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

PCN: MC68EN302 Capacity Expansion

Effective Date: 25-May-00

Motorola is pleased to announce the expansion of our MC68EN302 manufacturing capabilities with the use of our TSC facility in Japan. This means the 68EN302 will have two fab sources, MOS11 and TSC. Other than some special sample packs described below, orders will be fulfilled with 68EN302 devices from either fab; however, we do anticipate that the majority of the product will be produced at TSC8. The TSC facility is fully qualified for MC production of the 68EN302 and will use the same database as our current production in Austin Texas. Parts produced in Japan will have the mask set K30E and have no functional differences from our H74P mask production in Austin, Texas.

To facilitate customer qualification of our new K30E mask set we have two sample packs that will be specific to the new TSC mask set. The two TSC K30E mask sets sample packs are the KMC68EN302PV25BT and KMC68EN302PV20BT. The devices will be marked as MC68EN302PV25B and MC68EN302PV20B respectively.

QUALIFICATION PLAN

Please see Reliability Data Summary

RELIABILITY DATA SUMMARY

MC68EN302 Reliability Data:

Lifetest (6.0V, 125C)

C24663	0/77 (168 hours)

ESD Human Body Model (1KV)

C24663	0/3
C26170	0/3
C26171	0/3

ESD Machine Model (100V)

C24663	0/3
C26170	0/3
C26171	0/3

ESD Charged Device Model (500V)

C24663	0/3

C26170	0/3
C26171	0/3

Latchup (200mA)

C24663	0/3
C26170	0/3
C26171	0/3

NOTE: TSC8 ESD performance meets same level as existing MOS11 device.

TSC8 Process was qualified using the MC68338 device with the following Operating Life data.

TEST SCHEDULE (QUAL# 134970)

STRESS/SAMPLE	RESULTS		
LTDY CZ (4.5V/125C)	24	504	
C13515 HEAT9739	0/10	0/10	
C13387 HEAS9739	0/10	0/10	
C13698 HEBF9739	0/10	0/10	
LTDY (4.5V/125C)	168	504	1008
C13515 HEAT9739	0/77	0/77	0/77
C13387 HEAS9739	0/80	0/80	0/80
C13698 HEBF9739	0/80	0/80	0/79
LTDY (6V/125C)	1008		
C13515 HEAT9739	0/80		
C13387 HEAS9739	0/80		
C13698 HEBF9739	0/79		

ELECTRICAL CHARACTERISTIC SUMMARY

WORST CASE CORNER TAKEN FOR BOTH OLD MASK AND NEW MASK.

Ta=85C, Freq=25MHz, Sample Size = 27 CURRENT MASKSET

	Datasheet			H74P			Vdd
Spec	Min	Max	Unit	Avg.	s	Cpk	4.7v
Sp12		20	ns	13.849	0.362	5.671	4.7v
Sp125		20	ns	11.289	0.793	3.661	4.7v
Sp144		20	ns	11.020	0.322	9.287	4.7v
Sp23		20	ns	12.679	0.384	6.350	4.7v
Sp264		20	ns	12.233	0.101	25.575	4.7v
Sp275	7	50	ns	20.338	0.565	17.498	4.7v
Sp290	7	60	ns	40.482	0.386	16.844	4.7v
Sp293	0	34	ns	15.403	0.901	6.884	4.7v

Sp6	0	30	ns	17.491	0.338	12.330	4.7v
Sp9	3	20	ns	15.577	0.369	3.994	4.7v
Sp93		20	ns	10.600	0.273	11.490	4.7v
Idd		0.14	A	0.119	0.001	6.992	5.25v

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Ta=85C, Freq=25MHz, Sample Size = 23 NEW MASKSET

	Datasheet				**K30E**		**Vdd**
Spec	Min	Max	Unit	Avg.	s	Cpk	4.7v
Sp12		20	ns	13.967	0.382	5.269	4.7v
Sp125		20	ns	11.230	0.297	9.829	4.7v
Sp144		20	ns	11.107	0.274	10.827	4.7v
Sp23		20	ns	12.820	0.365	6.550	4.7v
Sp264		20	ns	11.367	0.128	22.444	4.7v
Sp275	7	50	ns	20.251	0.475	20.858	4.7v
Sp290	7	60	ns	40.479	0.292	22.308	4.7v
Sp293	0	34	ns	15.312	0.344	18.107	4.7v
Sp6	0	30	ns	16.978	0.422	10.278	4.7v
Sp9	3	20	ns	15.668	0.439	3.288	4.7v
Sp93		20	ns	10.767	0.305	10.087	4.7v
Idd		0.14	A	0.121	0.001	7.314	5.25v

CHANGED PART IDENTIFICATION

Mask set marking on finished good device.

AFFECTED DEVICE LIST (WITHOUT SPECIALS)

KMC68EN302PV20B, KMC68EN302PV20BT, KMC68EN302PV25B, KMC68EN302PV25BT
MC68EN302CPV20B, MC68EN302PV20B, MC68EN302PV25B, PC68EN302RC25B
SPAKEN302PV20B, SPAKEN302PV25B, XC68EN302CPV20B, XC68EN302PV20B
XC68EN302PV25A, XC68EN302PV25B