

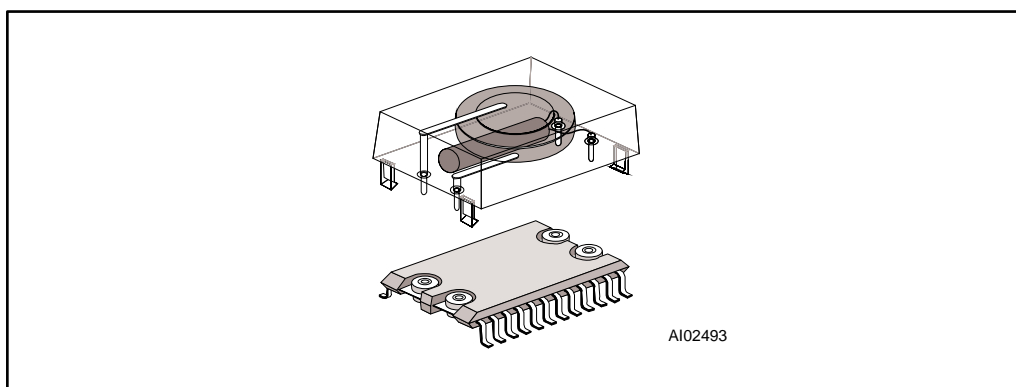
Second source for SNAPHAT[®] using a dual footprint

Introduction

By integrating a battery and power switching circuitry in its ZEROPOWER[®] memory devices, STMicroelectronics was the first to develop non-volatile CMOS Static RAM technology. This is conventional, high-speed, low-power, random access, read/write memory that retains its data even when the external power is removed. By further integrating a crystal oscillator and a real-time clock in the package for its TIMEKEEPER[®] products, STMicroelectronics provides, in a single chip package, non-volatile SRAM and timekeeping that continues to run without external power.

STMicroelectronics has subsequently extended the technique to work with surface-mount packaging, in a product range that is known as the SNAPHAT[®] (as shown in [Figure 1: "SOIC and SNAPHAT[®] package"](#)). The standard 28-pin or 44-pin SOIC allows the SNAPHAT (containing the battery and crystal) to be mounted on top of the SOIC package after completion of the surface mount process, thereby avoiding these components from being exposed to the high temperatures of the surface-mounting process.

Figure 1: SOIC and SNAPHAT[®] package

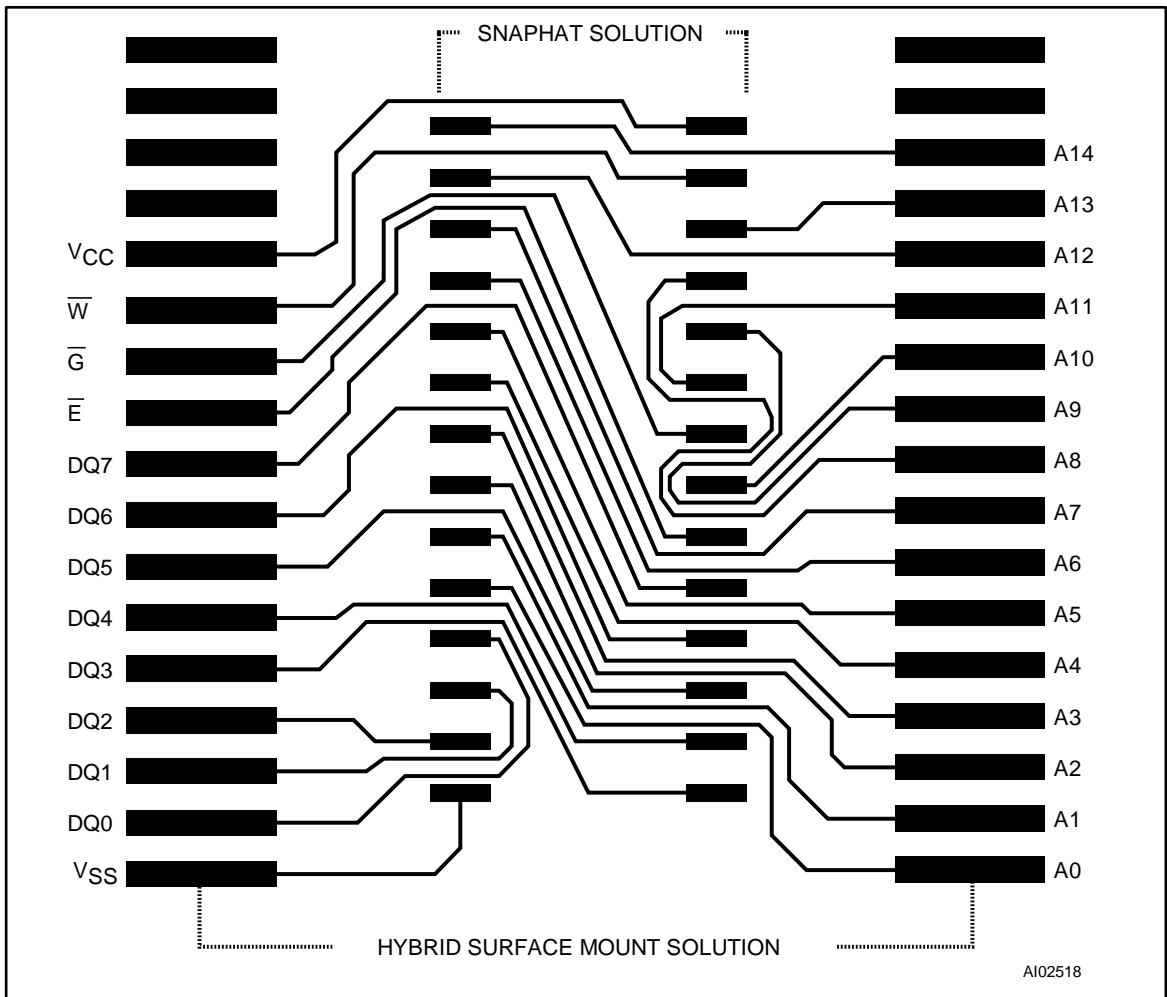


1 Overview

The SNAPHAT[®] assembly process is fully automated and consistently produces a highly reliable product in volume. This automated equipment takes advantage of microcomputer controlled robotics to obtain the reproducible accuracy required to pick, place, weld and encapsulate both battery and crystal in the SNAPHAT[®] package.

However, although we are proud to be the industry's sole source of this technology, we recognize that many customers will be unable to take advantage of it unless we can also provide a path to a second source. Thus, a recommended dual footprint has been designed, and is shown in [Figure 2: "Dual footprint for the Maxim Integrated hybrid device and the ST ZEROPOWER[®] or TIMEKEEPER SNAPHAT[®] device"](#). This suggested board layout uses a Maximum Integrated hybrid surface mount device in order to provide an alternative for the M48T58/Y, M48T59, M48T35/Y, or M48T35AV. Traces have been laid out on a single level with a minimum width and space of 6 mils.

Figure 2: Dual footprint for the Maxim Integrated hybrid device and the ST ZEROPOWER[®] or TIMEKEEPER SNAPHAT[®] device



2 Revision history

Table 1: Document revision history

Date	Version	Change
Dec-1998	1	Initial release
01-Nov-2013	2	Textual updates; revised document presentation

Please Read Carefully

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN ST'S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

ST PRODUCTS ARE NOT DESIGNED OR AUTHORIZED FOR USE IN: (A) SAFETY CRITICAL APPLICATIONS SUCH AS LIFE SUPPORTING, ACTIVE IMPLANTED DEVICES OR SYSTEMS WITH PRODUCT FUNCTIONAL SAFETY REQUIREMENTS; (B) AERONAUTIC APPLICATIONS; (C) AUTOMOTIVE APPLICATIONS OR ENVIRONMENTS, AND/OR (D) AEROSPACE APPLICATIONS OR ENVIRONMENTS. WHERE ST PRODUCTS ARE NOT DESIGNED FOR SUCH USE, THE PURCHASER SHALL USE PRODUCTS AT PURCHASER'S SOLE RISK, EVEN IF ST HAS BEEN INFORMED IN WRITING OF SUCH USAGE, UNLESS A PRODUCT IS EXPRESSLY DESIGNATED BY ST AS BEING INTENDED FOR "AUTOMOTIVE, AUTOMOTIVE SAFETY OR MEDICAL" INDUSTRY DOMAINS ACCORDING TO ST PRODUCT DESIGN SPECIFICATIONS. PRODUCTS FORMALLY ESCC, QML OR JAN QUALIFIED ARE DEEMED SUITABLE FOR USE IN AEROSPACE BY THE CORRESPONDING GOVERNMENTAL AGENCY.

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

© 2013 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy
- Japan - Malaysia - Malta - Morocco - Philippines - Singapore - Spain - Sweden - Switzerland - United Kingdom - United
States of America

www.st.com