



PRELIMINARY

CYM74P430B/431B CYM74P434B/435B

Intel™ 82430FX, HX, VX PCIset Pipelined L2 Cache Modules

Features

- Secondary cache modules that are ideal for the Intel 82430FX, 82430HX, and 82430VX chip sets
- Complies with Intel COAST 3.0 cache module specifications
- High-performance cache modules based on synchronous pipelined 32Kx32 data BSRAM
- All modules contain series damping resistors on the data lines to improve system signal quality
- Operates at 50, 60, and 66 MHz

- 160-position connector is compatible with all four Keying Options defined in COAST 3.0.
- 3.3V compatible inputs/data outputs

Functional Description

The cache modules are designed for Intel P54C/P55C systems with the 82430FX, 82430HX, and 82430VX chip sets. The CYM74P430B/431B/434B/435B modules are based on industry standard 32Kx32 synchronous pipelined BSRAM.

The CYM74P430B (256-Kbyte) and CYM74P431B (512-Kbyte) are high performance modules compatible with all three chipsets.

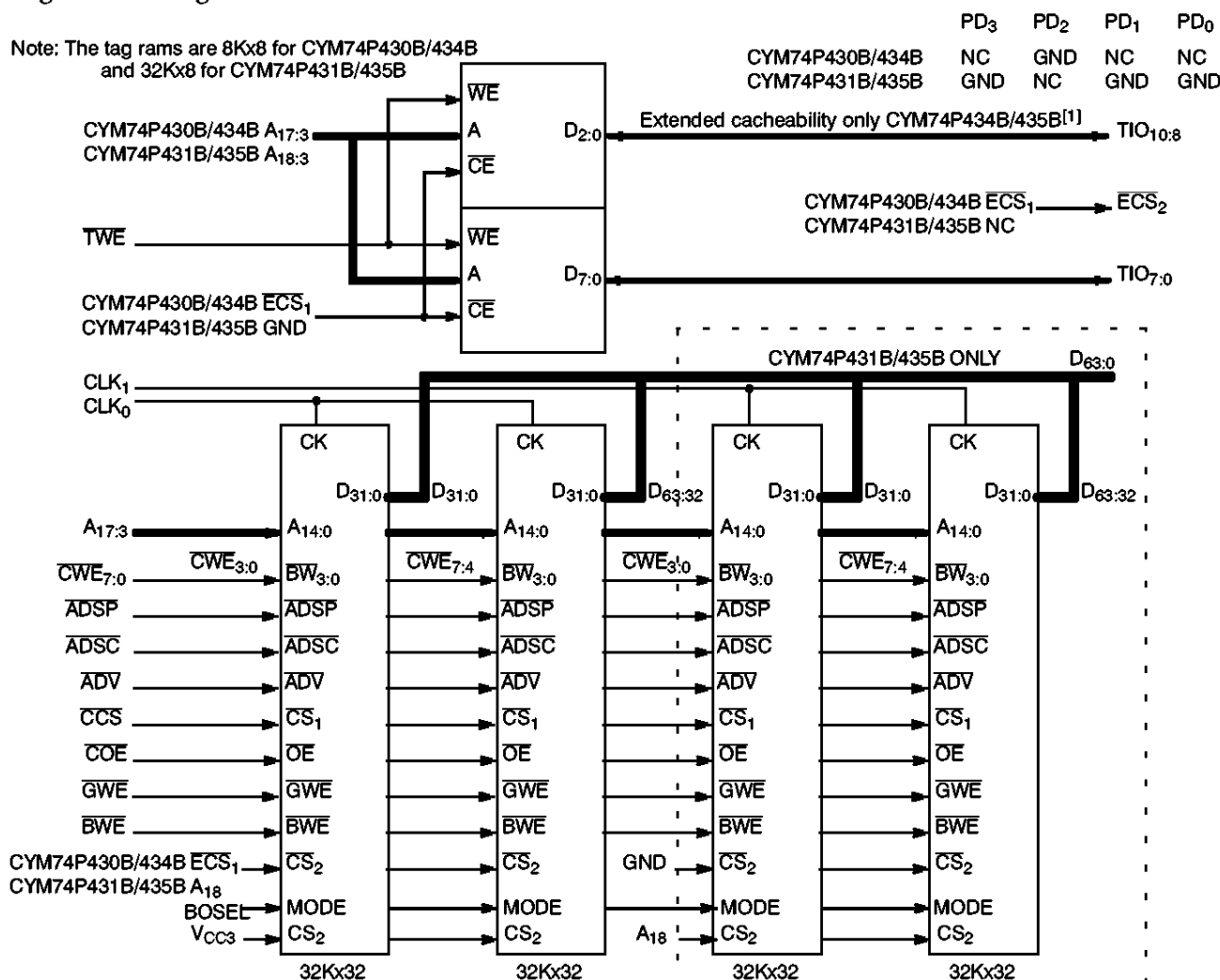
The CYM74P434B (256-Kbyte) and CYM74P435B (512-Kbyte) are high performance modules with extended cacheability for systems based on the 82430HX chipset.

Multiple ground pins and on-board decoupling capacitors ensure high performance with maximum noise immunity. All modules have series damping resistors on the data lines.

All components on the cache modules are surface mounted on a multi-layer epoxy laminate (FR-4) substrate. The contact pins are plated with 150 micro-inches of nickel covered by 30 micro-inches of gold.

Logic Block Diagram

Note: The tag rams are 8Kx8 for CYM74P430B/434B and 32Kx8 for CYM74P431B/435B



Note: All modules have series damping resistors on each data line between the SRAM and the module connector.

Intel is a trademark of Intel Corporation.



Selection Guide

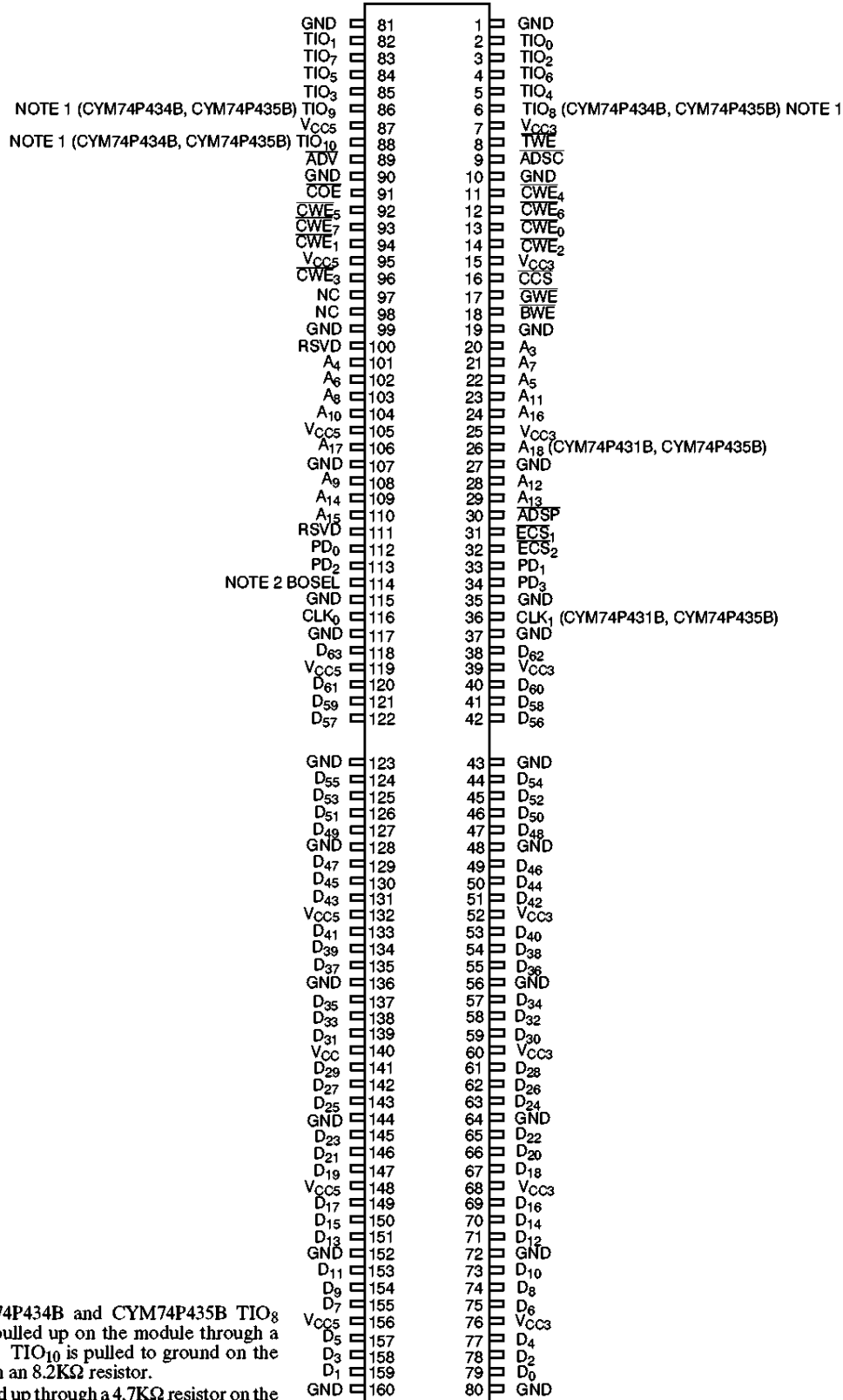
	Synchronous Pipelined Cache Modules					
Part Number	74P430B-50	74P430B-60	74P430B-66	74P431B-50	74P431B-60	74P431B-66
Cache Size	256 KB			512 KB		
System Clock (MHz)	50	60	66	50	60	66
Data SRAM t_{CO} w/0 pF loading	13.5 ns	10 ns	8.5 ns	13.5 ns	10 ns	8.5 ns
Tag SRAM t_{AA}	20 ns	15 ns	15 ns	20 ns	15 ns	15 ns

	Synchronous Pipelined Cache Modules with Extended Cacheability					
Part Number	74P434B-50	74P434B-60	74P434B-66	74P435B-50	74P435B-60	74P435B-66
Cache Size	256 KB			512 KB		
System Clock (MHz)	50	60	66	50	60	66
Data SRAM t_{CO} w/0 pF loading	13.5 ns	10 ns	8.5 ns	13.5 ns	10 ns	8.5 ns
Tag SRAM t_{AA}	20 ns	15 ns	15 ns	20 ns	15 ns	15 ns



Pin Configuration

Dual Read-Out SIMM (DIMM)
Top View



Notes:

- For the CYM74P434B and CYM74P435B TIO₈ and TIO₉ are pulled up on the module through a 8.2KΩ resistor. TIO₁₀ is pulled to ground on the module through an 8.2KΩ resistor.
- BOSEL is pulled up through a 4.7KΩ resistor on the module for backward compatible operation in systems not supporting BOSEL operation.



Pin Definitions

Common Signals	Description
V _{CC5}	5V Supply
V _{CC3}	3.3V Supply
GND	Ground
A _{18:3}	Addresses from processor
$\overline{\text{COE}}$	Output Enable
$\overline{\text{CWE}}_{7:0}$	Byte Write Selects
$\overline{\text{BWE}}$	Byte Write Enable
$\overline{\text{GWE}}$	Global Write Enable
D _{63:0}	Data lines from processor
TIO _{7:0}	Tag data bits
TIO _{10:8}	Extended cacheability tag data bits for CYM74P434B or CYM74P435B
$\overline{\text{TWE}}$	Tag Write Enable signal
ADSP	Processor Address Strobe
ADSC	Cache Controller Address Strobe
ADV	Burst Address Advance
CCS	Cache Chip Select
$\overline{\text{ECS}}_1$	256-Kbyte Expansion Chip Select input pin (CYM74P430B or CYM74P434B)
$\overline{\text{ECS}}_2$	256-Kbyte Expansion Chip Select output pin (CYM74P430B or CYM74P434B)
CLK _{1:0}	Clock signals, CLK ₁ is not used on CYM74P430B or CYM74P434B
PD _{3:0}	Presence Detect output pins
BOSEL	Burst Order Select. When LOW, linear burst sequence is selected. When HIGH, interleaved burst sequence is selected. If not driven (a no-connect on the motherboard) a pull-up resistor on the module will default to interleaved burst sequence.
RSVD	Reserved.
NC	Signal not connected on module.

Presence Detect Pins

	PD ₃	PD ₂	PD ₁	PD ₀
CYM74P430B, CYM74P434B	NC	GND	NC	NC
CYM74P431B, CYM74P435B	GND	NC	GND	GND



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
- 3.3V Supply Voltage to Ground Potential -0.5V to +4.6V
- 5V Supply Voltage to Ground Potential -0.5V to +7.0V
- DC Voltage Applied to Outputs in High Z State -0.5V to +4.6V

- DC Input Voltage -0.5V to +4.6V
- Output Current into Outputs (LOW) 20 mA

Operating Range

Range	Ambient Temperature	V _{CC5}	V _{CC3}
Commercial	0° to 70°C	5V ± 5%	3.3V +10%–5%

Electrical Characteristics Over the Operating Range

Parameter	Description	Test Condition	Min.	Max.	Unit
V _{IH}	Input HIGH Voltage		2.0	V _{CC3} + 0.3	V
V _{IL}	Input LOW Voltage		-0.3	0.8	V
V _{OH}	Output HIGH Voltage	V _{CC} =Min. I _{OH} = -4 mA	2.4		V
V _{OL}	Output LOW Voltage	V _{CC} =Min. I _{OL} = 8 mA		0.4	V
I _{CC} (74P430B)	V _{CC} Operating Supply Current	V _{CC} =Max., I _{OUT} =0 mA, f=f _{MAX}		750	mA
I _{CC} (74P431B)	V _{CC} Operating Supply Current	V _{CC} =Max., I _{OUT} =0 mA, f=f _{MAX}		1400	mA
I _{CC} (74P434B)	V _{CC} Operating Supply Current	V _{CC} =Max., I _{OUT} =0 mA, f=f _{MAX}		900	mA
I _{CC} (74P435B)	V _{CC} Operating Supply Current	V _{CC} =Max., I _{OUT} =0 mA, f=f _{MAX}		1550	mA

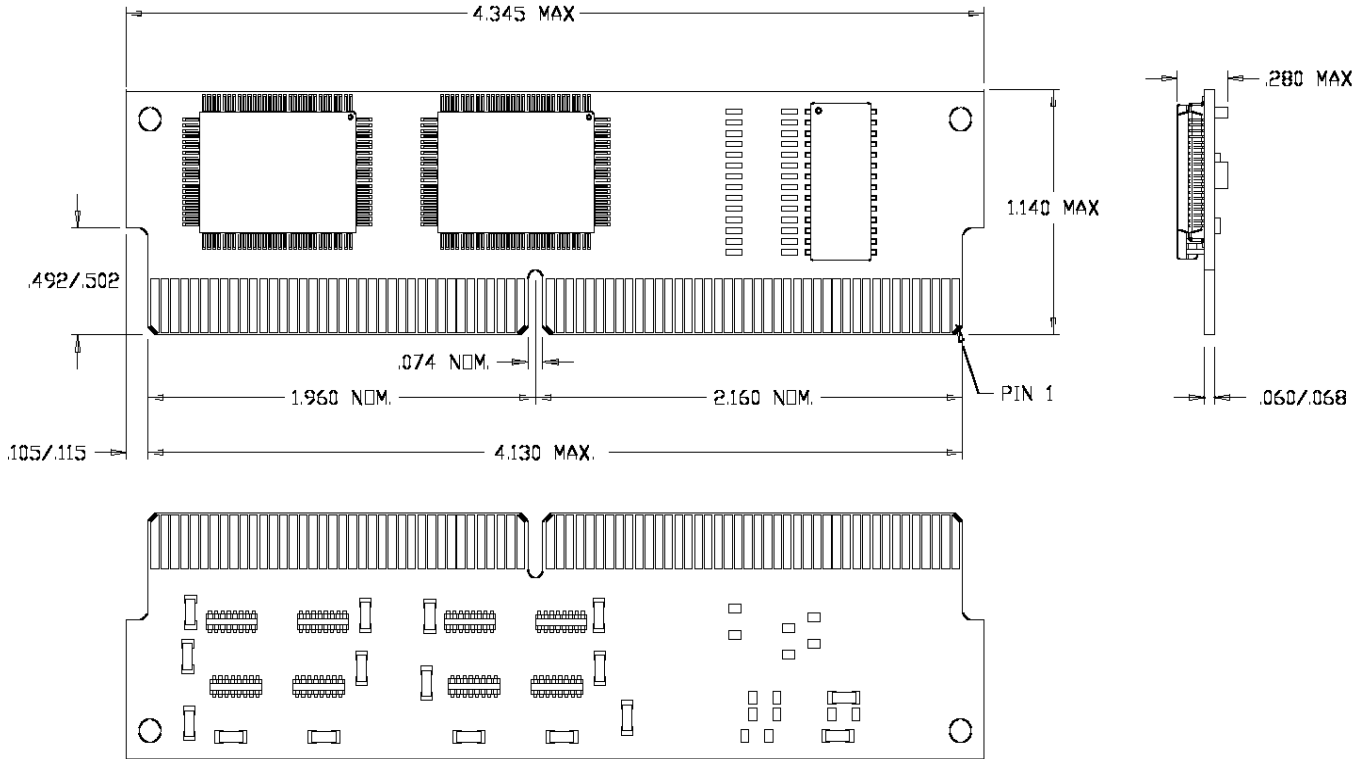
Ordering Information

Speed (MHz)	Ordering Code	Package Name	Package Type	Description	Operating Range
50	CYM74P430BPM-50C	PM38	160-Pin Dual-Readout SIMM	256 KB	Commercial
	CYM74P431BPM-50C	PM40		512 KB	
	CYM74P434BPM-50C	PM39		256 KB extended cache	
	CYM74P435BPM-50C	PM41		512 KB extended cache	
60	CYM74P430BPM-60C	PM38	160-Pin Dual-Readout SIMM	256 KB	Commercial
	CYM74P431BPM-60C	PM40		512 KB	
	CYM74P434BPM-60C	PM39		256 KB extended cache	
	CYM74P435BPM-60C	PM41		512 KB extended cache	
66	CYM74P430BPM-66C	PM38	160-Pin Dual-Readout SIMM	256 KB	Commercial
	CYM74P431BPM-66C	PM40		512 KB	
	CYM74P434BPM-66C	PM39		256 KB extended cache	
	CYM74P435BPM-66C	PM41		512 KB extended cache	

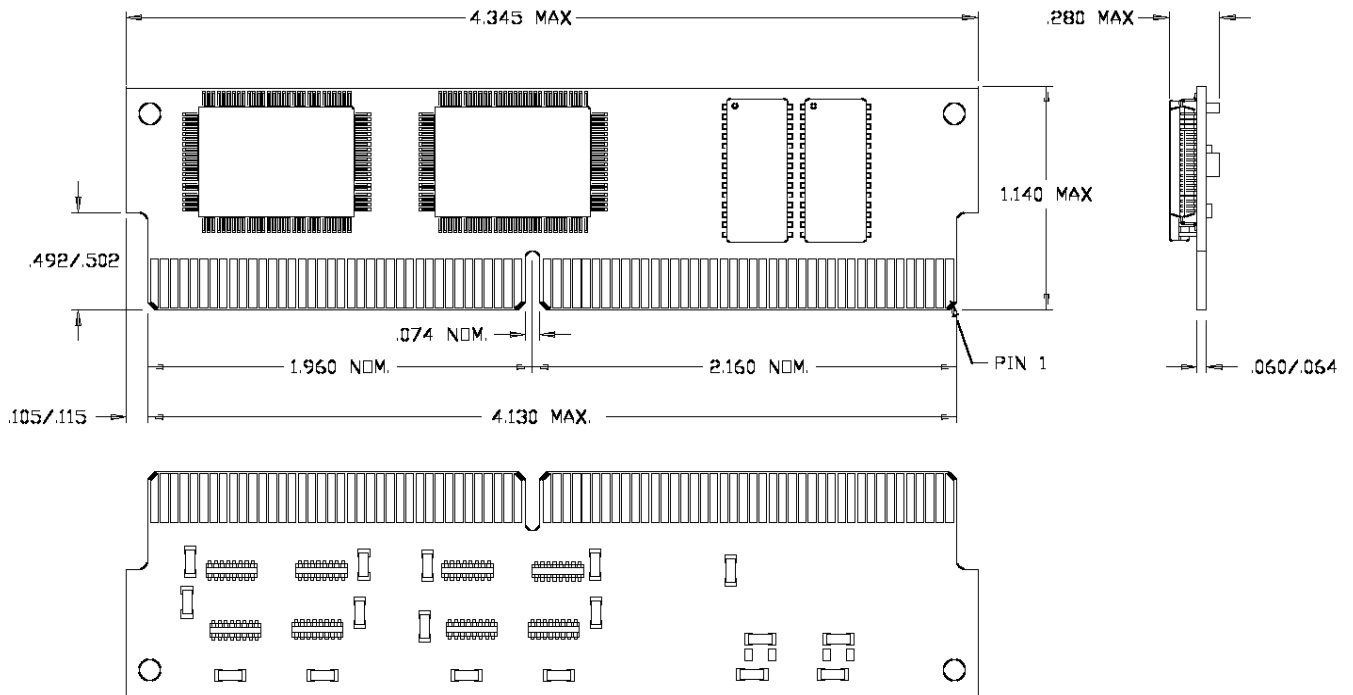


Package Diagrams

CYM74P430BPM in 160-pin Dual Readout SIMM PM38



CYM74P434BPM in 160-pin Dual Readout SIMM PM39



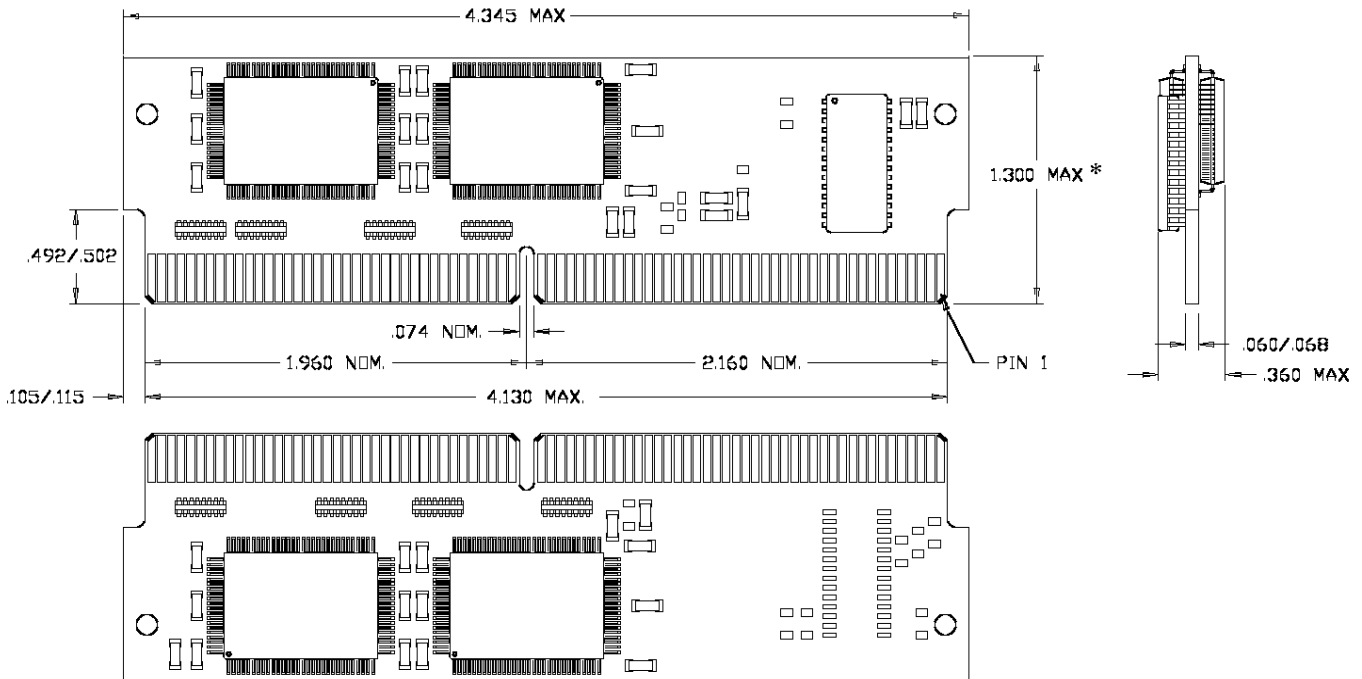


PRELIMINARY

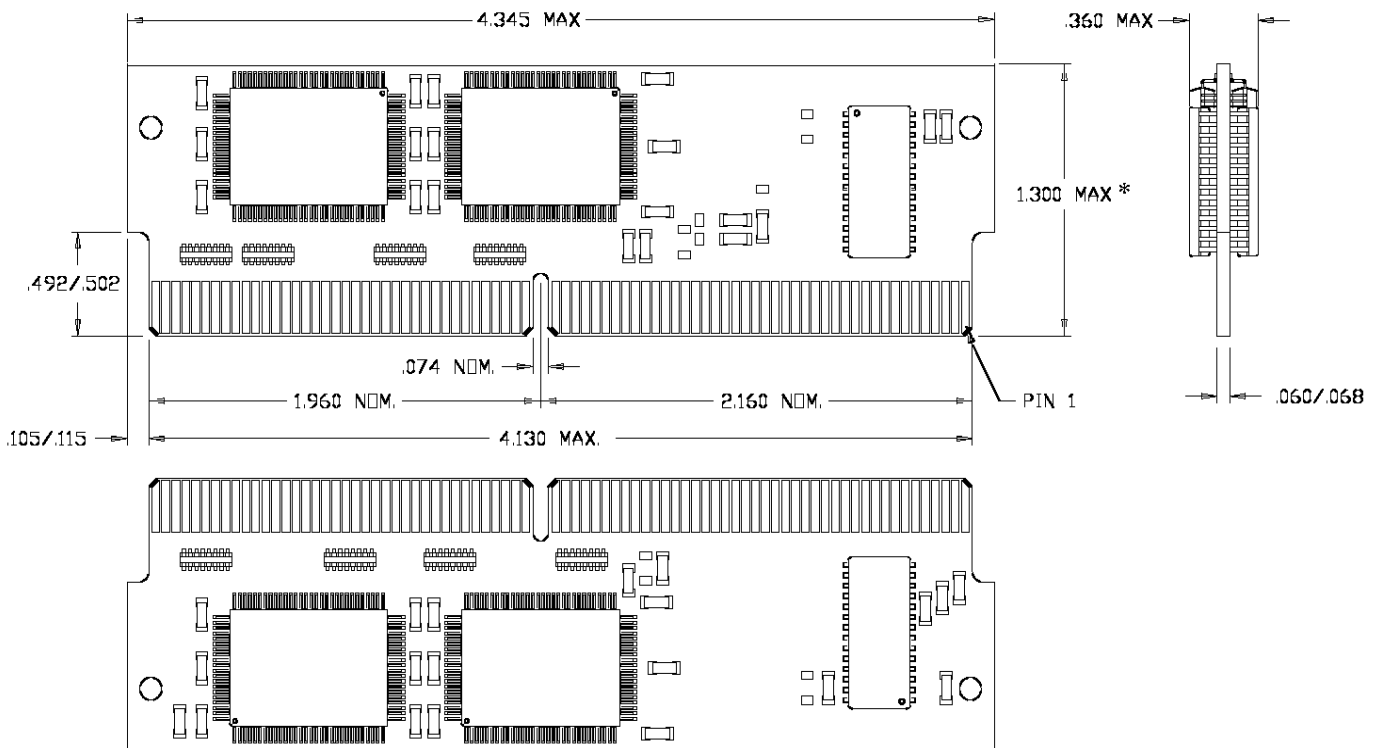
CYM74P430B, CYM74P431B
CYM74P434B, CYM74P435B

Package Diagrams (continued)

CYM74P431BPM in 160-pin Dual Readout SIMM PM40



CYM74P435BPM in 160-pin Dual Readout SIMM PM41



* The 512-KByte modules CYM74P431B and CYM74P435B have a 1.300 max. height vs. 1.140 for the 256-KB modules.