

# **64MEGX64** **(Unbuffered DDR)**

**64MX8 BASED      Lead-Free**

**67,108,864 words x 64Bit Double Data Rate SDRAM Memory Module**

Centon's 512MB Unbuffered DDR SDRAM Memory Module is 67,108,864 words by 64Bit Double Data Rate SDRAM Memory Module which is assembled with 8 pieces of a 64MX8Bit, 66 pin TSOP, Double Data Rate SDRAM on the printed circuit board. The module is optimized for high density and large capacity in a compact size.

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**64MEGX64 (DDR) - 512MB**

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**64MEGX64 (DDR)-512MB DDR400 CL3 NON-ECC 184-PIN**

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**M0697**

Rev: 0.0 04/09

## Pinout Information

1	VREF	32	A5	62	VDDQ	93	VSS	124	VSS	154	RAS
2	DQ0	33	DQ24	63	WE	94	DQ4	125	A6	155	DQ45
3	VSS	34	VSS	64	DQ41	95	DQ5	126	DQ28	156	VDDQ
4	DQ1	35	DQ25	65	CAS	96	VDDQ	127	DQ29	157	CS0
5	DQS0	36	DQS3	66	VSS	97	DM0	128	VDDQ	158	NC
6	DQ2	37	A4	67	DQS5	98	DQ6	129	DM3	159	DM5
7	VDD	38	VDD	68	DQ42	99	DQ7	130	A3	160	VSS
8	DQ3	39	DQ26	69	DQ43	100	VSS	131	DQ30	161	DQ46
9	NC	40	DQ27	70	VDD	101	NC	132	VSS	162	DQ47
10	NC	41	A2	71	NC	102	NC	133	DQ31	163	NC
11	VSS	42	VSS	72	DQ48	103	NC	134	NC	164	VDDQ
12	DQ8	43	A1	73	DQ49	104	VDDQ	135	NC	165	DQ52
13	DQ9	44	NC	74	VSS	105	DQ12	136	VDDQ	166	DQ53
14	DQS1	45	NC	75	CK2	106	DQ13	137	CK0	167	NC
15	VDDQ	46	VDD	76	CK2	107	DM1	138	CK0	168	VDD
16	CK1	47	NC	77	VDDQ	108	VDD	139	VSS	169	DM6
17	CK1	48	A0	78	DQS6	109	DQ14	140	NC	170	DQ54
18	VSS	49	NC	79	DQ50	110	DQ15	141	A10	171	DQ55
19	DQ10	50	VSS	80	DQ51	111	NC	142	NC	172	VDDQ
20	DQ11	51	NC	81	VSS	112	VDDQ	143	VDDQ	173	NC
21	CKE0	52	BA1	82	VDDID*	113	BA2*	144	NC	174	DQ60
22	VDDQ		KEY	83	DQ56	114	DQ20		KEY	175	DQ61
23	DQ16	53	DQ32	84	DQ57	115	A12	145	VSS	176	VSS
24	DQ17	54	VDDQ	85	VDD	116	VSS	146	DQ36	177	DM7
25	DQS2	55	DQ33	86	DQS7	117	DQ21	147	DQ37	178	DQ62
26	VSS	56	DQS4	87	DQ58	118	A11	148	VDD	179	DQ63
27	A9	57	DQ34	88	DQ59	119	DM2	149	DM4	180	VDDQ
28	DQ18	58	VSS	89	VSS	120	VDD	150	DQ38	181	SA0
29	A7	59	BA0	90	NC	121	DQ22	151	DQ39	182	SA1
30	VDDQ	60	DQ35	91	SDA	122	A8	152	VSS	183	SA2
31	DQ19	61	DQ40	92	SCL	123	DQ23	153	DQ44	184	VDDSPD

Pin Name	Function
A0 ~ A12	Address input Row=A0-A12, Col=A0-A9, A11
BA0 ~BA1	Bank Select Address
DQ0 ~DQ63	Data input/output
DQS0 ~ DQS7	Data Strobe input/output
CK0 ~ CK2	Positive Edge Clock Inputs
CK0 ~ CK2	Negative Edge Clock Inputs
CKE0	Clock Enable input
CS0	Chip Select input
RAS	Row Address Strobe
CAS	Column Address Strobe
WE	Write Enable
DM0 ~ DM7	Data-in mask
VDD	Power Supply
VDDQ	Power Supply for DQ's
VSS	Ground
VREF	Power supply for reference
VDDSPD	Serial EEPROM Power Supply
SDA	Serial Data I/O
SCL	Serial Clock
SA0 ~ SA2	Address in EEPROM
VDDID	VDD identification flag
NC	No Connection

Note: \* : these pins are not used in this module.

## CPCB-00608

## 64MEGX64 DDR - 512MB

## FEATURES

- \* 67,108,864 words by 64 bits organization
- \* Utilizes 200MHz Double Data Rate SDRAM components
- \* CAS Latency as specified in performance range table
- \* Single power supply of 2.6V +/- .1V
- \* Differential clock inputs
- \* Two data accesses per clock cycle
- \* Bidirectional source-synchronous data strobe
- \* Serial Presence Detect with EEPROM
- \* Burst length; 2, 4, 8
- \* 7.8us maximum average periodic refresh interval
- \* Auto and Self refresh capability
- \* SSTL\_2 Interface
- \* 184 pin JEDEC compatible
- \* RoHS compliant

## PERFORMANCE RANGE

TYPE	MAX FREQ.
DDR400	200Mhz (5ns @ CL3)
DDR333	167Mhz (6ns @ CL2.5)

## COMPATIBILITY

Centon's 512MB DDR Memory Module is fully compatible with industry standard 184 pin Unbuffered DDR SDRAM Memory Modules.

## APPLICATION

High Density Memory Unit for Personal Computers, Workstations and Servers.

## ENVIRONMENT

	OPERATING	STORAGE
TEMPERATURE	0°C to 70°C	-55°C to 125°C
HUMIDITY	20% to 80%	5% to 80%

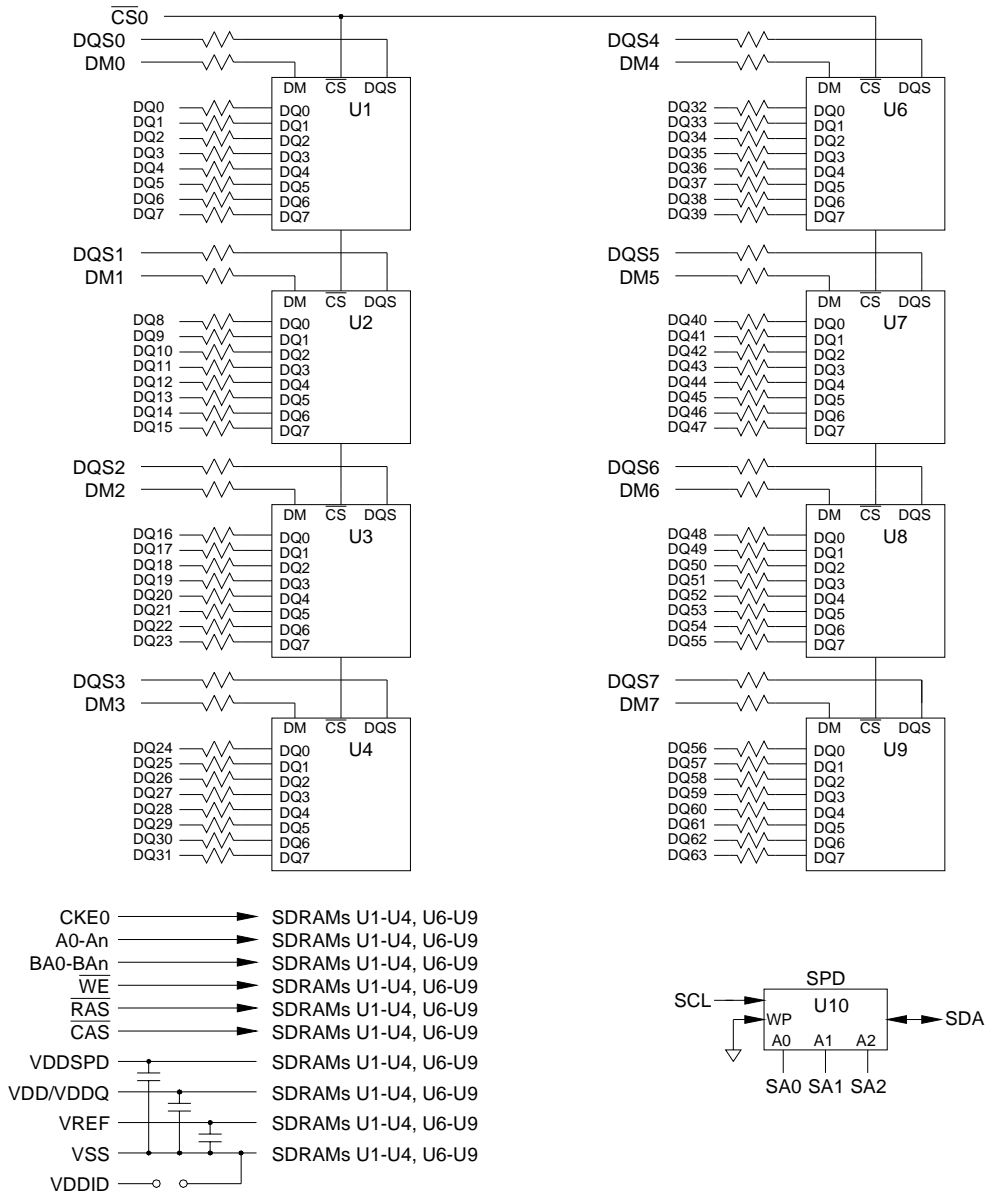
## WARRANTY

Centon will repair or replace any Centon memory product that fails due to defective material or workmanship under normal use for the life of the product.

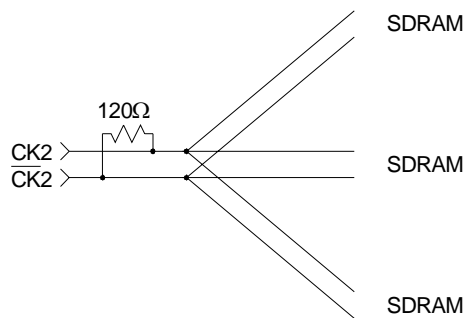
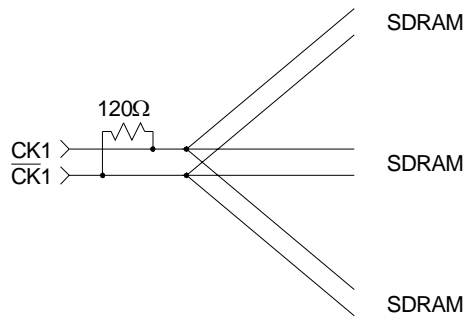
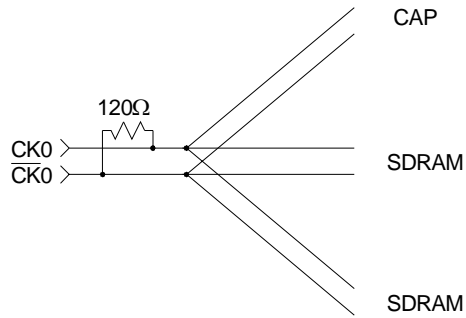
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Block Diagram



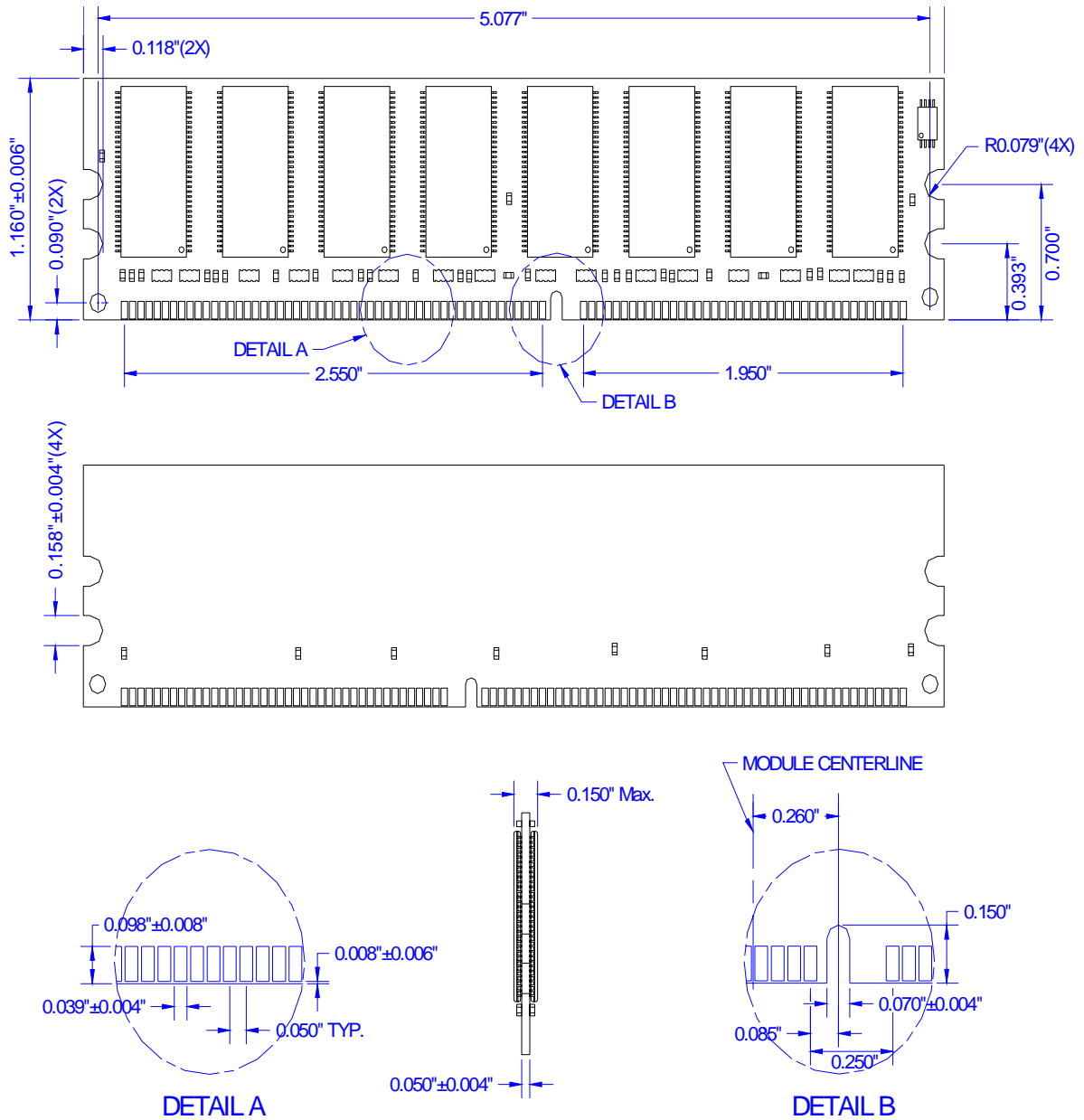
Differential Clock Wiring Diagram



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Mechanical Drawing



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