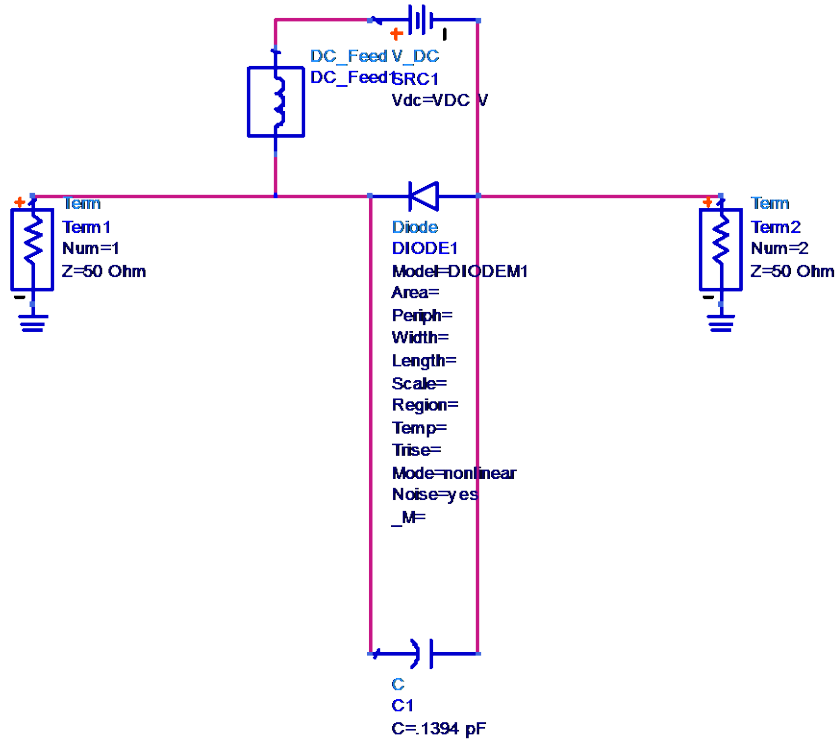


# **MA46H120 ADS/Spice Diode Model**

# MA46H120 : ADS Diode Model



## S-PARAMETERS

S\_Param

SP1

Freq=13 GHz

## PARAMETER SWEEP

ParamSweep

Sweep1

SweepVar="VDC"

SimInstanceName[1]="SP1"

SimInstanceName[2]=

SimInstanceName[3]=

SimInstanceName[4]=

SimInstanceName[5]=

SimInstanceName[6]=

Start=0

Stop=15

Step=.1

VAR  
VAR1  
VDC=1.0

## Diode\_Model

DIODEM1

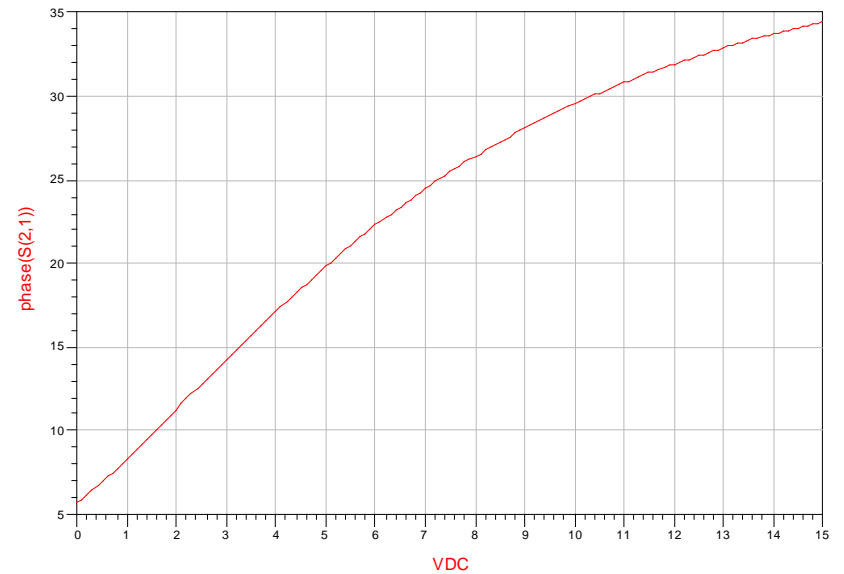
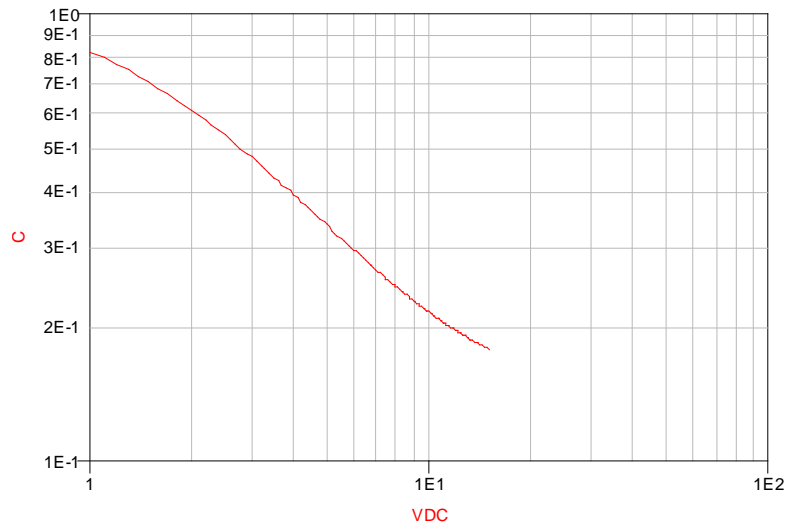
Level=	Ikf=1.572e-2 A	Ikp=	Trise=	Trs=
Is=2.374e-18 A	Ikr=	Cjsw=	Tlev=	Trs2=
Rs=.880 Ohm	IkModel=	Msw=	Tlevc=	Tgs=
Gleak=	Bv=27.41 V	Vjsw=	Xti=	Tgs2=
N=1.372	Ibv=10 uA	Fcsw=	Eg=	Tbv=
Tt=	Nbv=	Area=	EgAlpha=	Tbv2=
Cd=	Ibv=	Periph=	EgBeta=	wBv=
Cjo=1.09 pF	Nbv=	Width=	Tcjo=	wPmax=
Vj=4.445 V	Kf=	Length=	Tcjsw=	AllParams=
M=2.256	Af=	Etch=	Tt1=	
Fc=5	Ffe=	Etch=	Tt2=	
Imax=	Jsw=	Dwf=	Tm1=	
Imelt=	Rsw=	Shrink=	Tm2=	
Isr=	Gleaksw=	AllowScaling=no	Tvj=	
Nr=	Ns=	Tnom=	Tvjsw=	

# MA46H120 : ADS Diode Model

$$\text{Eqn } Z = 50 * ((1 + S(1,1)) * (1 + S(2,2)) - S(1,2) * S(2,1)) / (2 * S(2,1))$$

$$\text{Eqn } R = \text{real}(Z) \quad \text{Eqn } X = \text{imag}(Z)$$

$$\text{Eqn } C = -1e12 / (2 * 3.14159 * \text{freq} * X)$$

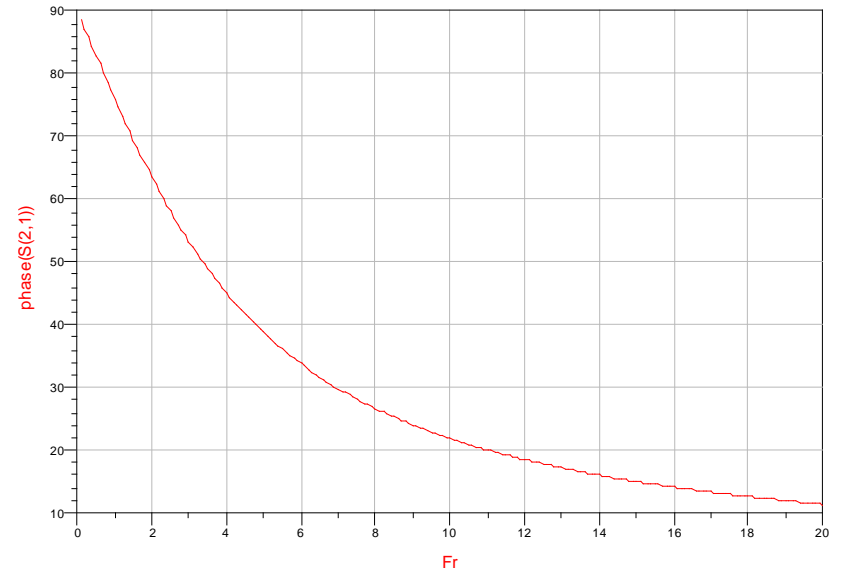
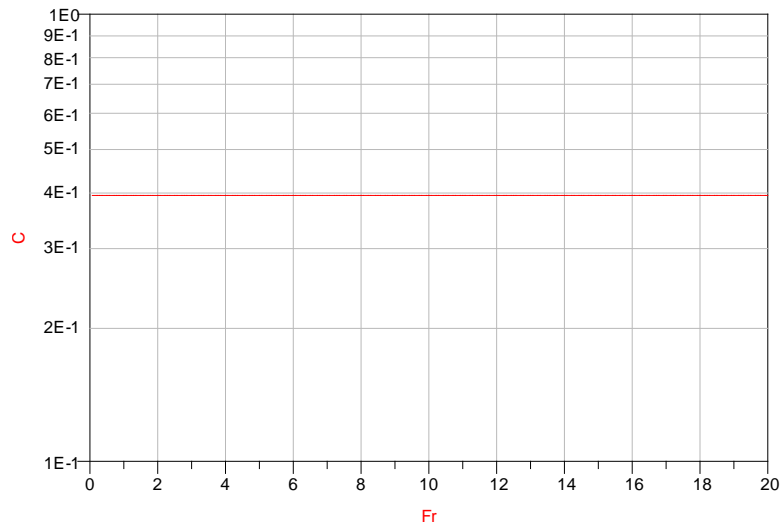


# MA46H120 : ADS Diode Model

$$\text{Eqn } Z = 50 * ((1 + S(1,1)) * (1 + S(2,2)) - S(1,2) * S(2,1)) / (2 * S(2,1))$$

$$\text{Eqn } R = \text{real}(Z) \quad \text{Eqn } X = \text{imag}(Z)$$

$$\text{Eqn } C = -1e12 / (2 * 3.14159 * \text{freq} * X)$$



# MA46H120 : Spice Model

GaAs Constant Gamma Flip-Chip  
Varactor

Spice Model Parameters

MA46H120

7451316

Run #: C

	First Pass	First Pass	First Pass	First Pass	First Pass	First Pass		Optimize d	Optimize d	Optimize d	Fixed	Optimized
	<b>N</b>	<b>R<sub>s(nc)</sub></b>	<b>I<sub>s</sub></b>	<b>I<sub>k</sub></b>	<b>BV</b>	<b>IBV</b>	<b>C<sub>t</sub></b>	<b>C<sub>jo</sub></b>	<b>V<sub>j</sub></b>	<b>M</b>	<b>FC</b>	<b>Cpar_Cj</b>
		<b>Ω</b>	<b>A</b>	<b>(A)</b>	<b>(Volts)</b>	<b>(μA)</b>	<b>(pF)</b>	<b>(pF)</b>	<b>(Volts)</b>			<b>(F)</b>
D01	1.356	0.895	1.52E-18	1.58E-02	27.48	10.0	1.18	1.09	4.376	2.228	0.50	1.360E-13
D02	1.379	0.845	2.78E-18	1.57E-02	27.05	10.0	1.22	1.12	4.427	2.244	0.50	1.410E-13
D03	1.375	0.990	2.49E-18	1.49E-02	27.46	10.0	1.19	1.09	4.452	2.259	0.50	1.400E-13
D04	1.373	0.840	2.35E-18	1.60E-02	27.38	10.0	1.19	1.09	4.504	2.278	0.50	1.400E-13
D05	1.378	0.832	2.73E-18	1.62E-02	27.66	10.0	1.18	1.08	4.467	2.272	0.50	1.400E-13

Average	1.372	0.880	2.374E-18	1.572E-02	27.41	10.00	1.19	1.09	4.445	2.256	0.50	1.394E-13
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