

\*Models and Subcircuits:

```
.MODEL GENERATED_MODEL_DD1 D( BV=100 IBV=87 IS=2.97e-15 RS=1 VJ=0.7 )
.MODEL GENERATED_MODEL_DD2 D( BV=100 IBV=40 IS=9.3e-14 RS=0.76 VJ=0.22 )
.MODEL GENERATED_MODEL_DD3 D( BV=100 IBV=87 IS=2.97e-15 RS=1 VJ=0.7 )
.MODEL GENERATED_MODEL_DD4 D( BV=100 IBV=87 IS=2.97e-15 RS=1 VJ=0.7 )
.MODEL GENERATED_MODEL_DD5 D( BV=100 IBV=40 IS=9.3e-14 RS=0.76 VJ=0.22 )
.MODEL GENERATED_MODEL_DD6 D( BV=100 IBV=87 IS=2.97e-15 RS=1 VJ=0.7 )
.MODEL GENERATED_MODEL_DD7 D( BV=100 IBV=87 IS=2.97e-15 RS=1 VJ=0.7 )
.MODEL GENERATED_MODEL_DD8 D( BV=100 IBV=40 IS=9.3e-14 RS=0.76 VJ=0.22 )
.MODEL GENERATED_MODEL_DD9 D( BV=100 IBV=87 IS=2.97e-15 RS=1 VJ=0.7 )
.MODEL GENERATED_MODEL_DD10 D( BV=100 IBV=87 IS=2.97e-15 RS=1 VJ=0.7 )
.MODEL GENERATED_MODEL_DD11 D( BV=100 IBV=40 IS=9.3e-14 RS=0.76 VJ=0.22 )
.MODEL GENERATED_MODEL_DD12 D( BV=100 IBV=87 IS=2.97e-15 RS=1 VJ=0.7 )
.MODEL GENERATED_MODEL_DD13 D( BV=100 IBV=87 IS=2.97e-15 RS=1 VJ=0.7 )
.MODEL GENERATED_MODEL_DD14 D( BV=100 IBV=40 IS=9.3e-14 RS=0.76 VJ=0.22 )
.MODEL GENERATED_MODEL_DD15 D( BV=100 IBV=87 IS=2.97e-15 RS=1 VJ=0.7 )
.MODEL GENERATED_MODEL_DD16 D( BV=100 IBV=87 IS=2.97e-15 RS=1 VJ=0.7 )
.MODEL GENERATED_MODEL_DD17 D( BV=100 IBV=40 IS=9.3e-14 RS=0.76 VJ=0.22 )
.MODEL GENERATED_MODEL_DD18 D( BV=100 IBV=87 IS=2.97e-15 RS=1 VJ=0.7 )
.MODEL diode D ( )
.MODEL VDMOS_Nchan VDMOS (Nchan)

.SYNTAX PSPICE
.SUBCKT IRS21867S LO HO COM LIN HIN VCC VB VS
R_HO HO VS 1E12
R_LO LO COM 1E12
R_VB VB VS 1E12
R_VCC VCC COM 1E12
R_VS VS COM 1E12
R_SD SD VCC 750K
C_SD SD COM 1F
R_DT DT COM 1
C_DT DT COM 1P
X_GD_TEMPLATE LO HO COM VSS LIN HIN VCC VB VS SD DT IRS21867S_GD_TEMPLATE
.ENDS IRS21867S
.ENDSYNTAX

.SUBCKT IRS21867S_GD_TEMPLATE LO HO COM VSS LIN HIN VCC VB VS SD DT PARAMS:
+ HB_EN=0 SHT_EN=0 P_OFFSET_DT=4E-07 P_SLOPE_DT=2.496E-11
+ P_SD_D=3.428571428571428E-08 P_C_SD_LPF=1.4476482730108394E-09 P_TH_SD_UP=2.1
+ P_TH_SD_DW=1.1 P_C_TPD=4.6058E-08 P_TH_TPD= 0.5000002948 P_C_PW_MIN=1.4E-09
+ P_TH_HIN_OFF=0.85 P_TH_LIN_OFF=0.85 P_TH_HIN_ON=2.4 P_TH_LIN_ON=2.4
+ P_R_HIN_CL=20000.0 P_R_LIN_CL= 20000.0 P_C_GATE=1.4E-08 P_RBOND_NMOS=0.01
+ P_RBOND_PMOS=0.01 P_LO_VGS_NMOS=4.46 P_LO_VGS_PMOS=5.42 P_LPMOS_LAMDA=0.98
+ P_LPMOS_KP= 2.4E-05 P_LNMOS_LAMDA=0.7 P_LNMOS_KP=5.6E-05 P_HO_VGS_NMOS=4.46
+ P_HO_VGS_PMOS=5.42 P_HPMOS_LAMDA=0.98 P_HPMOS_KP=2.4E-05 P_HNMOS_LAMDA=0.7
+ P_HNMOS_KP=5.6E-05 P_VCC_UVH=6 P_VCC_UVL=5.5 P_VB_UVL=5.5 P_VB_UVH=6
+ P_R_UV_D_H=142857.14285714287 P_R_UV_D_L= 71428.57142857143 P_VCC_MIN=10
+ P_IQ_VCC_MIN=9E-05 P_VB_MIN=10 P_IQ_VB_MIN=5E-05 P_V_LEAK=600 P_I_LEAK=1E-06
+ P_VCC_MAX=20 P_IQ_VCC_MAX=0.00016 P_VB_MAX=20 P_IQ_VB_MAX=9E-05 P_R_BSD=28
+ P_N_BSD=1.3982651641301325 P_IS_BSD=3.1E-16
```

```

R_LIN_CLAMP LIN COM {P_R_LIN_CL}
R_HIN_CLAMP HIN COM {P_R_HIN_CL}
X_HIN_VCC_D HIN VCC IRS21867S_ESD_DIO PARAMS: P_V_BV=0.5 P_I_BV=1M
X_COM_HIN_D COM HIN IRS21867S_ESD_DIO PARAMS: P_V_BV=0.5 P_I_BV=1M
X_LIN_VCC_D LIN VCC IRS21867S_ESD_DIO PARAMS: P_V_BV=0.5 P_I_BV=1M
X_COM_LIN_D COM LIN IRS21867S_ESD_DIO PARAMS: P_V_BV=0.5 P_I_BV=1M
X_CL_VCM_VCC COM IRS21867S_CL_DIO PARAMS: P_V_BV=25 P_I_BV=1
X_CL_VB_VB VS IRS21867S_CL_DIO PARAMS: P_V_BV=25 P_I_BV=1
X_INPUT_STAGE LIN_DD HIN_DD SD_DD LIN_HIN_SD COM IRS21867S_INPUT_STAGE PARAMS:
+ P_SD_D={P_SD_D} P_TH_SD_UP={P_TH_SD_UP} P_TH_SD_DW={P_TH_SD_DW}
+ P_C_SD_LPF={P_C_SD_LPF} P_C_TPD={P_C_TPD} P_TH_TPD={P_TH_TPD}
+ P_C_PW_MIN={P_C_PW_MIN} P_TH_HIN_OFF={P_TH_HIN_OFF} P_TH_LIN_OFF={P_TH_LIN_OFF}
+ P_TH_HIN_ON={P_TH_HIN_ON} P_TH_LIN_ON={P_TH_LIN_ON}
X_DEADTIME LIN_DT_DIG HIN_DT_DIG LIN_DD HIN_DD DT_VCC COM VCC_UV
+ IRS21867S_DEADTIME PARAMS: P_SLOPE_DT={P_SLOPE_DT} P_OFFSET_DT={P_OFFSET_DT}
+ HB_EN={HB_EN} SHT_EN={SHT_EN}
X_HO_STAGE HO_HIN_DT_DIG VCC_UV_VB_VS SD_DD_VB_VS IRS21867S_HO_STAGE PARAMS:
+ P_RBOND_P MOS={P_RBOND_P MOS} P_RBOND_N MOS={P_RBOND_N MOS} P_C_GATE={P_C_GATE}
+ P_HO_VGS_P MOS={P_HO_VGS_P MOS} P_HPMOS_LAMDA={P_HPMOS_LAMDA}
+ P_HPMOS_KP={P_HPMOS_KP} P_HO_VGS_N MOS={P_HO_VGS_N MOS}
+ P_HNMOS_LAMDA={P_HNMOS_LAMDA} P_HNMOS_KP={P_HNMOS_KP}
X_LO_STAGE LO_LIN_DT_DIG VCC_UV_VB_VS SD_DD_VB_VS COM IRS21867S_LO_STAGE PARAMS:
+ P_RBOND_P MOS={P_RBOND_P MOS} P_RBOND_N MOS={P_RBOND_N MOS} P_C_GATE={P_C_GATE}
+ P_LO_VGS_P MOS={P_LO_VGS_P MOS} P_LPMOS_LAMDA={P_LPMOS_LAMDA}
+ P_LPMOS_KP={P_LPMOS_KP} P_LO_VGS_N MOS={P_LO_VGS_N MOS}
+ P_LNMOS_LAMDA={P_LNMOS_LAMDA} P_LNMOS_KP={P_LNMOS_KP}
X_UV_DETECT VCC_UV_VB_VS VCC_VB_VS COM VS_IRS21867S_UV_DETECT PARAMS:
+ P_VB_UVL={P_VB_UVL} P_VB_UVH={P_VB_UVH} P_R_UV_D_H={P_R_UV_D_H}
+ P_VCC_UVL={P_VCC_UVL} P_VCC_UVH={P_VCC_UVH} P_R_UV_D_L={P_R_UV_D_L}
X_CC_EMULATOR VCC_COM_VB_VS VS_IRS21867S_CC_EMULATOR PARAMS: P_VB_MIN={P_VB_MIN}
+ P_VCC_MIN={P_VCC_MIN} P_IQ_VB_MIN={P_IQ_VB_MIN} P_IQ_VCC_MIN={P_IQ_VCC_MIN}
+ P_I_LEAK={P_I_LEAK} P_V_LEAK={P_V_LEAK} P_VB_MAX={P_VB_MAX}
+ P_VCC_MAX={P_VCC_MAX} P_IQ_VB_MAX={P_IQ_VB_MAX} P_IQ_VCC_MAX={P_IQ_VCC_MAX}
.ENDS IRS21867S_GD_TEMPLATE

```

```

.SUBCKT IRS21867S_ESD_DIO A C PARAMS: P_V_BV=5 P_I_BV=1
G_ESD_DIO A C VALUE {TABLE(V(A,C), 0,0, {P_V_BV}*1.01,0,
+ {P_V_BV}*1.02,{P_I_BV}, 10*{P_V_BV}, 100*{P_I_BV} )}
C_ESD_DIO A C 10F
R_ESD_DIO A C 1E12
.ENDS IRS21867S_ESD_DIO

```

```

.SUBCKT IRS21867S_CL_DIO C A PARAMS: P_V_BV=5 P_I_BV=1
G_CL_DIO C A VALUE {TABLE(V(C,A), 0,0, {P_V_BV}*1.01,0, {P_V_BV}*1.02,{P_I_BV}
+, 10*{P_V_BV}, 100*{P_I_BV} )}
C_CL_DIO C A 10F
R_CL_DIO C A 1E12
.ENDS IRS21867S_CL_DIO

```

```

.SUBCKT IRS21867S_INPUT_STAGE LIN_DD HIN_DD SD_DD LIN_HIN_SD COM PARAMS:
+ P_SD_D=5E-08 P_TH_SD_UP=2.1 P_TH_SD_DW=1.1 P_C_TPD=1.9E-07 P_TH_TPD=10E-9
+ P_TH_HIN_OFF=0.9 P_TH_LIN_OFF=0.9 P_TH_HIN_ON=2.1 P_TH_LIN_ON=2.1
+ P_C_PW_MIN=42E-9 P_C_SD_LPF=1E-9
X_SD_TH_SD SD_DIG COM IRS21867S_STP_IDEAL PARAMS: P_TH_UP={P_TH_SD_UP}
+ P_TH_DW={P_TH_SD_DW}
X_SD_LPF SD_DIG SD_LPF_DIG IRS21867S_ADV_FILTER PARAMS: P_C_DELAY = {P_C_SD_LPF}
X_SD_DD SD_LPF_DIG SD_DD IRS21867S_RC_DELAY_5 PARAMS: P_C_DELAY = {P_SD_D}
X_HIN_TH_HIN_HIN_DIG COM IRS21867S_STP_IDEAL PARAMS: P_TH_UP={P_TH_HIN_ON}
+ P_TH_DW={P_TH_HIN_OFF}
X_HIN_LPF HIN_DIG HIN_LPF_DIG IRS21867S_ADV_FILTER PARAMS: P_C_DELAY =
+ {P_C_PW_MIN}
X_HIN_DD HIN_LPF_DIG HIN_DD IRS21867S_RC_DELAY_5 PARAMS: P_C_DELAY = {P_C_TPD}
+ P_TH_TPD = {P_TH_TPD}
X_LIN_TH_LIN_LIN_DIG COM IRS21867S_STP_IDEAL PARAMS: P_TH_UP={P_TH_LIN_ON}
+ P_TH_DW={P_TH_LIN_OFF}
X_LIN_LPF LIN_DIG LIN_LPF_DIG IRS21867S_ADV_FILTER PARAMS: P_C_DELAY =
+ {P_C_PW_MIN}
X_LIN_DD LIN_LPF_DIG LIN_DD IRS21867S_RC_DELAY_5 PARAMS: P_C_DELAY = {P_C_TPD}
+ P_TH_TPD = {P_TH_TPD}
.ENDS IRS21867S_INPUT_STAGE

```

```

.SUBCKT IRS21867S_DEADTIME LIN_DT_DIG HIN_DT_DIG LIN_HIN_DT VCC COM VCC_UV
+ PARAMS: HB_EN=1 SHT_EN=0.0 P_SLOPE_DT=2.43236451E-05 P_OFFSET_DT=5.4E-07
+ P_I_DT=1E-06 P_C_DT=10P P_TH_UP=0.5
X_LIN_DT LIN LIN_DD IRS21867S_RC_DELAY_10 PARAMS: P_C_DELAY = 0.3N
X_HIN_DT HIN HIN_DD IRS21867S_RC_DELAY_10 PARAMS: P_C_DELAY = 0.1N
E_VCC_1V VCC_1V 0 VALUE={TABLE( V(VCC,COM) , 0,0 , 3,0 , 6,1 )}
G_DT VCC DT VALUE={TABLE( V(VCC,DT) , 0,0 , 10M,{P_I_DT} )}
E_HDT_PLS HIN_DT_PLS 0 VALUE={IF( ((V(HIN_DD) - V(LIN_DD)) > 0.1) |
+ (V(HIN_DT_DIG) > 0.5) | ({HB_EN} < 0.5), 1.0 , 0.0 )}
E_HIN_DT_HIN_DT_DIG 0 VALUE={IF( ( (V(HIN_DT_PLS) > 0.5) & (V(LOFF) >
+ {P_TH_UP})) | {HB_EN} < 0.5 ) & (V(HIN_DD) > 0.5 ) & V( VCC_UV) > 0.5 , 1.0 ,
+ 0.0 )}
E_LDT_PLS LIN_DT_PLS 0 VALUE={IF( ((V(LIN_DD) - V(HIN_DD)) > 0.1) |
+ (V(LIN_DT_DIG) > 0.5) | ({HB_EN} < 0.5) , 1.0 , 0.0 )}
E_LIN_DT_LIN_DT_DIG 0 VALUE={IF( ( (V(LIN_DT_PLS) > 0.5) & (V(HOFF) >
+ {P_TH_UP})) | {HB_EN} < 0.5 ) & (V(LIN_DD) > 0.5 ) , 1.0 , 0.0 )}
E_SHT_H SHT_H 0 VALUE={IF( {SHT_EN} > 0.5 , V(HIN_DD) , V(HIN_DT_DIG) )}
E_SHT_L SHT_L 0 VALUE={IF( {SHT_EN} > 0.5 , V(LIN_DD) , V(LIN_DT_DIG) )}
G_H_DT VCC_1V HOFF VALUE={TABLE( V(VCC_1V,HOFF) , 0,0 , 10M, I_DT( V(DT,COM) ) )}
C_H_DT HOFF 0 {P_C_DT}
R_H_DT HOFF 0 1E8
S_H_DT HOFF 0 SHT_H 0 IRS21867S_DT_SW
G_L_DT VCC_1V LOFF VALUE={TABLE( V(VCC_1V,LOFF) , 0,0 , 10M, I_DT( V(DT,COM) ) )}
C_L_DT LOFF 0 {P_C_DT}
R_L_DT LOFF 0 1E8
S_L_DT LOFF 0 SHT_L 0 IRS21867S_DT_SW
.FUNC I_DT(V_DT) {{P_C_DT} * {P_TH_UP} / ({P_SLOPE_DT}/{P_I_DT}*V_DT +
+ {P_OFFSET_DT})}
.MODEL IRS21867S_DT_SW VSWITCH RON=1 ROFF=100MEG VON=0.8 VOFF=0.2
.ENDS IRS21867S_DEADTIME

```

```

.SUBCKT IRS21867S_HO_STAGE HO HIN_DT_DIG VCC_UV VB_UV SD_DD VB VS PARAMS:
+ P_RBOND_NMOS=10M P_RBOND_PMOS=10M P_C_GATE=1E-12 P_HO_VGS_PMOS=6
+ P_HPMOS_LAMDA=0.06 P_HPMOS_KP=60U P_HO_VGS_NMOS=6 P_HNMOS_LAMDA=0.05
+ P_HNMOS_KP=100U
R_HIN_DT_DD HIN_DT_DIG HIN_DT_DD 100
C_HIN_DT_DD HIN_DT_DD 0 1N
E_HIN_PLS HIN_PLS 0 VALUE {IF( (V(HIN_DT_DIG) - V(HIN_DT_DD)) > 0.1 |
+ ((V(HGATE_DIG) > 0.5) & V(HIN_DT_DIG)>0.5), 1.0,0.0 )}
E_HGATE_DIG HGATE_DIG 0 VALUE {IF( ( V(VB_UV) > 0.5 & V(HIN_PLS) > 0.5 & V(SD_DD)
+ > 0.5 ) , 1.0,0.0 )}
R_HGATE HGATE_DIG HGATE 1
C_HGATE HGATE 0 {P_C_GATE}
E_HGATE_P VB HGATE_P VALUE {V(HGATE) * {P_HO_VGS_PMOS} * V(HGATE_DIG)}
E_HGATE_N HGATE_N VS VALUE {(1 - V(HGATE)) * {P_HO_VGS_NMOS} * (1 - V(HGATE_DIG))}
M_HO_PMOS HO HGATE_P VB VB IRS21867S_HO_PMOS
M_HO_NMOS HO HGATE_N VS VS IRS21867S_HO_NMOS
.MODEL IRS21867S_HO_PMOS PMOS (LEVEL=1 VTO=-1 CGSO=100P RS=10M RD={P_RBOND_PMOS}
+ LAMBDA={P_HPMOS_LAMDA} KP= {P_HPMOS_KP} )
.MODEL IRS21867S_HO_NMOS NMOS (LEVEL=1 VTO=1 CGSO=100P RS=10M RD={P_RBOND_NMOS}
+ LAMBDA={P_HNMOS_LAMDA} KP= {P_HNMOS_KP} )
.ENDS IRS21867S_HO_STAGE

```

```

.SUBCKT IRS21867S_LO_STAGE LO LIN_DT_DIG VCC_UV SD_DD VCC COM PARAMS:
+ P_RBOND_NMOS=10M P_RBOND_PMOS=10M P_C_GATE=1E-12 P_LO_VGS_PMOS=6
+ P_LPMOS_LAMDA=0.06 P_LPMOS_KP=60U P_LO_VGS_NMOS=6 P_LNMOS_LAMDA=0.05
+ P_LNMOS_KP=100U
E_LGATE_DIG LGATE_DIG 0 VALUE {IF( (V(VCC_UV) > 0.5 & V(LIN_DT_DIG) > 0.5 &
+ V(SD_DD) > 0.5 ) , 1.0,0.0 )}
R_LGATE LGATE_DIG LGATE 1
C_LGATE LGATE 0 {P_C_GATE}
E_LGATE_P VCC LGATE_P VALUE {V(LGATE) * {P_LO_VGS_PMOS} * V(LGATE_DIG)}
E_LGATE_N LGATE_N COM VALUE {(1 - V(LGATE)) * {P_LO_VGS_NMOS} * (1 -
+ V(LGATE_DIG))}
M_LO_PMOS LO LGATE_P VCC VCC IRS21867S_LO_PMOS
M_LO_NMOS LO LGATE_N COM COM IRS21867S_LO_NMOS
.MODEL IRS21867S_LO_PMOS PMOS (LEVEL=1 VTO=-1 CGSO=100P RS=10M RD={P_RBOND_PMOS}
+ LAMBDA={P_LPMOS_LAMDA} KP= {P_LPMOS_KP} )
.MODEL IRS21867S_LO_NMOS NMOS (LEVEL=1 VTO=1 CGSO=100P RS=10M RD={P_RBOND_NMOS}

```

```

+ LAMBDA={P_LNMOS_LAMDA} KP= {P_LNMOS_KP} )
.ENDS IRS21867S_LO_STAGE

.SUBCKT IRS21867S_UV_DETECT VCC_UV VB_UV VCC_VB COM VS PARAMS: P_VB_UVL=7
+ P_VB_UVH=8 P_R_UV_D_H=142857 P_VCC_UVL=8 P_VCC_UVH=9 P_R_UV_D_L=71428
X_VB_UV VB_UV DIG VS IRS21867S_STP_IDEAL PARAMS: P_TH_UP={P_VB_UVH}
+ P_TH_DW={P_VB_UVL}
E_VB_UVL VB_UVL 0 VALUE {IF( V(VB,VS) < {P_VB_UVL} , 0.0 , 1.0 )}
R_VB_UVL VB_UVL VB_UVL_LPF {P_R_UV_D_H}
C_VB_UVL VB_UVL_LPF 0 1P
E_VB_UVL_PLS VB_UVL_PLS 0 VALUE {IF( V(VB_UVL_LPF) < 0.5 | V(VB_UV) < 0.5 , 0.0 ,
+ 1.0 )}
E_VB_UV VB_UV 0 VALUE {IF( V(VB_UV_DIG) < 0.5 & V(VB_UVL_PLS) < 0.5 , 0.0 , 1.0 )}
X_VCC_UV VCC_VB VCC_UV DIG COM IRS21867S_STP_IDEAL PARAMS: P_TH_UP={P_VCC_UVH}
+ P_TH_DW={P_VCC_UVL}
E_VCC_UVL VCC_VB VCC_UVL 0 VALUE {IF( V(VCC,COM) < {P_VCC_UVL} , 0.0 , 1.0 )}
R_VCC_UVL VCC_UVL VCC_UVL_LPF {P_R_UV_D_L}
C_VCC_UVL VCC_UVL_LPF 0 1P
E_VCC_UVL_PLS VCC_UVL_PLS 0 VALUE {IF( V(VCC_UVL_LPF) < 0.5 | V(VCC_UV) < 0.5 ,
+ 0.0 , 1.0 )}
E_VCC_UV VCC_UV 0 VALUE {IF( V(VCC_UV_DIG) < 0.5 & V(VCC_UVL_PLS) < 0.5 , 0.0 ,
+ 1.0 )}
.ENDS IRS21867S_UV_DETECT

.SUBCKT IRS21867S_CC_EMULATOR VCC_COM VB_VS PARAMS: P_VB_MIN=10 P_VCC_MIN=10
+ P_IQ_VB_MIN=100U P_IQ_VCC_MIN=500U P_I_LEAK=1.0U P_V_LEAK=650 P_VB_MAX=10
+ P_VCC_MAX=10 P_IQ_VB_MAX=100U P_IQ_VCC_MAX=500U
G_QB_VB_VS VALUE {TABLE(V(VB,VS) , 0,0 , 0.1,1U , 1,10U ,
+ {P_VB_MIN},{P_IQ_VB_MIN} , {P_VB_MAX},{P_IQ_VB_MAX} )}
R_QB_VB_VS 1E12
G_QCC_VCC_COM VALUE {TABLE(V(VCC,COM) , 0,0 , 0.1,1U , 1,10U ,
+ {P_VCC_MIN},{P_IQ_VCC_MIN} , {P_VCC_MAX},{P_IQ_VCC_MAX} )}
R_QCC_VCC_COM 1E12
G_VB_LEAK_VB_COM VALUE {TABLE(V(VB,COM) , 0,0 , {P_V_LEAK},{P_I_LEAK})}
R_VB_LEAK_VB_COM 1E12
.ENDS IRS21867S_CC_EMULATOR

.SUBCKT IRS21867S_STP_IDEAL IN_OUT GND PARAMS: P_TH_UP=0.9 P_TH_DW=0.1
E_OUTP_OUTP 0 VALUE={IF( V(IN,GND)>={P_TH_UP} | V(OUTN)<0.5 , 1,0 )}
E_OUTN_OUTN 0 VALUE={IF( V(IN,GND)<={P_TH_DW} | V(OUTP)<0.5 , 1,0 )}
E_OUT_OUT 0 VALUE={V(OUTP)}
.ENDS IRS21867S_STP_IDEAL

.SUBCKT IRS21867S_ADV_FILTER IN_OUT PARAMS: P_C_DELAY = 60E-9 P_TH_TPD = 0.5
R_RISE_IN_IN_DEL 1
C_RISE_IN_DEL 0 {P_C_DELAY}
X_CMP_IN_DEL_OUT 0 IRS21867S_STP_IDEAL PARAMS: P_TH_UP=0.999 P_TH_DW=0.001
.ENDS IRS21867S_ADV_FILTER

.SUBCKT IRS21867S_RC_DELAY_5 IN_OUT PARAMS: P_C_DELAY = 60E-9 P_TH_TPD = 0.5
X_D1_IN_D1 IRS21867S_RC_DELAY_BASE PARAMS: P_C_DELAY = {P_C_DELAY} P_TH_TPD =
+ {P_TH_TPD}
X_D2_D1_D2 IRS21867S_RC_DELAY_BASE PARAMS: P_C_DELAY = {P_C_DELAY} P_TH_TPD =
+ {P_TH_TPD}
X_D3_D2_D3 IRS21867S_RC_DELAY_BASE PARAMS: P_C_DELAY = {P_C_DELAY} P_TH_TPD =
+ {P_TH_TPD}
X_D4_D3_D4 IRS21867S_RC_DELAY_BASE PARAMS: P_C_DELAY = {P_C_DELAY} P_TH_TPD =
+ {P_TH_TPD}
X_D5_D4_OUT IRS21867S_RC_DELAY_BASE PARAMS: P_C_DELAY = {P_C_DELAY} P_TH_TPD =
+ {P_TH_TPD}
.ENDS IRS21867S_RC_DELAY_5

.SUBCKT IRS21867S_RC_DELAY_10 IN_OUT PARAMS: P_C_DELAY = 60E-9 P_TH_TPD = 0.5
X_D1_IN_D1 IRS21867S_RC_DELAY_5 PARAMS: P_C_DELAY = {P_C_DELAY} P_TH_TPD =
+ {P_TH_TPD}
X_D2_D1_OUT IRS21867S_RC_DELAY_5 PARAMS: P_C_DELAY = {P_C_DELAY} P_TH_TPD =
+ {P_TH_TPD}
.ENDS IRS21867S_RC_DELAY_10

.SUBCKT IRS21867S_RC_DELAY_BASE IN_OUT PARAMS: P_C_DELAY = 60E-9 P_TH_TPD = 0.5

```

```
R_DELAY IN IN_DEL 1
C_DELAY IN_DEL 0 {P_C_DELAY}
E_DELAY OUT 0 VALUE={IF( V(IN_DEL) > {P_TH_TPD} , 1.0,0.0 )}
.ENDS IRS21867S_RC_DELAY_BASE

.END
```