



## Solving Second Sourcing Issues with the 24LC00 Device in a SOT-23 Package

### INTRODUCTION

Many potential customers of the 24LC00 have expressed interest in the device, especially with it available in the ultra-small SOT-23 package. The one thing that has kept customers from designing in or qualifying the 24LC00 is the fact that it is a proprietary device without a second source. Because of this issue, Microchip Technology Inc. has put together this application note to assist customers in designing their applications to except a 24LC00 in a SOT-23 or a standard 1K-bit I<sup>2</sup>C device in an 8-lead, 150 mil SOIC package.

### HARDWARE/LAYOUT CONSIDERATIONS

Figure 1 below shows a board layout having both packages to scale with respect to each other. One can see from the figure that if the 24LC00 is placed as shown, a board can be easily designed to accept both devices. The connection from SCL on the 24LC00 to the SCL pad location on a standard I<sup>2</sup>C device is shown as a dashed line as it runs underneath the 24LC00.

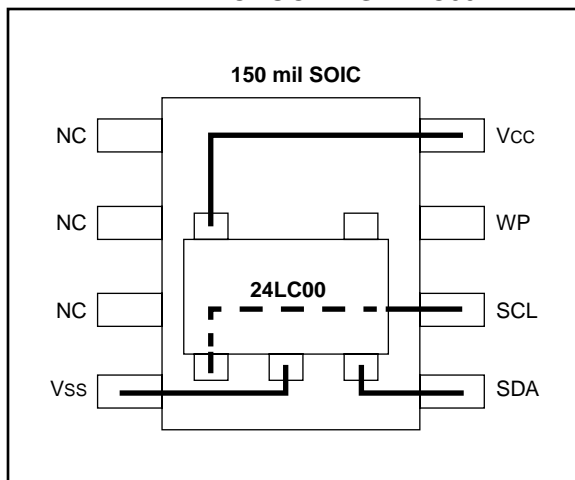
Since the 24LC00 does not have a WP pin, no connection was made from the 24LC00 to the WP pin of a standard I<sup>2</sup>C device. Most devices that contain WP pins require it to be tied to either Vcc or Vss, so a trace running to the WP pad will required for most applications.

### SOFTWARE CONSIDERATIONS

The Microchip 24LC00 is the only 16 byte device on the market that has a full function I<sup>2</sup>C interface. That means standard software routines that have been written for I<sup>2</sup>C communication will work with the 24LC00 device. In addition, Microchip offers I<sup>2</sup>C communication application notes and source code available for download on our web site ([www.microchip.com](http://www.microchip.com)).

The 24LC00 does not include page-write capability found on most of the industry's 1K-bit and higher I<sup>2</sup>C Serial EEPROMs. Software written for the 24LC00 will be able to be utilized without modification in systems where an industry standard 1K I<sup>2</sup>C Serial EEPROM is used. The one caveat is that the 24LC00 will answer to any I<sup>2</sup>C memory address from 000 to 111. Some 1K I<sup>2</sup>C Serial EEPROMs in the market have active address inputs, and therefore answer only to the address that is specified by the state of the three address inputs. Care must be taken to make sure address inputs match the application software if a second source device with active address inputs is chosen.

**FIGURE 1: BOARD LAYOUT ALLOWING SECOND SOURCING OF MICROCHIP'S 24LC00**



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- The PICmicro family meets the specifications contained in the Microchip Data Sheet.
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01/18/02