

512MEGX72

Unbuffered DDR3

(Very Low Profile)

256MX8 BASED Lead-Free

536,870,912 words x 72Bit DDR3 SDRAM Memory Module

Centon's 4GB Unbuffered ECC DDR3 SDRAM Memory Module is 536,870,912 words by 72Bit Double Data Rate SDRAM very low profile dual in-line Memory Module, which is assembled with 18 pieces of a 256MX8Bit, 82 ball FBGA, Double Data Rate SDRAMs on the printed circuit board. The module is optimized for high density and large capacity in a compact size.

512MEGX72 (DDR3) - 4GB

M0921.01

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Pinout Information

1	VREFDQ	41	VSS	81	DQ32	121	VSS	161	DM8	201	DQ37
2	VSS	42	DQS8	82	DQ33	122	DQ4	162	NC	202	VSS
3	DQ0	43	DQS8	83	VSS	123	DQ5	163	VSS	203	DM4
4	DQ1	44	VSS	84	DQS4	124	VSS	164	CB6	204	NC
5	VSS	45	CB2	85	DQS4	125	DM0	165	CB7	205	VSS
6	DQS0	46	CB3	86	VSS	126	NC	166	VSS	206	DQ38
7	DQS0	47	VSS	87	DQ34	127	VSS	167	TEST	207	DQ39
8	VSS	48	NC	88	DQ35	128	DQ6	168	RESET	208	VSS
9	DQ2	49	NC	89	VSS	129	DQ7	169	CKE1	209	DQ44
10	DQ3	50	CKE0	90	DQ40	130	VSS	170	VDD	210	DQ45
11	VSS	51	VDD	91	DQ41	131	DQ12	171	A15*	211	VSS
12	DQ8	52	BA2	92	VSS	132	DQ13	172	A14	212	DM5
13	DQ9	53	NC	93	DQS5	133	VSS	173	VDD	213	NC
14	VSS	54	VDD	94	DQS5	134	DM1	174	A12	214	VSS
15	DQS1	55	A11	95	VSS	135	NC	175	A9	215	DQ46
16	DQS1	56	A7	96	DQ42	136	VSS	176	VDD	216	DQ47
17	VSS	57	VDD	97	DQ43	137	DQ14	177	A8	217	VSS
18	DQ10	58	A5	98	VSS	138	DQ15	178	A6	218	DQ52
19	DQ11	59	A4	99	DQ48	139	VSS	179	VDD	219	DQ53
20	VSS	60	VDD	100	DQ49	140	DQ20	180	A3	220	VSS
21	DQ16	61	A2	101	VSS	141	DQ21	181	A1	221	DM6
22	DQ17	62	VDD	102	DQS6	142	VSS	182	VDD	222	NC
23	VSS	63	CK1	103	DQS6	143	DM2	183	VDD	223	VSS
24	DQS2	64	CK1	104	VSS	144	NC	184	CK0	224	DQ54
25	DQS2	65	VDD	105	DQ50	145	VSS	185	CK0	225	DQ55
26	VSS	66	VDD	106	DQ51	146	DQ22	186	VDD	226	VSS
27	DQ18	67	VREFCA	107	VSS	147	DQ23	187	NF	227	DQ60
28	DQ19	68	NC	108	DQ56	148	VSS	188	A0	228	DQ61
29	VSS	69	VDD	109	DQ57	149	DQ28	189	VDD	229	VSS
30	DQ24	70	A10	110	VSS	150	DQ29	190	BA1	230	DM7
31	DQ25	71	BA0/BA1	111	DQS7	151	VSS	191	VDD	231	NC
32	VSS	72	VDD	112	DQS7	152	DM3	192	RAS	232	VSS
33	DQS3	73	WE	113	VSS	153	NC	193	CS0	233	DQ62
34	DQS3	74	CAS	114	DQ58	154	VSS	194	VDD	234	DQ63
35	VSS	75	VDD	115	DQ59	155	DQ30	195	ODT0	235	VSS
36	DQ26	76	CS1	116	VSS	156	DQ31	196	A13	236	VDDSPD
37	DQ27	77	ODT1	117	SA0	157	VSS	197	VDD	237	SA1
38	VSS	78	VDD	118	SCL	158	CB4	198	NF	238	SDA
39	CB0	79	RFUSPD	119	SA2	159	CB5	199	VSS	239	VSS
40	CB1	80	VSS	120	VTT	160	VSS	200	DQ36	240	VTT

Pin Name	Function
A0 ~ A14	Address input Row=A0-A14, Col=A0-A9
BA0 ~BA2	Bank Select Address
DQ0 ~DQ63	Data input/output
DQS0 ~ DQS8	SDRAM Data Strobe
DQS0 ~ DQS8	SDRAM differential Data Strobe
CK0 ~ CK1	Positive Edge Clock Inputs
CK0 ~ CK1	Negative Edge Clock Inputs
CKE0,CKE1,	Clock Enable input
CS0,CS1	Chip Select input
RAS	Row Address Strobe
CAS	Column Address Strobe
WE	Write Enable
DM0 ~ DM8	SDRAM Data masks
VDD	Power Supply
VDDQ	Power Supply for DQ's
VSS	Ground
VREFDQ	SDRAM I/O reference supply
VDDSPD	Serial EEPROM Power Voltage
SDA	Serial Data I/O
SCL	Serial Clock
SA0 ~ SA2	EEPROM Address
CB0-CB7	Check Bits
ODT0,ODT1	On-Die Termination
RESET	Set DRAMs Know State
VTT	SDRAM I/O termination supply

*Note: Not used on this module
VDD and VDDQ pins are tied to a single power plane.
RFU: Reserved for future use
NF: No function
TEST: Used by memory bus analysis tools
VREFCA: SDRAM command/address reference supply

CPCB-00709

512MEGX72 DDR3 - 4GB

FEATURES

- * Apply for PC, Workstation, Server main memory application.
- * 536,870,912 words by 72 bits organization.
- * Supports ECC error detection and correction.
- * Utilizes 667MHz DDR3 SDRAM components.
- * CAS Latency as specified in performance range table.
- * Single power supply of 1.5V +/- 0.075V.
- * Differential clock inputs.
- * 8-bit prefetch architecture.
- * On-die termination (ODT).
- * Serial Presence Detect with EEPROM (VDDSPD=3.0V to 3.6V).
- * Burst length: 8.
- * 7.8us maximum average periodic refresh interval.
- * Temperature Sensor functionality with EEPROM.
- * SSTL_15 Interface.
- * 240 pin JEDEC compatible.
- * PCB: Height 18.74mm (0.738"), double sided components.
- * RoHS compliant.

PERFORMANCE RANGE

TYPE	MAX FREQ.
DDR3-1333	667MHz(1.5ns@CL9)
DDR3-1066	533MHz(1.875ns@CL7)

COMPATIBILITY

Centon's 4GB DDR3 Unbuffered ECC Memory Module is fully compatible with industry standard 240 pin Unbuffered DDR3 SDRAM Memory Modules.

APPLICATION

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

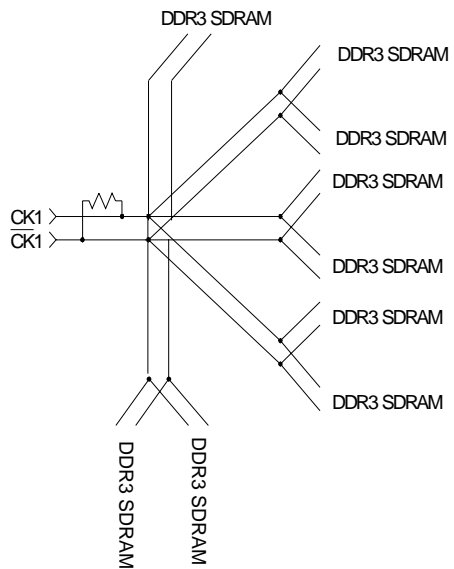
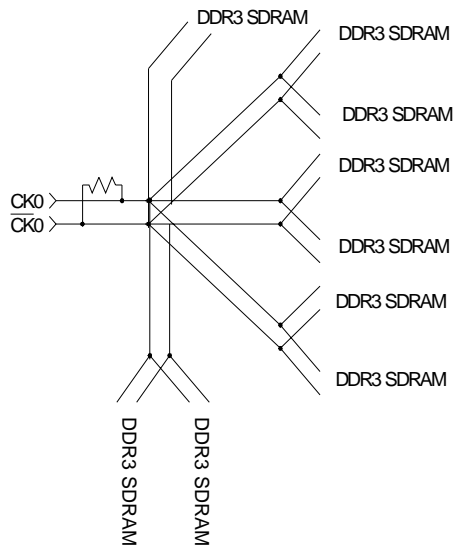
ENVIRONMENT

	OPERATING	STORAGE
TEMPERATURE	0°C to +95°C	-55°C to 100°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.

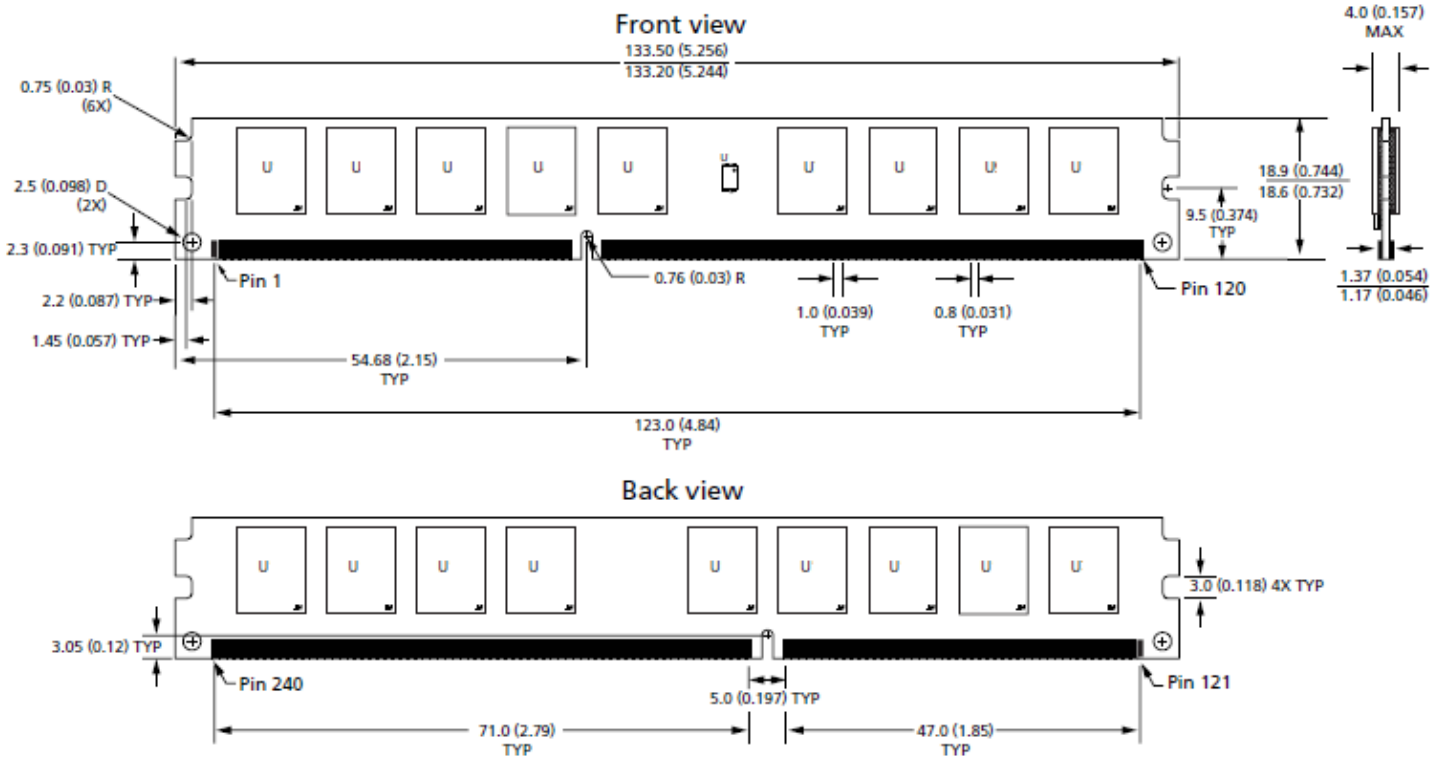
Differential Clock Wiring Diagram



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Mechanical Drawing



Notes: 1. All dimensions are in millimeters (inches); MAX/MIN or typical (TYP) where noted.

All dimensions are in inches (millimeters)



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