M

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

PCN: 86LC302 Fab Transfer to TSC

Effective Date: 07-Aug-00

Motorola is pleased to announce the expansion of our MC68LC302 manufacturing capabilities with the use of our TSC8 facility in Japan.
This means the 68LC302 will have two fab sources, MOS11 and TSC8. The TSC8 facility is fully qualified for MC production of the 68LC302 and will use the same database as our current production in Austin Texas. Parts produced in Japan will have the mask set K38E and have no functional differences from our J29A mask production in MOS11 Austin, Texas. The majority of LC302 production will be produced in TSC8.

We have created special sample packs that will specify the K38E 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:

KM68LC302PU20VCT 68LC302 TQFP 3.3V 20MHz
KMC68LC302PU20CT 68LC302 TQFP 5.0V 20MHZ
KMC68LC302PU25CT 68LC302 TQFP 5.0V 25MHZ

Please note that the the production part numbers will now change.
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MC68LC302PU25CT 68LC302 TQFP 5.0V 25MHZ

All new 68LC302 volume production orders must use the 'CT' suffix part numbers. Additionally, most existing 68LC302 orders on backlog will need to change to the new 'CT' suffix part numbers. We will be ready to ship 'CT' product starting August 1, 2000. The 'CT' part numbers reflect that die can be sourced from either TSC8 or MOS11, but please note the majority of LC302 production, if not all, will be produced in TSC8.

QUALIFICATION PLAN

Qualification of MC68LC302 in TSC8 (K38E)

The TSC8 MC68LC302 device, mask set K38E, has successfully completed R&QA qualification. This device is currently manufactured as J29A in MOS11 on the 82.5% UDR2/CDR1 process (0.57um TLM) and assembled in the 100 lead TQFP (PU) package in SHC. The process used in

TSC8 is also 82.5% UDR2/UDR1 (0.57um TLM). All of these technologies are fully qualified.

ESD and latch-up performance for this device in TSC8 has been confirmed to be comparable to current MOS11 material. An electrical characterization was also performed. All key electrical parameters are meeting specifications. Qualification results are summarized below.

The qualification of the MC63LC302 (K38E) in TSC8 required a reduced data set based on data taken during the MC68360 (K36E) qualification, which is similar in design and utilizes the same process at TSC8.

68LC302 (82.5 UDR2/CDR in MOS11 - 82.5 UDR2/UDR in TSC8)

- Lifetest, 168 hrs: One lot, 77 pcs
- ESD and Latch-up: Three lots, 12 pcs each

RELIABILITY DATA SUMMARY

MC68LC302 (K38E) Qualification Data:

Stress Results (#fails/#devices)
Lifetest (6.0V, 125C)
C25508A 0/89 @168 hours

ESD Human Body Model (2KV)
C25781A 0/3
C25794A 0/3
C25508.17A 0/3

ESD Machine Model (200V)
C25781A 0/3
C25794A 0/3
C25508.17A 0/3

Latchup (200mA)
C25781A 0/3
C25794A 0/3
C25508.17A 0/3

Electro Static Discharge Life Test

LOT HOURS	Room Temp	Hot Temp	Low Temp	Comment
C25508A	168	89/90	89/90	1 failed unit bent leads

Human Body Model (new) 2kV max

Lot Voltage Room Temp Hot Temp Low Temp
C25781A 1kV 0/3 0/3 0/3
C25781A 1.5kV 0/3 0/3 0/3
C25781A 2kV** 0/3 0/3 0/3
C25794A 1kV 0/3 0/3 0/3
C25794A 1.5kV 0/3 0/3 0/3
C25794A 2kV** 0/3 0/3 0/3
C25508.17A 2kV** 0/3 0/3 0/3

**needed for standard requirement

Machine Model (new) 2KV max
Lot Voltage Room Temp Hot Temp Low Temp
C25781A 100V 0/3 0/3 0/3
C25781A 200V 0/3 0/3 0/3
C25794A 100V 0/3 0/3 0/3
C25794A 200V 0/3 0/3 0/3
C25508 200V 0/3 0/3 0/3

Latch Up
Lot Current Room Temp High Temp Low Temp
C25781A 100mA 0/3 0/3 0/3
C25781A 200mA 0/3 0/3 0/3
C25794A 200mA 0/3 0/3 0/3
C25508.17A 200mA 0/3 0/3 0/3

ELECTRICAL CHARACTERISTIC SUMMARY

There are no signifacant electrical changes in either AC or DC specs.

CHANGED PART IDENTIFICATION

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AFECTED DEVICE LIST

PART
KM68LC302PU20VCT
KMC68LC302PU20C
KMC68LC302PU20CT
KMC68LC302PU20VC
KMC68LC302PU25C
KMC68LC302PU25CT
MC68LC302CPU16C
MC68LC302CPU16VC
MC68LC302CPU20C
MC68LC302CPU20VC
MC68LC302PU16C
MC68LC302PU16VC
MC68LC302PU20C
MC68LC302PU20VC
MC68LC302PU25C
SC530204LCPU16B
SPAKLC302PU16B
SPAKLC302PU16VB
SPAKLC302PU20B
SPAKLC302PU20VB
SPAKLC302PU25B
XC68LC302CPU16B
XC68LC302CPU16VB
XC68LC302CPU20B
XC68LC302CPU20VB
XC68LC302PU16B
XC68LC302PU16VB
XC68LC302PU20B
XC68LC302PU20VB
XC68LC302PU25B