



## OVERVIEW

HERD-2 is a non-magnetic inline infrared blocking filter based on patented High-Energy Radiation Drain (HERD) technology. It provides ultra-low in-band losses with deep stopband filtration, reducing quasiparticle generation and enhancing the performance of quantum processors and superconducting circuits.

The filter features integrated non-magnetic carbon-based absorbers, well thermalized to the gold-plated copper body, delivering flat in-band response with broadband absorption above 65 GHz.

## KEY FEATURES

- Non-magnetic, carbon-based IR absorbers
- Ultra-low insertion loss: < 0.15 dB typical (DC – 8 GHz)
- Deep stopband attenuation: > 65 dB (70 – 120 GHz)
- Compact form factor: 63 mm total length
- Full galvanic isolation – safe for DC-biased flux lines
- Precision-machined with low unit-to-unit variation
- Gold-plated copper body, 0 K – 320 K operating range

## APPLICATIONS

- Drive, flux & readout line IR filtering
- TWPA input protection
- High-density cryostat configurations
- Magnetically sensitive environments

## NOTES

RoHS compliant  
 Not tested in liquid-cooled cryostats  
 Custom male/female connector configurations available  
 Specifications subject to change without notice

## ELECTRICAL SPECIFICATIONS

Design Impedance	50 $\Omega$
Passband	DC – 13.5 GHz
Insertion Loss DC – 8 GHz, typical	< 0.15 dB
Return Loss Passband, typical	> 20 dB
Return Loss > 20 GHz, typical	> 7 dB
Stopband	70 – 145 GHz min.
Stopband Attenuation 70 – 120 GHz, typical	> 65 dB
RF Connectors	SMA / SMP / SMPM / SMPS

## MECHANICAL SPECIFICATIONS

Length	62.96 mm
Width	9.53 mm
Height	9.53 mm
Mounting Holes	$\varnothing$ 1.778 mm
Hole Spacing	7.112 mm c/c
Construction	Non-magnetic
Body Material	Gold-plated copper

## ABSOLUTE MAXIMUM RATINGS

Operating Temperature	0 K – 320 K
RF Input Power	$\leq$ 30 dBm

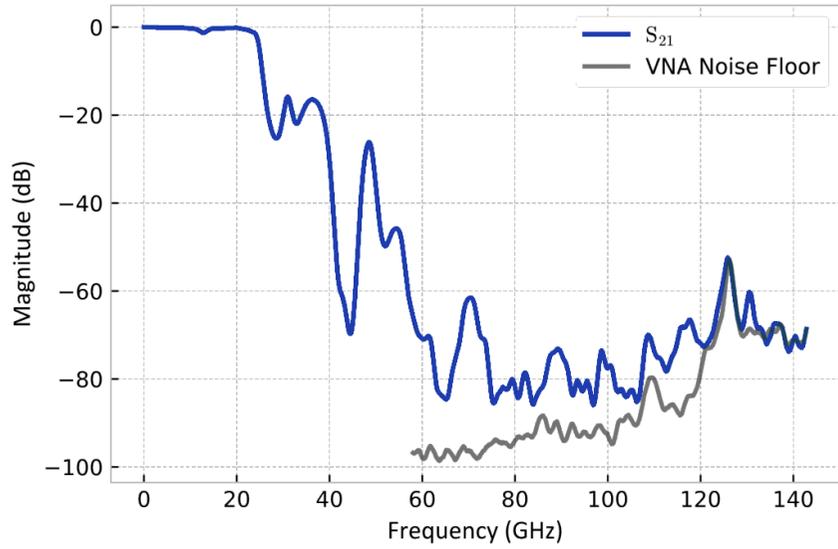


WEBSITE

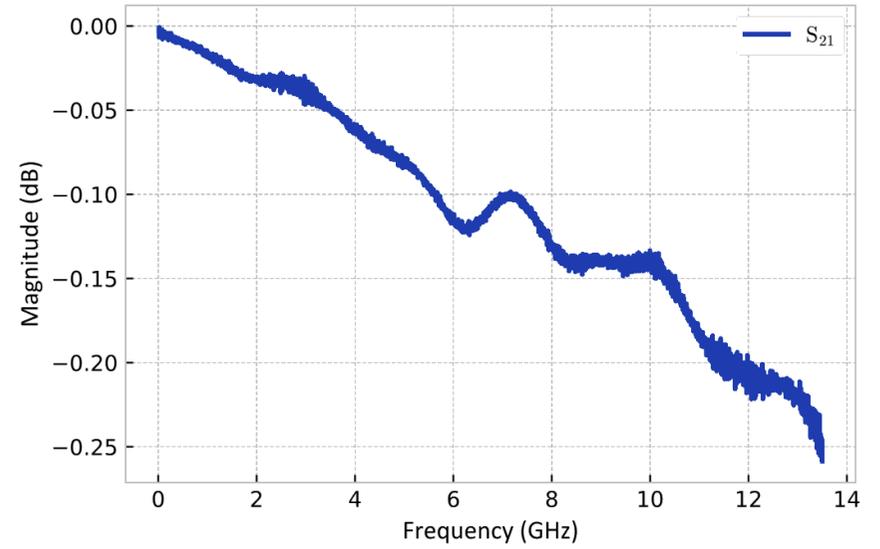


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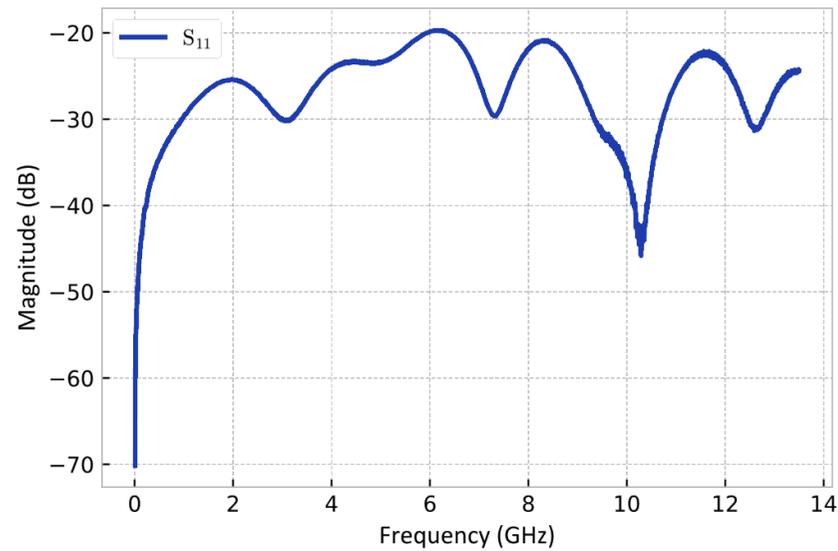
TRANSMISSION S<sub>21</sub> WIDEBAND 0 - 140 GHZ



TRANSMISSION S<sub>21</sub> PASSBAND 0 - 14 GHZ



REFLECTION S<sub>11</sub> 0 - 14 GHZ



DIMENSIONS MM, NOT TO SCALE

