PRELIMINARY

CYM9236
CYM9237

128K/256K Cache Module for the UMC491 Chip Set

Features

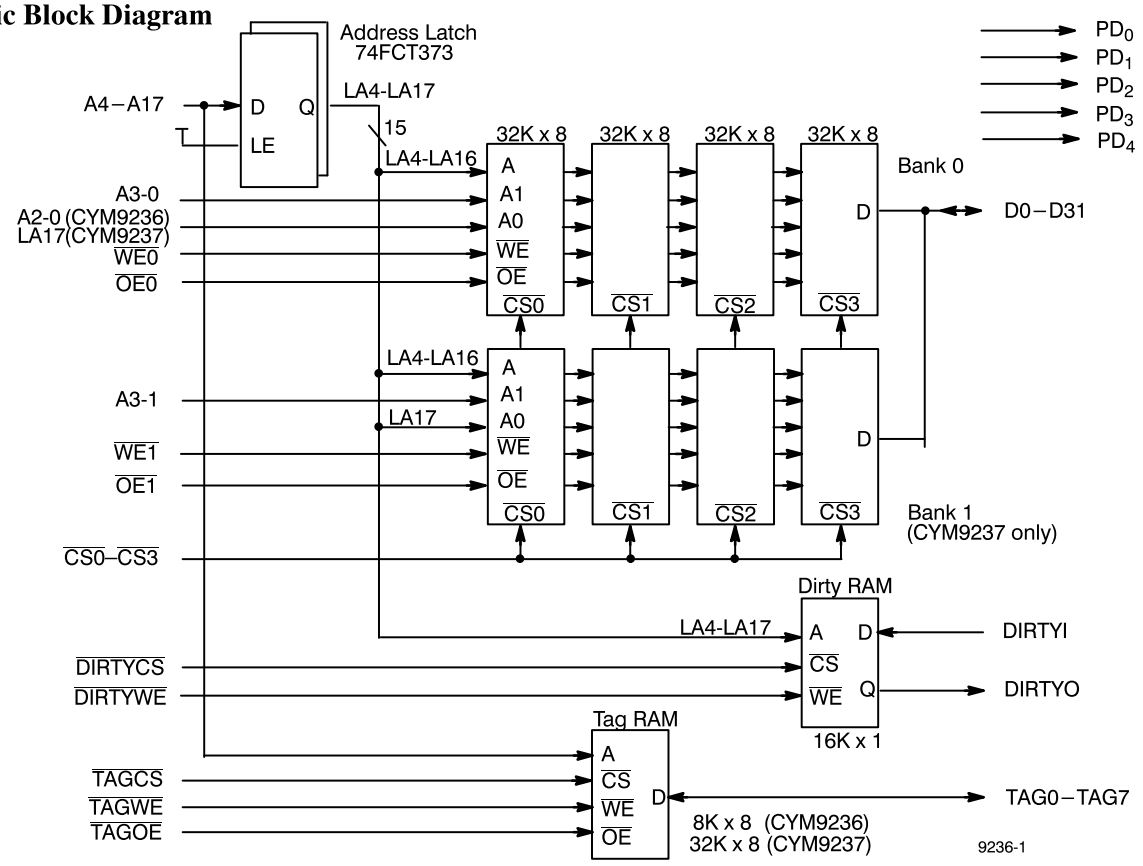
- **128 K-byte (CYM9236) or 256 K-byte (CYM9237) secondary cache module organized as 32K by 32 or 64K by 32**
- **Ideal for Intel™ 486-based systems with the UMC491 chip-set**
- **Zero-wait-state operations at 33 MHz**
- **Constructed using cost-effective CMOS asynchronous SRAMs**
- **On-board decoupling capacitors offer improved noise immunity**
- **112-position Burndy connector, part # CELP2X56SC3Z48**
- **5V (±5%) power supply**
- **TTL-compatible inputs/outputs**

Functional Description

These modules are designed specially to function as the secondary cache in Intel 486-based systems with the UMC491 chip-set. Each module contains either one or two banks of 32-bit wide data SRAMs, an 8-bit wide tag RAM, and a single-bit dirty RAM with separate I/O. The addresses for the data and the dirty SRAMs are buffered by an on-board latch. Asynchronous CMOS SRAMs are used to provide a low-cost, low-power, and zero-wait-state solution for CPU speeds up to 33 MHz. Multiple ground pins and on-board decoupling capacitors ensure maximum protection from noise.

Each module interfaces with the rest of the system via a 112-pin Burndy connector. All components on the cache module are surface mounted on a multi-layer epoxy laminate (FR-4) board. The package dimensions are 3.15″ x 0.365″ x 1.1″. All inputs and outputs of the CYM9236 and CYM9237 cache modules are TTL compatible and operate from a single 5V power supply. The contact pins are plated with 100 micro-inches of nickel covered by 5 micro-inches of gold flash.

Logic Block Diagram



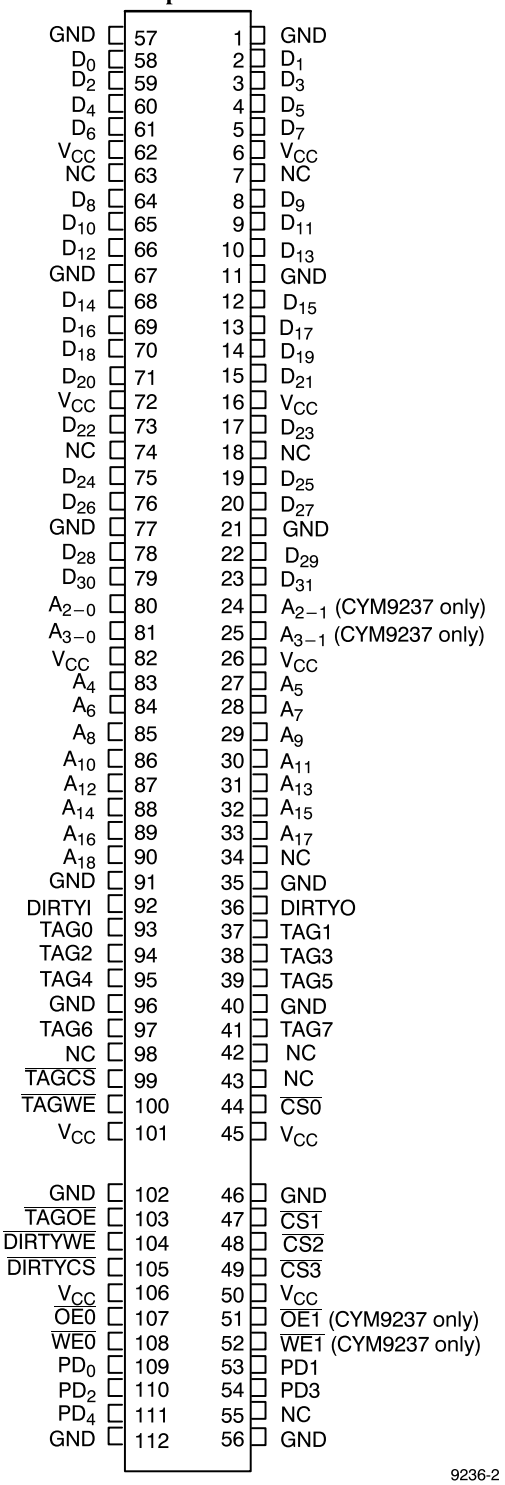
Selection Guide

	CYM9236PB–20C	CYM9237PB–20C
Cache Size (KB)	128	256
Data SRAM (ns)	20	20
Dirty SRAM (ns)	15	15
Tag/Valid SRAM (ns)	15	15

Intel is a trademark of Intel Corporation.

Pin Configuration

Dual Read-out SIMM
Top View



9236-2

Maximum Ratings

(Above which the useful life may be impaired. For user guidelines, not tested.)

Storage Temperature ..... −55°C to +125°C

Ambient Temperature with Power Applied ..... −0°C to +70°C

Supply Voltage to Ground Potential ..... −0.5V to +7.0V

DC Voltage Applied to Outputs in High Z State ..... −0.5V to +7.0V

DC Input Voltage ..... −0.5V to +7.0V

Output Current into Outputs (LOW) ..... 20 mA

Operating Range

Range	Ambient Temperature	V_{CC}
Commercial	0°C to +70°C	5V ± 5%

Electrical Characteristics Over the Operating Range

Parameter	Description	Test Conditions	CYM9236 CYM9237		Unit
			Min.	Max.	
V_{OH}	Output HIGH Voltage	V_{CC}=Min., I_{OH}=−4.0 mA	2.4		V
V_{OL}	Output LOW Voltage	V_{CC}=Min., I_{OL}=8.0 mA		0.4	V
V_{IH}	Input HIGH Voltage		2.2	V_{CC}+0.3	V
V_{IL}	Input LOW Voltage		−0.5	0.8	V
I_{CC}	V_{CC} Operating Supply Current (CYM9236 only).	V_{CC}=Max., I_{OUT}=0 mA, f=f_{MAX}=1/t_{RC}		1050	mA
I_{CC}	V_{CC} Operating Supply Current (CYM9237 only).	V_{CC}=Max., I_{OUT}=0 mA, f=f_{MAX}=1/t_{RC}		1800	mA

Presence Detect Table

	PD_4	PD_3	PD_2	PD_1	PD_0
CYM9236	NC	NC	NC	NC	GND
CYM9237	NC	NC	NC	GND	NC

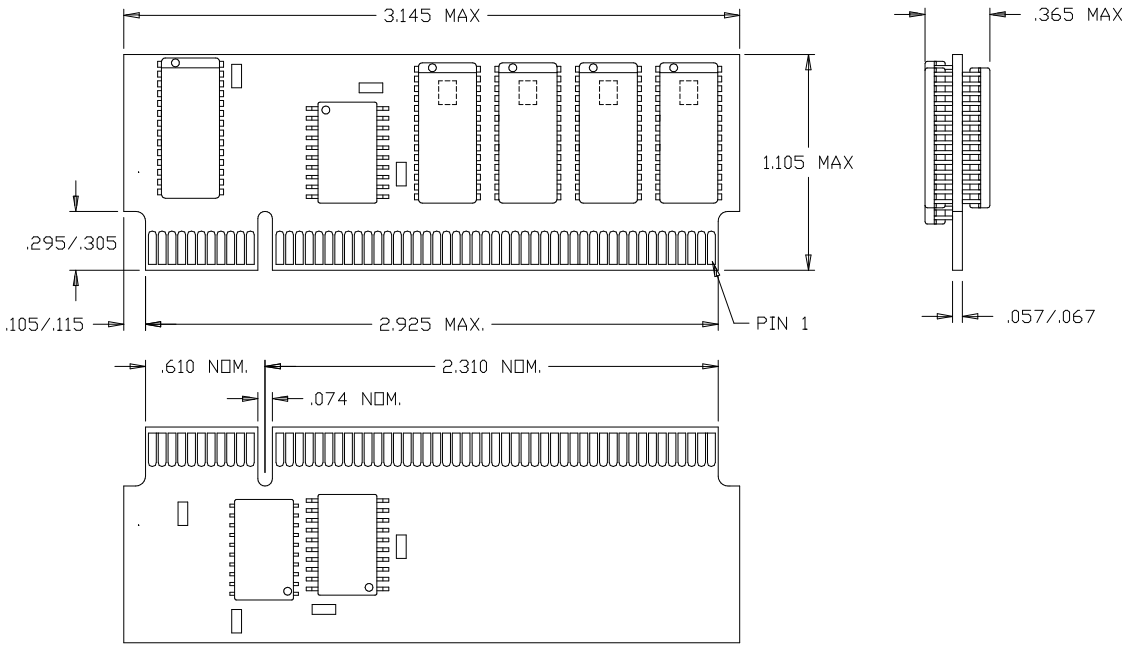
Ordering Information

Cache Memory Size	Ordering Code	Package Name	Package Type	Operating Range
128 K-byte	CYM9236PB−20C	PM17	112-Pin Dual-Readout SIMM	Commercial
256 K-byte	CYM9237PB−20C	PM18	112-Pin Dual-Readout SIMM	Commercial

Document #: 38−M−00069

Package Diagrams

112-Pin Dual-Readout SIMM PM17



112-Pin Dual-Readout SIMM PM18