



## Datasheet

## Cri/oFlex® 1

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

Cri/oFlex® (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
- Small form-factor
- Low thermal load
- High frequency bandwidth
- Resilient against thermal cycling
- Customizable connectors

General Properties	
Connector	
Connector Type	SMA, SMP, SMPM (all male)
Connector Material	Goldplated Brass/BeCu PEEK/PTPE
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® 2 versus Cri/oFlex® 1

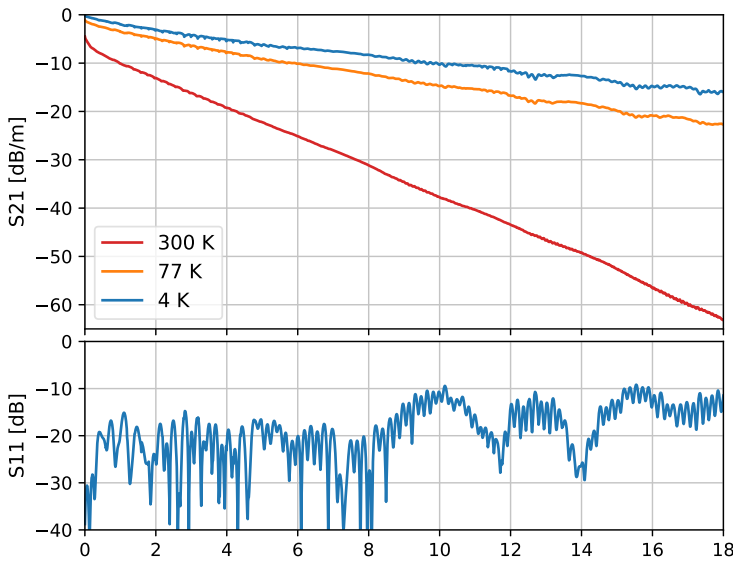
Thermal Properties	
Operating Temperature	10 mK → 400 K
Heat Load @ 50k ( $\Delta T$ : 3 - 50 K), L = 0.2m	315 $\mu$ W
Expected Heat Load @ 20 mK ( $\Delta T$ : 20 -100 mK), L = 0.2m	4.4 nW

Electrical Properties	
Impedance	Designed for 50 $\Omega$ (Customizable)
Operating Frequency	0 to 18 GHz
Signal Isolation (Crosstalk)	-60 dB, line to line

**Microwave Properties**

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.

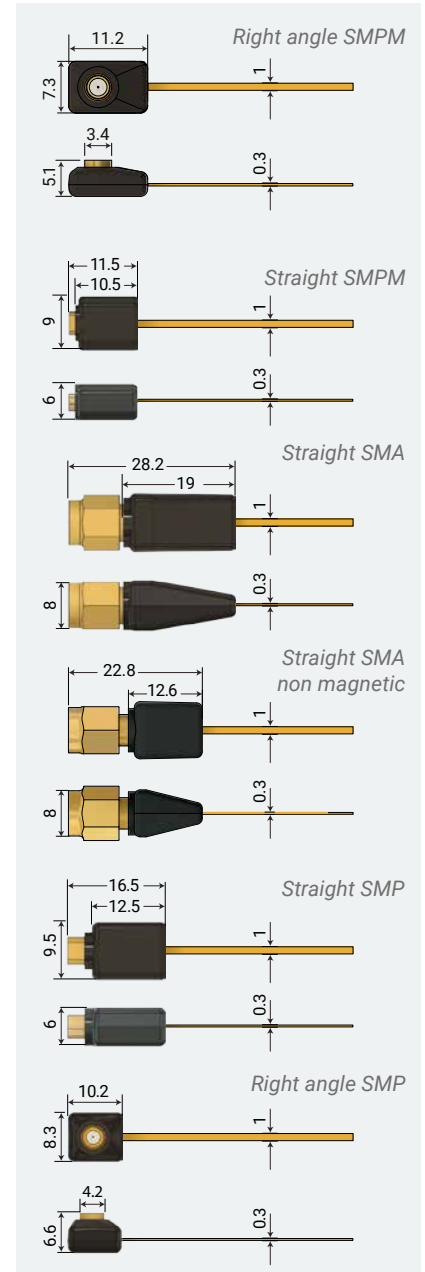
The figure below shows the transmission (S21) and reflection (S11) of a typical DC-18 GHz bandwidth flex cable. Depending on connector type the overall S-parameters may vary slightly.



**Non-Magnetic**

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.

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



	Right angle SMP	Straight SMP	Straight SMA non magn.	Straight SMA	Straight SMPM	Right angle SMPM
Bandwidth options	0-6 GHz	✓	✓	✓	✓	✓
	0-12 GHz	✓	✓	✓	✓	✓
	0-18 GHz	✓	✓	✓	✓	✓