



## Product Change Notification

**Product Change Notification Number: NC054201**

**Date:** November 14, 2005

**Title:** Pb-free conversion for C51 Microcontrollers

**Product Identification:**

Almost all C51 and ASSP products in package PLCC, PQFP, LQFP, TQFP, SOIC, SSOP. See Appendix A for the Pb-based part number and corresponding Pb-free part number.

**Reason for Change:**

Design

Processing

Logistics

Manufacturing Location

Quality/Reliability

Material

**Change Description:**

The lead frames are being converted to 100% matte tin (Sn) plating to support the government regulations and the needs of customers worldwide to supply environmentally friendly products.

Pb-free is compatible with the RoHS (Restriction On use of Hazardous Substances in Electrical and Electronic Equipment Directive 2002/95/EC) which becomes effective July 1, 2006.

Whenever possible, the conversion is being made to fully green packaging. All packages listed below, are already qualified in Green version. Other packages will be handled in other PCNs.

Packages listed in the PCN are already qualified in Green version in compliance with JEDEC Standard J-STD-020C.

Further information can be downloaded from the Atmel Website :

Atmel's Environmental Policy: <http://www.atmel.com/green/documents/doc4607.pdf>

RoHS & Green Questions and Answers (FAQ):

[http://www.atmel.com/quality/acrobat/GREEN\\_RoHS\\_FAQ.pdf](http://www.atmel.com/quality/acrobat/GREEN_RoHS_FAQ.pdf)

The Green products are backwards compatible. For instance, depending on the package size, the leaded reflow process for PCB (240°C) can be used with the listed Green parts as well as the unleaded reflow (260°C) process.

List of packages transferred to Green :

PLCC (codification S@) in Industrial range)

PQFP (codification 5@, 9@, N@, A@) in Industrial range)

LQFP (codification R@) in Industrial range)

TQFP (codification M@) in Industrial range)

TQFP (codification M@) in Automotive range)

SOIC (codification T@) in Industrial range)

SOIC (codification T@) in Automotive range)

SSOP (codification I@) in Industrial range except AT89C5121)

SSOP (codification I@) in Automotive range, except SSOP44 (IL))

Unless new instructions from customers, existing orders will be delivered as initially requested. However, we strongly require new orders to be submitted for fully green packaging.

There may be some stocks for some Pb-based products and these will be delivered until inventory is exhausted.

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**Identification Method to Distinguish Change:**

All Pb-free ICs have a new part-number and the according marking. See page 7 RoHS & Green FAQ : [http://www.atmel.com/quality/acrobat/GREEN\\_RoHS\\_FAQ.pdf](http://www.atmel.com/quality/acrobat/GREEN_RoHS_FAQ.pdf)

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<b>Qualification Data:</b>	<input checked="" type="checkbox"/> available	<input type="checkbox"/> will be available in WW__	<input type="checkbox"/> not applicable
<b>Samples:</b>	<input checked="" type="checkbox"/> available	<input type="checkbox"/> will be available in WW__	<input type="checkbox"/> not applicable

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**Quantifiable Impact on Quality & Reliability:**

Quality and reliability standard remain the same. The Pb-free conversion does not affect electrical or mechanical parameters. Data Sheet and IC package appearance remains unchanged.

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<b>Estimated Implementation Date*:</b>	February 14th, 2006
<b>Last Time Buy Date:</b>	March 1, 2006
<b>Last Ship Date:</b>	June 1, 2006

\*The Estimated Implementation Date is the forecasted date that a customer may expect to receive changed product. This is determined by the estimated date of inventory depletion on the PCN issue date. This may be affected by fluctuations in supply and demand. Consequently, although customers should be prepared to receive changed product on this date, Atmel will continue to ship pre-changed product until a time in which inventory has been depleted. This may result in pre-changed product being shipped to customers after this forecasted date.

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**Atmel Contact:**      pcnadm@atmel.com

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Atmel will deem this change accepted unless specific conditions of acceptance are provided in writing within 30 days from the date of this notice. All correspondence must be sent to the Quality Contact e-mail address listed above.

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## Appendix A

Pb Part Number	Green-compliant Part Number
AT80C51ID2-RLTIL	AT80C51ID2-RLTUL
AT80C51ID2-RLTIM	AT80C51ID2-RLTUM
AT80C51ID2-SLSCM	AT80C51ID2-SLSUM
AT80C51ID2-SLSIL	AT80C51ID2-SLSUL
AT80C51ID2-SLSIM	AT80C51ID2-SLSUM
AT80C51RD2-3CSCM	AT80C51RD2-3CSUM
AT80C51RD2-3CSIM	AT80C51RD2-3CSUM
AT80C51RD2-RLTIL	AT80C51RD2-RLTUL
AT80C51RD2-RLTIM	AT80C51RD2-RLTUM
AT80C51RD2-SLSCM	AT80C51RD2-SLSUM
AT80C51RD2-SLSIL	AT80C51RD2-SLSUL
AT80C51RD2-SLSIM	AT80C51RD2-SLSUM
AT80C51SND1C-ROTIL	AT80C51SND1C-ROTUL
AT83C21GC144-ICRIL	AT83C21GC144-ICRUL
AT83C21GC144-ICSIL	AT83C21GC144-ICSUL
AT83C22OK104-RDTIM	AT83C22OK104-RDTUM
AT83C23OK203-RATIM	AT83C23OK203-RATUM
AT83C24B-PRTIL	AT83C24B-PRTUL
AT83C24B-PRTIM	AT83C24B-PRTUM
AT83C24B-TISIL	AT83C24B-TISUL
AT83C24B-TISIM	AT83C24B-TISUM
AT83C24NDS-PRTIM	AT83C24NDS-PRTUM
AT83C24NDS-TISIM	AT83C24NDS-TISUM
AT83C25OK101-RDTIM	AT83C25OK101-RDTUM
AT85C5122D-RDTIM	AT85C5122D-RDTUM
AT85C5122D-SISIM	AT85C5122D-SISUM
AT85C5122D-SMSIM	AT85C5122D-SMSUM
AT85EC5122D-RDVIM	AT85EC5122D-RDTUM
AT89C5122D-PSVIM	AT89C5122D-PSTUM
AT89C5122D-RDFIM	AT89C5122D-RDRUM
AT89C5122D-RDRIM	AT89C5122D-RDRUM
AT89C5122D-RDVIM	AT89C5122D-RDTUM
AT89C5122D-SIUIM	AT89C5122D-SISUM
AT89C5131A-PUTIM	AT89C5131A-PUTUM
AT89C5131A-RDTIM	AT89C5131A-RDTUM
AT89C5131A-S3SIM	AT89C5131A-S3SUM
AT89C5132C-ROTIL	AT89C5132C-ROTUL
AT89C5132-ROTIL	AT89C5132-ROTUL
AT89C51AC3-RDTIM	AT89C51AC3-RDTUM
AT89C51AC3-RLTIM	AT89C51AC3-RLTUM
AT89C51AC3-S3SIM	AT89C51AC3-S3SUM
AT89C51AC3-SLSIM	AT89C51AC3-SLSUM
AT89C51CC03C-RDRIM	AT89C51CC03CA-RDRUM

Pb Part Number	Green-compliant Part Number
AT89C51CC03C-RDTIM	AT89C51CC03CA-RDTUM
AT89C51CC03C-RLRIM	AT89C51CC03CA-RLRUM
AT89C51CC03C-RLTIM	AT89C51CC03CA-RLTUM
AT89C51CC03C-S3RIM	AT89C51CC03CA-S3RUM
AT89C51CC03C-S3SIM	AT89C51CC03CA-S3SUM
AT89C51CC03C-SLRIM	AT89C51CC03CA-SLRUM
AT89C51CC03C-SLSIM	AT89C51CC03CA-SLSUM
AT89C51CC03U-RDRIM	AT89C51CC03UA-RDRUM
AT89C51CC03U-RDTIM	AT89C51CC03UA-RDTUM
AT89C51CC03U-RLRIM	AT89C51CC03UA-RLRUM
AT89C51CC03U-RLTIM	AT89C51CC03UA-RLTUM
AT89C51CC03U-S3RIM	AT89C51CC03UA-S3RUM
AT89C51CC03U-S3SIM	AT89C51CC03UA-S3SUM
AT89C51CC03U-SLRIM	AT89C51CC03UA-SLRUM
AT89C51CC03U-SLSIM	AT89C51CC03UA-SLSUM
AT89C51ED2-RDRIM	AT89C51ED2-RDRUM
AT89C51ED2-RDTIM	AT89C51ED2-RDTUM
AT89C51ED2-RDVIM	AT89C51ED2-RDTUM
AT89C51ED2-RLRIM	AT89C51ED2-RLRUM
AT89C51ED2-RLTIM	AT89C51ED2-RLTUM
AT89C51ED2-RLVIM	AT89C51ED2-RLTUM
AT89C51ED2-SLRIM	AT89C51ED2-SLRUM
AT89C51ED2-SLSIM	AT89C51ED2-SLSUM
AT89C51ED2-SLUIM	AT89C51ED2-SLSUM
AT89C51ED2-SMRIM	AT89C51ED2-SMRUM
AT89C51ED2-SMSIM	AT89C51ED2-SMSUM
AT89C51IC2-RLRIL	AT89C51IC2-RLRUL
AT89C51IC2-RLRIM	AT89C51IC2-RLRUM
AT89C51IC2-RLTIL	AT89C51IC2-RLTUL
AT89C51IC2-RLTIM	AT89C51IC2-RLTUM
AT89C51IC2-SLRIL	AT89C51IC2-SLRUL
AT89C51IC2-SLRIM	AT89C51IC2-SLRUM
AT89C51IC2-SLSCM	AT89C51IC2-SLSUM
AT89C51IC2-SLSIL	AT89C51IC2-SLSUL
AT89C51IC2-SLSIM	AT89C51IC2-SLSUM
AT89C51ID2-RDVIM	AT89C51ID2-RDTUM
AT89C51ID2-RLRIM	AT89C51ID2-RLRUM
AT89C51ID2-RLTIM	AT89C51ID2-RLTUM
AT89C51ID2-RLVIM	AT89C51ID2-RLTUM
AT89C51ID2-SLRIM	AT89C51ID2-SLRUM
AT89C51ID2-SLSIM	AT89C51ID2-SLSUM
AT89C51ID2-SLUIM	AT89C51ID2-SLSUM
AT89C51RB2-3CSIM	AT89C51RB2-3CSUM
AT89C51RB2-RLRIL	AT89C51RB2-RLRUL

Pb Part Number	Green-compliant Part Number
AT89C51RB2-RLRIM	AT89C51RB2-RLRUM
AT89C51RB2-RLTCM	AT89C51RB2-RLTUM
AT89C51RB2-RLTIL	AT89C51RB2-RLTUL
AT89C51RB2-RLTIM	AT89C51RB2-RLTUM
AT89C51RB2-SLRIL	AT89C51RB2-SLRUL
AT89C51RB2-SLRIM	AT89C51RB2-SLRUM
AT89C51RB2-SLSCM	AT89C51RB2-SLSUM
AT89C51RB2-SLSIL	AT89C51RB2-SLSUL
AT89C51RB2-SLSIM	AT89C51RB2-SLSUM
AT89C51RC2-3CSIM	AT89C51RC2-3CSUM
AT89C51RC2-RLRIL	AT89C51RC2-RLRUL
AT89C51RC2-RLRIM	AT89C51RC2-RLRUM
AT89C51RC2-RLTCM	AT89C51RC2-RLTUM
AT89C51RC2-RLTIL	AT89C51RC2-RLTUL
AT89C51RC2-RLTIM	AT89C51RC2-RLTUM
AT89C51RC2-SLRCM	AT89C51RC2-SLRUM
AT89C51RC2-SLRIL	AT89C51RC2-SLRUL
AT89C51RC2-SLRIM	AT89C51RC2-SLRUM
AT89C51RC2-SLSCM	AT89C51RC2-SLSUM
AT89C51RC2-SLSIL	AT89C51RC2-SLSUL
AT89C51RC2-SLSIM	AT89C51RC2-SLSUM
AT89C51RD2-RLRIM	AT89C51RD2-RLRUM
AT89C51RD2-RLTIM	AT89C51RD2-RLTUM
AT89C51RD2-RLVIM	AT89C51RD2-RLTUM
AT89C51RD2-SLRIM	AT89C51RD2-SLRUM
AT89C51RD2-SLSIM	AT89C51RD2-SLSUM
AT89C51RD2-SLUIM	AT89C51RD2-SLSUM
AT89C51SND1B-ROTIL	AT89C51SND1B-ROTUL
AT89C51SND1C-ROTIL	AT89C51SND1C-ROTUL
AT89EB5114OS-TGRIL	AT89EB5114OS-TGRUL
AT89EB5114-TGSIL	AT89EB5114-TGSUL
AT89SND1CDNC-ROTIL	AT89SND1CDNC-ROTUL
T80C51ID2-RLTIL	AT80C51ID2-RLTUL
T80C51ID2-RLTIM	AT80C51ID2-RLTUM
T80C51ID2-SLSCL	AT80C51ID2-SLSUL
T80C51ID2-SLSCM	AT80C51ID2-SLSUM
T80C51ID2-SLSIL	AT80C51ID2-SLSUL
T80C51ID2-SLSIM	AT80C51ID2-SLSUM
T80C51RD2-MIA	AT80C51RD2-3CSUM
T80C51RD2-RLTCL	AT80C51RD2-RLTUL
T80C51RD2-SLSCL	AT80C51RD2-SLSUL
T80C51RD2-SLSCM	AT80C51RD2-SLSUM
T85C5121-ICSIL	AT85C5121-ICSUL
T85C5121-S3SIL	AT85C5121-S3SUL
T89C5115-RATIM	AT89C5115-RATUM
T89C5115-SISIM	AT89C5115-SISUM
T89C5115-TISIM	AT89C5115-TISUM
T89C5121-ICUIL	AT89C5121-ICTUL

Pb Part Number	Green-compliant Part Number
T89C51AC2-RLTIM	AT89C51AC2-RLTUM
T89C51AC2-SLSIM	AT89C51AC2-SLSUM
T89C51CC01CA-RLTIM	AT89C51CC01CA-RLTUM
T89C51CC01CA-SLSIM	AT89C51CC01CA-SLSUM
T89C51CC01CU-SLSIM	AT89C51CC01CUA-SLSUM
T89C51CC01UA-RLRIM	AT89C51CC01UA-RLRUM
T89C51CC01UA-RLTIM	AT89C51CC01UA-RLTUM
T89C51CC01UA-RLVIM	AT89C51CC01UA-RLTUM
T89C51CC01UA-SLSIM	AT89C51CC01UA-SLSUM
T89C51CC02CA-RATIM	AT89C51CC02CA-RATUM
T89C51CC02CA-SISIM	AT89C51CC02CA-SISUM
T89C51CC02CA-TDSIM	AT89C51CC02CA-TDSUM
T89C51CC02CA-TISIM	AT89C51CC02CA-TISUM
T89C51CC02UA-RATIM	AT89C51CC02UA-RATUM
T89C51CC02UA-SISIM	AT89C51CC02UA-SISUM
T89C51CC02UA-TDSIM	AT89C51CC02UA-TDSUM
T89C51CC02UA-TISIM	AT89C51CC02UA-TISUM
T90FJR-5VV	AT90FJR-5VTX
TS80C31X2-LCA	AT80C31X2-3CSUL
TS80C31X2-LCB	AT80C31X2-SLSUL
TS80C31X2-LCBR	AT80C31X2-SLRUL
TS80C31X2-LCE	AT80C31X2-RLTUL
TS80C31X2-LIB	AT80C31X2-SLSUL
TS80C31X2-LIE	AT80C31X2-RLTUL
TS80C31X2-MCA	AT80C31X2-3CSUM
TS80C31X2-MCB	AT80C31X2-SLSUM
TS80C31X2-MCBR	AT80C31X2-SLRUM
TS80C31X2-MCE	AT80C31X2-RLTUM
TS80C31X2-MCED	AT80C31X2-RLTUM
TS80C31X2-MIA	AT80C31X2-3CSUM
TS80C31X2-MIB	AT80C31X2-SLSUM
TS80C31X2-MIBB	AT80C31X2-SLRUM
TS80C31X2-MIBR	AT80C31X2-SLRUM
TS80C31X2-MIE	AT80C31X2-RLTUM
TS80C32X2-LCA	AT80C32X2-3CSUL
TS80C32X2-LCB	AT80C32X2-SLSUL
TS80C32X2-LCBR	AT80C32X2-SLRUL
TS80C32X2-LCE	AT80C32X2-RLTUL
TS80C32X2-LCED	AT80C32X2-RLTUL
TS80C32X2-LCER	AT80C32X2-RLRUL
TS80C32X2-LIA	AT80C32X2-3CSUL
TS80C32X2-LIB	AT80C32X2-SLSUL
TS80C32X2-LIBR	AT80C32X2-SLRUL
TS80C32X2-LIE	AT80C32X2-RLTUL
TS80C32X2-LIEB	AT80C32X2-RLRUL
TS80C32X2-LIED	AT80C32X2-RLTUL
TS80C32X2-LIER	AT80C32X2-RLRUL
TS80C32X2-MCA	AT80C32X2-3CSUM

<b>Pb Part Number</b>	<b>Green-compliant Part Number</b>
TS80C32X2-MCB	AT80C32X2-SLSUM
TS80C32X2-MCBB	AT80C32X2-SLRUM
TS80C32X2-MCBD	AT80C32X2-SLTUM
TS80C32X2-MCBR	AT80C32X2-SLRUM
TS80C32X2-MCE	AT80C32X2-RLTUM
TS80C32X2-MCED	AT80C32X2-RLTUM
TS80C32X2-MIA	AT80C32X2-3CSUM
TS80C32X2-MIB	AT80C32X2-SLSUM
TS80C32X2-MIBB	AT80C32X2-SLRUM
TS80C32X2-MIBR	AT80C32X2-SLRUM
TS80C32X2-MIE	AT80C32X2-RLTUM
TS80C32X2-MIEB	AT80C32X2-RLRUM
TS80C32X2-MIED	AT80C32X2-RLTUM
TS80C51RA2-LCA	AT80C51RA2-3CSUL
TS80C51RA2-LCB	AT80C51RA2-SLSUL
TS80C51RA2-LCBD	AT80C51RA2-SLTUL
TS80C51RA2-LCBR	AT80C51RA2-SLRUL
TS80C51RA2-LCE	AT80C51RA2-RLTUL
TS80C51RA2-LIA	AT80C51RA2-3CSUL
TS80C51RA2-LIB	AT80C51RA2-SLSUL
TS80C51RA2-LIBR	AT80C51RA2-SLRUL
TS80C51RA2-LIE	AT80C51RA2-RLTUL
TS80C51RA2-LIED	AT80C51RA2-RLTUL
TS80C51RA2-MCA	AT80C51RA2-3CSUM
TS80C51RA2-MCB	AT80C51RA2-SLSUM
TS80C51RA2-MCBR	AT80C51RA2-SLRUM
TS80C51RA2-MCE	AT80C51RA2-RLTUM
TS80C51RA2-MCED	AT80C51RA2-RLTUM
TS80C51RA2-MIA	AT80C51RA2-3CSUM
TS80C51RA2-MIB	AT80C51RA2-SLSUM
TS80C51RA2-MIE	AT80C51RA2-RLTUM
TS80C51RD2-LCB	AT80C51RD2-SLSUL
TS80C51RD2-LCE	AT80C51RD2-RLTUL
TS80C51RD2-LCL	AT80C51RD2-RDTUL
TS80C51RD2-LIE	AT80C51RD2-RLTUL
TS80C51RD2-LIED	AT80C51RD2-RLTUL
TS80C51RD2-MCA	AT80C51RD2-3CSUM
TS80C51RD2-MCB	AT80C51RD2-SLSUM
TS80C51RD2-MCE	AT80C51RD2-RLTUM
TS80C51RD2-MCL	AT80C51RD2-RDTUM
TS80C51RD2-MIE	AT80C51RD2-RLTUM
TS87C51RB2-LCA	AT87C51RB2-3CSUL
TS87C51RB2-LCB	AT87C51RB2-SLSUL
TS87C51RB2-LCE	AT87C51RB2-RLTUL
TS87C51RB2-LCEB	AT87C51RB2-RLRUL
TS87C51RB2-LCED	AT87C51RB2-RLTUL
TS87C51RB2-LIA	AT87C51RB2-3CSUL
TS87C51RB2-LIB	AT87C51RB2-SLSUL

<b>Pb Part Number</b>	<b>Green-compliant Part Number</b>
TS87C51RB2-LIE	AT87C51RB2-RLTUL
TS87C51RB2-LIED	AT87C51RB2-RLTUL
TS87C51RB2-MCA	AT87C51RB2-3CSUM
TS87C51RB2-MCB	AT87C51RB2-SLSUM
TS87C51RB2-MCBR	AT87C51RB2-SLRUM
TS87C51RB2-MCE	AT87C51RB2-RLTUM
TS87C51RB2-MCED	AT87C51RB2-RLTUM
TS87C51RB2-MCER	AT87C51RB2-RLRUM
TS87C51RB2-MIA	AT87C51RB2-3CSUM
TS87C51RB2-MIB	AT87C51RB2-SLSUM
TS87C51RB2-MIBR	AT87C51RB2-SLRUM
TS87C51RB2-MIE	AT87C51RB2-RLTUM
TS87C51RC2-LCA	AT87C51RC2-3CSUL
TS87C51RC2-LCB	AT87C51RC2-SLSUL
TS87C51RC2-LCE	AT87C51RC2-RLTUL
TS87C51RC2-LCED	AT87C51RC2-RLTUL
TS87C51RC2-LIA	AT87C51RC2-3CSUL
TS87C51RC2-LIB	AT87C51RC2-SLSUL
TS87C51RC2-LIE	AT87C51RC2-RLTUL
TS87C51RC2-LIED	AT87C51RC2-RLTUL
TS87C51RC2-MCA	AT87C51RC2-3CSUM
TS87C51RC2-MCB	AT87C51RC2-SLSUM
TS87C51RC2-MCE	AT87C51RC2-RLTUM
TS87C51RC2-MCED	AT87C51RC2-RLTUM
TS87C51RC2-MIA	AT87C51RC2-3CSUM
TS87C51RC2-MIB	AT87C51RC2-SLSUM
TS87C51RC2-MIE	AT87C51RC2-RLTUM
TS87C51RC2-MIED	AT87C51RC2-RLTUM
TS87C52X2-MCB	AT87C52X2-SLSUM
TS87C52X2-MCBR	AT87C52X2-SLRUM
TS87C52X2-MCE	AT87C52X2-RLTUM
TS87C52X2-MCED	AT87C52X2-RLTUM
TS87C52X2-MIE	AT87C52X2-RLTUM
TS87C52X2-MIED	AT87C52X2-RLTUM
TS87C54X2-LCA	AT87C54X2-3CSUL
TS87C54X2-LCB	AT87C54X2-SLSUL
TS87C54X2-LCE	AT87C54X2-RLTUL
TS87C54X2-LCED	AT87C54X2-RLTUL
TS87C54X2-LIB	AT87C54X2-SLSUL
TS87C54X2-LIE	AT87C54X2-RLTUL
TS87C54X2-LIED	AT87C54X2-RLTUL
TS87C54X2-MCA	AT87C54X2-3CSUM
TS87C54X2-MCB	AT87C54X2-SLSUM
TS87C54X2-MCBR	AT87C54X2-SLRUM
TS87C54X2-MCE	AT87C54X2-RLTUM
TS87C54X2-MCED	AT87C54X2-RLTUM
TS87C54X2-MIA	AT87C54X2-3CSUM
TS87C54X2-MIB	AT87C54X2-SLSUM

<b>Pb Part Number</b>	<b>Green-compliant Part Number</b>
TS87C54X2-MIBR	AT87C54X2-SLRUM
TS87C54X2-MIE	AT87C54X2-RLTUM
TS87C58X2-LCA	AT87C58X2-3CSUL
TS87C58X2-LCB	AT87C58X2-SLSUL
TS87C58X2-LCE	AT87C58X2-RLTUL
TS87C58X2-LCED	AT87C58X2-RLTUL
TS87C58X2-LIA	AT87C58X2-3CSUL
TS87C58X2-LIB	AT87C58X2-SLSUL
TS87C58X2-LIE	AT87C58X2-RLTUL
TS87C58X2-MCA	AT87C58X2-3CSUM
TS87C58X2-MCB	AT87C58X2-SLSUM
TS87C58X2-MCE	AT87C58X2-RLTUM
TS87C58X2-MCED	AT87C58X2-RLTUM
TS87C58X2-MIA	AT87C58X2-3CSUM
TS87C58X2-MIB	AT87C58X2-SLSUM
TS87C58X2-MIBR	AT87C58X2-SLRUM
TS87C58X2-MIE	AT87C58X2-RLTUM
TS87C58X2-MIED	AT87C58X2-RLTUM
TSS461C:R	TSS461C-TDRZ
TSS461E-TDRA-9	TSS461E-TDRZ-9
TSS461E-TDSA-9	TSS461E-TDSZ-9
TSS463-AA:R	TSS463A-TERZ
TSS463B-TERA-9	TSS463B-TERZ-9
TSS463B-TESA-9	TSS463B-TESZ-9
TSSIO16E-TIRA	TSSIO16E-TIRZ
TSSIO16E-TISA	TSSIO16E-TISZ