

DESCRIPTION

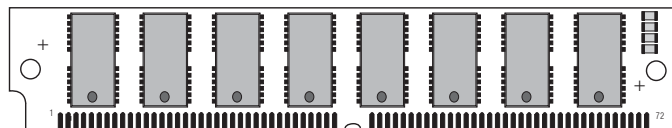
The Accutek AK5328192W high density memory module is a CMOS dynamic RAM organized in 8192K x 32 bit words. The module consists of sixteen standard 4 Meg x 4 DRAMs in plastic SOJ packages. The assembly has eight drams mounted on each side of a printed circuit board in a 72 pad leadless SIM configuration.

This configuration allows socket-mounting of large quantities of memory in applications where high density and ease of inserting additional memory are important.

The operation of the AK5328192W is identical to sixteen 4M x 4 Drams. There are four CAS lines and four RAS lines. On each bank of 4M x 32, independent byte control is accomplished by four $\overline{\text{CAS}}$ lines. Each separate CAS line controls two 4M x 4 Drams to form an 8 bit byte. Two banks of 32 bits are controlled by the two pairs of RAS lines. A sixteen bit data path can be produced by connecting DQ₀ to DQ₁₆, DQ₁ to DQ₁₇, etc. and alternately strobing $\overline{\text{RAS}}_0$ with $\overline{\text{RAS}}_1$ and $\overline{\text{RAS}}_2$ with $\overline{\text{RAS}}_3$.

FEATURES

- 8,388,608 x 32 bit organization
- 72 pad Single In-Line Module
- Multiple $\overline{\text{CAS}}$ and $\overline{\text{RAS}}$ lines allow x16 or x32 bit widths
- $\overline{\text{CAS}}$ -before- $\overline{\text{RAS}}$, $\overline{\text{RAS}}$ -only or hidden refresh
- Power
 - 5.32 Watt Max Active (60nS)
 - 4.48 Watt Max Active (70 nS)
 - 88 mW Max Standby
- Operating free air temperature 0°C to 70°C



- Single 5 Volt Power Supply
- 2048 Refresh Cycles, 32 mSEC
- 4096 Refresh Cycles, 64 mSEC available for all module sizes
- Available in Fast Page Mode and EDO
- Available in leadless (W) or leaded Zip (Z) versions
- Downward compatible with AK5324096, AK5322048, AK5321024, AK532512 and AK532256

EXAMPLES

AK5328192WP-60

8 Meg x 32 CMOS Dynamic RAM, SIM, Page Mode, Commercial 60 nSEC Access Time

PIN NOMENCLATURE

A ₀ - A ₁₀	Address Inputs
DQ ₀ - DQ ₃₁	Data In/Data Out
$\overline{\text{CAS}}_0$ - $\overline{\text{CAS}}_3$	Column Address Strobe
$\overline{\text{RAS}}_0$ - $\overline{\text{RAS}}_3$	Row Address Strobe
$\overline{\text{WE}}$	Write Enable
$\overline{\text{OE}}$	Output Enable
PD ₁ - PD ₄	Presence Detect
V _{cc}	5v Supply
V _{ss}	Ground
NC	No Connect

MODULE OPTIONS

Leadless SIM: AK5328192W

Leaded ZIP: AK5328192Z

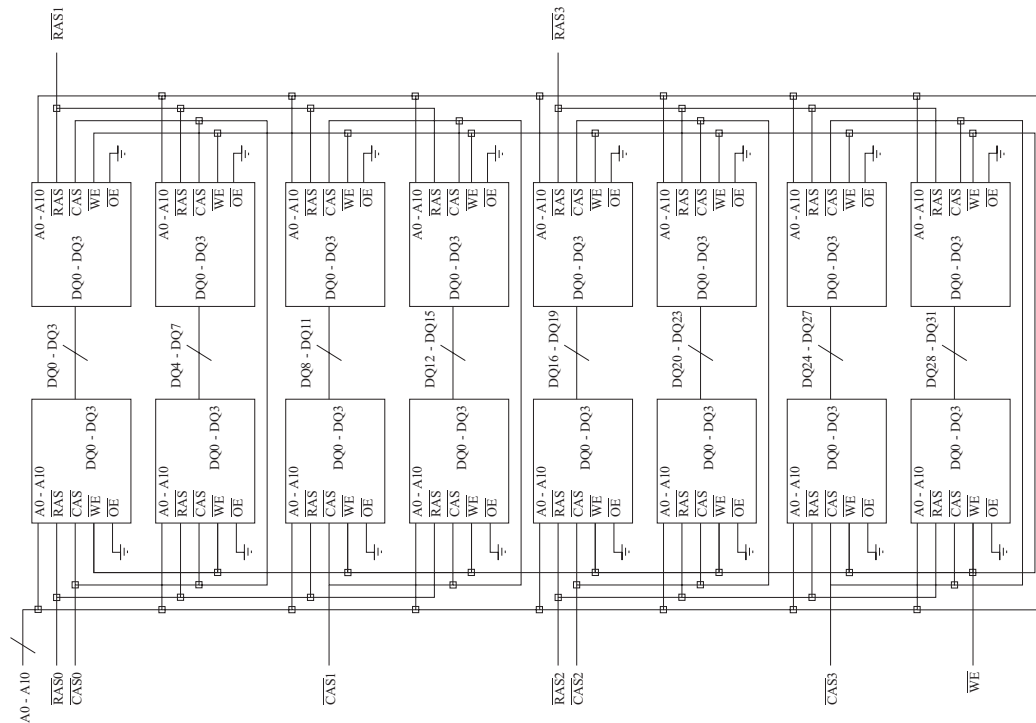
PIN ASSIGNMENT

PIN #	SYMBOL	PIN #	SYMBOL	PIN #	SYMBOL	PIN #	SYMBOL
1	V _{ss}	19	A ₁₀	37	NC	55	DQ ₁₁
2	DQ ₀	20	DQ ₄	38	NC	56	DQ ₂₇
3	DQ ₁₆	21	DQ ₂₀	39	V _{ss}	57	DQ ₁₂
4	DQ ₁	22	DQ ₅	40	$\overline{\text{CAS}}_0$	58	DQ ₂₈
5	DQ ₁₇	23	DQ ₂₁	41	$\overline{\text{CAS}}_2$	59	V _{cc}
6	DQ ₂	24	DQ ₆	42	$\overline{\text{CAS}}_3$	60	DQ ₂₉
7	DQ ₁₈	25	DQ ₂₂	43	$\overline{\text{CAS}}_1$	61	DQ ₁₃
8	DQ ₃	26	DQ ₇	44	$\overline{\text{RAS}}_0$	62	DQ ₃₀
9	DQ ₁₉	27	DQ ₂₃	45	$\overline{\text{RAS}}_1$	63	DQ ₁₄
10	V _{cc}	28	A ₇	46	NC	64	DQ ₃₁
11	NC	29	NC	47	$\overline{\text{WE}}$	65	DQ ₁₅
12	A ₀	30	V _{cc}	48	NC	66	NC
13	A ₁	31	A ₈	49	DQ ₈	67	PD ₁
14	A ₂	32	A ₉	50	DQ ₂₄	68	PD ₂
15	A ₃	33	$\overline{\text{RAS}}_3$	51	DQ ₉	69	PD ₃
16	A ₄	34	$\overline{\text{RAS}}_2$	52	DQ ₂₅	70	PD ₄
17	A ₅	35	NC	53	DQ ₁₀	71	NC
18	A ₆	36	NC	54	DQ ₂₆	72	V _{ss}

Presence Detect -

	-60	-70
PD ₁	NC	NC
PD ₂	V _{ss}	V _{ss}
PD ₃	NC	V _{ss}
PD ₄	NC	NC

FUNCTIONAL DIAGRAM



MECHANICAL DIMENSIONS

