



PULSE(0 5 0 1pS 1pS 50ms 100ms 10)

```
.tran 300ms startup
.inc PN2907A.mod\include MMSZ5232B.mod
.inc BC549.lib
.include transistoren.mod

*SRC=1N4005;DI_1N4005;Diodes;Si; 600V 1.00A 3.00us Diodes, Inc. diode
.MODEL 1N4005 D ( IS=76.9p RS=42.0m BV=600 IBV=5.00u
+ CJO=26.5p M=0.333 N=1.45 TT=4.32u )
```

```
.SUBCKT S6010D 1 2 3
* TERMINALS: A G K
Qpnp 6 4 1 Pfor OFF
Qnpn 4 6 5 Nfor OFF
Rfor 6 4 2G
Rrev 1 4 2G
Rshort 6 5 35
Rlat 2 6 2.64
Ron 3 5 31.6m
Dfor 6 4 Zbrk
Drev 1 4 Zbrk
Dgate 6 5 Zgate
.MODEL Zbrk D (IS=10F IBV=1U BV=600)
.MODEL Zgate D (IS=10F IBV=100U BV=10 VJ=0.3)
.MODEL Pfor PNP(IS=10P BF=1.5 CJE=30p CJC=16p TF=0.3U)
.MODEL Nfor NPN(IS=10P ISE=1E-9 BF=100.0 RC=13.6M CJE=300p CJC=16p TF=0.3U)
.ENDS
```

```
.SUBCKT S401E 1 2 3
* TERMINALS: A G K
Qpnp 6 4 1 Pfor OFF
Qnpn 4 6 5 Nfor OFF
Rfor 6 4 5G
Rrev 1 4 5G
Rshort 6 5 50
Rlat 2 6 2.64
Ron 3 5 364.6m
Dfor 6 4 Zbrk
Drev 1 4 Zbrk
Dgate 6 5 Zgate
.MODEL Zbrk D (IS=10F IBV=1U BV=400)
.MODEL Zgate D (IS=10F IBV=100U BV=10 VJ=0.3)
.MODEL Pfor PNP(IS=10P BF=1.0 CJE=5p CJC=2p TF=0.3U)
.MODEL Nfor NPN(IS=10P ISE=1E-9 BF=100.0 RC=13.6M CJE=30p CJC=2p TF=0.3U)
.ENDS
```