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

PCN: MC68360 Rev L fab transfer to TSC

Effective Date: 10-Aug-00

Motorola is pleased to announce the introduction of the MC68360 Rev L fabricated in TSC8 and Rev L 5 Volt 25MHz in MOS 11. This PCN is to notify our MC68360 product family customers that they need to convert from Revision K (mask J17A) to Revision L (mask K36E) produced at TSC8 in Japan and (mask H84G) at MOS11 in Austin. The devices affected are the revision K of the MC68360, MC68EN360, and 68MH360 products in the 240-QFP (EM), 356-PBGA ZP) 25MHz, 5V, standard and extended temp.

TSC8 will provide dual-sourcing for the the 68360 as we will continue production of Rev L at MOS11. This will allow us to provide greater flexibility in meeting customer demand for the 68360, though the majority of Rev L will be fabricated in TSC8.

Once the PCN has expired we will be shipping from either factory using either mask as they use the same design database. This approach will allow much greater flexibility in supporting customer requirements. Rev L product fabricated in MOS11 and/or TSC8 meets the same mechanical and electrical specifications.

RAM microcode functionality is identical on Rev K and Rev L; therefore, recompilation of Rev K RAM microcode is not necessary.

Sample part numbers will be set up to specify 68360 K36E products from our TSC8 fab to allow customers to qualify the new mask set and TSC8 manufacturing facility.

The mask set K36E TSC8 sample part numbers are:

KMC68360EM25LT
KMC68EN360EM25LT
KMC68MH360EM25LT
KMC68360ZP25LT
KMC68EN360ZP25LT
KMC68MH360ZP25LT
KMC68360CEM25LT
KMC68EN360CEM25LT
KMC68MH360CEM25LT
KMC68360CZP25LT
KMC68EN360CZP25LT
KMC68MH360CZP25LT



The mask set H84G at MOS11 sample part numbers are :

- KMC68360EM25L
- KMC68EN360EM25L
- KMC68MH360EM25L
- KMC68360ZP25L
- KMC68EN360ZP25L
- KMC68MH360ZP25L
- KMC68360CEM25L
- KMC68EN360CEM25L
- KMC68MH360CEM25L
- KMC68360CZP25L
- KMC68EN360CZP25L
- KMC68MH360CZP25L

The production part numbers from TSC8 and MOS11 are :

- MC68360EM25L
- MC68EN360EM25L
- MC68MH360EM25L
- MC68360ZP25L
- MC68EN360ZP25L
- MC68MH360ZP25L
- MC68360CEM25L
- MC68EN360CEM25L
- MC68MH360CEM25L
- MC68360CZP25L
- MC68EN360CZP25L
- MC68MH360CZP25L

In approximately 6 months we plan to also qualify the 3.3V, 33MHz 68360 product family in TSC8. This will provide dual sourcing for these devices also.

QUALIFICATION PLAN

See Reliability Data.

RELIABILITY DATA SUMMARY

Condition/

Stress	Readpoint	LOT#	Rej/ SS	Comment
=====	=====	=====	=====	=====
Op Life	168hrs	C25925D	0 / 77	
		C25925E	0 / 77	
		C25617E	0 / 77	
	504hrs	C25925D	0 / 75	
		C25925E	0 / 77	
		C25617E	0 / 76	

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ESD-HBM	3kV	C25925D	0 / 3	Meets same performance as MOS11
		C25925E	0 / 3	
		C25617E	0 / 3	
ESD-MM	200V	C25925D	0 / 3	
		C25925E	0 / 3	
		C25617E	0 / 3	
Latchup	200mA	C25925D	0 / 3	
		C25925E	0 / 3	
		C25617E	0 / 3	

Temp Cycle Precond. 357 PBGA	500cycs.	C25925D	0 / 77
		C25925E	0 / 77
		C25617E	0 / 77

Autoclave Precond. 357 PBGA	96hrs.	C25925D	0 / 61
		C25925E	0 / 70
		C25617E	0 / 66
	144hrs.	C25925D	0 / 60
		C25925E	0 / 70
		C25617E	0 / 66

MSL3 357 PBGA	220C.	C25925D	0 / 15	1 unit removed due to possible handling/assy error
		C25925E	0 / 14*	
		C25617E	0 / 15	

ELECTRICAL CHARACTERISTIC SUMMARY

CHARACTERIZATION DATA:

K36E: (Ta=85C) TSC8, 82.5% UDR, TLM, SLP, 5v-25MHz, Sample Size = 16

Param.	Min	max	Min VDD			Max VDD		
			Avg.	s	Cpk	Avg.	s	Cpk
sp6a	0	20	9.488	0.852	4.115	8.906	0.782	4.730
sp64		5	2.588	0.247	3.252	2.113	0.245	3.935
sp62		5	2.575	0.277	2.919	2.094	0.224	4.334
sp6	0	15	9.438	0.883	2.100	8.756	0.742	2.805
sp47a		5	3.321	0.358	1.564	3.036	0.298	2.199
sp280		2	11.871	0.795	3.410	11.150	0.735	4.016
sp27b		20	-0.894	0.542	12.846	-0.394	0.298	22.835

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sp27a	10	3.475	0.284	7.658	3.319	0.312	7.128
sp23a	25	11.644	0.802	5.548	13.156	1.803	2.189
sp23	23	7.619	0.508	10.101	7.306	0.443	11.797
sp212	20	10.907	0.663	4.574	10.100	0.536	6.152
sp188	10	0.900	0.295	10.276	0.621	0.181	17.319
sp184	20	6.747	0.497	8.890	6.293	0.418	10.923
sp158	20	8.069	0.565	7.035	7.844	0.768	5.279
sp150	10	0.963	0.405	7.443	0.467	0.238	13.349

K36E: (Ta=-40C)

Param.	Min	max	Min VDD			Max VDD		
			Avg.	s	Cpk	Avg.	s	Cpk
sp6a	0	20	6.312	0.515	8.866	6.147	0.458	10.073
sp64		5	1.453	0.133	8.900	1.041	0.123	10.748
sp62		5	1.612	0.169	6.678	1.059	0.158	8.297
sp6	0	15	6.282	0.519	5.602	6.141	0.403	7.324
sp47a		5	2.100	0.252	3.829	1.806	0.205	5.205
sp280		20	9.559	0.570	6.104	9.006	0.509	7.196
sp27b		20	-0.612	0.352	19.542	-0.606	0.382	18.001
sp27a		10	2.571	0.208	11.880	2.147	0.150	17.394
sp23a		25	9.381	0.054	95.720	9.388	0.093	56.106
sp23		23	6.393	0.234	23.699	6.325	0.154	35.981
sp212		20	8.406	0.413	9.357	7.912	0.333	12.089
sp188		10	0.347	0.112	28.612	0.283	0.058	56.099
sp184		20	5.453	0.274	17.689	5.218	0.243	20.278
sp158		20	5.829	0.407	11.595	5.653	0.387	12.342
sp150		10	1.165	0.757	3.893	1.329	0.685	4.217

H84G: (Ta=85C) MOS11, 82.5% UDR, TLM, SLP, 5v-25MHz, Sample Size = 10

Param.	min	max	Min VDD			Max VDD		
			Avg.	s	Cpk	Avg.	s	Cpk
sp6a	0	20	7.940	0.237	16.988	7.440	0.212	19.761
sp64		5	2.250	0.071	12.964	1.950	0.085	11.963
sp62		5	2.150	0.085	11.179	1.840	0.052	20.398
sp6	0	15	7.810	0.242	9.886	7.400	0.216	11.727
sp47a		5	2.780	0.079	9.381	2.510	0.032	26.247
sp280		20	10.470	0.142	22.400	9.860	0.117	28.796
sp27b		20	-0.650	0.600	11.463	-0.650	0.465	14.807
sp27a		10	3.030	0.067	34.422	2.720	0.063	38.369
sp23a		25	12.600	0.343	12.044	12.460	0.246	17.002
sp23		23	6.720	0.140	38.806	6.830	0.211	25.535
sp212		20	9.810	0.088	38.793	9.160	0.117	30.784

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sp188	10	0.540	0.143	22.054	0.478	0.148	21.427
sp184	20	6.260	0.126	36.208	5.960	0.126	36.999
sp158	20	7.590	0.137	30.188	7.700	0.115	35.507
sp150	10	0.550	0.143	21.971	0.800	0.067	46.000

H84G: (Ta=-40C)

Param.	Min	max	Min VDD		Cpk	Max VDD		
			Avg.	s		Avg.	s	Cpk
sp6a	0	20	6.655	0.472	9.426	6.327	0.434	10.506
sp64		5	1.282	0.098	12.626	0.945	0.052	25.880
sp62		5	1.373	0.065	18.697	0.955	0.069	19.613
sp6	0	15	6.682	0.429	6.470	6.409	0.416	6.887
sp47a		5	1.836	0.112	9.415	1.564	0.121	9.498
sp280		20	8.927	0.400	9.222	8.445	0.393	9.791
sp27b		20	-0.145	0.507	13.253	-0.309	0.404	16.772
sp27a		10	2.036	0.175	15.189	1.718	0.160	17.242
sp23a		25	10.455	0.129	37.488	10.618	0.337	14.221
sp23		23	6.425	0.139	39.785	6.345	0.216	25.682
sp212		20	9.255	0.230	15.599	8.755	0.169	22.116
sp188		10	0.367	0.151	21.329	0.288	0.155	20.851
sp184		20	5.364	0.262	18.635	5.200	0.179	27.578
sp158		20	6.109	0.239	19.410	6.400	0.253	17.920
sp150		10	0.573	0.065	48.594	0.700	0.063	49.015

CHANGED PART IDENTIFICATION

The mask set will be marked on the finished good devices.

AFFECTED DEVICE LIST (WITHOUT SPECIALS)

KMC68360CEM25L, KMC68360EM25L, KMC68360EM25VL, KMC68360EM33L, KMC68360RC33L, KMC68360ZP25L, KMC68360ZP25VL, KMC68360ZP33L, KMC68EN360CEM25L, KMC68EN360CZP25L, KMC68EN360EM25L, KMC68EN360EM25VL, KMC68EN360EM33L, KMC68EN360RC33L, KMC68EN360ZP25L, KMC68EN360ZP25VL, KMC68EN360ZP33L, KMC68MH360CEM25L, KMC68MH360CZP25L, KMC68MH360EM25L, KMC68MH360EM25VL, KMC68MH360EM33L, KMC68MH360RC33L, KMC68MH360ZP25L, KMC68MH360ZP25VL, KMC68MH360ZP33L, MC68360CEM25K, MC68360CEM25L, MC68360CFE25C, MC68360CRC25C, MC68360CRC25K, MC68360CRC25L, MC68360CZP25K, MC68360CZP25KR2, MC68360CZP25L, MC68360CZP25LR2, MC68360EM25K, MC68360EM25L, MC68360EM25VL, MC68360EM33C, MC68360EM33K, MC68360EM33KB1, MC68360EM33L, MC68360EM33LB1, MC68360EMK, MC68360FE25C, MC68360FE33C, MC68360RC25C, MC68360RC25K, MC68360RC25L, MC68360RC33C, MC68360RC33K, MC68360RC33L, MC68360ZP25CR2, MC68360ZP25K, MC68360ZP25KR2, MC68360ZP25L, MC68360ZP25LR2, MC68360ZP25VC, MC68360ZP25VL, MC68360ZP25VLR2, MC68360ZP33K, MC68360ZP33KR2, MC68360ZP33L, MC68360ZP33LR2, MC68EN360CEM25K, MC68EN360CEM25L, MC68EN360CFE25C

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MC68EN360CRC25C, MC68EN360CRC25K, MC68EN360CRC25L, MC68EN360CZP25C
MC68EN360CZP25K, MC68EN360CZP25L, MC68EN360EM25C, MC68EN360EM25K
MC68EN360EM25L, MC68EN360EM25VC, MC68EN360EM25VL, MC68EN360EM33C
MC68EN360EM33K, MC68EN360EM33L, MC68EN360FE33C, MC68EN360RC25C
MC68EN360RC25K, MC68EN360RC25L, MC68EN360RC33C, MC68EN360RC33K
MC68EN360RC33L, MC68EN360RCL, MC68EN360ZP25C, MC68EN360ZP25K
MC68EN360ZP25KR2, MC68EN360ZP25L, MC68EN360ZP25LR2, MC68EN360ZP25VL
MC68EN360ZP33K, MC68EN360ZP33KR2, MC68EN360ZP33L, MC68EN360ZP33LR2
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MC68MH360ZP25LR2, MC68MH360ZP25VE, MC68MH360ZP25VL, MC68MH360ZP33E
MC68MH360ZP33K, MC68MH360ZP33KR2, MC68MH360ZP33L, MC68MH360ZP33LR2
MCE360CZP25KR2, MCE360CZP25LR2, SC414357CFE25C, SCW414336
SPAK360CEM25K, SPAK360EM25K, SPAK360EM25VL, SPAK360EM33K
SPAK360RC33K, SPAK360ZP25K, SPAK360ZP25VL, SPAK360ZP33K
SPAKEN360CEM25K, SPAKEN360CZP25K, SPAKEN360EM25K, SPAKEN360EM25VL
SPAKEN360EM33K, SPAKEN360RC33K, SPAKEN360ZP25K, SPAKEN360ZP25VL
SPAKEN360ZP33K, SPAKMH360CEM25K, SPAKMH360EM25K, SPAKMH360EM25VL
SPAKMH360EM33K, SPAKMH360RC33K, SPAKMH360ZP25K, SPAKMH360ZP25VL
SPAKMH360ZP33K

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