

High-Performance
256/512/1024 KByte 3.3V
SRAM Module



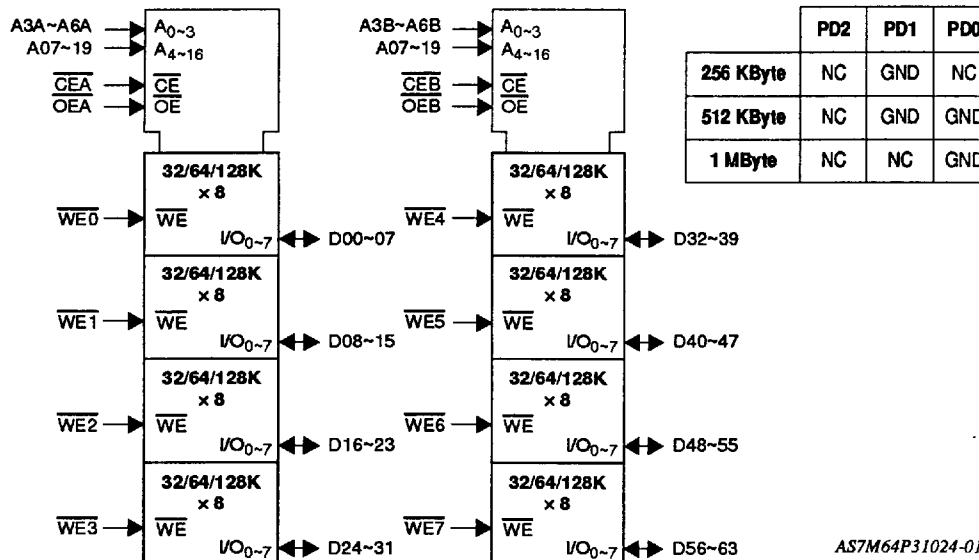
AS7M64P3256
AS7M64P3512
AS7M64P31024

Low Voltage 256/512/1024 KByte Asynchronous SRAM Module

FEATURES

- Pentium™-ready 64-bit datapath
 - AS7M64P3256: 32K words × 64 bits
 - AS7M64P3512: 64K words × 64 bits
 - AS7M64P31024: 128K words × 64 bits
- High speed
 - 10/12/15/20 ns address access time
 - 75/66/60/50 MHz system frequency
- Very low power
 - Active: 2.02W max (AS7M64P31024-15)
 - Standby: 144 mW max
- 80 pin dual-readout DIMM
 - Same pinout for 256/512/1024KB
 - Same pinout for burst mode 64B3256
 - No motherboard jumpers required
 - Small footprint: less than 1.5 in²
- Single 3.3V ±5% power supply
- 5V tolerant I/O specification; TTL-compatible, three-state I/O
- High-quality 4-layer PCB
- Compatible with Burndy CELP socket

LOGIC BLOCK DIAGRAM



SELECTION GUIDE

	7M64P3256				7M64P3512		7M64P31024		Unit
	-10	-12	-15	-20	-15	-20	-15	-20	
Max address access time	10	12	15	20	15	20	15	20	ns
Max operating current	480	440	400	360	520	480	560	520	mA
Max CMOS standby current	8	8	8	8	20	20	40	40	mA

Shaded areas contain advance information.

PIN ARRANGEMENT

GND	81	1	GND
D63	82	2	D62
[VCC5]	83	3	VCC3
D61	84	4	D60
[VCC5]	85	5	VCC3
D59	86	6	D58
D57	87	7	D56
GND	88	8	GND
[P7]	89	9	[P6]
D55	90	10	D54
D53	91	11	D52
D51	92	12	D50
GND	93	13	GND
D49	94	14	D48
D47	95	15	D46
D45	96	16	D44
D43	97	17	D42
GND	98	18	GND
D41	99	19	D40
[P5]	100	20	[P4]
D39	101	21	D38
D37	102	22	D36
D35	103	23	D34
GND	104	24	GND
D33	105	25	D32
D31	106	26	D30
D29	107	27	D28
D27	108	28	D26
D25	109	29	D24
GND	110	30	GND
[P3]	111	31	[P2]
D23	112	32	D22
D21	113	33	D20
[VCC5]	114	34	VCC3
D19	115	35	D18
GND	116	36	GND
D17	117	37	D16
[VCC5]	118	38	VCC3
D15	119	39	D14
D13	120	40	D12
GND	121	41	GND
D11	122	42	D10
[VCC5]	123	43	VCC3
D09	124	44	D08
[P1]	125	45	[P0]
[VCC5]	126	46	VCC3
D07	127	47	D06
D05	128	48	D04
D03	129	49	D02
D01	130	50	D00
GND	131	51	GND
A3B	132	52	A3A
A4B	133	53	A4A
A5B	134	54	A5A
A6B	135	55	A6A
A07	136	56	A08
GND	137	57	GND
A09	138	58	A10
A11	139	59	A12
A13	140	60	A14
A15	141	61	A16
A17	142	62	A18
GND	143	63	GND
A19	144	64	PD0
PD1	145	65	PD2
[CLK0]	146	66	[CLK1]
[CLK2]	147	67	[CLK3]
GND	148	68	GND
WE7	149	69	WE6
WE5	150	70	WE4
WE3	151	71	WE2
WE1	152	72	WE0
GND	153	73	GND
[ADSCB]	154	74	[ADSCA]
CEB	155	75	CEA
[ADVB]	156	76	[ADVA]
OEB	157	77	OEA
[VCC5]	158	78	VCC3
[ADSPB]	159	79	[ADSPA]
GND	160	80	GND

AS7M64P31024-02

ALLIANCE SEMICONDUCTOR

9003449 0000144 6T6



FUNCTIONAL DESCRIPTION

The AS7M64P3256, AS7M64P3512 and AS7M64P31024 are three members of Alliance Semiconductor's high performance asynchronous static RAM family for Pentium™ and other advanced applications. This family provides a plug-and-play upgradeable low voltage SRAM solution for personal computer and server cache, as well as high performance DSP and embedded systems applications. Speed grades down to 10 ns are ideal for current and future system requirements.

The 7M64P3256 includes 256 KBytes of fast static memory, organized as one bank of 32K words × 64 bits. The 7M64P3512 includes 512 KBytes of fast static memory, organized as one bank of 64K words × 64 bits. The 7M64P31024 provides one megabyte of storage, organized as one bank of 128K words × 64 bits.

The modules share identical pinout specifications except for the upper two address bits, and a three-bit Presence Detect (PD) signal, for easy system configuration.

Alliance's industry-leading low power CMOS fast static RAM gives these modules excellent power characteristics. The modules dissipate less than 144mW in standby mode, and less than 2.02W for 1MB cache at 66 MHz.

These modules plug into an inexpensive 80 dual readout connector which occupies less than 1.5 in² of board space.

The 7M64P3256, 7M64P3512 and 7M64P31024 modules operate from a single 3.3V power supply. The modules are plug-compatible with Alliance's 64P256, 64P512, and 64P1024 5V fast SRAM modules. For ease of system design, 5V modules in the Alliance 64P series draw power only from V_{CC} pins on the left side of the connector (pins 81-160), while 3.3V modules draw power only from V_{CC} pins on the right side of the connector (pins 1-80).

RECOMMENDED OPERATING CONDITIONS

(T_a = 0 to +70°C)

Parameter	Speed	Symbol	Min	Typ	Max	Unit
Supply Voltage	-12, -15	V _{CC}	3.15	3.3	3.6	V
	-20		3.0	3.3	3.6	V
		GND	0.0	0.0	0.0	V
Input Voltage		V _{IIH}	2.2	—	5.5	V
		V _{IL}	-0.5*	—	0.8	V

* V_{IL} min = -3.0V for pulse width less than t_{RC}/2.

CAPACITANCE ²

(f = 1 MHz, T_a = Room Temperature, V_{CC} = 5V)

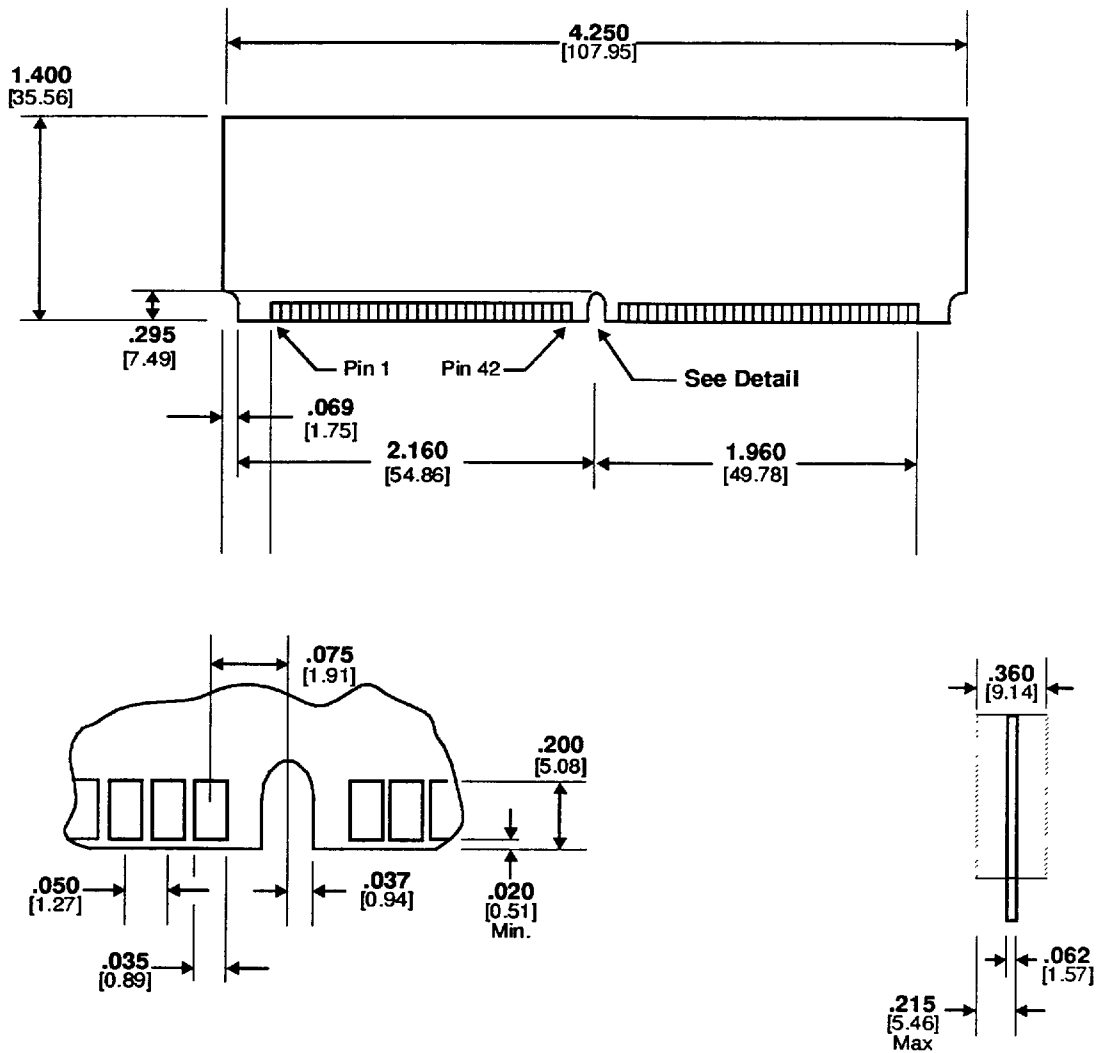
Parameter	Symbol	Signals	Test Conditions	Max	Unit
Input capacitance: address	C _{IN8}	A07~19	V _{in} = 0V	70	pF
Input capacitance: ganged control	C _{IN4}	$\overline{CE}$, $\overline{OE}$, A3~6	V _{in} = 0V	35	pF
Input capacitance: write enable	C _{IN1}	$\overline{WE}$	V _{in} = 0V	10	pF
Data I/O capacitance	C _{IO1}	D	V _{in} = V _{out} = 0V	12	pF

DC and AC PARAMETERS

Refer to latest Alliance SRAM datasheets (AS7C3256, AS7C3512, AS7C31024) for details.



PHYSICAL DIMENSIONS



Dimensions in inches [millimeters].

AS7M64P31024-03

AS7M64P3256
AS7M64P3512
AS7M64P31024



ORDERING INFORMATION

Cache size	Address Access Time			
	10 ns	12 ns	15 ns	20 ns
256 KBytes	AS7M64P3256-10C	AS7M64P3256-12C	AS7M64P3256-15C	AS7M64P3256-20C
512KByte		—	AS7M64P3512-15C	AS7M64P3512-20C
1 MByte		—	AS7M64P31024-15C	AS7M64P31024-20C

Shaded areas contain advance information.

PART NUMBERING SYSTEM

AS7M	64	P	3	XXXX	-XX	C
SRAM Module Prefix	Data width	Pentium™ and PowerPC™ -ready	Blank = 5V supply 3 = 3.3V supply	Cache size in KBytes	Access Time	Commercial Temperature Range, 0°C to 70 °C

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