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*=====Create Signal=====
*V_SIN# NODE_P NODE_N DC VALUE SIN( V DC AC_MAG FREQ DELAY FDamp)
VIN VIN 0 DC 0 SIN( .5 .499 3 )
*V_PULSE# NODE_P NODE_N DC VALUE PULSE( VINIT VPULSE TDELAY TRISE TFALL PWIDTH PERIOD )
VCLKL CLK 0 DC 0 PULSE( 0 1 1n 1n 1n 4m 8m )

XPOSE1 CLK CNTL POS_E
XS_H1 VOUTA CNTL VOUT SH

BTH0 D0 0 V = u( V(VIN) -1/2)
BOFF0 VIN OFF0 V = V(D0)/2
BTH1 D1 0 V = u( V(OFF0) -1/4)
BOFF1 OFF0 OFF1 V = V(D1)/4
BTH2 D2 0 V = u( V(OFF1) -1/8)
BOFF2 OFF1 OFF2 V = V(D2)/8
BTH3 D3 0 V = u( V(OFF2) -1/16)
BOFF3 OFF2 OFF3 V = V(D3)/16
BTH4 D4 0 V = u( V(OFF3) -1/32)
BOFF4 OFF3 OFF4 V = V(D4)/32
BTH5 D5 0 V = u( V(OFF4) -1/64)
BOFF5 OFF4 OFF5 V = V(D5)/64
BTH6 D6 0 V = u( V(OFF5) -1/128)
BOFF6 OFF5 OFF6 V = V(D6)/128
BTH7 D7 0 V = u( V(OFF6) -1/256)
BOFF7 OFF6 OFF7 V = V(D7)/256
BTH8 D8 0 V = u( V(OFF7) -1/512)
BOFF8 OFF7 OFF8 V = V(D8)/256
BDAC VOUTA 0 V = V(D0)/2+V(D1)/4+V(D2)/8+V(D3)/16 +V(D4)/32 +V(D5)/64 +V(D6)/128 +V(D7)/256

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.control
*TRAN TSTEP TSTOP TSTART TMAX ?UIC?
tran .0125m 1 0 .0125m
set pensize = 2
plot vin vout
plot vin -vout xlimit 0 .35

```

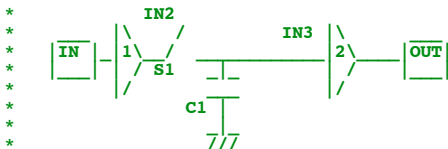
```

echo "=====FFT_and_Plot=====
linearize
let FFT_BandWidth_Hz = 20k
let FFT_resolution_Hz = 1
echo "FFT_BandWidth_Hz= $&FFT_BandWidth_Hz"
echo "FFT_resolution_Hz= $&FFT_resolution_Hz"
set specwindow = "rectangular"
spec $&FFT_resolution_Hz $&FFT_BandWidth_Hz $&FFT_resolution_Hz v(vout)
*let freqL = length(frequency)
let expect = (.5/256)/sqrt(128)
plot mag (vout) expect loglog
*plot mag (vout) ylog xlimit 400 600
echo "=====Done=====

```

.endc

\*=====Sample\_Hold=====



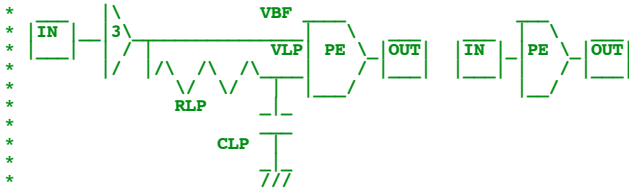
```

.SUBCKT SH IN CNTL OUT
B1 IN2 0 V = v(IN )
S1 IN2 IN3 CNTL 0 SW
C1 IN3 0 .1u

R1 IN3 0 100Meg
B2 OUT 0 V = v(IN3 )
.ENDS SH

```

\*=====POS\_Edge=====



```

.SUBCKT POS_E IN OUT
BBUF VBF 0 V = u( v(IN )-.5 )
RLP VBF VLP 10k
CLP VLP 0 1n IC=0
BAND OUT 0 V = u( v(VBF )-.5)*u(.5 -v(VLP) ) -.1)
.ENDS POS_E

```

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.MODEL SW SW( VT=.5 VH=.1 RON=1 ROFF=100MEG)

```

.end

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