

**MOTOROLA**

*Semiconductor Products Sector
Networking and Computing Systems Group
Networking and Communications System Division*

PCN: XPC850 XC Qualification in MOS12

Motorola is pleased to announce an additional wafer fabrication facility, MOS12, for the XPC850 communications processor family. This capacity expansion substantially increases Motorola's ability to service XPC850 product demand in the marketplace. MOS12 brings the total number of fabs capable of running the XPC to three.

The MOS12 process has identical electrical parameter targets as the current wafer fabrication process in MOS11 and TSMC/Wafertech for the XPC850 rev B.

Production Part Numbers:

In order to facilitate volume production from the new wafer fabrication facility, the following part numbers are now active. These part numbers, denoted with a U suffix, correspond to XPC850's that have die sourced from MOS12, TSMC/WaferTech, or MOS11. This method provides maximum flexibility to the customer to service XPC850 product demand.

XPC850ZT50BU
XPC850ZT66BU
XPC850ZT80BU
XPC850DEZT50BU
XPC850DEZT66BU
XPC850DEZT80BU
XPC850SRZT50BU
XPC850SRZT66BU
XPC850SRZT80BU

The 850's with the U suffix will be assembled in KLM or Anam/Amkor.

Current MRSD Backlog

Existing orders currently on backlog with a MRSD for XPC850 rev B will be supported through existing capacity in MOS11. Existing orders currently on backlog with a MRSD for XPC850 rev BT will be supported through existing capacity in TSMC/Wafertech. There is no need to transition scheduled orders to the new MOS12 rev BU part numbers at this time.

New Orders and Will Schedule

Current orders on will schedule should remain unchanged. There is no need to convert rev B or rev BT will schedule to rev BU at this time. All conversions will be done at the request of the factory. This process will be handled on a customer-by-customer basis to switch will schedule from rev B and rev BT to rev BU.

Extended Temperature

Extended temperature part numbers will be supported by MOS12 beginning in September 2000.

Samples

Samples from MOS12 are available by placing orders for KXPC850SRZT80BU. This device is a superset of the XPC850 family and can operate as 850 derivatives (850, 850DE, 850SR) and at speeds up to 80MHz (50, 66, 80MHz).

If you have any questions regarding the MOS12 qualification, please contact your local Motorola representative.

The MOS12 product is tested using the same test programs as the current production devices sourced from MOS11 and WaferTech. The programs provide 95% test coverage tested on 100% of the product across the specified voltage and temperature ranges. Final test yields and speed distributions are comparable to the current production devices. The following is a sample of electrical characterization data across wafer lots and temperature for selected datasheet parameters.

Table 1: MOS 12 XPC850 Electrical Characterization Data Analysis – 0, 25, 100°C

MOS12 XPC850 Electrical Characterization Data Analysis						
0C - 8 units - Two wafer lots						
Data Sheet		Spec(ns)		Actual	Data 0C	
Parameters		Min	Max	Mean	Min	Max
spB8	CLKOUT to Addr,RW,BRUST,Data,D...	6.77	15.12	12.04	11.72	12.28
spB8a	CLKOUT to TSIZ,REG,RSV,AT,BDIP...	6.77	15.12	8.50	8.34	8.72
spB8b	CLKOUT to BR,BG,FRZ,VFLS,VF,IW...	6.77	15.12	10.03	10.03	10.03
spB11	CLKOUT to TS,BB Assertion	6.77	14.64	8.91	8.53	9.28
spB17	CLKOUT to TA,TEA,BI,BB,BG,BR V...	1.00		4.80	4.50	4.97
spB22a	CLKOUT Fall Edge to CS Asserte...		8.71	1.37	1.17	1.64
spB22b	CLKOUT Fall Edge to CS Asserte...	6.77	15.47	9.24	9.08	9.57
spB25	CLKOUT Rise Edge to OE, WE Ass...		9.71	8.23	8.06	8.44
spB28	CLKOUT Rise Edge to WE Negated...		9.71	0.63	0.50	0.88
spB32	CLKOUT Fall to BS Valid (Per B...	1.50	8.71	2.13	1.76	2.34
spB33	CLKOUT Fall to GPL Valid (Per ...	1.50	8.71	1.98	1.52	2.23
spB33a	CLKOUT Rise to GPL Valid (Per ...	6.77	15.47	8.83	8.40	9.18
spP46	CLKOUT to REG Valid	6.77	15.12	7.48	7.31	7.59
spP48	CLKOUT to CE1,CE2 Asserted	6.77	15.12	8.70	8.34	8.91
25C - 10 units - Two wafer lots						
Data Sheet		Spec(ns)		Actual	Data 25C	
Parameters		Min	Max	Mean	Min	Max
spB8	CLKOUT to Addr,RW,BRUST,Data,D...	6.77	15.12	12.18	11.91	12.38
spB8a	CLKOUT to TSIZ,REG,RSV,AT,BDIP...	6.77	15.12	8.66	8.53	8.81
spB8b	CLKOUT to BR,BG,FRZ,VFLS,VF,IW...	6.77	15.12	10.03	10.03	10.03
spB11	CLKOUT to TS,BB Assertion	6.77	14.64	9.05	8.81	9.28
spB17	CLKOUT to TA,TEA,BI,BB,BG,BR V...	1.00		5.06	5.06	5.06
spB22a	CLKOUT Fall Edge to CS Asserte...		8.71	1.43	1.29	1.70
spB22b	CLKOUT Fall Edge to CS Asserte...	6.77	15.47	9.39	9.18	9.67
spB25	CLKOUT Rise Edge to OE, WE Ass...		9.71	8.41	8.25	8.56
spB28	CLKOUT Rise Edge to WE Negated...		9.71	0.63	0.50	0.75
spB32	CLKOUT Fall to BS Valid (Per B...	1.50	8.71	2.15	1.99	2.29
spB33	CLKOUT Fall to GPL Valid (Per ...	1.50	8.71	1.99	1.82	2.17
spB33a	CLKOUT Rise to GPL Valid (Per ...	6.77	15.47	8.86	8.69	9.08
spP46	CLKOUT to REG Valid	6.77	15.12	7.58	7.50	7.69
spP48	CLKOUT to CE1,CE2 Asserted	6.77	15.12	8.79	8.63	9.00
100C - 10 units - Two wafer lots						
Data Sheet		Spec(ns)		Actual	Data 100C	
Parameters		Min	Max	Mean	Min	Max
spB8	CLKOUT to Addr,RW,BRUST,Data,D...	6.77	15.12	12.90	12.66	13.2
spB8a	CLKOUT to TSIZ,REG,RSV,AT,BDIP...	6.77	15.12	8.82	8.72	9.0
spB8b	CLKOUT to BR,BG,FRZ,VFLS,VF,IW...	6.77	15.12	10.03	10.03	10.0
spB11	CLKOUT to TS,BB Assertion	6.77	14.64	9.58	9.28	10.2



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spB17 CLKOUT to TA,TEA,BI,BB,BG,BR V...1.00		4.61	4.50	4.8
spB22aCLKOUT Fall Edge to CS Asserte...	8.71	1.65	1.41	1.9
spB22bCLKOUT Fall Edge to CS Asserte...6.77	15.47	9.84	9.57	10.3
spB25 CLKOUT Rise Edge to OE, WE Ass...	9.71	8.59	8.31	8.9
spB28 CLKOUT Rise Edge to WE Negated	9.71	0.97	0.81	1.2
spB32 CLKOUT Fall to BS Valid (Per B...1.50	8.71	2.33	2.17	2.6
spB33 CLKOUT Fall to GPL Valid (Per ...1.50	8.71	2.12	1.93	2.5
spB33aCLKOUT Rise to GPL Valid (Per ...6.77	15.47	9.17	8.98	9.5
spP46 CLKOUT to REG Valid	6.77	15.12	7.88	7.69
spP48 CLKOUT to CE1,CE2 Asserted	6.77	15.12	9.10	8.81

Table 2: MOS 12 XC Qualification Results

Stress	Results (#fails/#devices tested)
Lifetest @ 168 Hours (4.0V, 125°C)	
T545616N01	0/120
T545861002	0/120
ESD Human Body Model (2KV)	
T545616N01	0/3
T545861002	0/3
ESD Machine Model (200V)	
T545616N01	0/3
T545861002	0/3
ESD Charged Device Model Socketed (1KV) FYI	
T545616N01	0/3
T545861002	0/3
ESD Charged Device Model Unsocketed (1KV) FYI	
T545616N01	0/2
T545861002	0/2
Latch-up (200mA)	
T545616N01	0/3
T545861002	0/3

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