

MOSIS WAFER ACCEPTANCE TESTS

RUN: T85R
TECHNOLOGY: SCN05

VENDOR: AMIS
FEATURE SIZE: 0.5 microns

Run type: DED

INTRODUCTION: This report contains the lot average results obtained by MOSIS from measurements of MOSIS test structures on each wafer of this fabrication lot. SPICE parameters obtained from similar measurements on a selected wafer are also attached.

COMMENTS: American Microsystems, Inc. C5

TRANSISTOR PARAMETERS	W/L	N-CHANNEL	P-CHANNEL	UNITS
MINIMUM	3.0/0.6			
Vth		0.83	-0.94	volts
SHORT	20.0/0.6			
Idss		470	-250	uA/um
Vth		0.70	-0.92	volts
Vpt		10.0	-10.0	volts
WIDE	20.0/0.6			
Ids0		< 2.5	< 2.5	pA/um
LARGE	50/50			
Vth		0.72	-0.96	volts
Vjbkd		11.2	-11.6	volts
Ijlk		<50.0	<50.0	pA
Gamma		0.47	0.58	V^0.5
K' (Uo*Cox/2)		58.9	-18.7	uA/V^2
Low-field Mobility		477.61	151.63	cm^2/V*s

COMMENTS: Poly bias varies with design technology. To account for mask bias use the appropriate value for the parameter XL in your SPICE model card.

Design Technology	XL (um)	XW (um)
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SCMOS_SUBM (lambda=0.30)	0.10	0.00
SCMOS (lambda=0.35)	0.00	0.20

FOX TRANSISTORS	GATE	N+ACTIVE	P+ACTIVE	UNITS
Vth	Poly	>15.0	<-15.0	volts

PROCESS PARAMETERS	N+	P+	POLY	PLY2_HR	POLY2	M1	M2	UNITS
Sheet Resistance	85.0	109.5	22.9	1058	39.1	0.09	0.09	
ohms/sq								
Contact Resistance	68.5	149.4	15.6		24.5		0.88	ohms
Gate Oxide Thickness	140							angstrom

PROCESS PARAMETERS	M3	N\PLY	N_W	UNITS
Sheet Resistance	0.05	807	796	ohms/sq
Contact Resistance	0.85			ohms

COMMENTS: N\POLY is N-well under polysilicon.

CAPACITANCE PARAMETERS	N+	P+	POLY	POLY2	M1	M2	M3	N_W	UNITS
Area (substrate)	423	735	86		31	16	9	37	
aF/um^2									
Area (N+active)			2461		37	16	12		
aF/um^2									
Area (P+active)			2385						
aF/um^2									
Area (poly)				874	59	15	9		
aF/um^2									
Area (poly2)					53				
aF/um^2									
Area (metal1)						30	12		
aF/um^2									
Area (metal2)							31		
aF/um^2									
Fringe (substrate)	336	212			66	48	32		aF/um
Fringe (poly)					69	38	28		aF/um
Fringe (metal1)						47	33		aF/um
Fringe (metal2)							50		aF/um
Overlap (N+active)			298						aF/um
Overlap (P+active)			407						aF/um

CIRCUIT PARAMETERS	UNITS		
Inverters	K		
Vinv	1.0	2.06	volts
Vinv	1.5	2.32	volts
Vol (100 uA)	2.0	0.12	volts
Voh (100 uA)	2.0	4.87	volts
Vinv	2.0	2.51	volts
Gain	2.0	-18.77	
Ring Oscillator Freq.			

DIV256 (31-stg,5.0V)	92.59	MHz
D256_WIDE (31-stg,5.0V)	153.61	MHz
Ring Oscillator Power		
DIV256 (31-stg,5.0V)	0.47	uW/MHz/gate
D256_WIDE (31-stg,5.0V)	0.98	uW/MHz/gate

COMMENTS: SUBMICRON

T85R SPICE BSIM3 VERSION 3.1 PARAMETERS

SPICE 3f5 Level 8, Star-HSPICE Level 49, UTMOST Level 8

* DATE: Aug 14/08

* LOT: t85r WAF: 1003

* Temperature_parameters=Default

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.MODEL nfet NMOS (
+VERSION = 3.1          TNOM      = 27          LEVEL    = 49
+XJ          = 1.5E-7    NCH       = 1.7E17      TOX       = 1.4E-8
+K1          = 0.8982415  K2       = -0.1028379   VTH0      = 0.6374091
+K3B         = -9.950199  W0      = 1.003114E-8    K3       = 31.8276298
+DVT0W       = 0         DVT1W     = 0          NLX      = 1E-9
+DVT0        = 0.7954543 DVT1    = 0.369766      DVT2W     = 0
+U0          = 445.0586907 UA       = 1E-13      DVT2      = -0.4941272
+UC          = 9.131065E-13 VSAT    = 1.520524E5    UB       = 1.068246E-18
+AGS         = 0.1256636  B0      = 2.296935E-6    A0       = 0.6539329
+KETA        = -2.411169E-3 A1      = 1.95721E-6     B1       = 5E-6
+RDSW        = 1.003705E3 PRWG    = 0.1021022    A2       = 0.3665483
+WR          = 1         WINT     = 2.533671E-7  PRWB     = 0.0310575
+XL          = 1E-7      XW      = 0          LINT     = 9.586445E-8
+DWB         = 4.85487E-8 VOFF    = 0          DWG      = -1.483771E-9
+CIT         = 0         CDSC     = 2.4E-4      NFACTOR   = 0.745568
+CDSCB       = 0         ETA0     = 9.427127E-3    CDSCD    = 0
+DSUB        = 0.2609239 PCLM    = 2.7215871    ETAB     = -1.929681E-3
+PDIBLC2     = 3.844739E-3 PDIBLCB = 0.064868    PDIBLC1  = 3.090061E-5
+PSCBE1      = 6.191659E8 PSCBE2  = 1.492411E-4  DROUT    = 0.0103615
+DELTA       = 0.01      RSH     = 85         PVAG     = 0
+PRT         = 0         UTE     = -1.5      MOBMOD   = 1
+KT1L        = 0         KT2     = 0.022     KT1      = -0.11
+UB1         = -7.61E-18 UC1      = -5.6E-11  UA1      = 4.31E-9
+WL          = 0         WLN     = 1         AT       = 3.3E4
+WVN         = 1         WWL     = 0          WW       = 0
+LLN         = 1         LW      = 0          LL      = 0
+LWL         = 0         CAPMOD  = 2        LWN     = 1
+CGDO        = 2.98E-10  CGSO    = 2.98E-10   XPART    = 0.5
+CJ          = 4.238155E-4 PB       = 0.9320453  CGBO     = 1E-10
+CJSW        = 3.029259E-10 PBSW    = 0.8       MJ       = 0.4429752
+CJSWG       = 1.64E-10  PBSWG   = 0.8       MJSW     = 0.1879599
               MJSWG    = 0.1879599
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+CF      = 0          PVTH0    = 7.131408E-3    PRDSW    = 360.8178698
+PK2     = -0.0763095 WKETA   = -0.0198764    LKETA    = -8.660741E-3
)
*
.MODEL pfet PMOS (
+VERSION = 3.1        TNOM     = 27          LEVEL   = 49
+XJ      = 1.5E-7     NCH     = 1.7E17      TOX     = 1.4E-8
+K1      = 0.553472   K2      = 7.871921E-3  VTH0    = -0.9152268
+K3B     = -0.8706515 W0      = 6.225262E-6  K3      = 51.3510604
+DVT0W   = 0         DVT1W   = 0          NLX     = 2.235269E-7
+DVT0    = 1.1296262 DVT1    = 0.2659815   DVT2W   = 0
+U0      = 201.3603195 UA      = 2.408572E-9  DVT2    = -0.0650358
+UC      = -1E-10    VSAT    = 9.946551E4  UB      = 1E-21
+AGS     = 0.0807981 B0      = -5.021177E-8 A0      = 0.8830954
+KETA    = -4.865785E-3 A1      = 2.60334E-4   B1      = 1.915399E-7
+RDSW    = 3E3       PRWG     = -0.030162  A2      = 0.5589771
+WR      = 1         WINT     = 3.181856E-7 PRWB    = -0.0443086
+XL      = 1E-7      XW      = 0          LINT    = 1.184713E-7
+DWB     = 9.993851E-10 VOFF    = -0.0750046  DWG     = 2.569941E-9
+CIT     = 0         CDSC     = 2.4E-4    NFACTOR = 0.9004403
+CDSCB   = 0        ETA0     = 5.581083E-4  CDSCD   = 0
+DSUB    = 1        PCLM     = 2.498226   ETAB    = -0.2
+PDIBLC2 = 3.013914E-3 PDIBLCB = -0.0326568  PDIBLC1 = 0.0421992
+PSCBE1  = 1E8      RSH      = 109.5    DROUT   = 0.2287629
+DELTA   = 0.01     UTE      = -1.5    PVAG    = 0.010259
+PRT     = 0        KT2     = 0.022    MOBMOD  = 1
+KT1L    = 0        KT1     = -0.11   KT1     = -0.11
+UB1     = -7.61E-18 UC1     = -5.6E-11   UA1     = 4.31E-9
+WL      = 0        WLN     = 1      AT      = 3.3E4
+WWN     = 1        WWL     = 0      WW      = 0
+LLN     = 1        LW      = 0      LL      = 0
+LWL     = 0        CAPMOD  = 2      LWN     = 1
+CGDO    = 4.07E-10 CGSO    = 4.07E-10  XPART   = 0.5
+CJ      = 7.285322E-4 PB      = 0.99      CGB0    = 1E-10
+CJSW    = 2.484081E-10 PBSW    = 0.980213  MJ      = 0.4999883
+CJSWG   = 6.4E-11  PBSWG   = 0.980213  MJSW    = 0.421631
+CF      = 0        PVTH0    = 5.98016E-3  MJSWG   = 0.421631
+PK2     = 3.73981E-3 WKETA   = 9.061855E-3 PRDSW    = 14.8598424
)
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