

**MACOM**<sup>TM</sup>

*Partners in RF & Microwave*

# SPICE Model



**MADP-009989-14320 Glass MELF rev B**

Jan 22, 2021

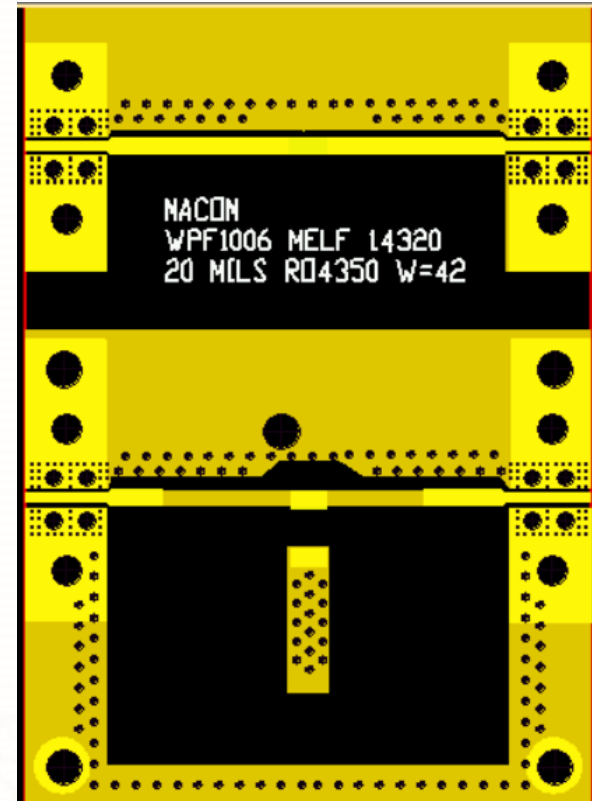
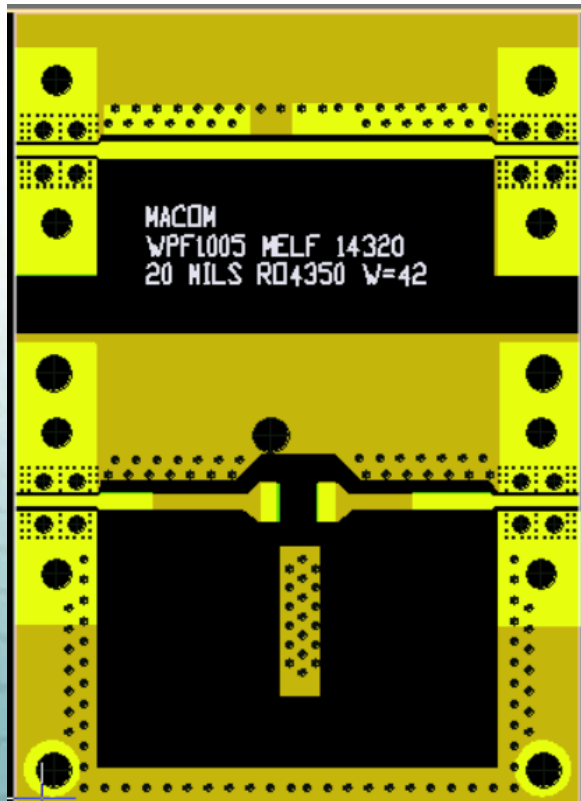
# Contents

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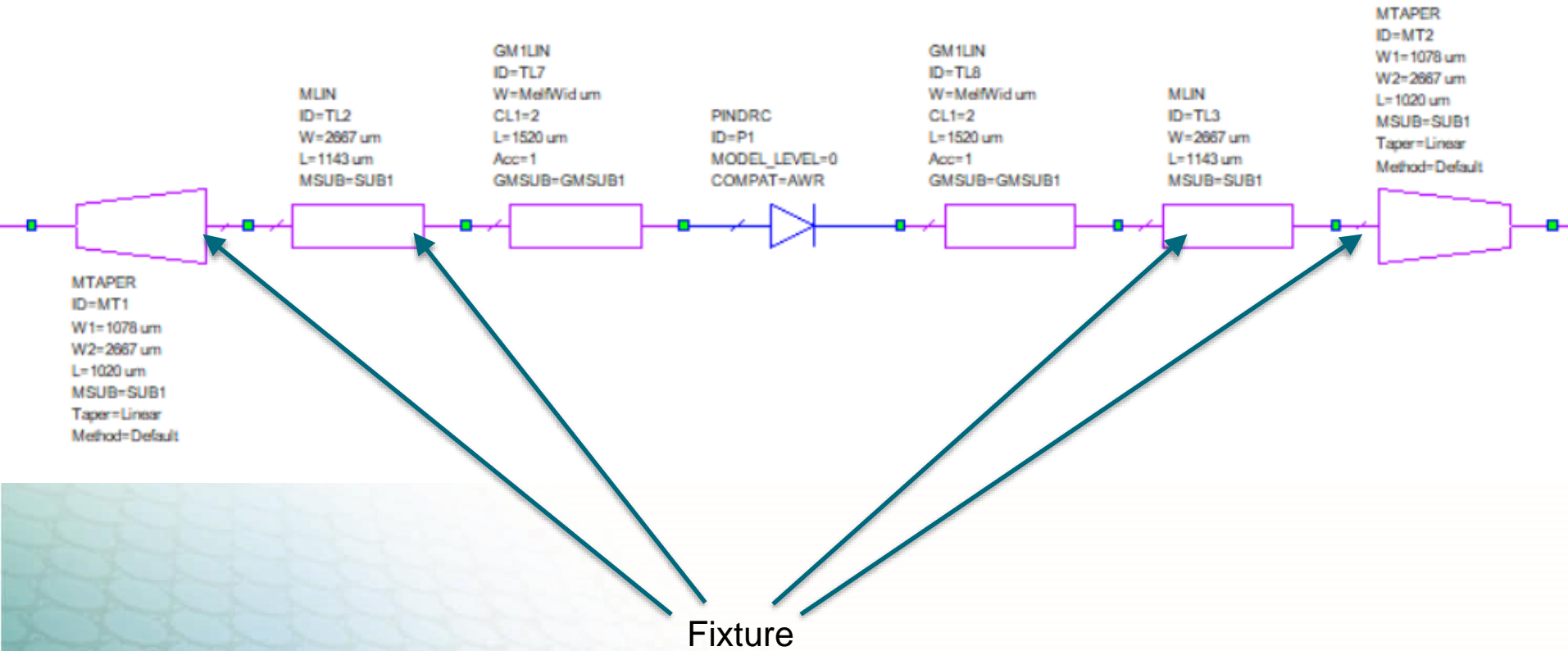
- **Test Fixture**
- **Package**
- **Diode**
- **Results**
  - IV Curve
  - Series 100 mA
  - Series -40 V
  - Shunt 100 mA
  - Shunt -40 V

# Test Fixture Series and Shunt

- 20 mils Rogers RO4350 with 1 oz copper
- S-parameters measured with port extensions such that the reference plane is set to the beginning of the transmission line taper for the series MELF and set to the edge of the package for the shunt MELF

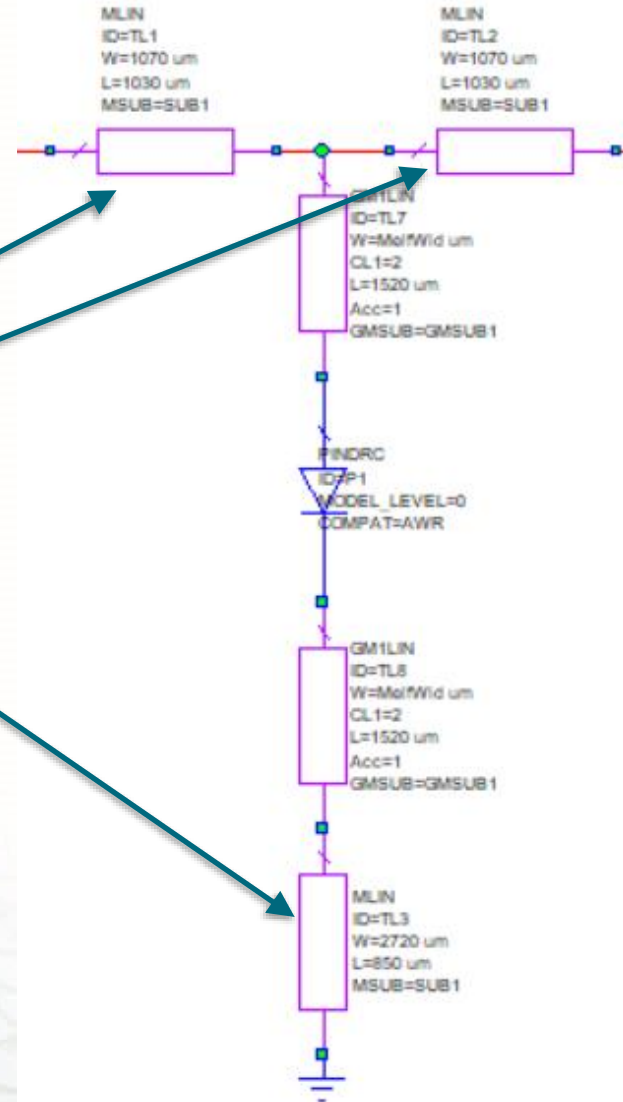


# Test Fixture Series

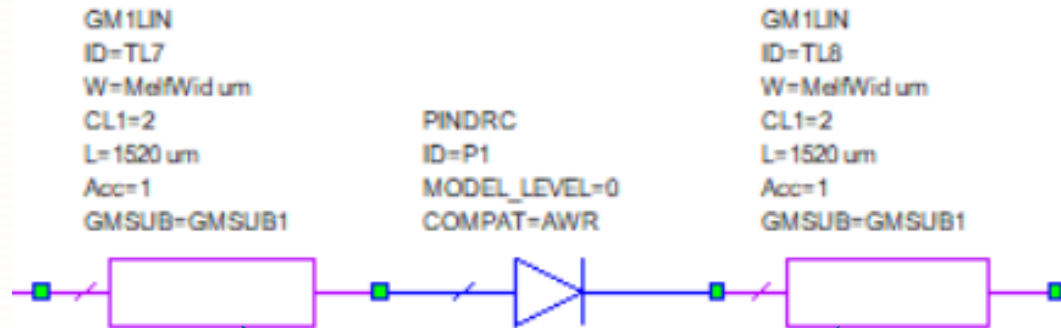


# Test Fixture Shunt

Fixture



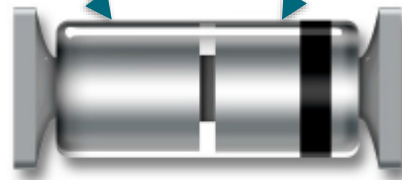
# Glass MELF Package



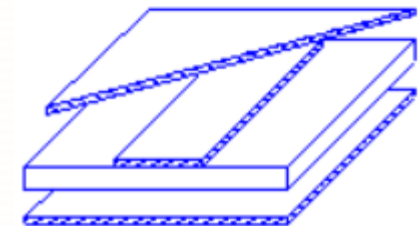
MelfWid=515

GMSUB  
N=3  
Er={6.9,6.9,3.66}  
Tand={.004,.004,.003}  
H={1310,470,508} um  
ErC=1  
TandC=0  
HC=1000 um  
HB=100 um  
T={0,MelfWid,0} um  
Rho=1  
Cover=No Cover  
Gnd=Grounded Substrate  
Name=GMSUB1

Model leads inside package as a square transmission line (width & height) embedded inside a multilayer substrate.

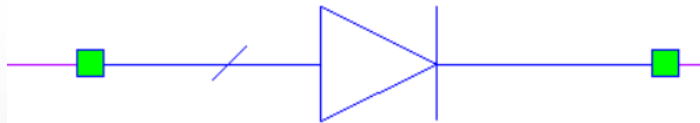


MELF



# Robert Caverly PIN Diode Model

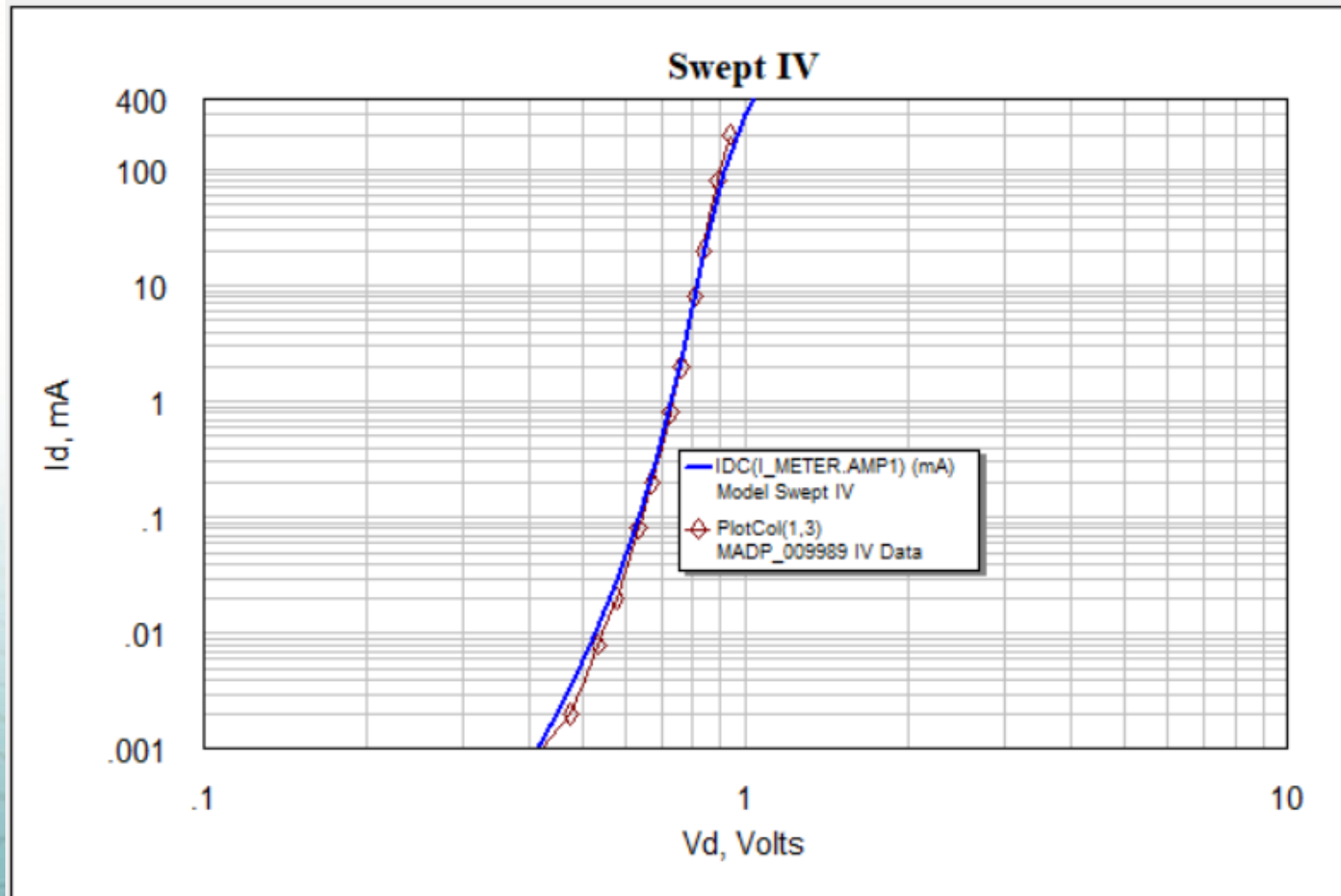
PINDRC  
ID=P1  
MODEL\_LEVEL=0  
COMPAT=AWR



Name	Value	Unit
ID	P1	
IS	Is	mA
IKNEE	Iknee	mA
N	Npin	
RLIM	Rlim	Ohm
REPI	Repi	Ohm
CJ	Cj	pF
CPKG	Cpkg	pF
TAU	LT	ns
W	W	
B	3	
LBOND	Lpkg	nH
TNOM	26.85	DegC
TEMP	26.85	DegC
AREA	1	
NFLAG	Noise Off	
MODEL_LEVEL	0	
COMPAT	AWR	

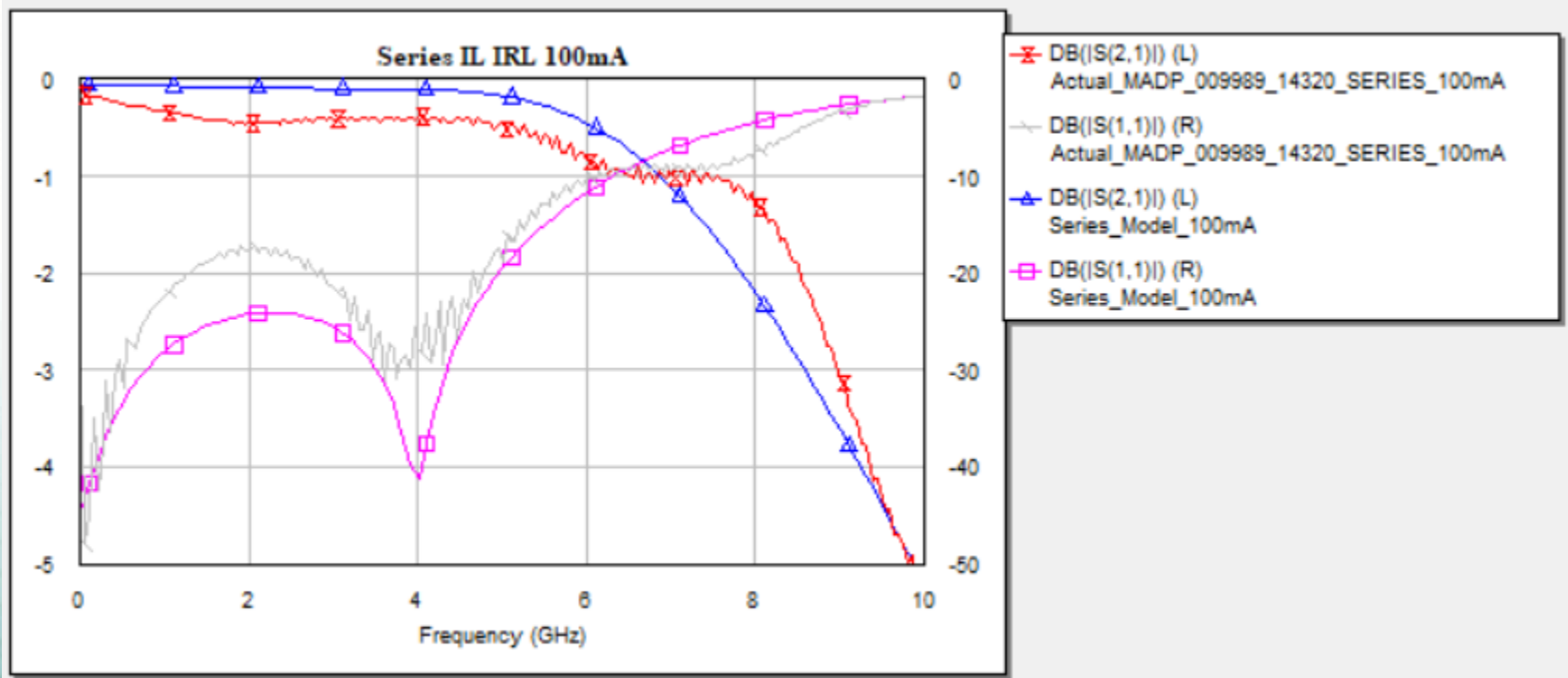
Is=3.1e-07  
Iknee=0.49  
Npin=0.98  
Repi=4000  
LT=136  
W=9  
Cj=0.71  
Rlim=0.13  
Cpkg=0.28  
Lpkg=0.42

# IV Curve

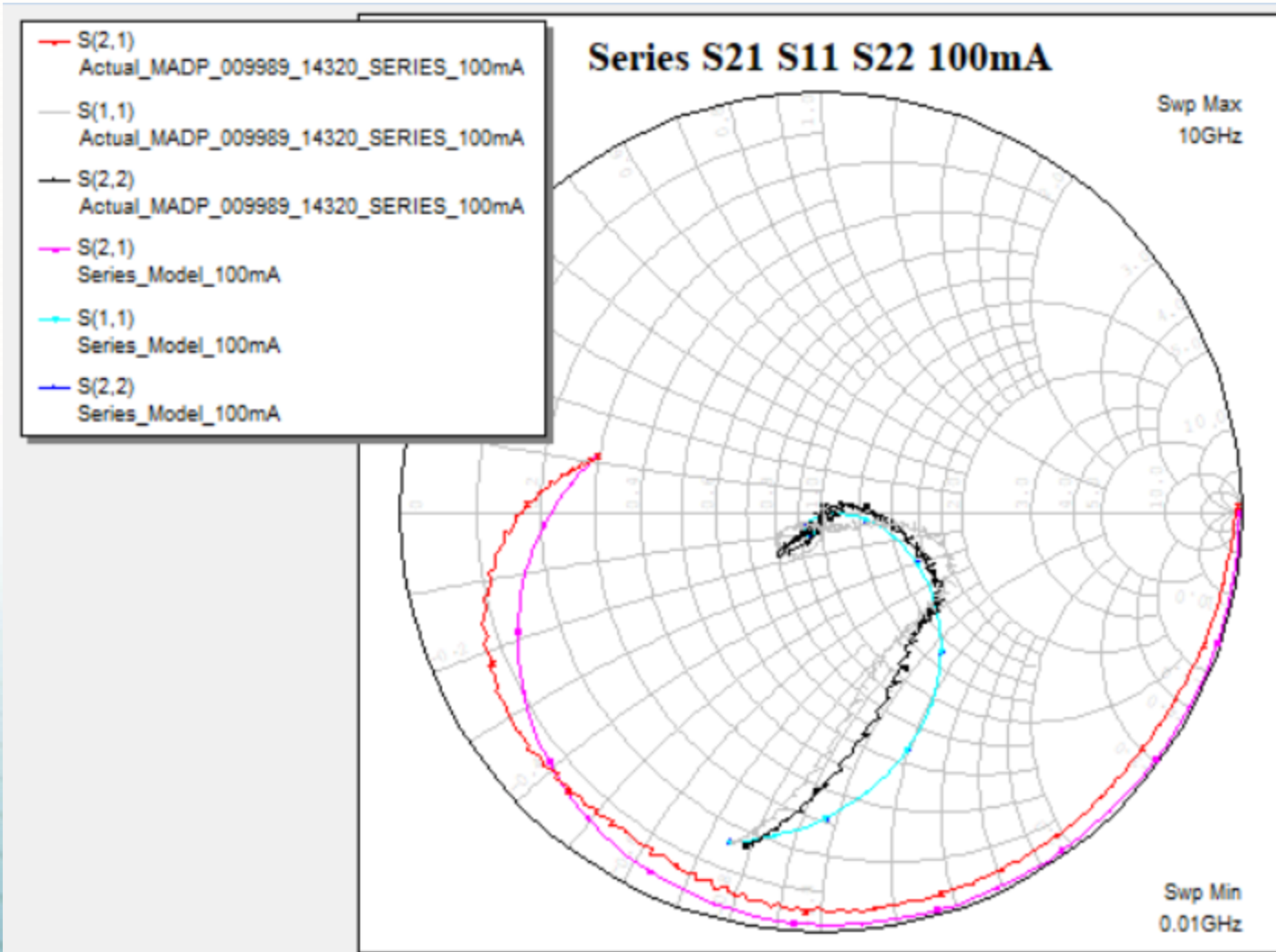




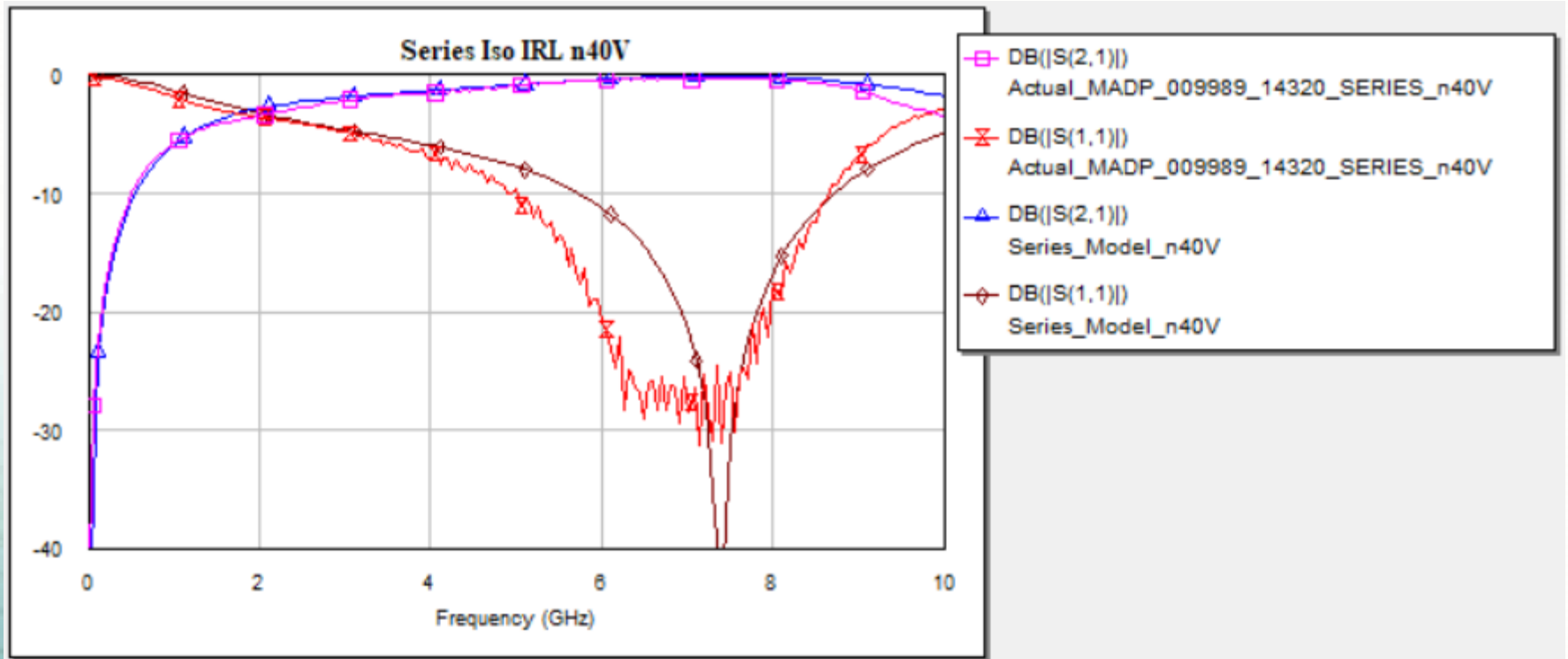
# Series 100 mA



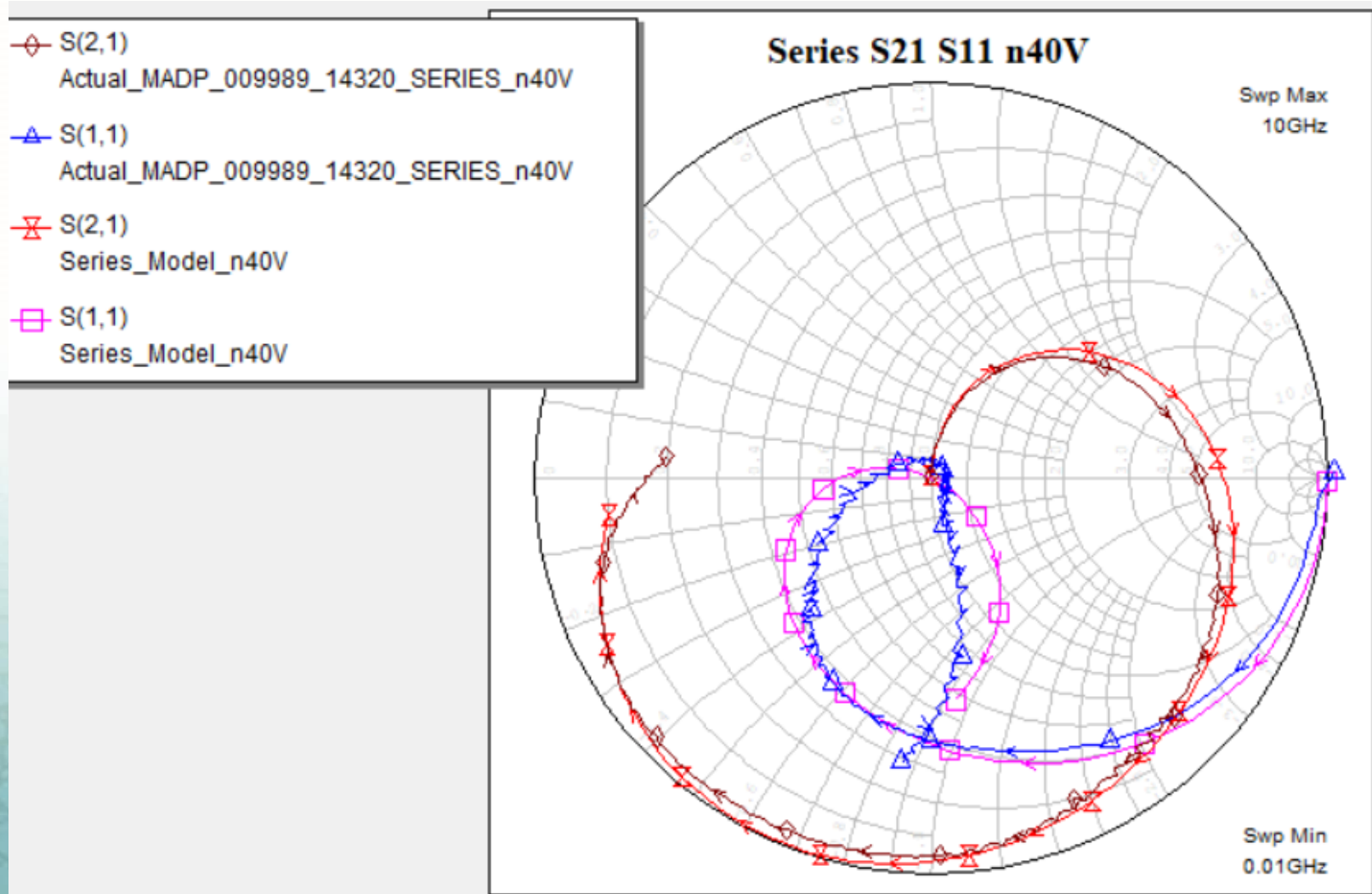
# Series 100 mA



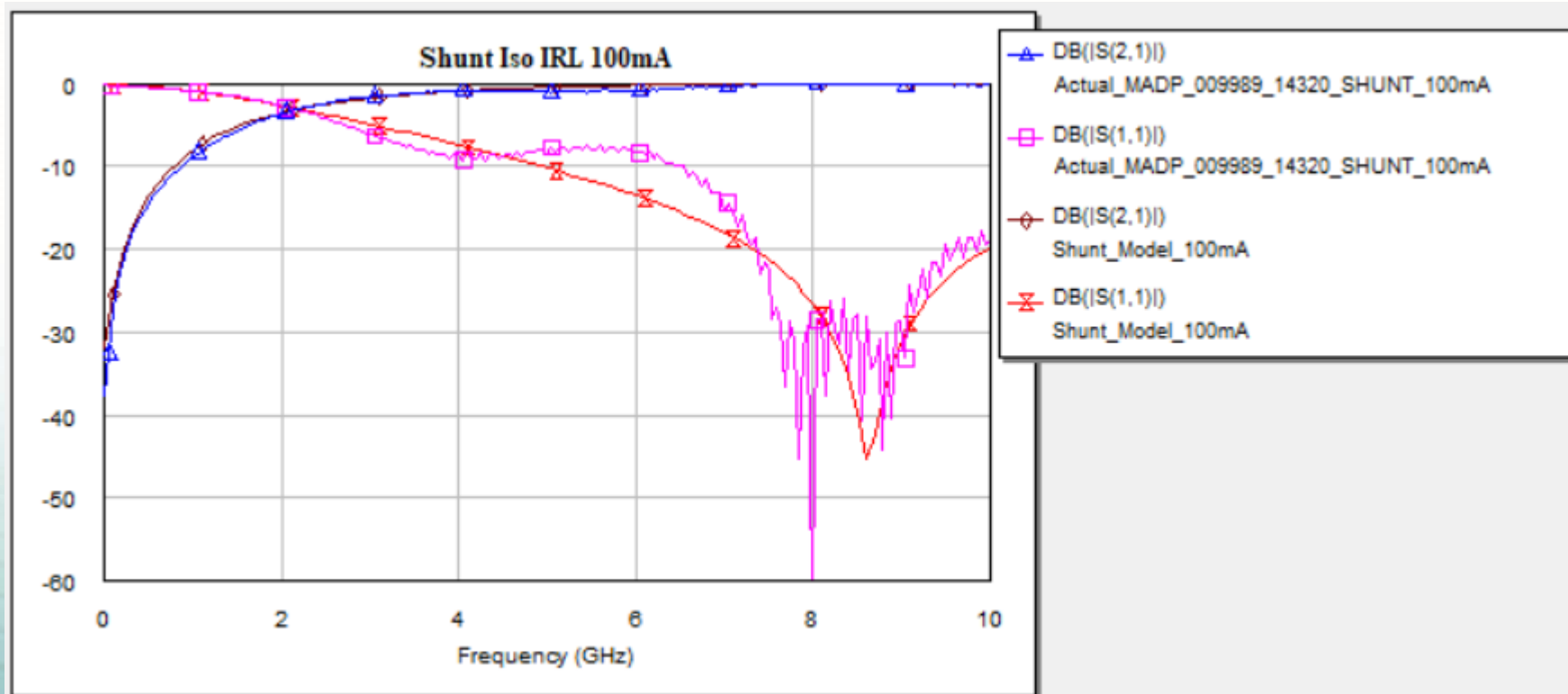
# Series -40 V



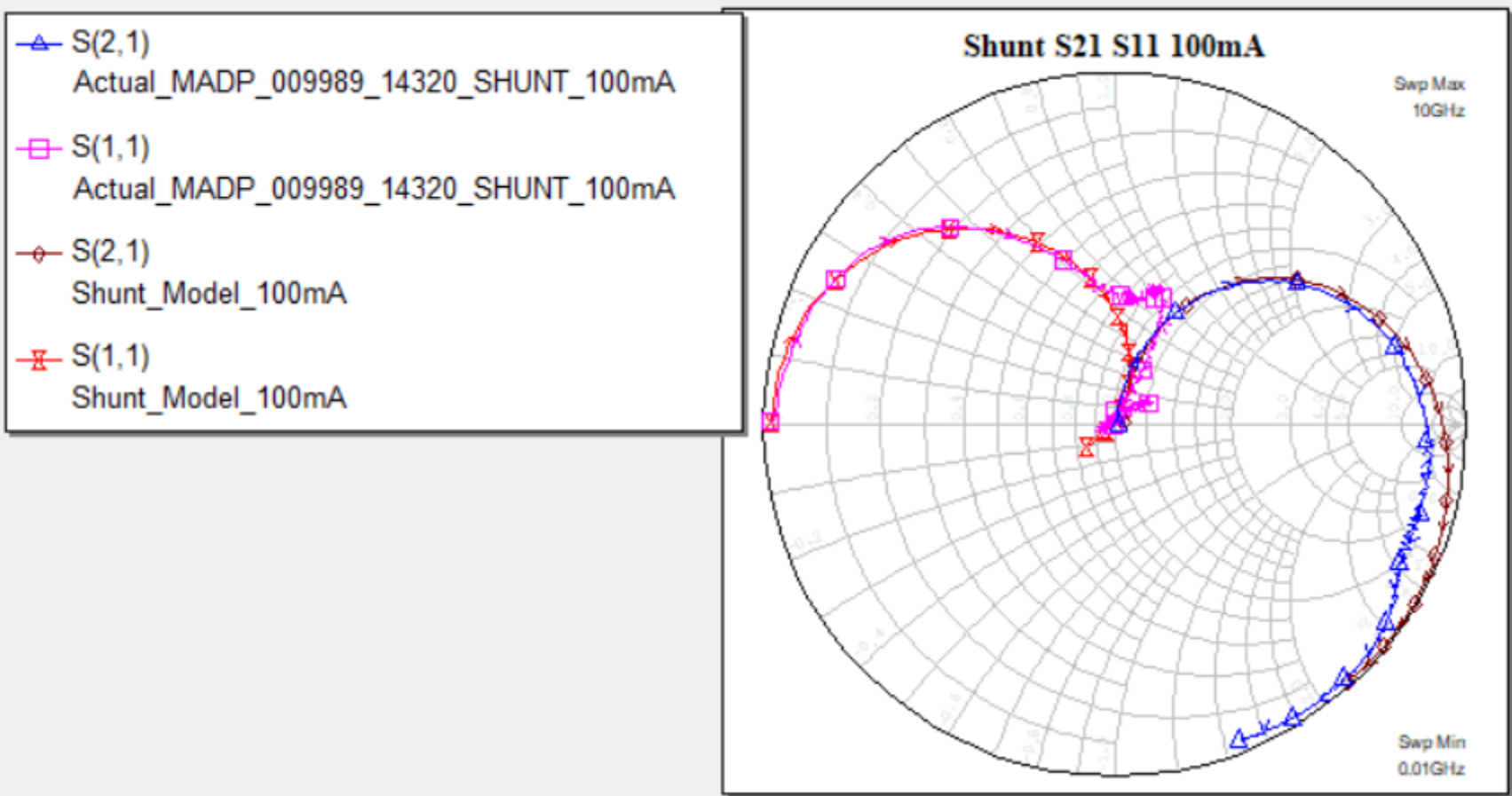
# Series -40 V



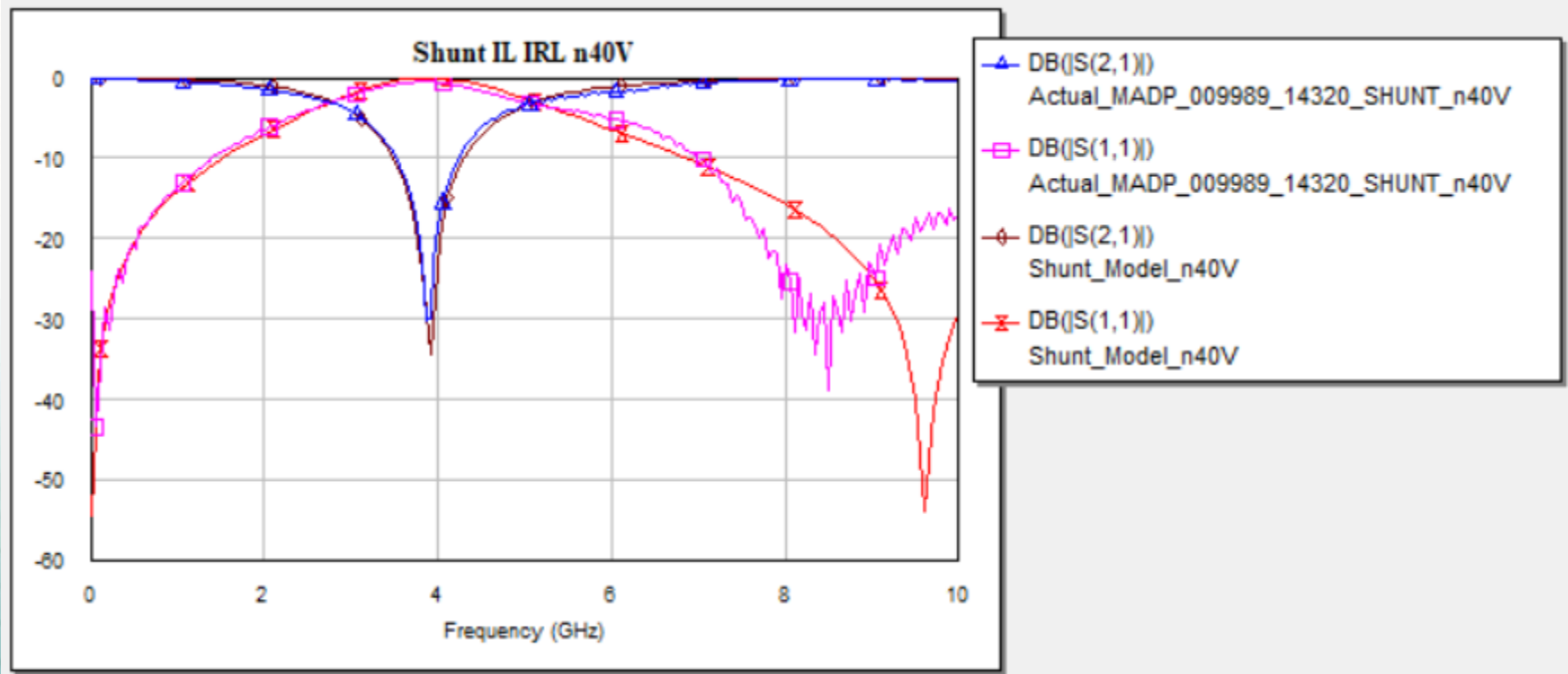
# Shunt 100 mA



# Shunt 100 mA



# Shunt -40 V



# Shunt -40 V

