

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 : LVTTTL compatible
- Output : LVTTTL compatible, 3-state, nonlatch
- Refresh : 2048 cycles/32 ms
- $\overline{\text{CAS}}$ before $\overline{\text{RAS}}$ refresh, $\overline{\text{CAS}}$ before $\overline{\text{RAS}}$ hidden refresh, $\overline{\text{RAS}}$ -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	

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, LVTTTL)
9 (-60)	0	0	1	1	1	1	0	0	$\overline{\text{RAS}}$ Access Time (60 ns)
9 (-70)	0	1	0	0	0	1	1	0	$\overline{\text{RAS}}$ Access Time (70 ns)
10 (-60)	0	0	0	0	1	1	1	1	$\overline{\text{CAS}}$ Access Time (15 ns)
10 (-70)	0	0	0	1	0	1	0	0	$\overline{\text{CAS}}$ 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