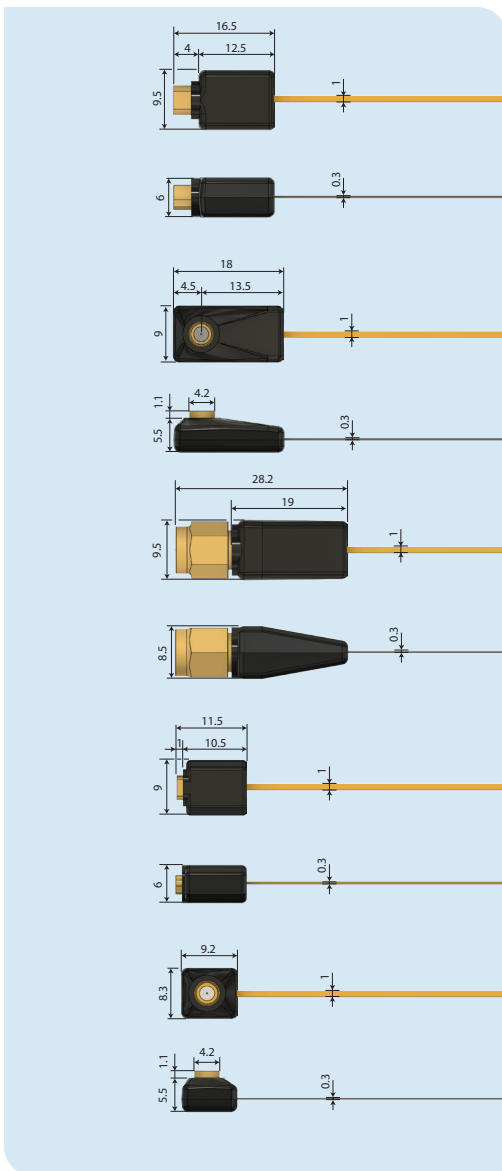
\*under further investigation

Electrical Properties	
Impedance	50 $\Omega$ (Customizable)
Operating Frequency	0 to 26 GHz
Signal Isolation (Crosstalk)	-60 dB, line to line

# Specifications

## Cri/oFlex<sup>®</sup> CF1

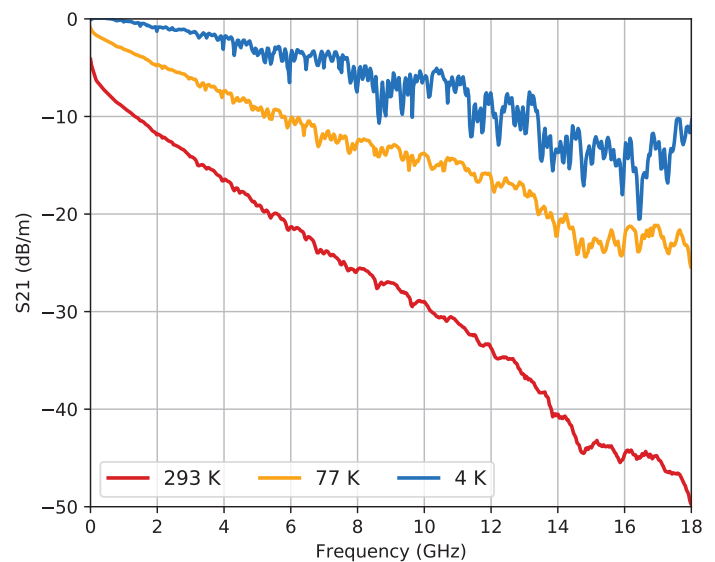
						
		Straight SMP	Straight SMA	Straight Mini-SMP	Right Angle SMP	Right Angle Compact SMP
Bandwidth options	0-6 GHz	✓	✓	✓	✓	✓
	0-12 GHz	✓	✓	✓	✓	✓
	0-18 GHz	✓	✓	✓	✓	✓
	0-20 GHz	✓	✗	✓	✗	✓
	0-26.5 GHz	✓	✗	✗	✗	✗



In the table above the readily available connector options and their respective frequency bandwidth options are shown, the icons indicate their current availability;  
 ✓ readily available ✗ under development.

The flex cables can be configured with different connectors at each end, for example an SMA-SMP hybrid. Other connector types or even custom PCB landing designs can be developed in-house to fit your setup. Bandwidth ranges may vary depending on the design constraints.

In the figure below the roll-off (S21) of a typical DC-18 GHz bandwidth flex cable is shown.



### Non-Magnetic information

For customers with stringent demands on non-magnetic components in their set-ups we offer specialized non-magnetic products. The standard Cri/oFlex products can in most cases be considered low-magnetic already and sufficient for most applications involving magnetic fields. Contact Delft Circuits for specific information.