DDR ECC Unbuffered DIMM

DDR ECC Unbuffered DIMM is high-speed, low power memory module that use DDR SDRAM and a 2048 bits serial EEPROM on a 184-pin printed circuit board. DDR ECC Unbuffered DIMM is a Dual In-Line Memory Module and is intended for mounting into 184-pin edge connector sockets.
Synchronous design allows precise cycle control with the use of system clock. Data I/O transactions are possible on both edges of DQS. Range of operation frequencies, programmable latencies allow the same device to be useful for a variety of high bandwidth, high performance memory system applications.

Features

- RoHS compliant products.
- 400MHz Power supply: VDD: 2.6V ± 0.1V
  VDDQ: 2.6V ±0.1V
- 266/333MHz Power supply: VDD: 2.5V ± 0.2V
  VDDQ: 2.5V ±0.2V
- Clock Freq: 133MHZ for 266Mb/s/Pin.
  166MHZ for 333Mb/s/Pin.
  200MHZ for 400Mb/s/Pin.
- MRS cycle with address key programs.
- CAS Latency: 2.5, 3
- Burst Length: 2,4,8
- Data Sequence(Sequential & Interleave)
- Burst Mode Operation
- Auto and Self Refresh.
- Data I/O transaction on both edge of data strobe.
- Edge aligned data output, center aligned data input.
- SSTL-2 compatible inputs and outputs.
- Serial presence detect with EEPROM

Pin Identification

Symbol	Function
A0~A12, BA0~BA1	Address/Bank input
DQ0~DQ63	Bi-direction data bus.
DQS0~DQS8	Data strobes
CB0~CB7	Check bit
CK0,/CK0,CK1,/CK1, Ck2,/CK2	Clock Input. (Differential pair)
CKE0, CKE1	Clock Enable Input.
/CS0, /CS1	DIMM rank select lines.
/RAS	Row address strobe
/CAS	Column address strobe
/WE	Write Enable
DM0~DM8	Data masks/high data strobes
VDD	Power supply
VDDQ	Power Supply for DQS
V_{REF}	Power Supply for Reference
V_{DD}SPD	SPD EEPROM power supply
SA0~SA2	Address select for EEPROM
SCL	Clock for EEPROM
SDA	Data for EEPROM
VSS	Ground
NC	No Connection

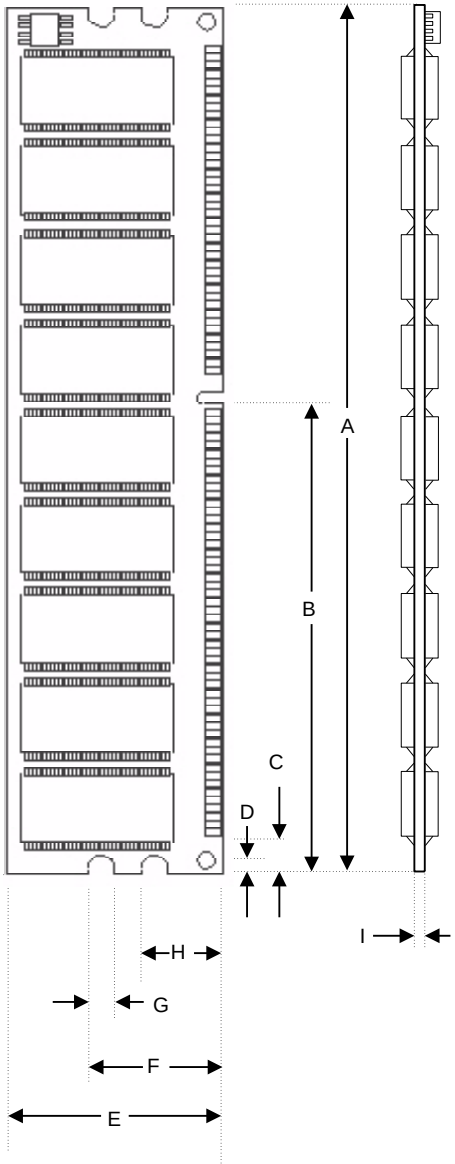
Dimensions

Side	Millimeters	Inches
A	133.35	5.250
B	72.39	2.850
C	6.35	0.250
D	2.20	0.087
E	30.48	1.200
F	19.80	0.779
G	4.00	0.157
H	12.00	0.472
I	1.27±0.10	0.050±0.004

Note:

1. Tolerances on all dimensions +/-0.15mm unless otherwise specified.

Placement



Pin Assignments

Pin No	Pin Name	Pin No	Pin Name	Pin No	Pin Name	Pin No	Pin Name
01	VREF	47	DQS8	93	VSS	139	VSS
02	DQ0	48	A0	94	DQ4	140	DM8
03	VSS	49	CB2	95	DQ5	141	A10
04	DQ1	50	VSS	96	VDDQ	142	CB6
05	DQS0	51	CB3	97	DM0	143	VDDQ
06	DQ2	52	BA1	98	DQ6	144	CB7
07	VDD	53	DQ32	99	DQ7	145	VSS
08	DQ3	54	VDDQ	100	VSS	146	DQ36
09	NC	55	DQ33	101	NC	147	DQ37
10	NC	56	DQS4	102	NC	148	VDD
11	VSS	57	DQ34	103	NC	149	DM4
12	DQ8	58	VSS	104	VDDQ	150	DQ38
13	DQ9	59	BA0	105	DQ12	151	DQ39
14	DQS1	60	DQ35	106	DQ13	152	VSS
15	VDDQ	61	DQ40	107	DM1	153	DQ44
16	CK1	62	VDDQ	108	VDD	154	/RAS
17	/CK1	63	/WE	109	DQ14	155	DQ45
18	VSS	64	DQ41	110	DQ15	156	VDDQ
19	DQ10	65	/CAS	111	CKE1	157	/CS0
20	DQ11	66	VSS	112	VDDQ	158	/CS1
21	CKE0	67	DQS5	113	NC	159	DM5
22	VDDQ	68	DQ42	114	DQ20	160	VSS
23	DQ16	69	DQ43	115	A12	161	DQ46
24	DQ17	70	VDD	116	VSS	162	DQ47
25	DQS2	71	NC	117	DQ21	163	NC
26	VSS	72	DQ48	118	A11	164	VDDQ
27	A9	73	DQ49	119	DM2	165	DQ52
28	DQ18	74	VSS	120	VDD	166	DQ53
29	A7	75	/CK2	121	DQ22	167	NC
30	VDDQ	76	CK2	122	A8	168	VDD
31	DQ19	77	VDDQ	123	DQ23	169	DM6
32	A5	78	DQS6	124	VSS	170	DQ54
33	DQ24	79	DQ50	125	A6	171	DQ55
34	VSS	80	DQ51	126	DQ28	172	VDDQ
35	DQ25	81	VSS	127	DQ29	173	NC
36	DQS3	82	NC	128	VDDQ	174	DQ60
37	A4	83	DQ56	129	DM3	175	DQ61
38	VDD	84	DQ57	130	A3	176	VSS
39	DQ26	85	VDD	131	DQ30	177	DM7
40	DQ27	86	DQS7	132	VSS	178	DQ62
41	A2	87	DQ58	133	DQ31	179	DQ63
42	VSS	88	DQ59	134	CB4	180	VDDQ
43	A1	89	VSS	135	CB5	181	SA0
44	CB0	90	NC	136	VDDQ	182	SA1
45	CB1	91	SDA	137	CK0	183	SA2
46	VDD	92	SCL	138	/CK0	184	VDDSPD