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.

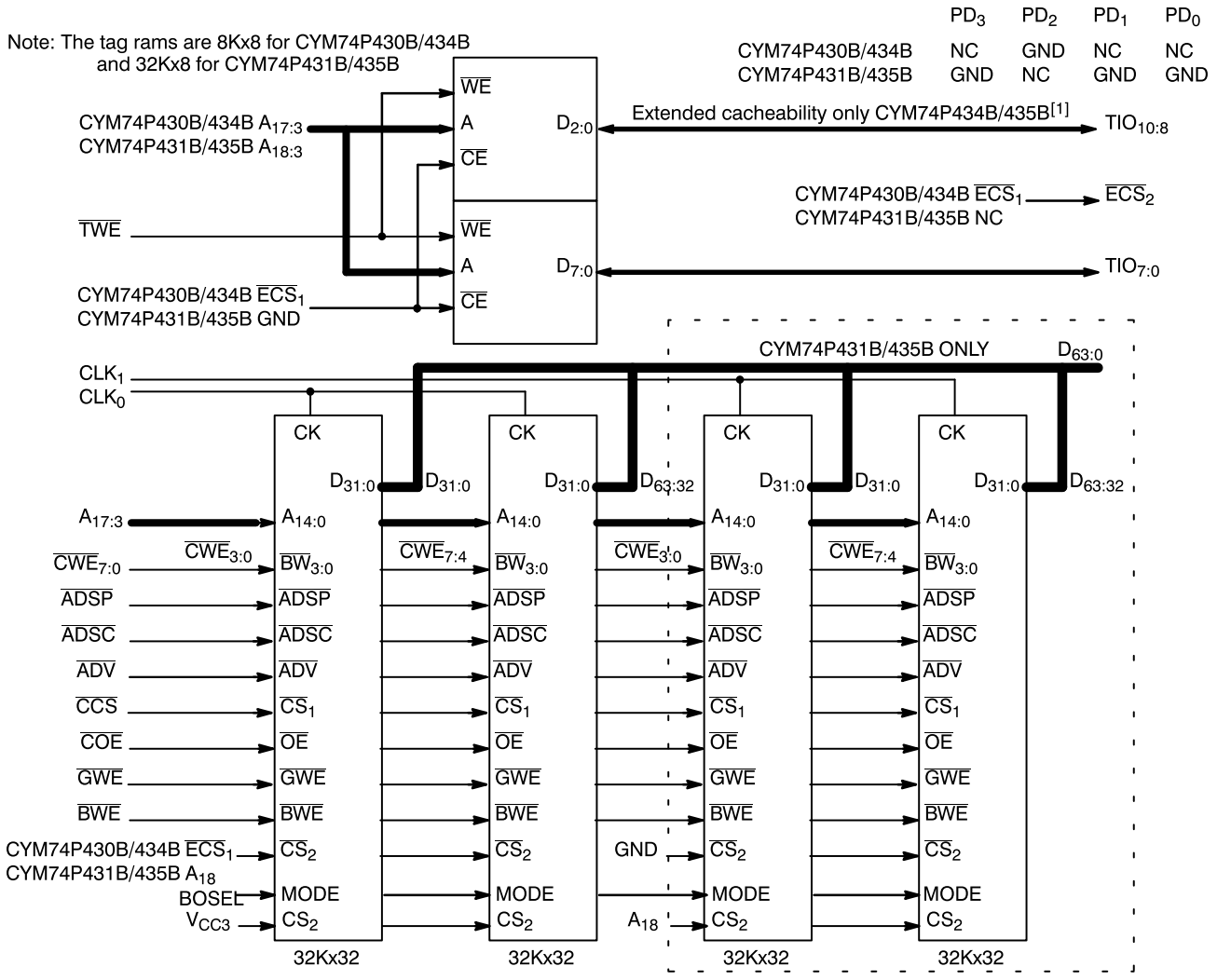
The CYM74P430B (256-Kbyte) and CYM74P431B (512-Kbyte) are high performance modules compatible with all three chipsets.

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

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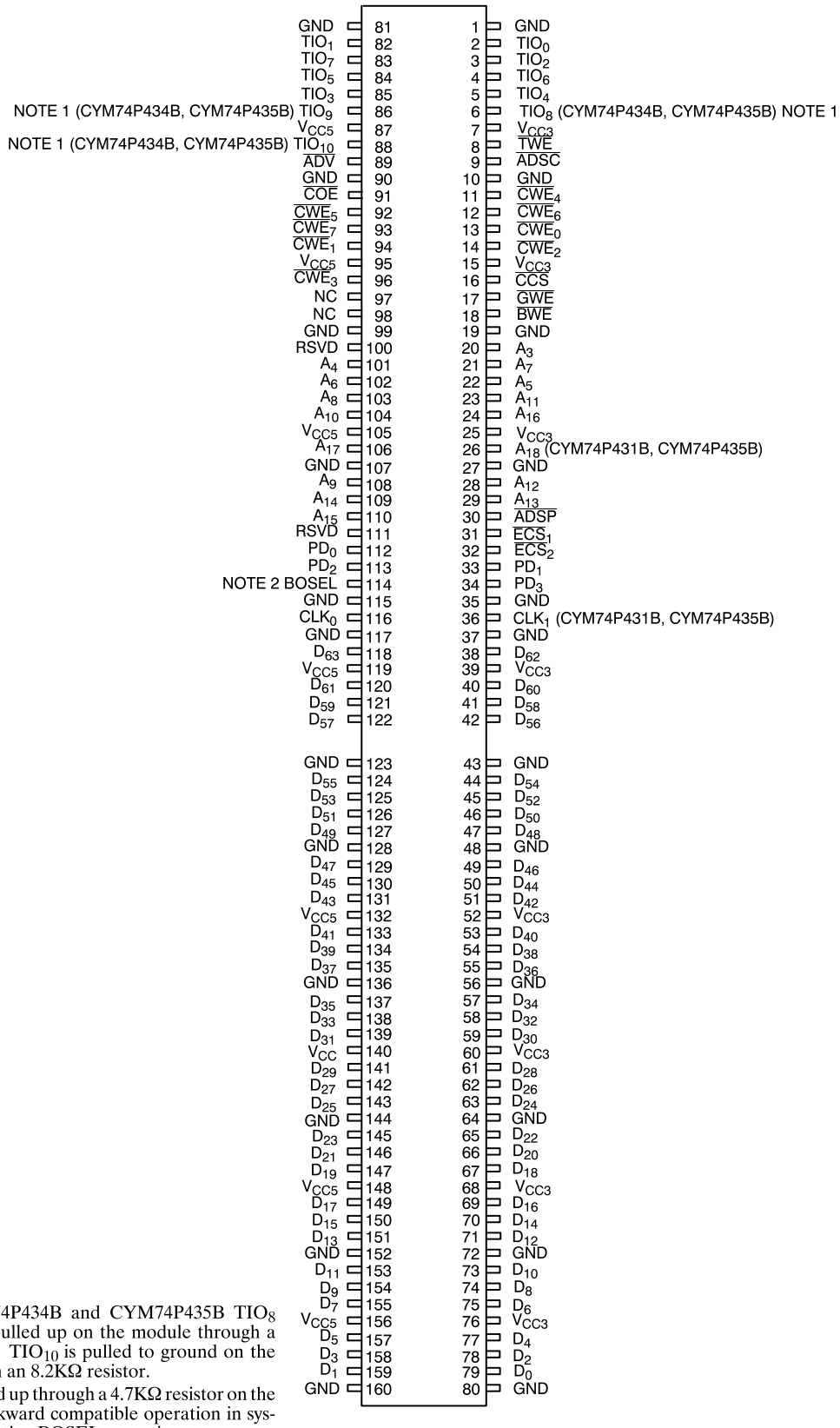
Selection Guide

	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:

1. For the CYM74P434B and CYM74P435B TIO_8 and TIO_9 are pulled up on the module through a 8.2KΩ resistor. TIO_{10} is pulled to ground on the module through an 8.2KΩ resistor.
2. 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
$\overline{COE}$	Output Enable
$\overline{CWE}_{7:0}$	Byte Write Selects
$\overline{BWE}$	Byte Write Enable
$\overline{GWE}$	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
$\overline{TWE}$	Tag Write Enable signal
$\overline{ADSP}$	Processor Address Strobe
$\overline{ADSC}$	Cache Controller Address Strobe
$\overline{ADV}$	Burst Address Advance
$\overline{CCS}$	Cache Chip Select
$\overline{ECS}_1$	256-Kbyte Expansion Chip Select input pin (CYM74P430B or CYM74P434B)
$\overline{ECS}_2$	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	

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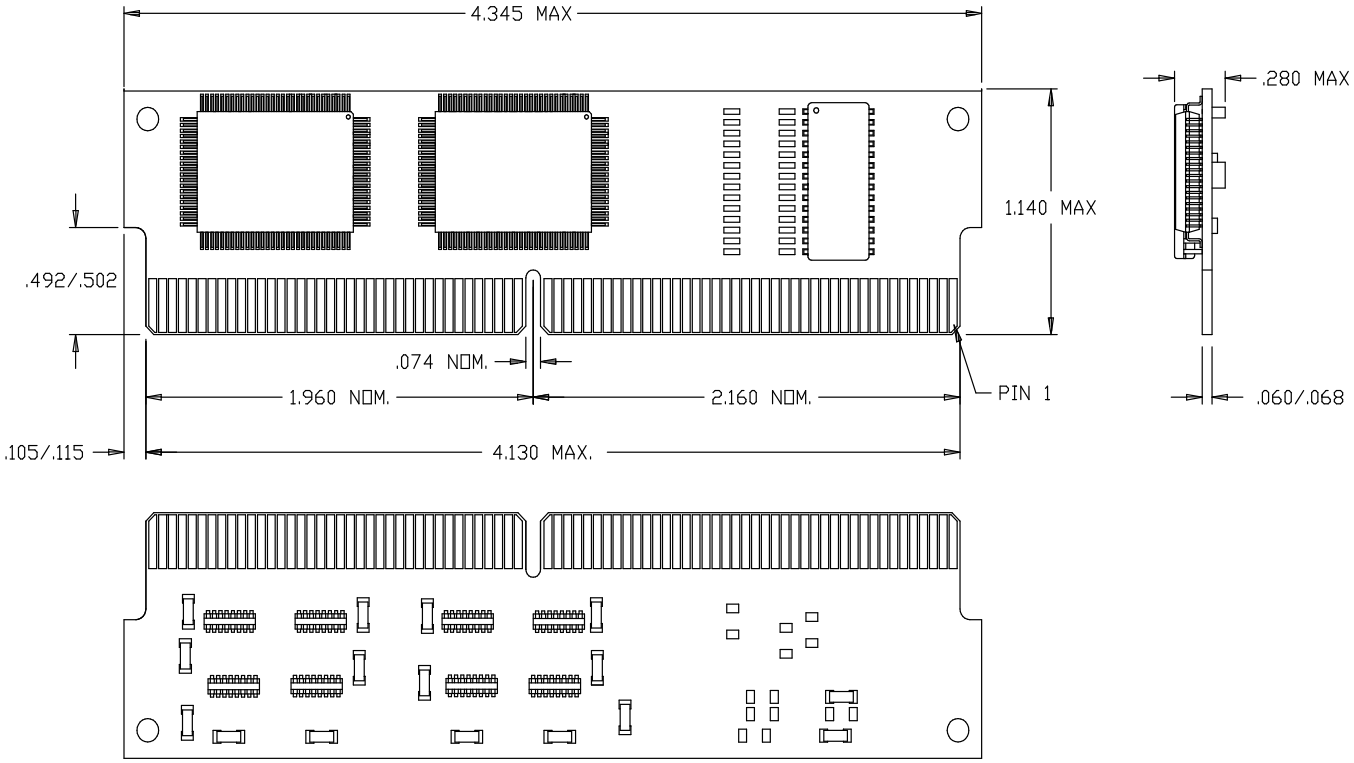
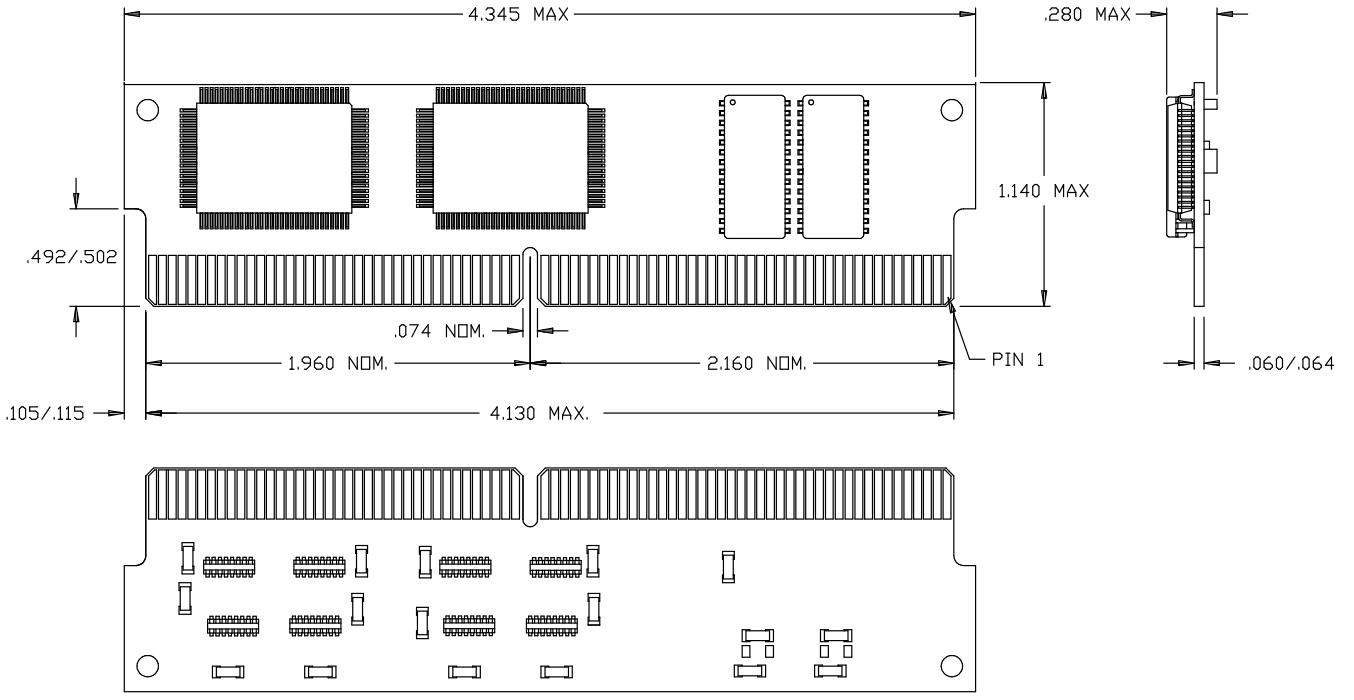
Package Diagrams

CYM74P430BPM in 160-pin Dual Readout SIMM PM38

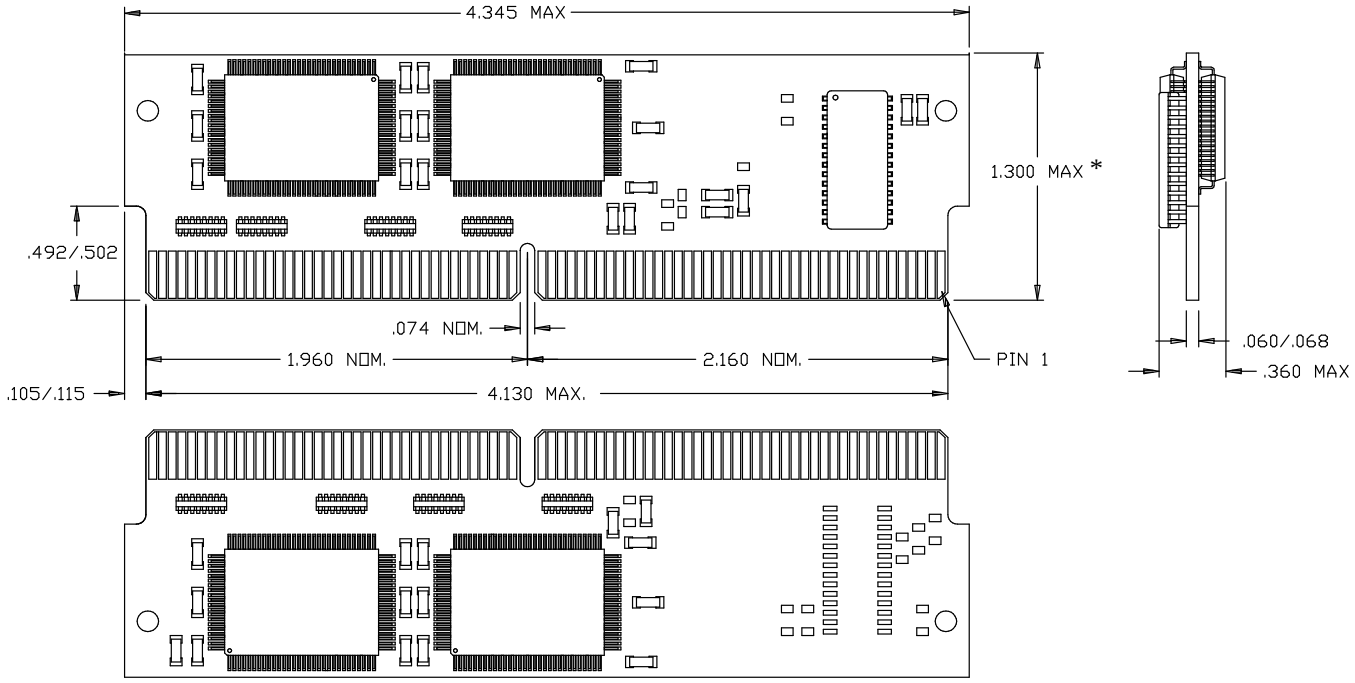


CYM74P434BPM in 160-pin Dual Readout SIMM PM39

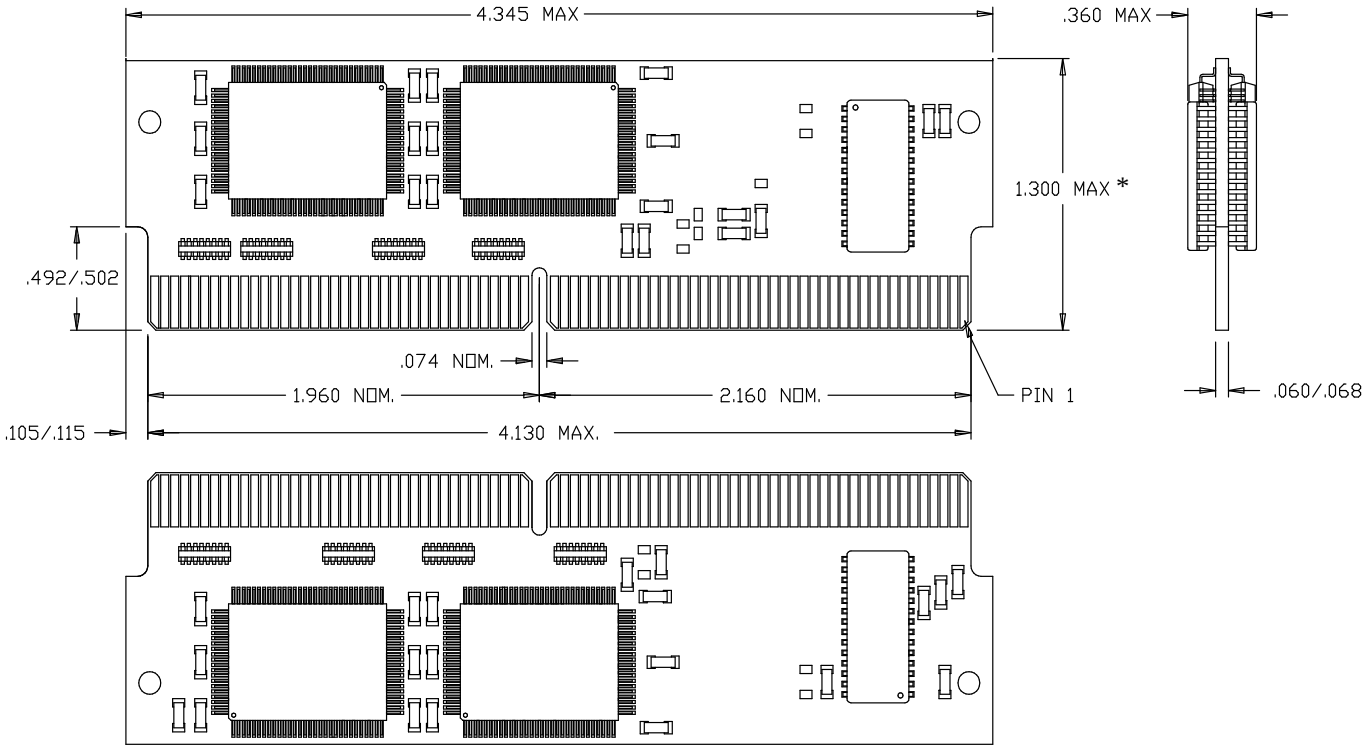


Package Diagrams (continued)

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.