

# Product Change Notification

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The information below reflects a change that is being implemented.

Notice Date: 11/11/2004

Product Category: Battery Management; Infrared Devices; Linear Devices; Mixed Signal Devices; Power Management; RS232; Supervisor; Thermal Management; dsPIC; CAN Communication; Infrared Communication; LIN Communication; Serial Communication; 24xxx; 25xxx; 93xxx; Other; PIC12xxx; PIC16xxx; PIC17xxx; PIC18xxx; rPIC; RFID; SDP

Notification Subject: Change #453 Update - Pb Free Conversion Plan

Notification Body:

Microchip Part#s Affected

Microchip SnPb-plated packages. See "Additional Comments" section below for detailed list of affected packages.

Description of Change:

Affected Microchip devices will change from SnPb (tin/lead) plating to matte tin (Sn) plating on the device leads. The base leadframe material (copper) is not changing, only the final plating material.

1. All devices have been qualified to meet the 260C Pb-free soldering temperatures required by Pb-free solder reflow processes and can use Pb-free soldering paste such as Sn/Ag/Cu.
2. This new matte tin finish is also backward compatible with existing SnPb soldering temperatures down to 215C and can use standard SnPb soldering paste. Therefore, no action is required on your part due to this change.
3. During a transition period you may receive parts with either SnPb or Sn-only plating, due to existing inventory of SnPb-plated product.

Impacts to Data Sheet:

No data sheet parameters are affected.

Reason for Change:

1. New regulations being imposed in Europe (RoHS) and some Asian countries necessitate the elimination of lead (Pb) in electronics manufacturing processes. The conversion from SnPb finish to matte tin plating on the device leads is being implemented to meet these new requirements.
2. The electronic component industry worldwide is affected and will begin

using Pb-free plating compound soon. Many manufacturers will use matte tin plating similar to that chosen by Microchip.

3. Matte tin was chosen above other plating materials due to its backward- and forward-compatibility with both SnPb and Pb-free solder reflow processes and its similar cost structure to SnPb plating.

Estimated Change Implementation Date(s):  
January, 2005

Markings to Distinguish Revised From Unrevised Devices: (e.g.: Date Code, Device Marking, Ship Container Marking)

1. A JEDEC-standard (e3) logo for Matte tin plating will be added to topside mark where space permits.

2. Cartons, bags and/or reels will be marked with a new label showing both a standard "Pb-free" mark and the new JEDEC (e3) logo. Once each package begins its first production lot with the new matte tin plating, the date code of that lot will be published on Microchip's website: [www.microchip.com](http://www.microchip.com). Please refer to device datasheets to decode the top mark trace codes and contact any Microchip sales office for assistance if needed.

Summary of Qualification Results: (Reference Report Number if applicable):  
Pb-Free Summary Qualification Report (See [www.microchip.com/pbfree](http://www.microchip.com/pbfree))

Additional Comments:

This conversion is for the following packages. Note that all pin counts within each package type are affected.

Package name (Microchip package designator)

CERDIP (JA, JD, JE, JG, JI, JL, JW)

DPAK (VB)

DDPAK (EB, EK, ET)

DFN (MF [3x3])

LQFP (LQ)

MQFP (KU, KW)

MSOP (MS, UA, UN)

PDIP (P, PA, PD, PE, PF, PG, PI, PJ, PL)

PLCC (L, LS, LI, LW, W)

PQFP (LQ, PQ)

QFN (ML)

QSOP (QR)

SC70 (LB, LT)

SOIC and SOIJ (SL, SN, SM, SO, OA, OD, OG, OI, OR)

SOT-143 (RC)

SOT-223 (DB)

SOT-23 (CB, CH, CT, NB, OT, TT)

SOT-89 (MB, MT)

SPDIP (PJ, SP)

SSOP (SI, SS)

SOP (HA)

TO-220 (AB, AK, AT, AV, BB)

TO-92 (TO, ZB, ZM)  
TQFP (PF, PT)  
TSSOP (ST)

Note that the following four packages have already been changed to matte tin. See Microchip Change Notifications 453, 453A and 524.

14-lead TSSOP (Package code = ST14 or ST)  
8-lead TSSOP (Package code = ST)  
6-lead SOT-23 (Package code = OT)  
8-lead DFN (Package code = MF [6x5])

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