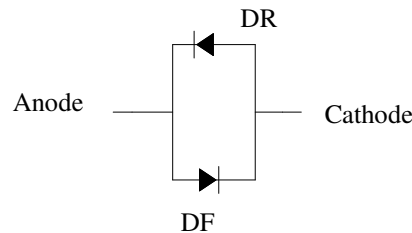


The standard diode model found in Spice (Ver 2) does not correctly model the reverse bias characteristics of Metelics' GaAs Schottky diodes. To correct this problem, use the macromodel shown below.



Diode DF models the forward bias curve, capacitance and transit time. Diode DR models the reverse bias curve. The parameters for DF for the catalog part numbers are shown on the page that follows. Package parasitics are not included in the macromodel. See the outline datasheets for the package parasitics. Spice parameters not included are KF, AF and FC.

#### Macromodel for MGS901

```
* Metelics GaAs schottky 1 is Anode 2 is Cathode
.SUBCKT GA_SCH 1 2
D1 1 2 DF
D3 2 1 DR
.MODEL DF D (IS=16E-12 N=1.4 RS=2 CJO=0.06E-12 VJ=0.7 M=0.25 XTI=2.0 EG=0.87
+ TT=3.0E-12 BV=15 IBV=10E-6)
.MODEL DR D (IS=7.0E-18 N=10.2 XTI=4.0 EG=6.8 BV=15 IBV=10E-6)
.ENDS
```

#### Example circuit using macromodel

```
.DC V1 .2 .6 .1
.PRINT DC V(2)
V1 1 0 0
R1 1 2 1000
X1 2 0 GA_SCH
* Metelics GaAs schottky 1 is Anode 2 is Cathode
.SUBCKT GA_SCH 1 2
D1 1 2 DF
D3 2 1 DR
.MODEL DF D (IS=16E-12 N=1.4 RS=2 CJO=0.06E-12 VJ=0.7 M=0.25 XTI=2.0 EG=0.87
+ TT=3.0E-12 BV=15 IBV=10E-6)
.MODEL DR D (IS=7.0E-18 N=10.2 XTI=4.0 EG=6.8 BV=15 IBV=10E-6)
.ENDS
.END
```

Metelics provides Spice models that may be used and distributed freely, provided they are not changed in any way, resold or included in any other package for resale. These models are furnished on an "as is" basis without warranty of any kind. Metelics reserves the right to make changes to any model without notice. Although the use of models can be a useful tool in evaluating devices for applications, they do not exactly model all device characteristics under all conditions.

## Parameters for diode DF

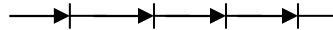
Part Number	IS	N	RS ohms	CJO pF
MGS801 MGS802 MGS803 MGS901 MGS902 MGS903 MGS904 MGS905 MGS906 MGS907 MGS908 MGS909 MGS910 MGS911 MGS912	1.6 to 16E-12	1.35 to 1.45	2 to 6.8	0.03 to 0.06
MGS801A MGS802A MGS904A MGS907A	1.6 to 16E-12	1.35 to 1.45	2 to 6.5	0.04 to 0.075

# Schottky Diode Configurations

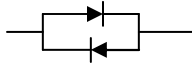
Single



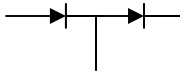
Four junctions in series



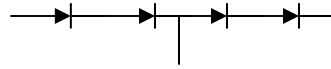
Anti Parallel Pair



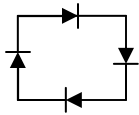
Series Tee



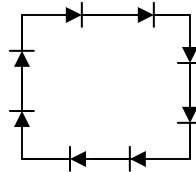
four junction series tee



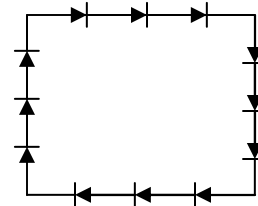
Ring Quad - four junction



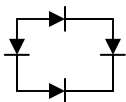
Ring Quad - eight junction



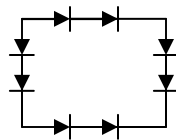
Ring Quad - twelve junction



Bridge Quad - four junction



Bridge Quad - eight junction



Bridge Quad - twelve junction

