Preliminary

OKI Semiconductor

MSC23V47257TA-xxBS18/ MSC23V47257SA-xxBS18

4,194,304-Word × 72-Bit DRAM MODULE : FAST PAGE MODE TYPE WITH EDO

DESCRIPTION

The Oki MSC23V47257TA-xxBS18/MSC23V47257SA-xxBS18 is a fully decoded 4,194,304-word × 72-bit CMOS dynamic random access memory composed of eighteen 16-Mb DRAMs (4M × 4) in TSOP or SOJ packages mounted with decoupling capacitors on an 168-pin glass epoxy DIMM Package supports any application where high density and large capacity of storage memory are required.

FEATURES

- 4,194,304-word × 72-bit (8 Byte ECC) organization
- 168-pin DIMM
  MSC23V47257TA-xxBS18 : TSOP type
  MSC23V47257SA-xxBS18 : SOJ type
- Single 3.3 V supply ±0.3 V tolerance
- Input : LVTTL compatible
- Output : LVTTL compatible, 3-state, nonlatch
- Refresh : 2048 cycles/32 ms
- $\overline{CAS}$ before $\overline{RAS}$ refresh, $\overline{CAS}$ before $\overline{RAS}$ hidden refresh, $\overline{RAS}$-only refresh capability
- Multi-bit test mode capability
- Fast Page Mode with EDO capability
- Serial Presence Detect

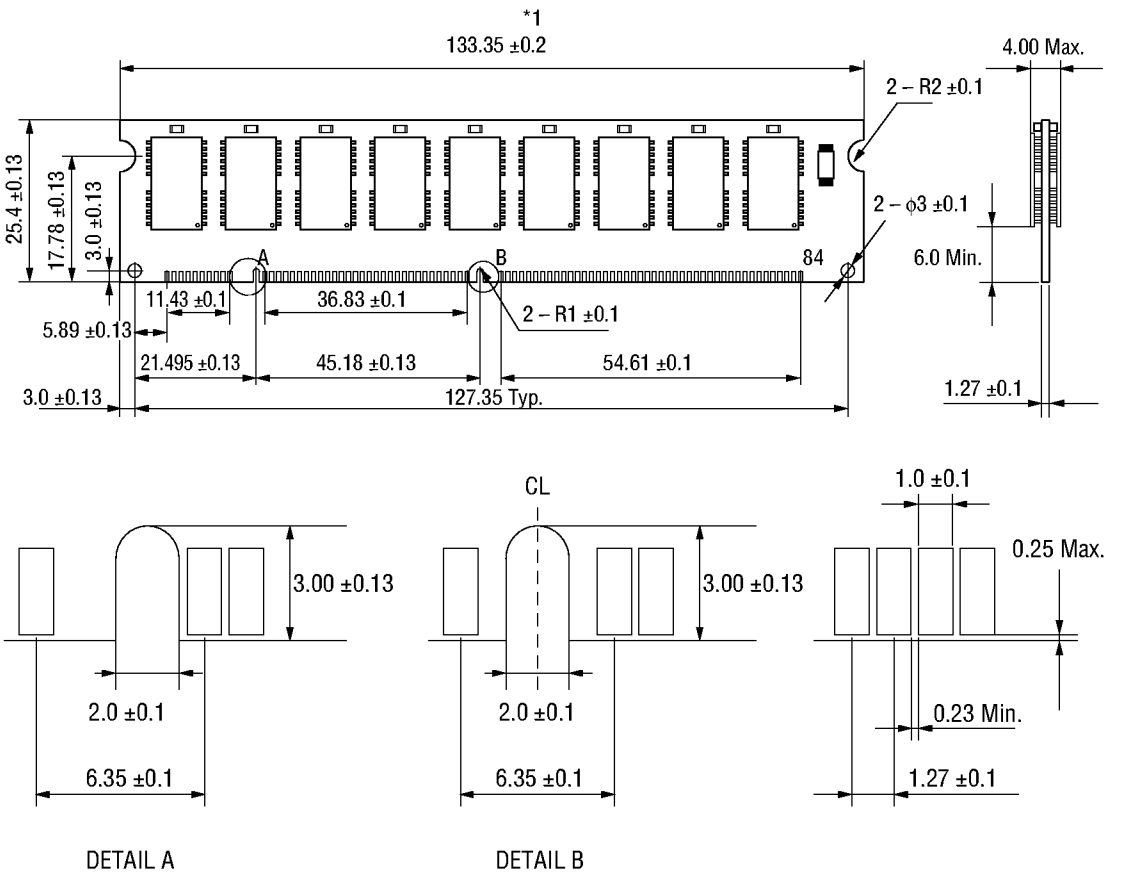
PRODUCT FAMILY

Family	Access Time (Max.)				Cycle Time (Min.)	Power Dissipation	
	t_{RAC}	t_{AA}	t_{CAC}	t_{OEA}		Operating (Max.)	Standby (Max.)
MSC23V47257TA-60BS18 MSC23V47257SA-60BS18	60 ns	30 ns	15 ns	15 ns	110 ns	7776 mW	64.8 mW
MSC23V47257TA-70BS18 MSC23V47257SA-70BS18	70 ns	35 ns	20 ns	20 ns	130 ns	7128 mW	

PIN CONFIGURATION

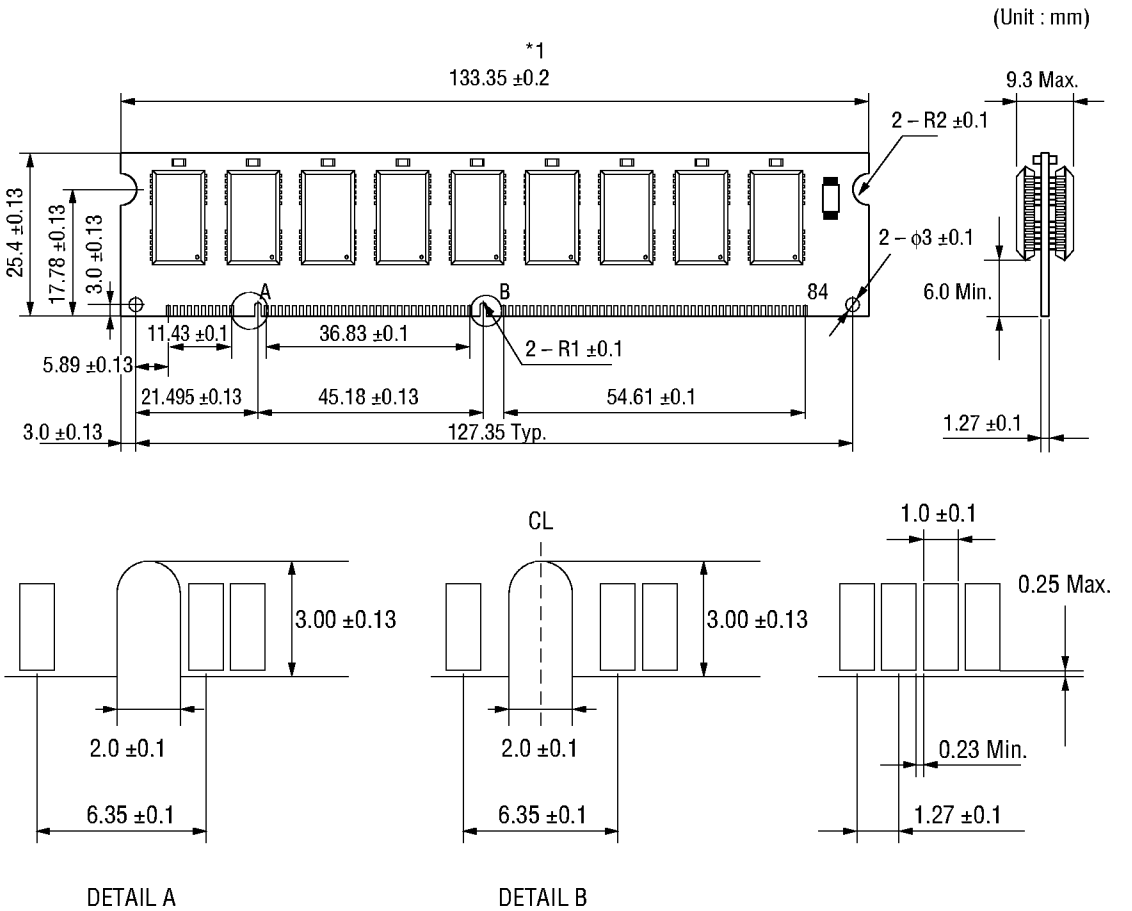
MSC23V47257TA-xxBS18

(Unit : mm)



*1 The common size difference of the board width 19.78 mm of its height is specified as ±0.2. The value above 19.78 mm is specified as ±0.5.

MSC23V47257SA-xxBS18



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Front Side

Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name
1	V_{SS}	18	V_{CC}	35	A4	52	CB2	69	DQ24
2	DQ0	19	DQ14	36	A6	53	CB3	70	DQ25
3	DQ1	20	DQ15	37	A8	54	V_{SS}	71	DQ26
4	DQ2	21	CB0	38	A10	55	DQ16	72	DQ27
5	DQ3	22	CB1	39	NC	56	DQ17	73	V_{CC}
6	V_{CC}	23	V_{SS}	40	V_{CC}	57	DQ18	74	DQ28
7	DQ4	24	NC	41	V_{CC}	58	DQ19	75	DQ29
8	DQ5	25	NC	42	NC	59	V_{CC}	76	DQ30
9	DQ6	26	V_{CC}	43	V_{SS}	60	DQ20	77	DQ31
10	DQ7	27	$\overline{WE0}$	44	$\overline{OE2}$	61	NC	78	V_{SS}
11	DQ8	28	$\overline{CAS0}$	45	$\overline{RAS2}$	62	NC	79	NC
12	V_{SS}	29	$\overline{CAS1}$	46	$\overline{CAS2}$	63	NC	80	NC
13	DQ9	30	$\overline{RAS0}$	47	$\overline{CAS3}$	64	V_{SS}	81	NC
14	DQ10	31	$\overline{OE0}$	48	$\overline{WE2}$	65	DQ21	82	SDA
15	DQ11	32	V_{SS}	49	V_{CC}	66	DQ22	83	SCL
16	DQ12	33	A0	50	NC	67	DQ23	84	V_{CC}
17	DQ13	34	A2	51	NC	68	V_{SS}		

Back Side

Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name
85	V_{SS}	102	V_{CC}	119	A5	136	CB6	153	DQ56
86	DQ32	103	DQ46	120	A7	137	CB7	154	DQ57
87	DQ33	104	DQ47	121	A9	138	V_{SS}	155	DQ58
88	DQ34	105	CB4	122	NC	139	DQ48	156	DQ59
89	DQ35	106	CB5	123	NC	140	DQ49	157	V_{CC}
90	V_{CC}	107	V_{SS}	124	V_{CC}	141	DQ50	158	DQ60
91	DQ36	108	NC	125	NC	142	DQ51	159	DQ61
92	DQ37	109	NC	126	NC	143	V_{CC}	160	DQ62
93	DQ38	110	V_{CC}	127	V_{SS}	144	DQ52	161	DQ63
94	DQ39	111	NC	128	NC	145	NC	162	V_{SS}
95	DQ40	112	$\overline{CAS4}$	129	NC	146	NC	163	NC
96	V_{SS}	113	$\overline{CAS5}$	130	$\overline{CAS6}$	147	NC	164	NC
97	DQ41	114	NC	131	$\overline{CAS7}$	148	V_{SS}	165	SA0
98	DQ42	115	NC	132	NC	149	DQ53	166	SA1
99	DQ43	116	V_{SS}	133	V_{CC}	150	DQ54	167	SA2
100	DQ44	117	A1	134	NC	151	DQ55	168	V_{CC}
101	DQ45	118	A3	135	NC	152	V_{SS}		

Serial PD Matrix

Byte Number	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Remark
0	0	0	0	0	1	1	0	1	Number of Bytes used (13 Bytes)
1	0	0	0	0	1	0	0	0	Total SPD Memory size (256 Bytes)
2	0	0	0	0	0	0	1	0	Memory type (EDO)
3	0	0	0	0	1	0	1	1	Number of Rows (11)
4	0	0	0	0	1	0	1	1	Number of Columns (11)
5	0	0	0	0	0	0	0	1	Number of Banks (1)
6	0	1	0	0	1	0	0	0	Module Data Width (72)
7	0	0	0	0	0	0	0	0	Module Data Width Continued (0)
8	0	0	0	0	0	0	1	0	Supply Voltage (3.3 V, LVTTL)
9 (-60)	0	0	1	1	1	1	0	0	$\overline{RAS}$ Access Time (60 ns)
9 (-70)	0	1	0	0	0	1	1	0	$\overline{RAS}$ Access Time (70 ns)
10 (-60)	0	0	0	0	1	1	1	1	$\overline{CAS}$ Access Time (15 ns)
10 (-70)	0	0	0	1	0	1	0	0	$\overline{CAS}$ Access Time (20 ns)
11	0	0	0	0	0	0	1	0	ECC
12	0	0	0	0	0	0	0	0	Normal Refresh