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

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**PCN: MC68EN302 part numbers will change depending on fab**

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EFFECTIVE DATE: 01-Aug-00

**DESCRIPTION AND PURPOSE**

Please note that PCN# 5656 has been issued stating that the only way to identify which fab the 68EN302's are produced is to look at the mask set marking on the device package, and that the production part numbers will not change.

This is the addendum to the PCN 5656 stating that the production part numbers will now change. The production part numbers will be, e.g.:

MC68EN302PV20BT  
MC68EN302PV25BT

All new 68EN302 volume production orders must use the 'BT' suffix part numbers. Additionally, most existing 68EN302 orders on backlog will need to change to the new 'BT' suffix part numbers. We will be ready to ship 'BT' product starting August 1, 2000. The 'BT' part numbers reflect that die can be sourced from either TSC8 or MOS11, but please note the majority of EN302 production, if not all, will be produced in TSC8.

The 68EN302 product family is adding a new fab site - TSC8. TSC8 will be the main fab for the 68EN302. This fab addition will make way for additional capacity in MOS11 for Motorola's MPC8xx families primarily 860 and 850.

**MC68EN302**

Motorola is pleased to announce the expansion of our MC68EN302 manufacturing capabilities with the use of our TSC8 facility in Japan. This means the 68EN302 will have two fab sources, MOS11 and TSC8. The TSC8 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 TSC8 will have the mask set K30E and have no functional differences from our H74P mask production in MOS11 Austin, Texas. The majority of EN302 production will be produced in TSC8.

We have created special sample packs that will specify the K30E mask devices produced in TSC8 to facilitate customers qualifying this second manufacturing site. The below part numbers should be used for ordering the TSC8 sample packs:

KMC68EN302PV20BT  
KMC68EN302PV25BT

**For More Information On This Product,  
Go to: [www.freescale.com](http://www.freescale.com)**

Freescale Semiconductor, Inc.



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### 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.

**For More Information On This Product,  
Go to: [www.freescale.com](http://www.freescale.com)**



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

PURPOSE: MC qual initial device from TSC8.

TEST SCHEDULE (QUAL# 134970)

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STRESS/SAMPLE RESULTS  
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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  
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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  
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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

Spec	Datasheet			H74P			Vdd
	Min	Max	Unit	Avg.	s	Cpk	
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

Spec	Datasheet			Avg.	K30E s	Cpk	Vdd
	Min	Max	Unit				
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

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## RELATED NOTIFICATIONS:

MC68EN302 ADDITIONAL MANUFACTURING SITE

Freescale Semiconductor, Inc.



AFFECTED DEVICE LIST

**PART**

KMC68EN302PV20B  
KMC68EN302PV20BT  
KMC68EN302PV25B  
KMC68EN302PV25BT  
MC68EN302CPV20B  
MC68EN302PV20B  
MC68EN302PV20BT  
MC68EN302PV25B  
MC68EN302PV25BT  
PC68EN302RC25B  
SPAKEN302PV20B  
SPAKEN302PV25B  
XC68EN302PV20B  
XC68EN302PV25A  
XC68EN302PV25B