MOSIS WAFER ACCEPTANCE TESTS

RUN: T56H VENDOR: AMIS
TECHNOLOGY: SCN05 FEATURE SIZE: 0.5 microns
Run type: SKD

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		0.78	-0.96	volts
SHORT	20.0/0.6			
Idss		462	-244	uA/um
Vth		0.65	-0.93	volts
Vpt		10.0	-10.0	volts
WIDE	20.0/0.6			
Ids0		< 2.5	< 2.5	pA/um
LARGE	50/50			
Vth		0.69	-0.98	volts
Vjbkd		11.1	-11.8	volts
Ijlk		<50.0	<50.0	pA
Gamma		0.47	0.58	V^0.5
K' (Uo*Cox/2)		56.7	-18.6	uA/V^2
Low-field Mobility		459.77	150.82	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)
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	81.7	105.2	23.3	1008	42.4	0.09	0.09	ohms/sq
Contact Resistance	63.4	154.5	17.6		29.1		0.81	ohms
Gate Oxide Thickness	140							angstrom

PROCESS PARAMETERS	M3	N\PLY	N_W	UNITS
Sheet Resistance	0.05	833	823	ohms/sq
Contact Resistance	0.73			ohms

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

CAPACITANCE PARAMETERS	N+	P+	POLY	POLY2	M1	M2	M3	N_W	UNITS
Area (substrate)	425	726	85		32	17	11	39	aF/um^2
Area (N+active)			2467		36	17	12		aF/um^2
Area (P+active)			2370						aF/um^2

Area (poly)			893	56	17	10	aF/um^2
Area (poly2)				50			aF/um^2
Area (metal1)					35	15	aF/um^2
Area (metal2)						42	aF/um^2
Fringe (substrate)	333	250		74	60	40	aF/um
Fringe (poly)				57	39	29	aF/um
Fringe (metal1)					51	35	aF/um
Fringe (metal2)						48	aF/um
Overlap (N+active)		194					aF/um
Overlap (P+active)		271					aF/um

CIRCUIT PARAMETERS			UNITS
Inverters	K		
Vinv	1.0	2.01	volts
Vinv	1.5	2.27	volts
Vol (100 uA)	2.0	0.13	volts
Voh (100 uA)	2.0	4.85	volts
Vinv	2.0	2.45	volts
Gain	2.0	-19.73	
Ring Oscillator Freq.			
DIV256 (31-stg,5.0V)		90.94	MHz
D256_WIDE (31-stg,5.0V)		147.84	MHz
Ring Oscillator Power			
DIV256 (31-stg,5.0V)		0.47	uW/MHz/gate
D256_WIDE (31-stg,5.0V)		0.99	uW/MHz/gate

COMMENTS: SUBMICRON

T56H SPICE BSIM3 VERSION 3.1 PARAMETERS

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

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* DATE: Sep 20/05
* LOT: T56H                  WAF: 8102
* Temperature_parameters=Default
.MODEL CMOSN NMOS (                                LEVEL   = 49
+VERSION = 3.1            TNOM    = 27             TOX     = 1.4E-8
+XJ      = 1.5E-7         NCH     = 1.7E17         VTH0    = 0.6538044
+K1      = 0.8853913      K2      = -0.1047816     K3      = 21.6004865
+K3B     = -9.4148632     W0      = 1E-8           NLX     = 1E-9
+DVT0W   = 0              DVT1W   = 0              DVT2W   = 0
+DVT0    = 3.2548861      DVT1    = 0.369923       DVT2    = -0.0797281
+U0      = 461.0388766    UA      = 4.431227E-13   UB      = 1.598731E-18
+UC      = 2.038732E-12   VSAT    = 1.692121E5     A0      = 0.5719078
+AGS     = 0.1280663      B0      = 2.69712E-6     B1      = 5E-6
+KETA    = -4.085402E-3   A1      = 2.305862E-5    A2      = 0.3500406
+RDSW    = 1.308094E3     PRWG    = 0.0456341      PRWB    = 7.331838E-3
+WR      = 1              WINT    = 3.188132E-7    LINT    = 6.753372E-8
+XL      = 1E-7           XW      = 0              DWG     = -2.528222E-8
+DWB     = 1.778968E-8    VOFF    = -1.43982E-4    NFACTOR = 0.7765941
+CIT     = 0              CDSC    = 2.4E-4         CDSCD   = 0
+CDSCB   = 0              ETA0    = 1.425914E-3    ETAB    = -1.023089E-4
+DSUB    = 0.070146       PCLM    = 2.587667       PDIBLC1 = 1
+PDIBLC2 = 2.183734E-3    PDIBLCB = -0.0350596     DROUT   = 0.9409932
+PSCBE1  = 6.28769E8      PSCBE2  = 2.030729E-4    PVAG    = 0.0099949
+DELTA   = 0.01           RSH     = 81.7           MOBMOD  = 1
+PRT     = 0              UTE     = -1.5           KT1     = -0.11
+KT1L    = 0              KT2     = 0.022          UA1     = 4.31E-9
+UB1     = -7.61E-18      UC1     = -5.6E-11       AT      = 3.3E4
+WL      = 0              WLN     = 1              WW      = 0
+WWN     = 1              WWL     = 0              LL      = 0
+LLN     = 1              LW      = 0              LWN     = 1
+LWL     = 0              CAPMOD  = 2              XPART   = 0.5
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+CGDO    = 1.94E-10       CGSO    = 1.94E-10       CGBO    = 1E-9
+CJ      = 4.238559E-4    PB      = 0.9095194      MJ      = 0.4317228
+CJSW    = 3.148131E-10   PBSW    = 0.8            MJSW    = 0.1947829
+CJSWG   = 1.64E-10       PBSWG   = 0.8            MJSWG   = 0.1947829
+CF      = 0              PVTH0   = 0.0282116      PRDSW   = 184.2459368
+PK2     = -0.0292084     WKETA   = -0.01224       LKETA   = 4.30841E-3      )
*
.MODEL CMOSP PMOS (                                LEVEL   = 49
+VERSION = 3.1            TNOM    = 27             TOX     = 1.4E-8
+XJ      = 1.5E-7         NCH     = 1.7E17         VTH0    = -0.9488227
+K1      = 0.5470562      K2      = 8.137964E-3    K3      = 8.7265807
+K3B     = -0.700221      W0      = 1.010777E-8    NLX     = 3.935524E-8
+DVT0W   = 0              DVT1W   = 0              DVT2W   = 0
+DVT0    = 2.6250227      DVT1    = 0.5154392      DVT2    = -0.0860696
+U0      = 223.8617516    UA      = 3.224613E-9    UB      = 1E-21
+UC      = -5.60395E-11   VSAT    = 1.999271E5     A0      = 0.9770251
+AGS     = 0.1761707      B0      = 8.037714E-7    B1      = 5E-6
+KETA    = -3.842499E-3   A1      = 1.656625E-3    A2      = 0.3009487
+RDSW    = 3E3            PRWG    = -0.0423795     PRWB    = -0.0194875
+WR      = 1              WINT    = 2.959135E-7    LINT    = 9.609755E-8
+XL      = 1E-7           XW      = 0              DWG     = -2.057485E-8
+DWB     = 1.98858E-8     VOFF    = -0.0642643     NFACTOR = 0.9186569
+CIT     = 0              CDSC    = 2.4E-4         CDSCD   = 0
+CDSCB   = 0              ETA0    = 0.0259721      ETAB    = -0.0307056
+DSUB    = 0.7362716      PCLM    = 2.056266       PDIBLC1 = 0.0868428
+PDIBLC2 = 4.562915E-3    PDIBLCB = -0.0415238     DROUT   = 0.2882318
+PSCBE1  = 6.98343E9      PSCBE2  = 6.591507E-10   PVAG    = 0.1300289
+DELTA   = 0.01           RSH     = 105.2          MOBMOD  = 1
+PRT     = 0              UTE     = -1.5           KT1     = -0.11
+KT1L    = 0              KT2     = 0.022          UA1     = 4.31E-9
+UB1     = -7.61E-18      UC1     = -5.6E-11       AT      = 3.3E4
+WL      = 0              WLN     = 1              WW      = 0
+WWN     = 1              WWL     = 0              LL      = 0
+LLN     = 1              LW      = 0              LWN     = 1
+LWL     = 0              CAPMOD  = 2              XPART   = 0.5
+CGDO    = 2.71E-10       CGSO    = 2.71E-10       CGBO    = 1E-9
+CJ      = 7.221984E-4    PB      = 0.9437124      MJ      = 0.4959499
+CJSW    = 2.574744E-10   PBSW    = 0.99           MJSW    = 0.2696275
+CJSWG   = 6.4E-11        PBSWG   = 0.99           MJSWG   = 0.2696275
+CF      = 0              PVTH0   = 5.98016E-3     PRDSW   = 14.8598424
+PK2     = 3.73981E-3     WKETA   = 5.920921E-3    LKETA   = -4.015468E-3    )
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