

MACOMTM

Partners in RF & Microwave

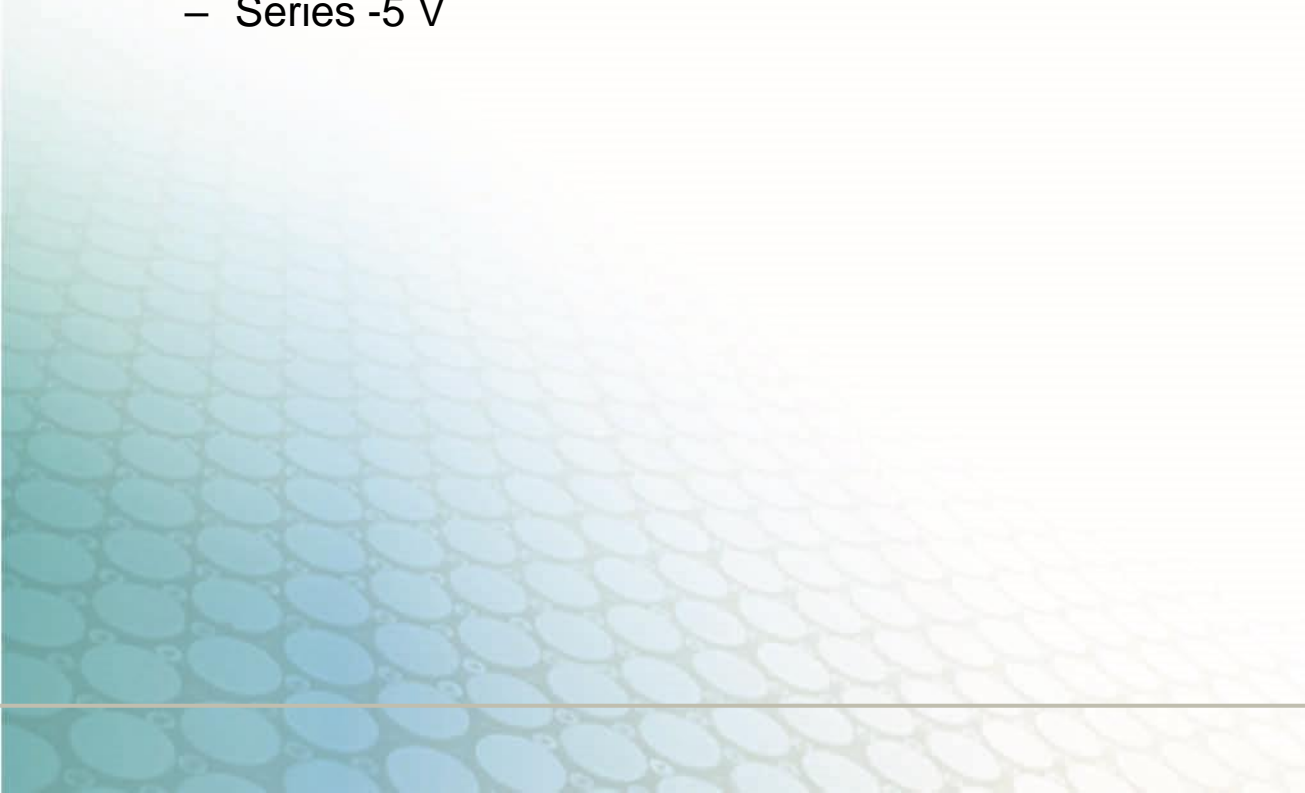
SPICE Model



MADP-000907-14020

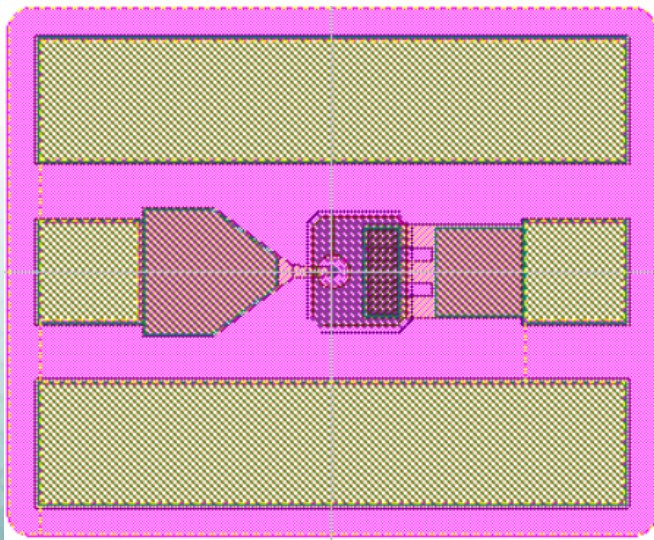
March 5, 2021

Contents

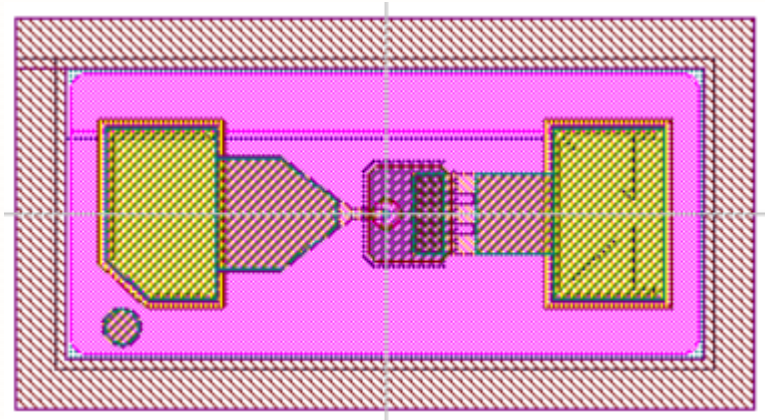
- **Test Fixture**
 - **Package**
 - **Diode**
 - **Results**
 - IV Curve
 - Series 10 mA
 - Series -5 V
- 

Test Fixture

- Co-planer ground-signal-ground on-wafer probes
- Diode is a co-planer PCM pattern

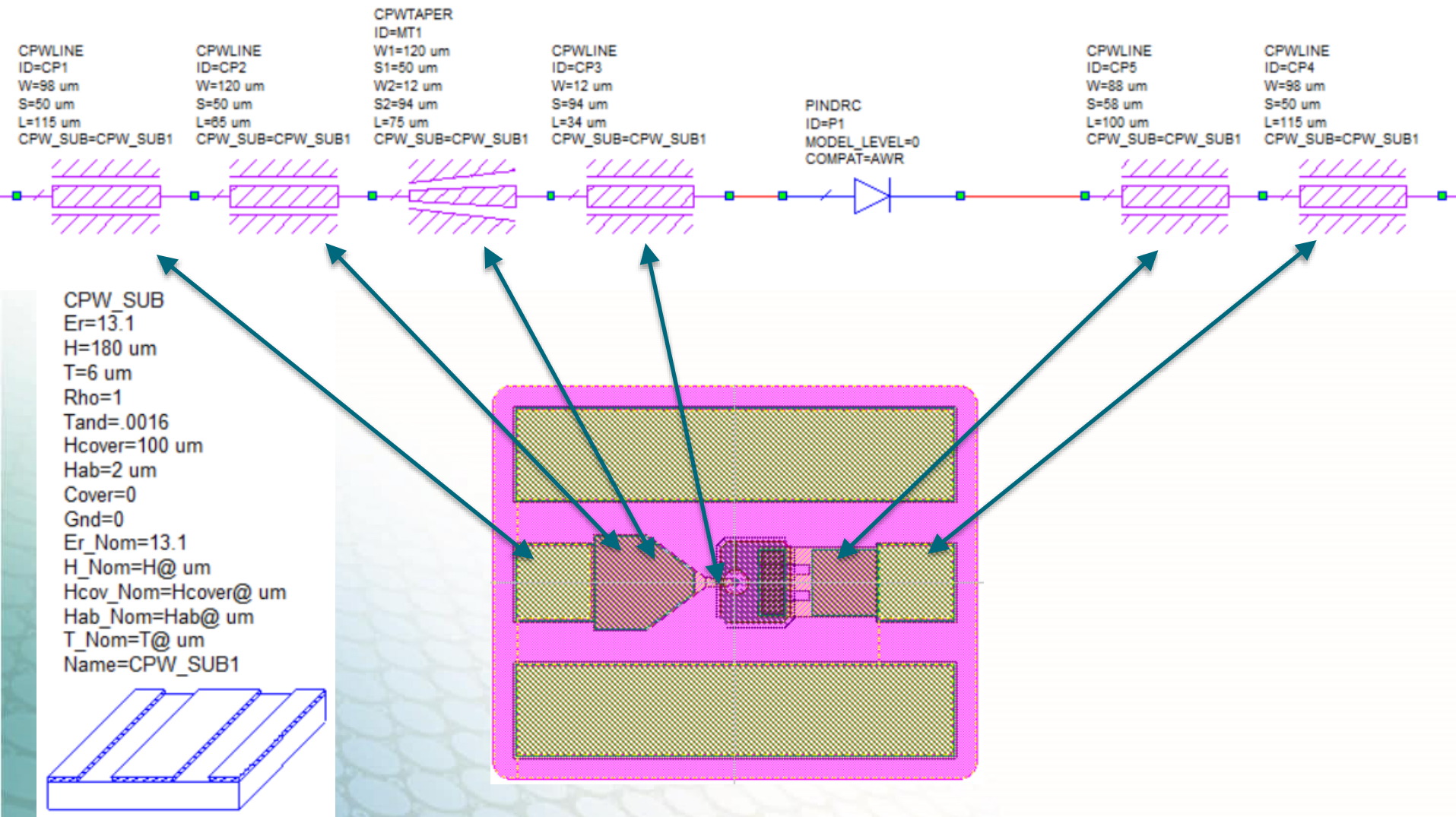


PCM Device



Actual Device

Package Co-Planer Transmission Lines



Robert Caverly PIN Diode Model

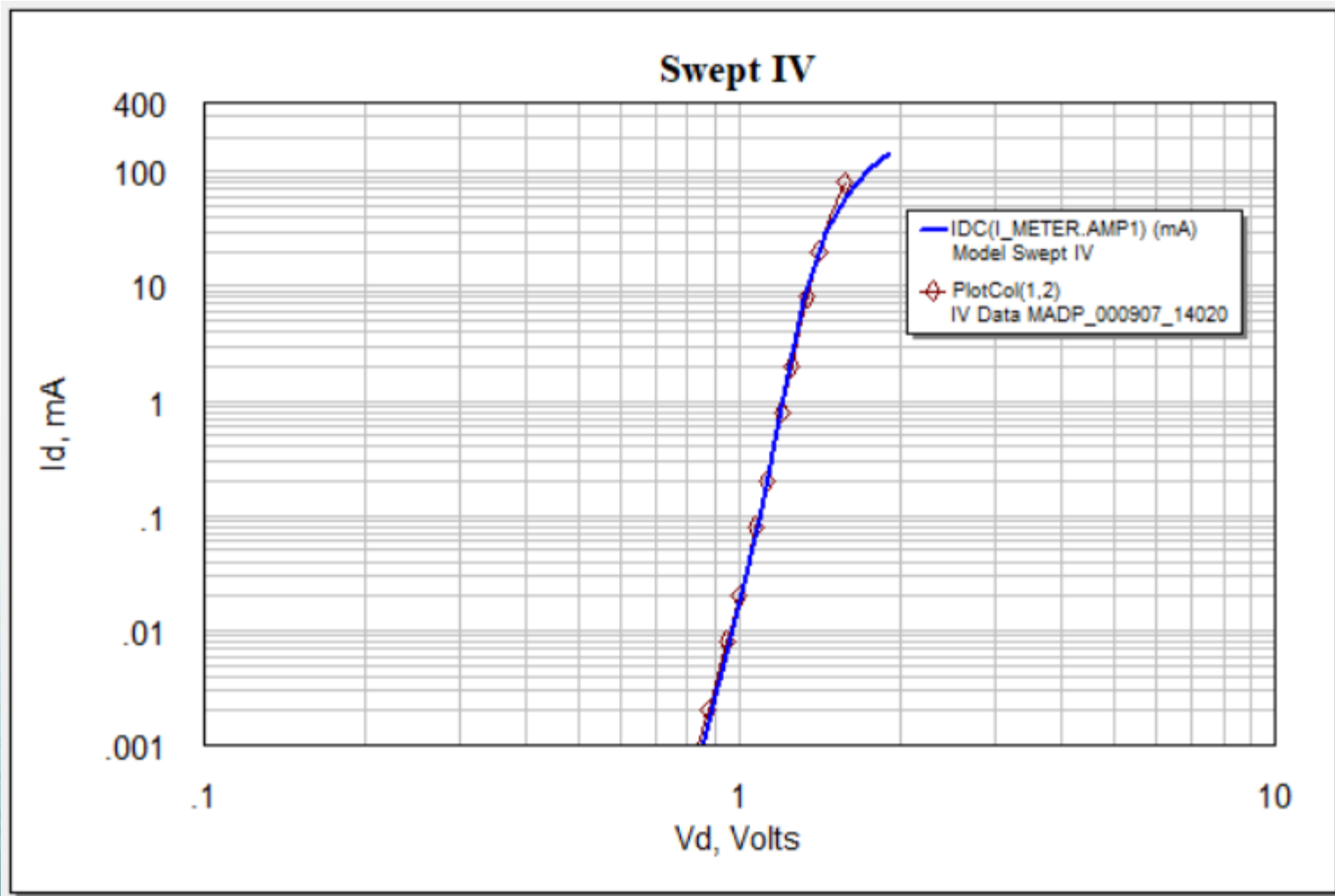
PINDRC
ID=P1
MODEL_LEVEL=0
COMPAT=AWR



| 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 | |

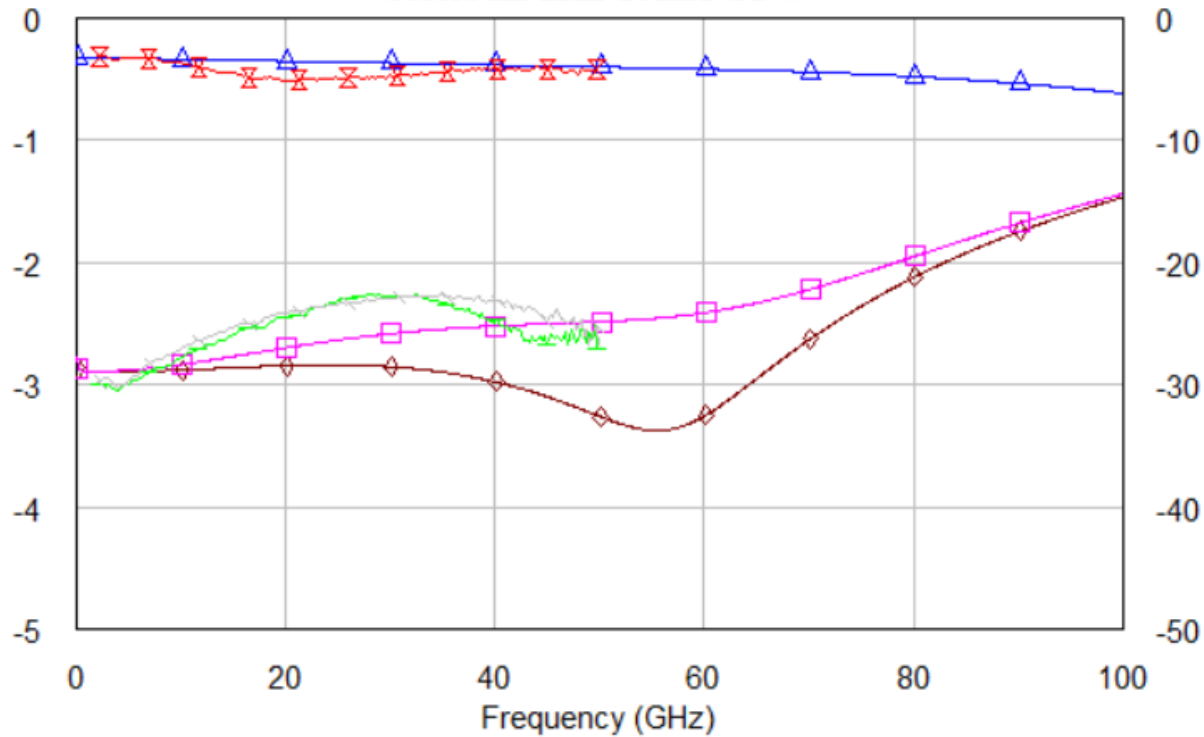
Is=7.25e-11
Iknee=10
Npin=1
Repi=10000
LT=20
W=2
Cj=0.023
Rlim=3.5
Cpkg=0.0035
Lpkg=0.00

IV Curve



Series 10 mA

Series IL IRL 10mA CPW



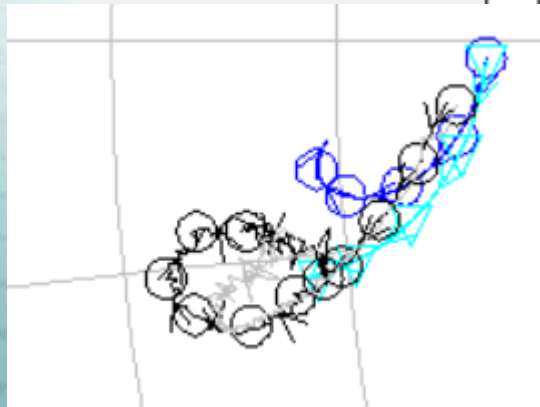
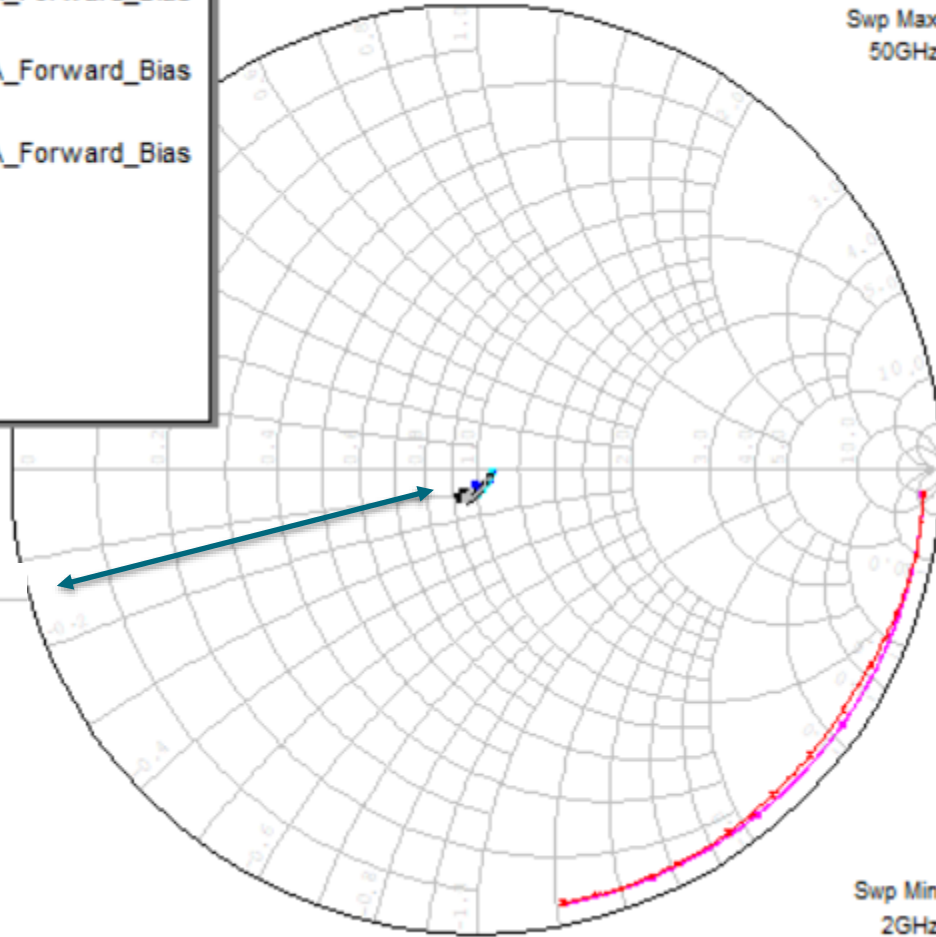
- DB(|S(2,1)|) (L) Measured_MA4AGP907_10mA_Forward_Bias
- DB(|S(1,1)|) (R) Measured_MA4AGP907_10mA_Forward_Bias
- DB(|S(2,2)|) (R) Measured_MA4AGP907_10mA_Forward_Bias
- DB(|S(2,1)|) (L) Series_Model_10mA
- DB(|S(1,1)|) (R) Series_Model_10mA
- DB(|S(2,2)|) (R) Series_Model_10mA

Series 10 mA

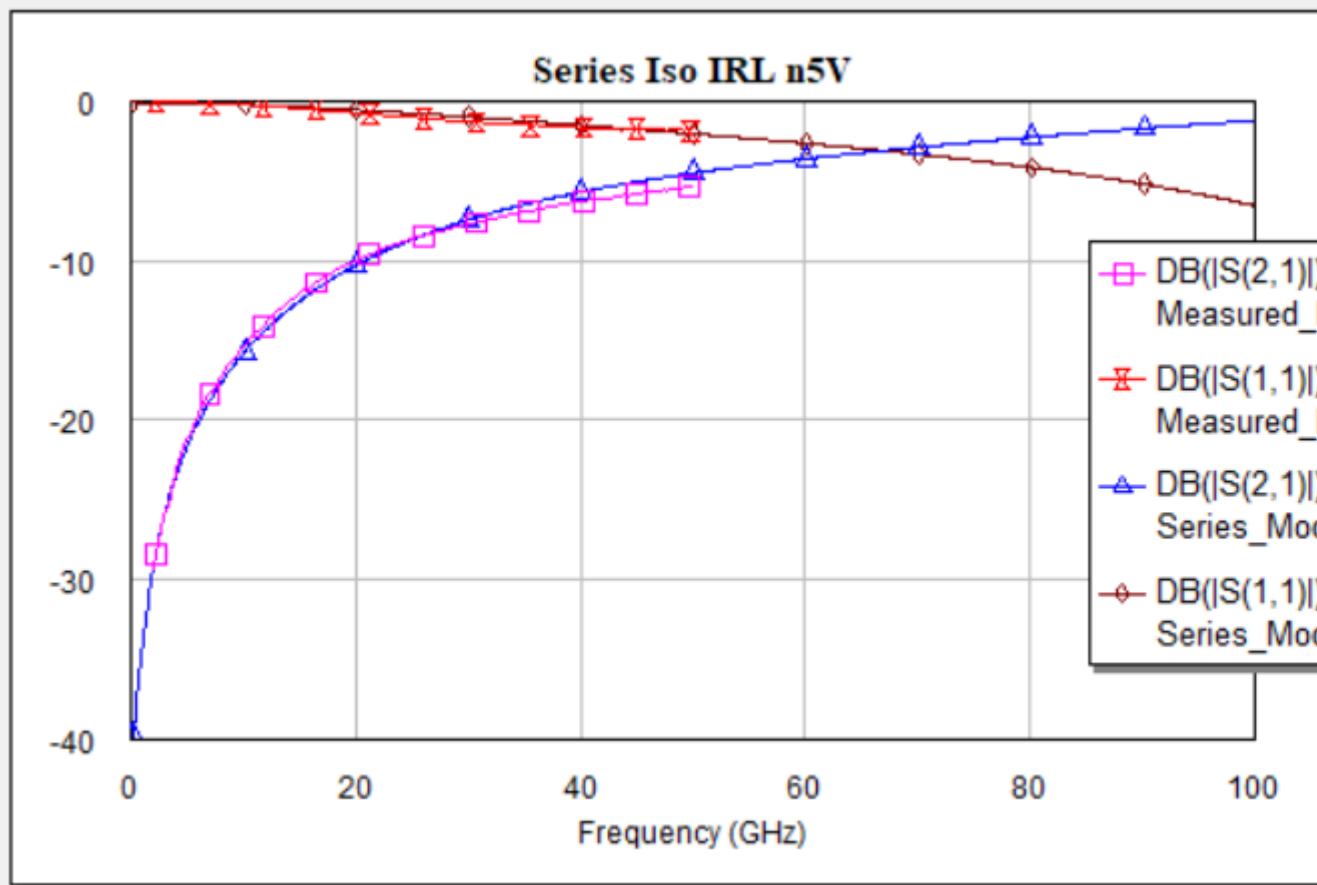
- S(2,1)
Measured_MA4AGP907_10mA_Forward_Bias
- S(1,1)
Measured_MA4AGP907_10mA_Forward_Bias
- S(2,2)
Measured_MA4AGP907_10mA_Forward_Bias
- S(2,1)
Series_Model_10mA
- S(1,1)
Series_Model_10mA
- S(2,2)
Series_Model_10mA

Series S21 S11 S22 10mA

Swp Max
50GHz



Series -5 V



- DB(|S(2,1)|)
Measured_MA4AGP907_n5V_Reverse_Bias
- ⊠ DB(|S(1,1)|)
Measured_MA4AGP907_n5V_Reverse_Bias
- △ DB(|S(2,1)|)
Series_Model_n5V
- ◇ DB(|S(1,1)|)
Series_Model_n5V

Series -5 V

