Bus Interface Logic Circuit

Features

- **Comparators, counters, latches, and drivers minimize logic requirements for a variety of multiplexed and non-multiplexed buses**
- **Directly drives VMEbus address and data signals**
- **8-bit comparator for slave address decoding**
- **Flexible interface optimized for VMEbus applications**
- **Companion device to Cypress VMEbus family of components**
- **Replaces multiple SSI/MSI components**
- **Cascadable**
- **64-pin QFP**
- **See the *VMEbus Interface Handbook* for more information**

Functional Description

The CY7C964A integrates several space-consuming functions into one small package, freeing board space for the implementation of added-value board features. It contains counters, comparators, latches, and drivers configured to be of value to implementors of any backplane interface with address and data buses, particularly VMEbus interfaces. The on-chip drivers are suitable for driving the VMEbus directly. The CY7C964A is ideal in applications where high-performance and real estate are primary concerns.

Although having many applications, the Bus Interface Logic Circuit is an ideal companion part to Cypress's VMEbus family of components, the VIC068A, VIC64, and the CY7C960A. It is intended to drive the address and data buses, so three or four of these small devices are needed per controller. In every case, the controllers provide the control and timing signals to the Bus Interface Logic Circuit as it acts as a bridge between the VMEbus and the Local bus.

Application with VMEbus Architecture

Use with Cypress VMEbus Controllers

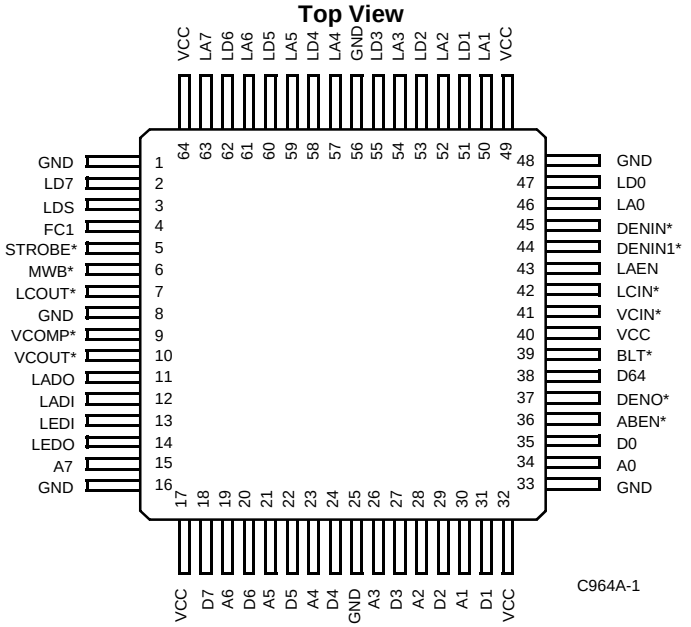
The CY7C964A Bus Interface Logic Circuit is a seamless interface between the VIC068A/VIC64 and the VMEbus signals. The device functions equally well in the established 32-bit VMEbus arena and the new 64-bit VMEbus standard. The device contains three 8-bit counters to fulfill the functions of Block counters, and DMA counters as implied by the D64 portion of the VMEbus specification. It also contains the necessary multiplexing logic to allow the 64-bit-wide VMEbus path to be funnelled to and from the 32-bit local bus. Control circuitry is included to manage the switching of the 32-bit address bus during normal (32-bit) operations, and during MBLT (64-bit) operations. The on-chip drivers are capable of driving the VMEbus directly (48 mA).

Use in Other VMEbus Controller Implementations

The CY7C964A circuitry is designed to be of use to designers of VMEbus circuitry, including VSB (VME subsystem bus) and designs not requiring the features of the Cypress VIC068A, VIC64, and CY7C960A. The logic diagram includes general-purpose blocks of comparators, counters, and latches that can be controlled using the flexible control interface to allow many different options to be implemented. Although the device is offered in a small 64-pin package, the use of multiplexed input and output pins provides access to the many internal functions, thus saving external circuitry.

Pin Configuration

PQFP/CQFP/TQFP
Top View



Application with Other Bus Architectures

The CY7C964A is optimized for applications requiring wide buffers and high-performance multiplexing operations. The architecture can be configured to provide functions such as 16-bit bidirectional three-state latch and 16-bit comparator with mask register, or more complex functions such as 16-to-8 pipelined bidirectional multiplexer with address counter/comparator circuitry. The device can be cascaded to generate counters and comparators suitable for multiple byte address/data buses. The on-chip 48 mA drivers can be directly connected to many standard backplane buses.

Ordering Information

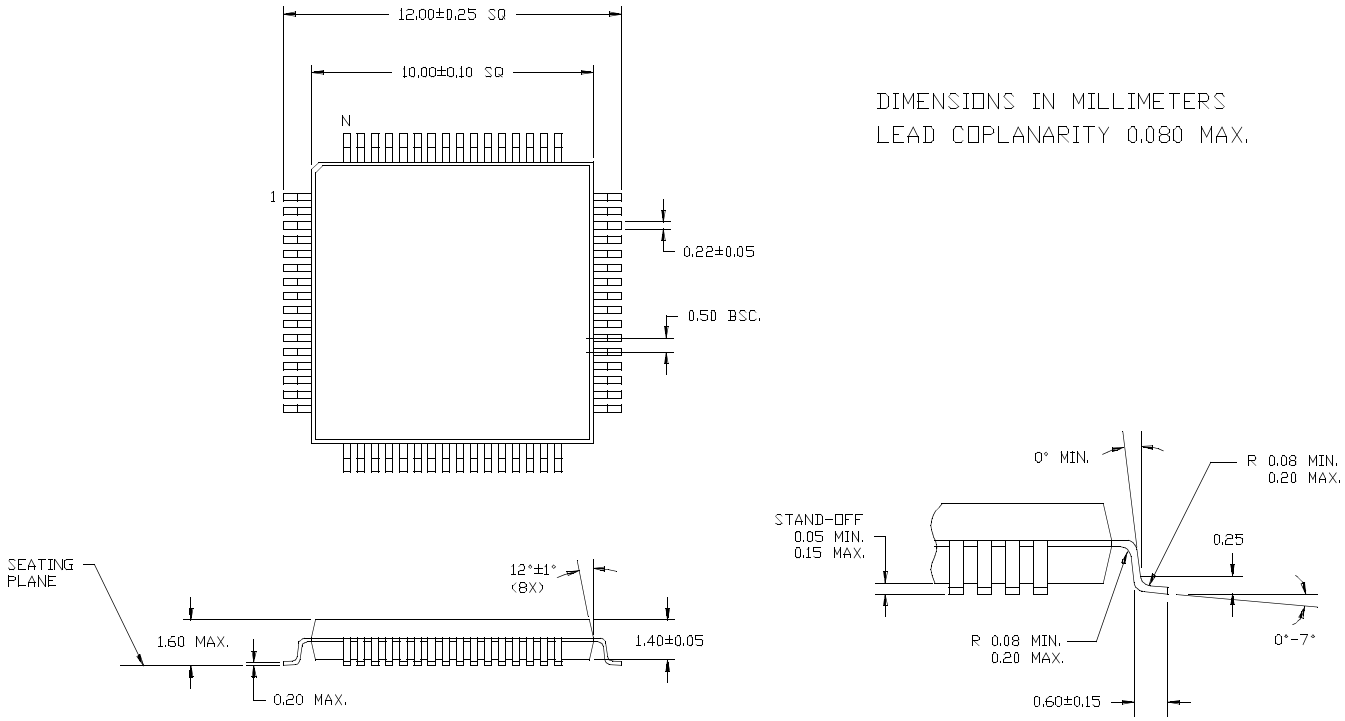
Ordering Code	Package Name	Package Type	Operating Range
CY7C964A–ASC	A64	64-Pin Thin Quad Flatpack	Commercial
CY7C964A–NC	N65	64-Pin Plastic Quad Flatpack	
CY7C964A–UM	U65	64-Pin Ceramic Quad Flatpack	Military
CY7C964A–UMB	U65	64-Pin Ceramic Quad Flatpack	

Related Documents

VMEbus Interface Handbook

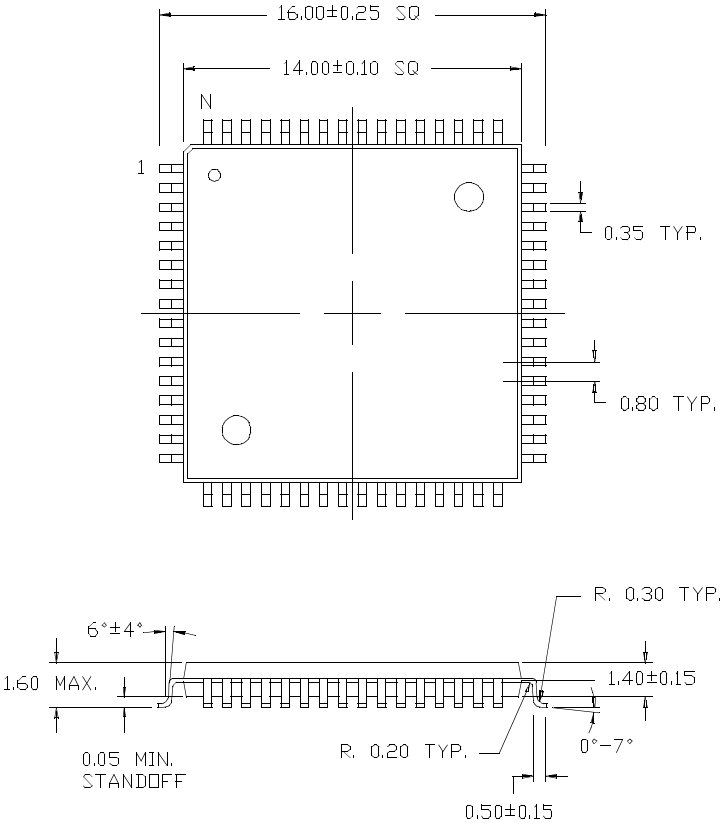
Package Diagrams

64-Pin Thin Quad Flatpack A64



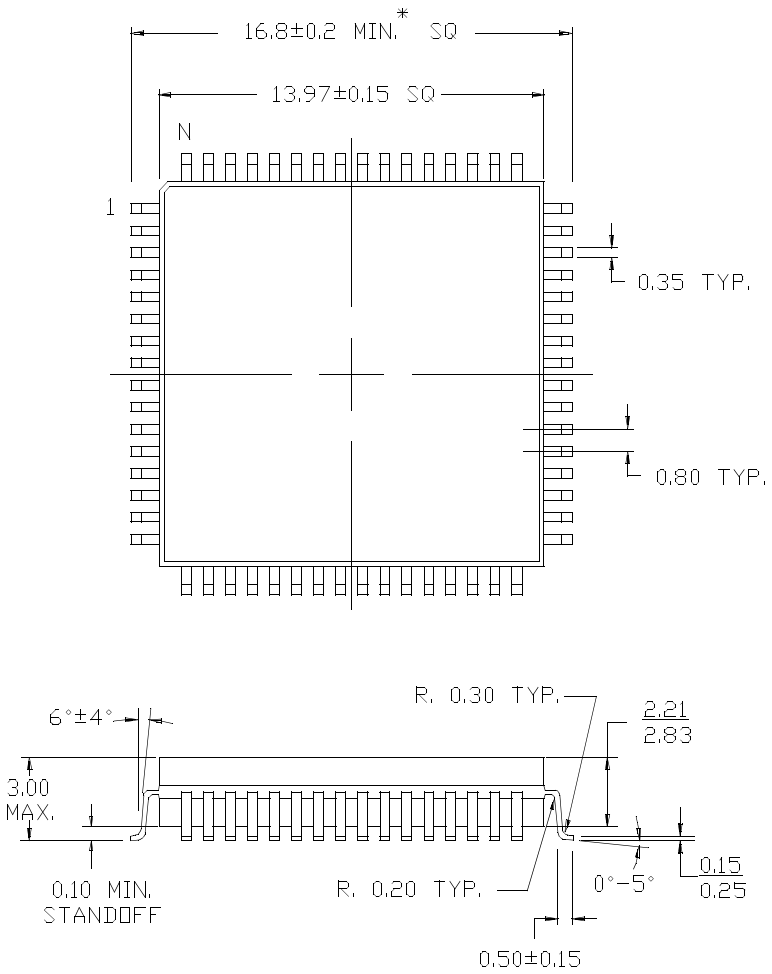
Package Diagrams (continued)

64-Lead Plastic Thin Quad Flatpack N65



Package Diagrams (continued)

64-Lead Ceramic Quad Flatpack (Cavity Up) U65



DIMENSIONS IN MILLIMETERS

LEAD COPLANARITY 0.102 MAX.

DIMENSION	MIN. / MAX.

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REV.	**ECN NO.**	**Issue Date**	**Orig. of Change**	**Description of Change**
**	106236	04/20/01	SZV	Change from Spec number: 38-00197 to 38-09001
*A	107043	06/12/01	KBN	Change from CY7C964 to CY7C964A; removed GMB and GM packages