

MACOMTM

Partners in RF & Microwave

SPICE Model



MA4P7104-1072 rev B

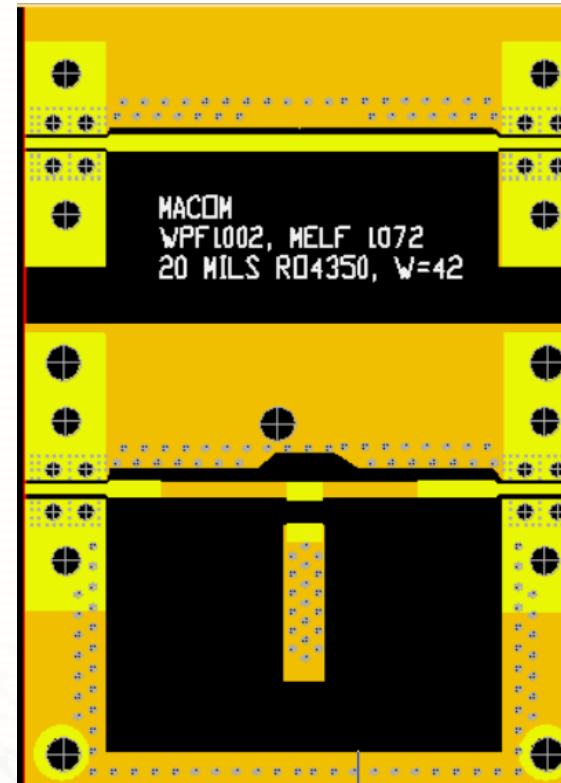
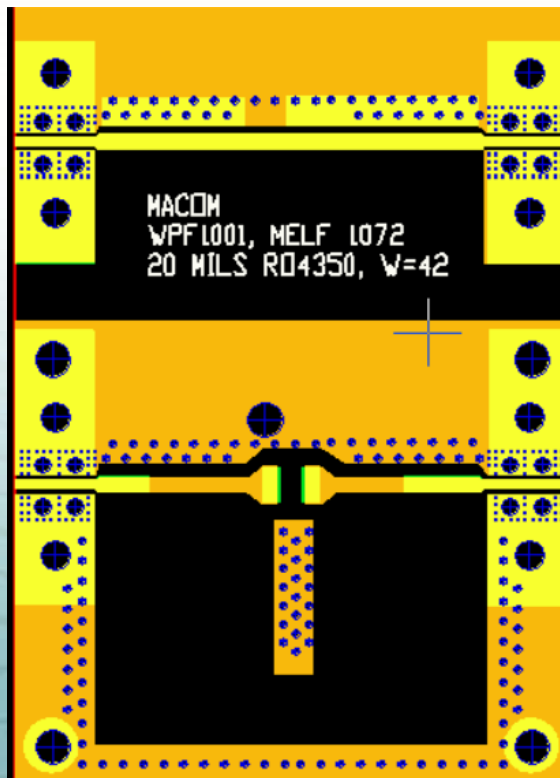
Jan 21, 2020

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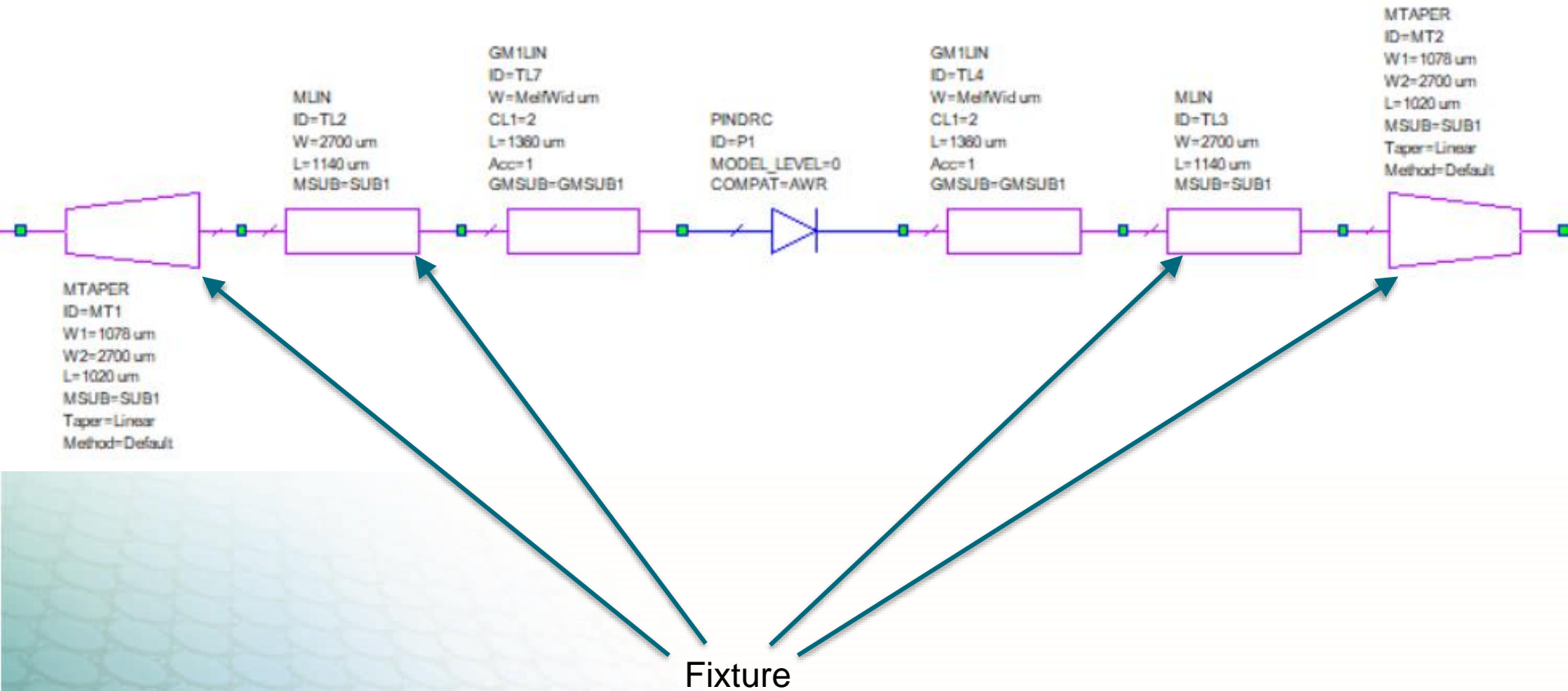
- **Test Fixture**
- **Package**
- **Diode**
- **Results**
 - IV Curve
 - Series 100 mA
 - Series -40 V
 - Shunt 100 mA
 - Shunt -40 V

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

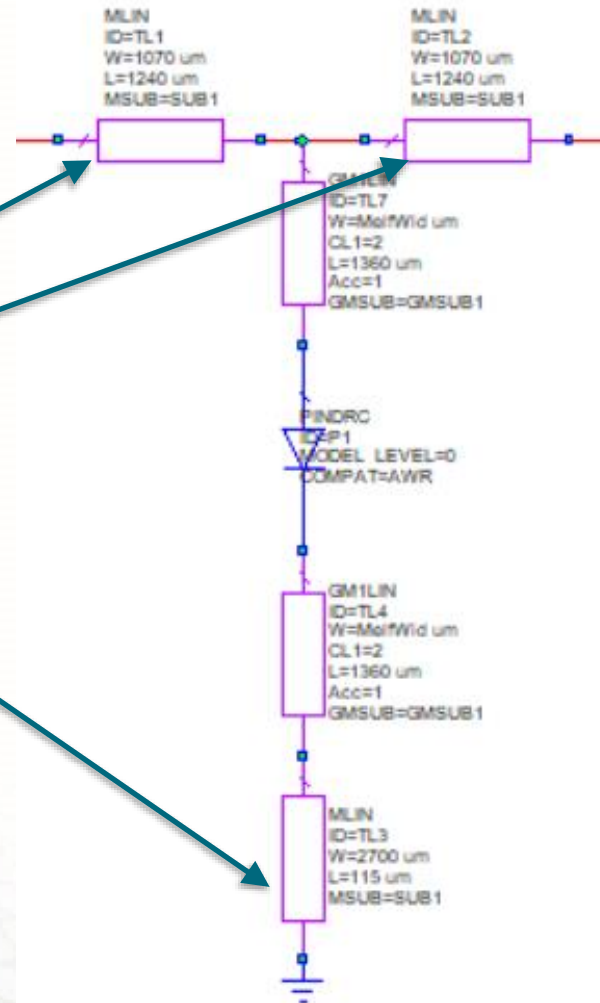


Test Fixture Series

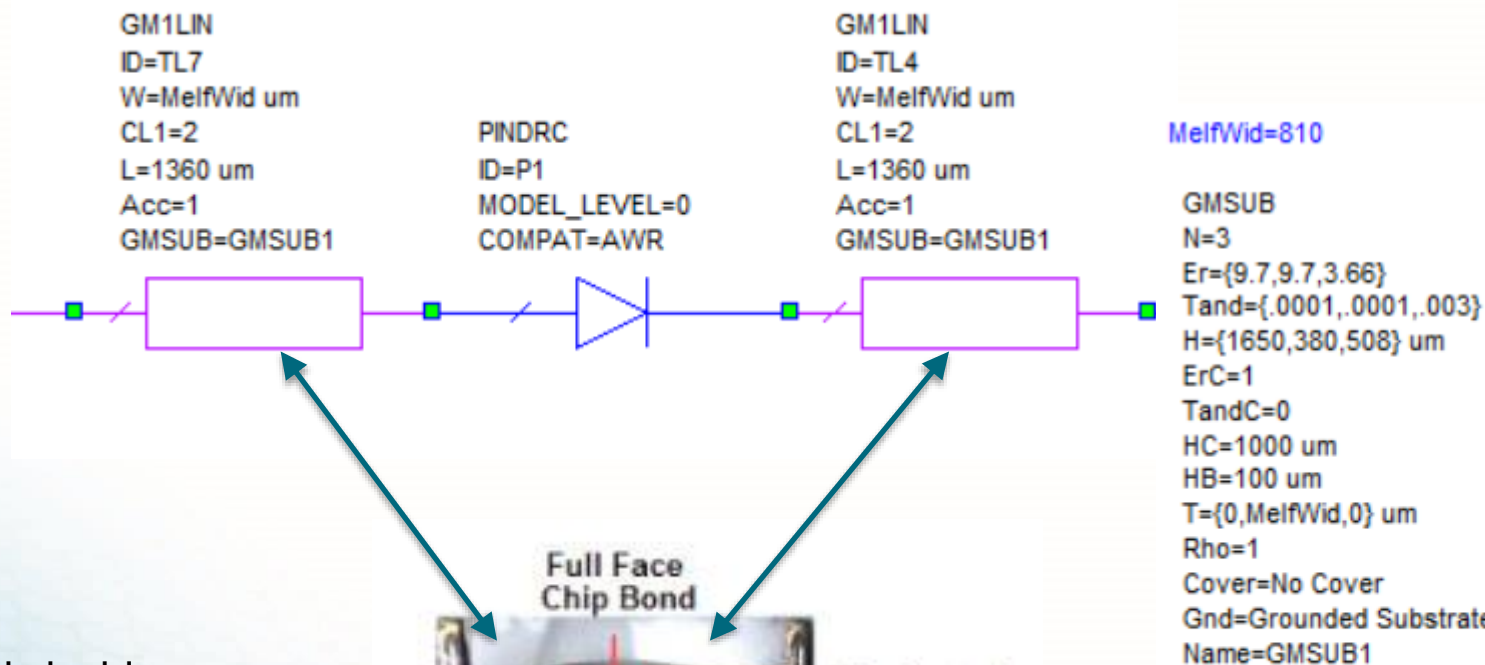


Test Fixture Shunt

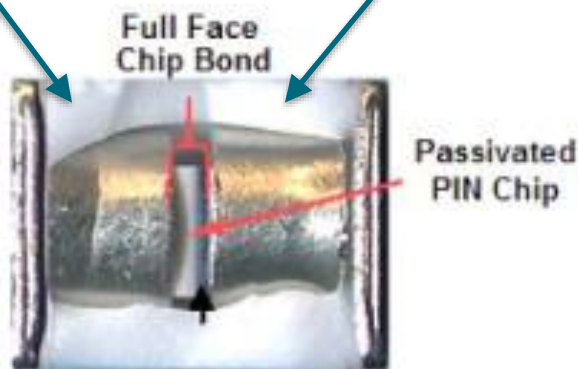
Fixture



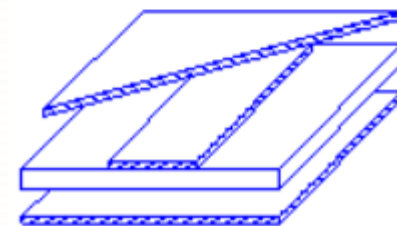
Package



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

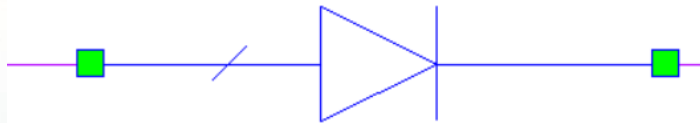


Diode Cross Section



Robert Caverly PIN Diode Model

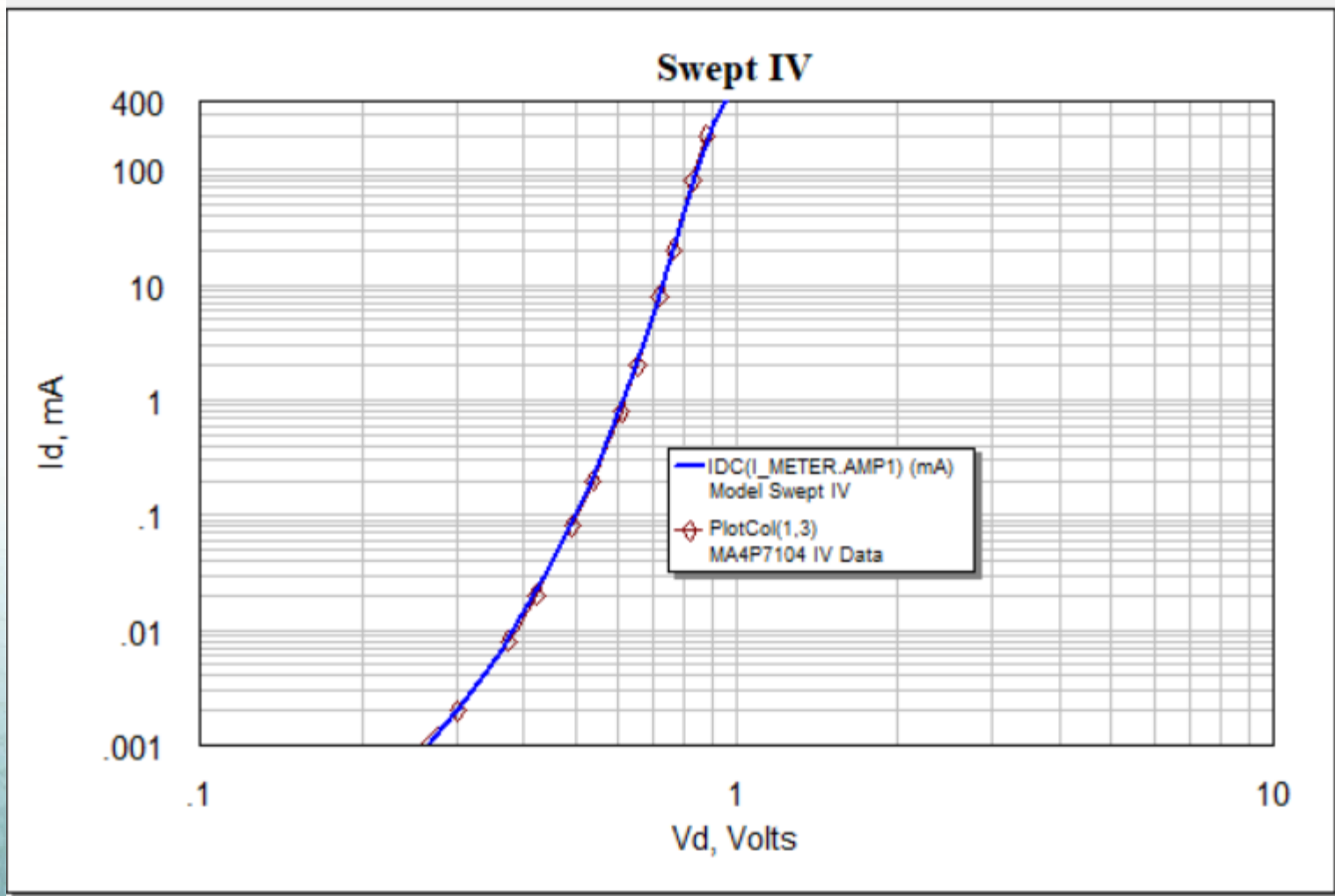
PINDRC
ID=P1
MODEL_LEVEL=0
COMPAT=AWR



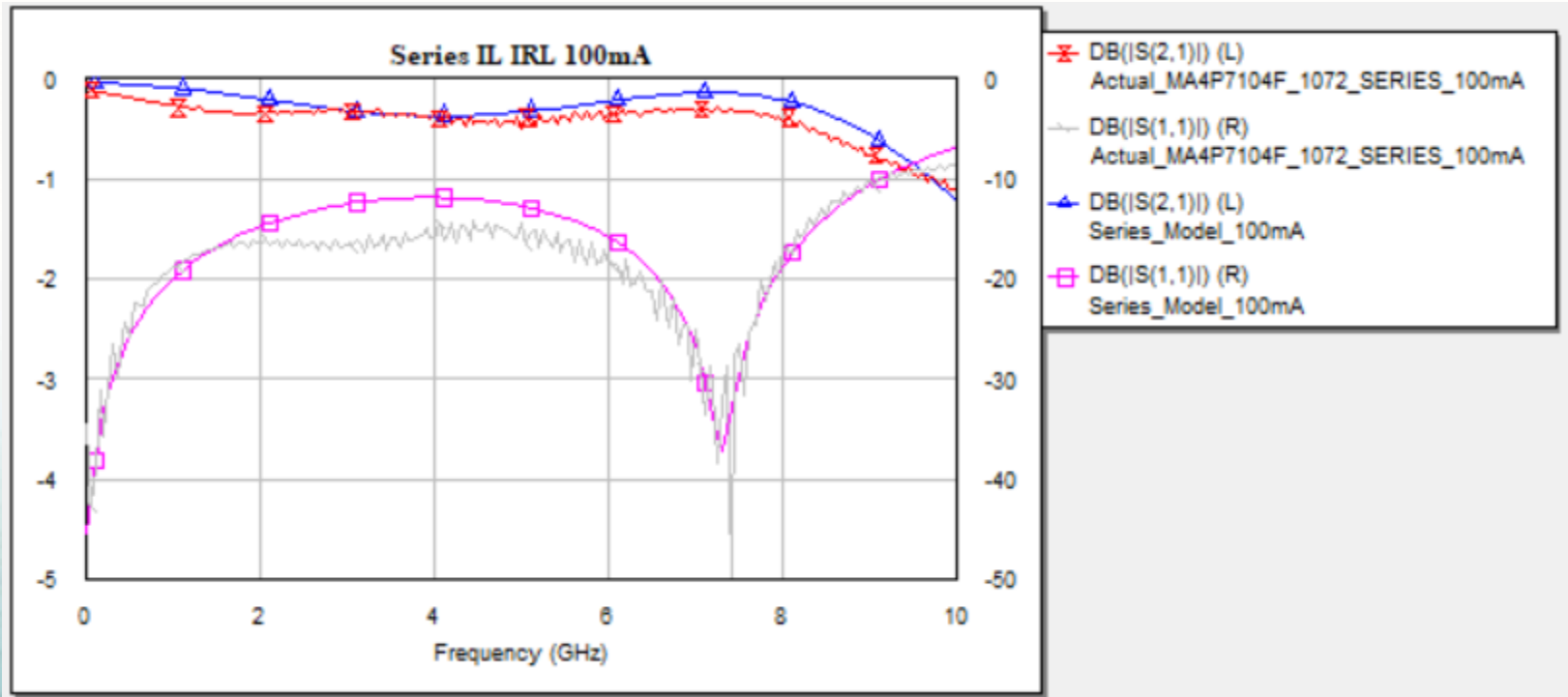
ID	P1	
IS	Is	mA
IKNEE	Iknee	mA
N	Npin	
RLIM	Rlim	Ohm
REPI	Repi	Ohm
CJ	Cj	pF
CPKG	Cpkg	pF
TAU	LT	ns
W	W	
B	3	
LBOND	Lpkg	nH
TNOM	26.85	DegC
TEMP	26.85	DegC
AREA	1	
NFLAG	Noise Off	
MODEL_LEVEL	0	
COMPAT	AWR	

Is=7.3e-06
Iknee=30
Npin=0.98
Repi=100000
LT=3500
W=96
Cj=0.39
Rlim=0.15
Cpkg=0.3
Lpkg=0.18

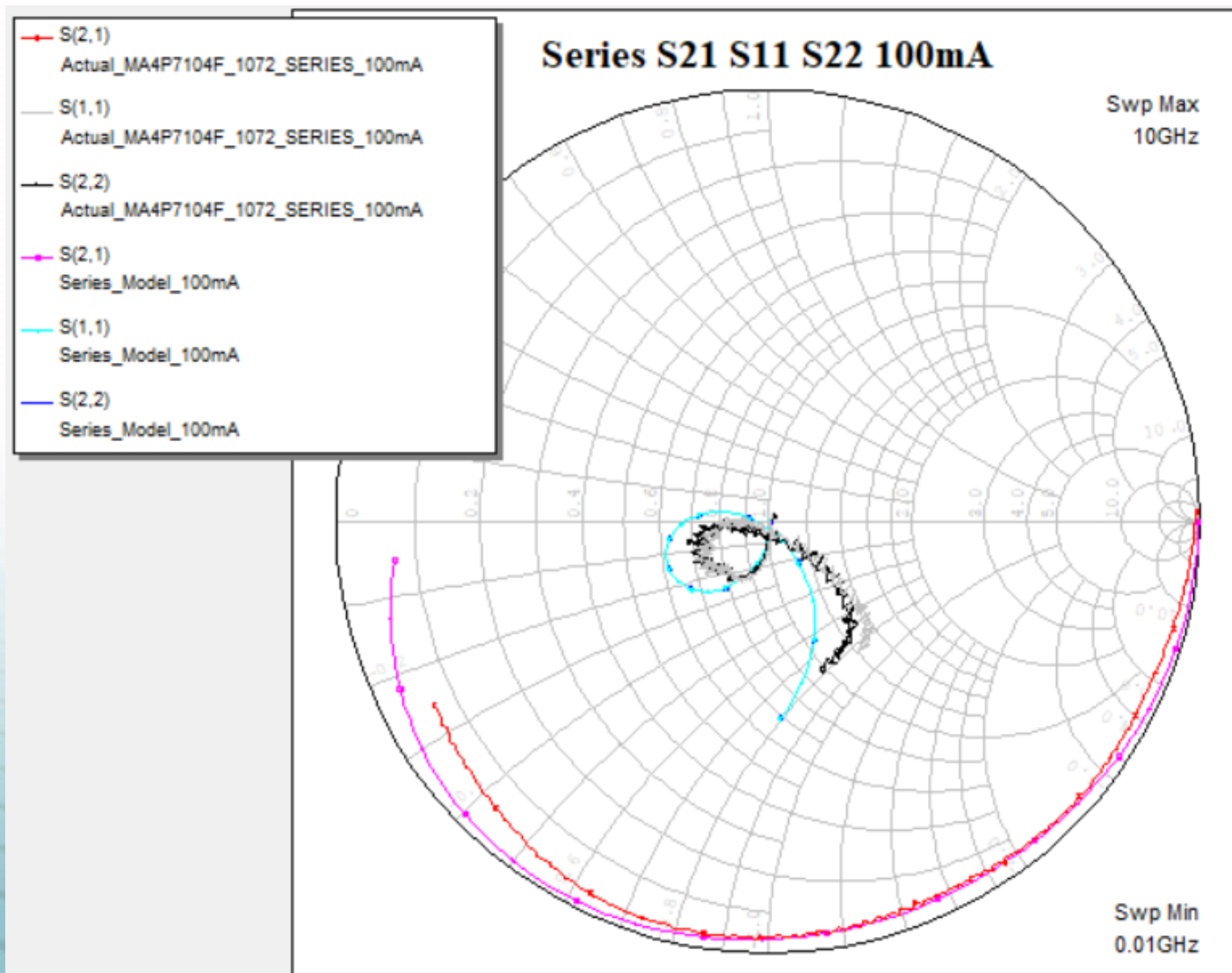
IV Curve



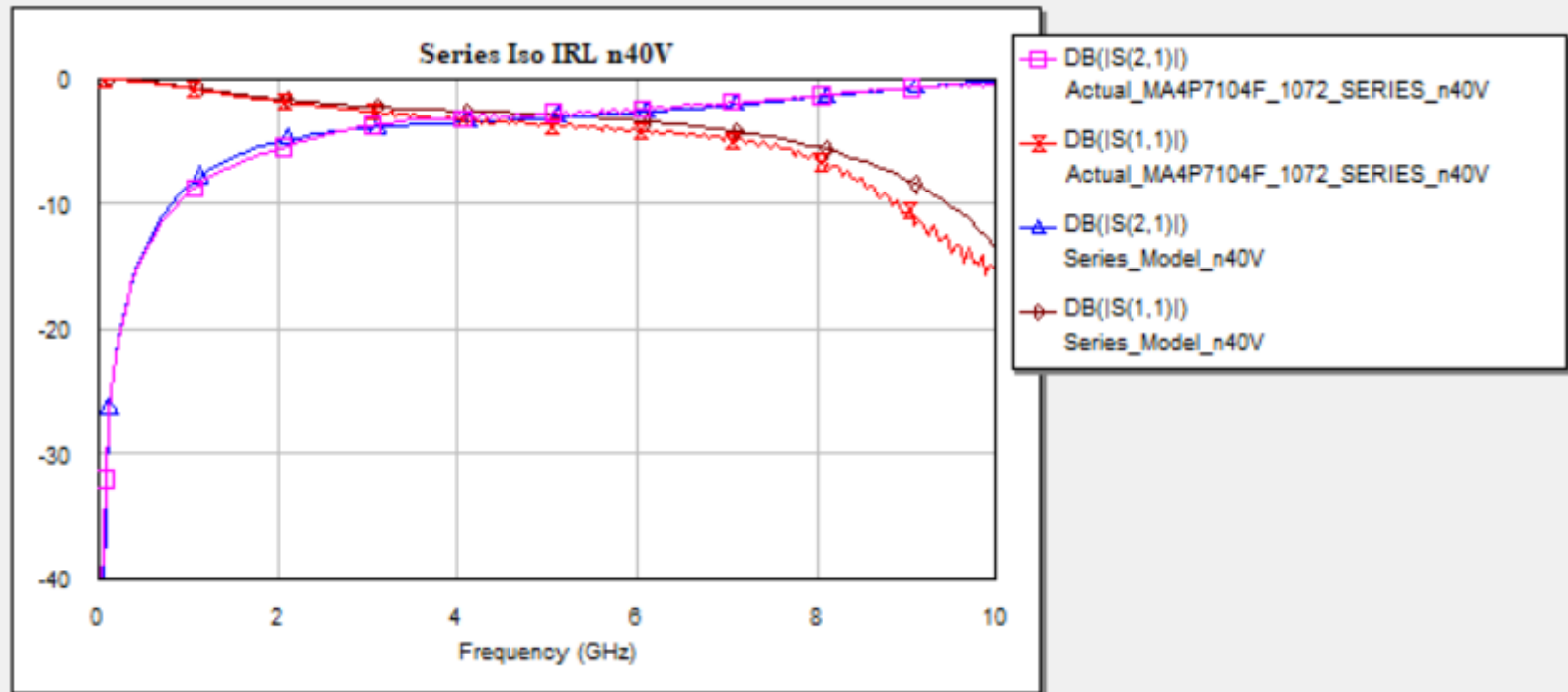
Series 100 mA



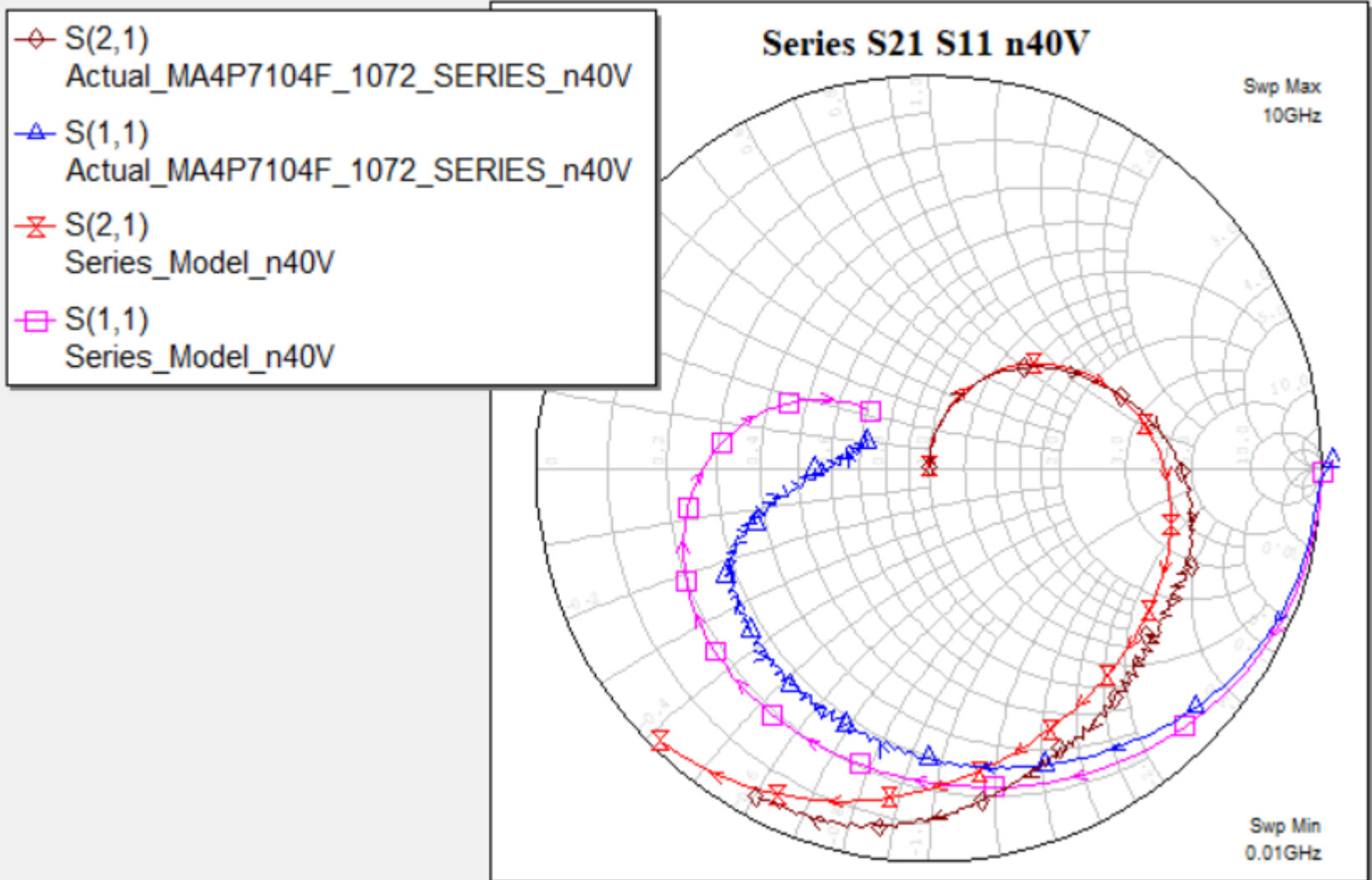
Series 100 mA



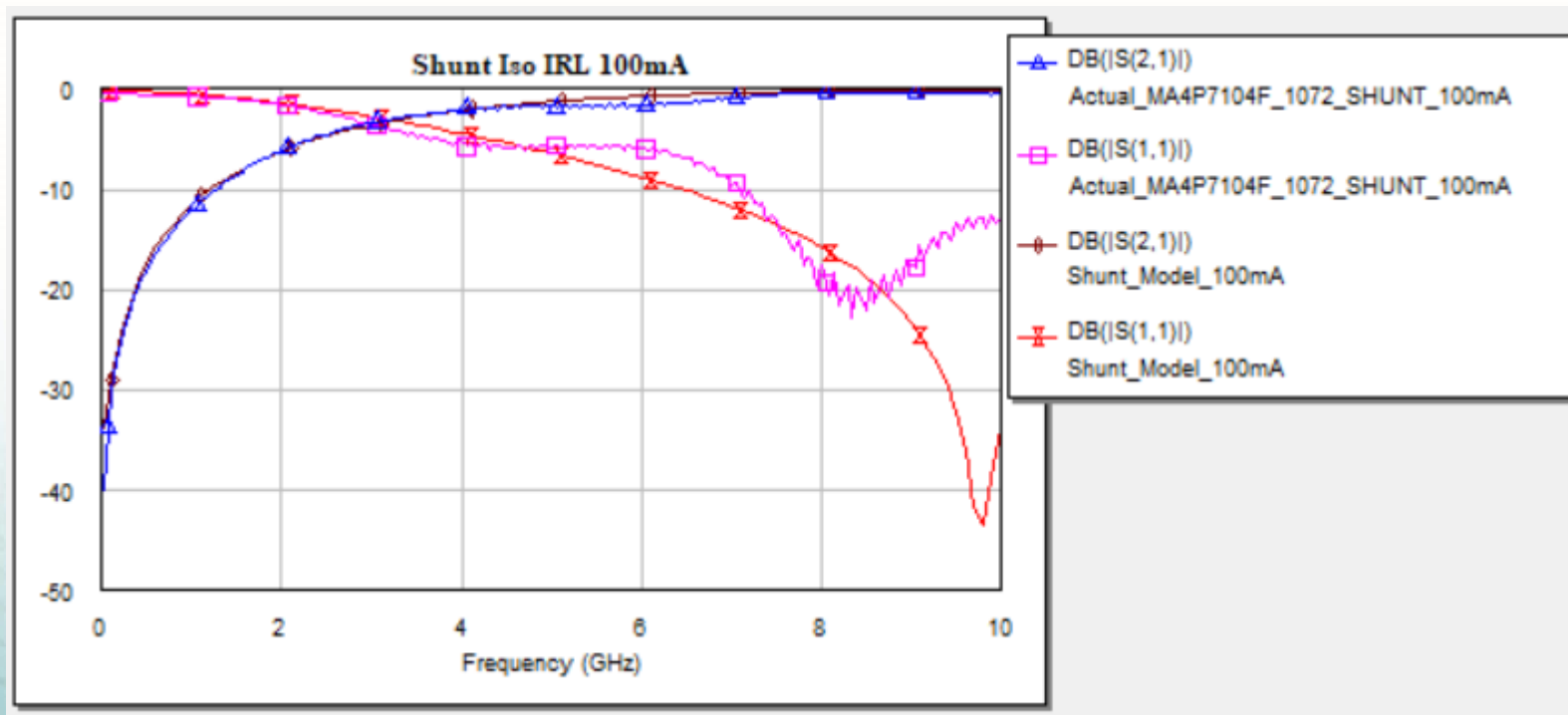
Series -40 V



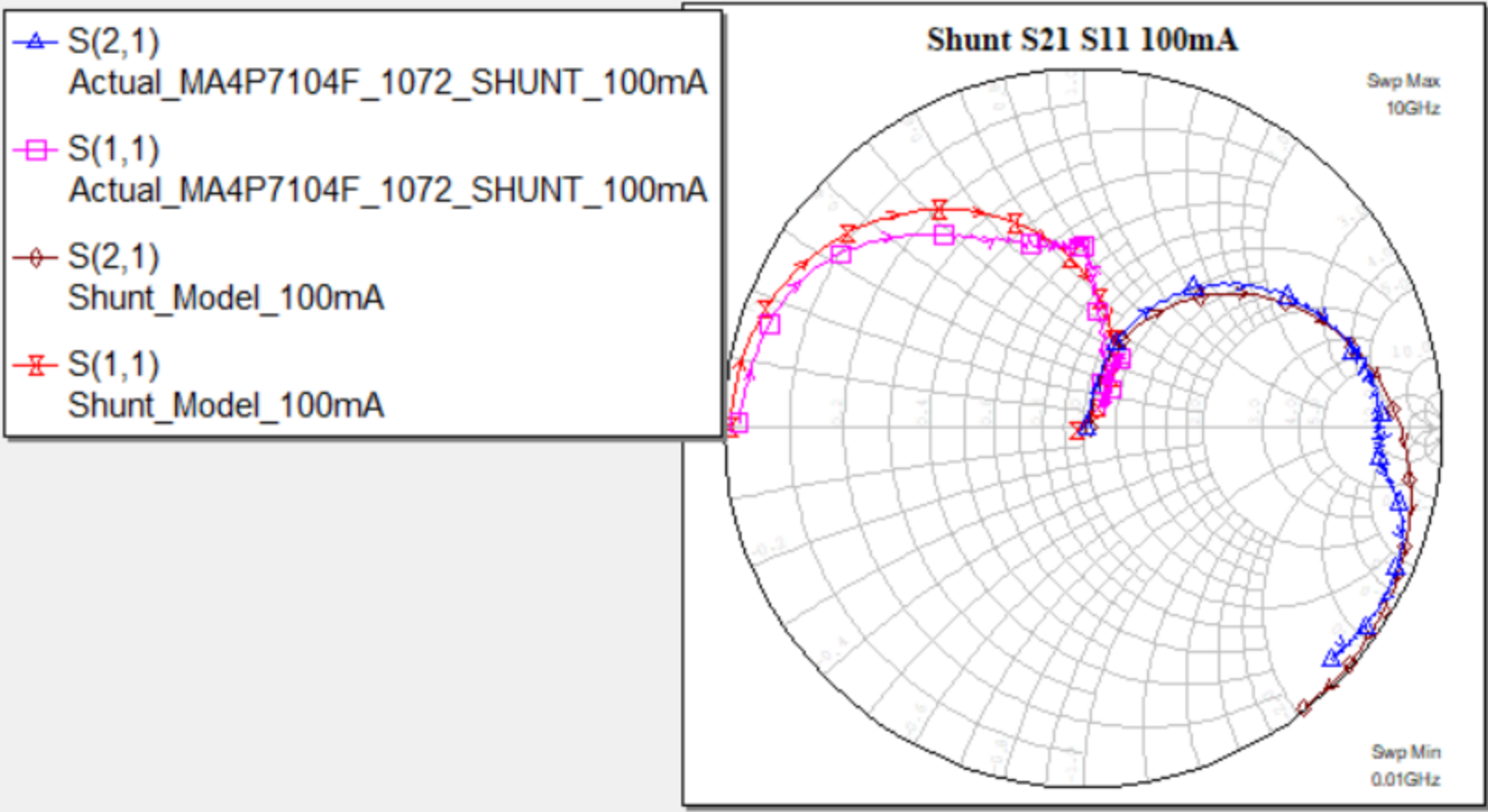
Series -40 V



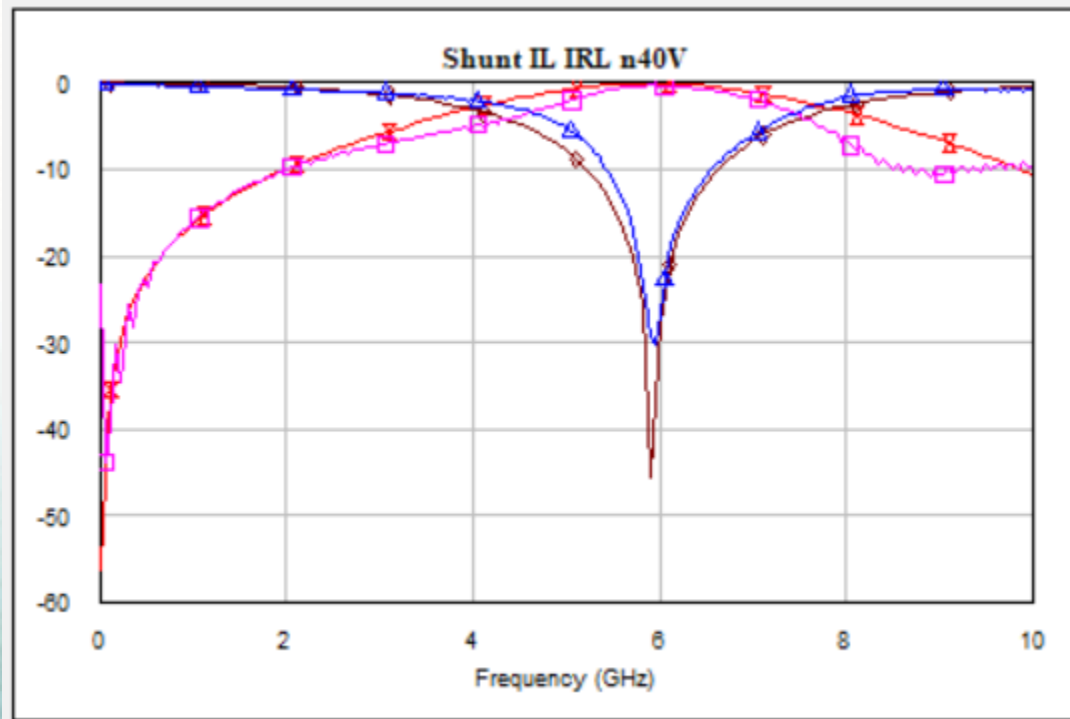
Shunt 100 mA



Shunt 100 mA



Shunt -40 V



- DB(IS(2,1)) Actual_MA4P7104F_1072_SHUNT_n40V
- DB(IS(1,1)) Actual_MA4P7104F_1072_SHUNT_n40V
- DB(IS(2,1)) Shunt_Model_n40V
- DB(IS(1,1)) Shunt_Model_n40V

Shunt -40 V

