

B1120M

Preliminary Specifications

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B1120M is a test burn-in system manufactured with the view of executing the batch test during memory IC burn-in. B1120M is organized 60 burn-in boards at 6 zones and it can communicate with categorized loader / unloader machines by connection to the network.

1. General Specification

1.1 Object Devices	Semiconductor Logic, Memory And Embedded Memory.
1.2 Application	Burn-in / Batch Test / Life Test
1.3 Available System Operation Temperature Range	< 28°C
1.4 Temperature Range in the Chamber	Room temperature + 30°C ~ 150°C
1.5 Number of Zones	6 Zones
1.6 Number of Slots	60 Slots (10 Slots per Zone)
1.7 Address Size	32 Bit (4G)
1.8 I/O Channel	64 Channels (Max)

2. Burn-in Board

2.1 Size	313mm × 590mm (thickness : 1.6mm) 291.5mm × 590mm (thickness : 1.6mm)
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2.2 Pin Assignment

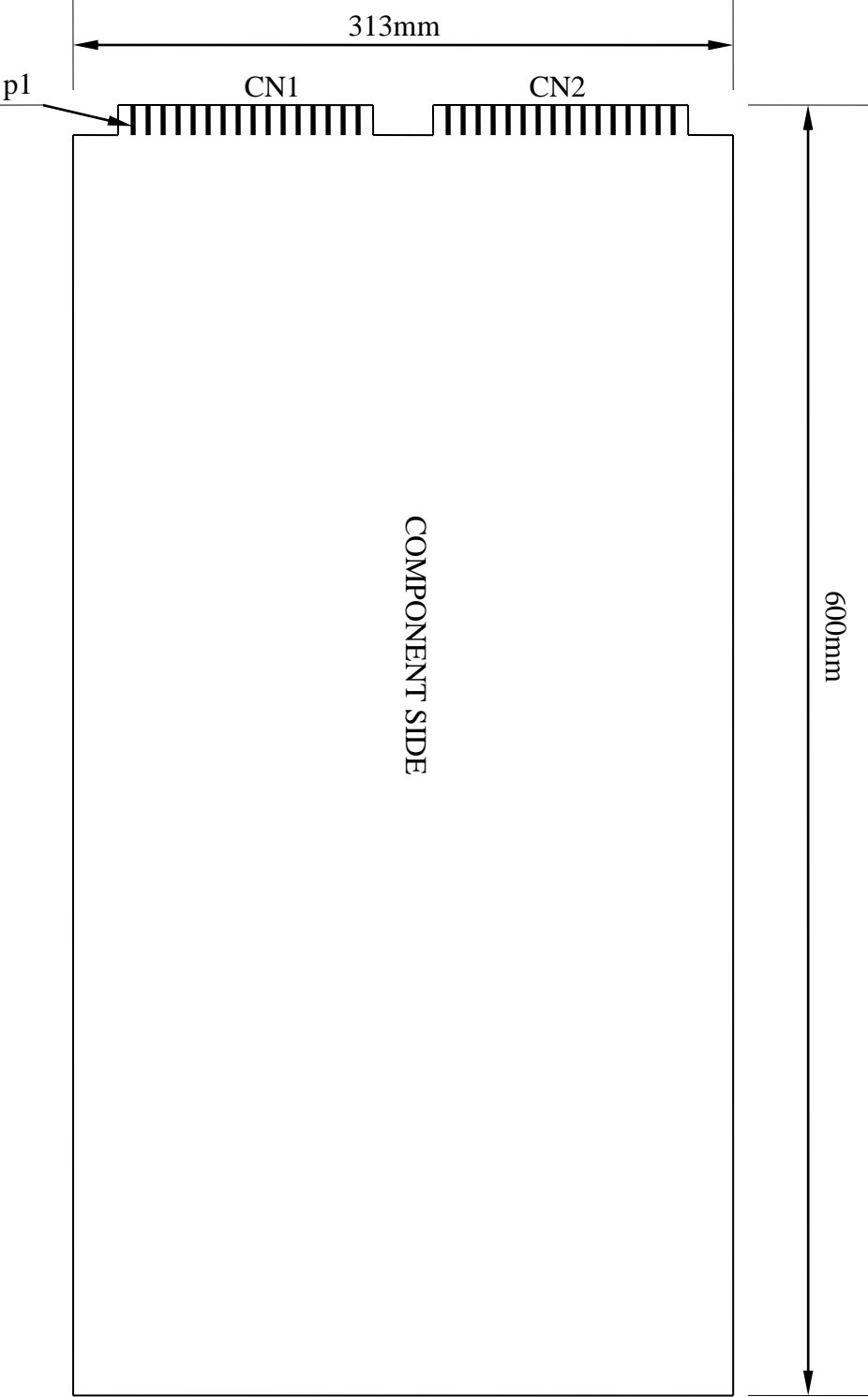
Pin Description	Notation	Maximum No.of Channels	Comments
Address Channel	An	32	n = 0~31, Can use as Clock
Input / Output Channel	IO _n	64	n = 0~63, Can use as Clock
Board ID Selector	DnSEL	4	n = 1~4
Board ID Data	nDBR	4	n = 2,3 & L · MSBR
Board Exist	EXIST	1	
Board Select	BDSEL	1	
Power Supply	DPS _n	26	n = 1~3
Power Supply Sense	DPS _n SENS	3	n = 1~3
Power Supply Monitor	DPS _n MON	3	n = 1~3
Ground	GND	51	
Ground Monitor	MGND	1	
Spare	SPARE	7	
MONCK	MONCK	1	Reserved
+5V Power Supply	VSN	2	For Board Select

2.3 Table of connector pin signals

		<u>CN1</u>	
Component Side	1	Sold Side	2
GND	1	GND	2
GND	2	GND	3
EXIST	3	GND	4
DRO80 IO38	4	DRO88 IO46	5
DRO81 IO39	5	DRO89 IO47	6
DRO82 IO40	6	DRO90 IO48	7
GND	7	GND	8
DRO83 IO41	8	DRO91 IO49	9
DRO84 IO42	9	DRO92 IO50	10
DRO85 IO43	10	DRO93 IO51	11
DRO86 IO44	11	DRO94 IO52	12
DRO87 IO45	12	DRO95 IO53	13
GND	13	GND	14
*SPARE	14	*SPARE	15
DPS2	15	DPS2	16
DPS2	16	DPS2	17
DPS2	17	DPS2	18
DPS2	18	DPS2	19
DPS2	19	DPS2	20
DPS2SENS	20	DPS2MON	21
GND	21	GND	22
GND	22	GND	23
GND	23	GND	24
DRO0 A0	24	DRO26 A26/CLK10	25
DRO1 A1	25	DRO27 A27/CLK11	26
DRO2 A2	26	DRO28 A28/CLK12	27
DRO3 A3	27	DRO29 A29/CLK13	28
DRO4 A4	28	DRO30 A30/CLK14	29
GND	29	GND	30
DRO5 A5	30	DRO31 A31/CLK15	31
DRO6 A6	31	DRO32 CLK16	32
DRO7 A7	32	DRO33 CLK17	33
DRO8 A8	33	DRO34 CLK18	34
DRO9 A9	34	DRO35 CLK19	35
GND	35	GND	36
D1SEL	36	D2SEL	37
D4SEL	37	D3SEL	38
2DBR	38	LSBR	39
3DBR	39	MSBR	40
BDSEL	40	MONCK	41
MGND	41	*SPARE	42
VSN	42	VSN	43
GND	43	GND	44
DRO10 A10	44	DRO36 CLK20	45
DRO11 A11	45	DRO37 CLK21	46
DRO12 A12	46	DRO38 CLK22	47
DRO13 A13	47	DRO39 CLK23	48
DRO14 A14	48	DRO40 CLK24	49
GND	49	GND	50
GND	50	GND	

		<u>CN2</u>	
Component Side	1	Sold Side	2
GND	1	GND	2
GND	2	GND	3
DRO15 A15	3	DRO41 CLK25	4
DRO16 A16/CLK0	4	DRO42 IO0/CLK26	5
DRO17 A17/CLK1	5	DRO43 IO1/CLK27	6
DRO18 A18/CLK2	6	DRO44 IO2/CLK28	7
DRO19 A19/CLK3	7	DRO45 IO3/CLK29	8
DRO20 A20/CLK4	8	DRO46 IO4/CLK30	9
GND	9	GND	10
DRO21 A21/CLK5	10	DRO47 IO5/CLK31	11
DRO22 A22/CLK6	11	DRO48 IO6/CLK32	12
DRO23 A23/CLK7	12	DRO49 IO7/CLK33	13
DRO24 A24/CLK8	13	DRO50 IO8/CLK34	14
DRO25 A25/CLK9	14	DRO51 IO9/CLK35	15
*SPARE	15	*SPARE	16
DPS3	16	DPS3	17
DPS3	17	DPS3	18
DPS3SENS	18	DPS3MON	19
GND	19	GND	20
GND	20	GND	21
GND	21	GND	22
GND	22	GND	23
DPS1SENS	23	DPS1MON	24
DPS1	24	DPS1	25
DPS1	25	DPS1	26
DPS1	26	DPS1	27
DPS1	27	DPS1	28
DPS1	28	DPS1	29
DPS1	29	DPS1	30
*SPARE	30	*SPARE	31
GND	31	GND	32
DRO52 IO10/CLK36	32	DRO66 IO24	33
DRO53 IO11/CLK37	33	DRO67 IO25	34
DRO54 IO12/CLK38	34	DRO68 IO26	35
DRO55 IO13/CLK39	35	DRO69 IO27	36
GND	36	GND	37
DRO56 IO14/CLK40	37	DRO70 IO28	38
DRO57 IO15/CLK41	38	DRO71 IO29	39
DRO58 IO16/CLK42	39	DRO72 IO30	40
DRO59 IO17/CLK43	40	DRO73 IO31	41
DRO60 IO18/CLK44	41	DRO74 IO32	42
GND	42	GND	43
DRO61 IO19/CLK45	43	DRO75 IO33	44
DRO62 IO20/CLK46	44	DRO76 IO34	45
DRO63 IO21/CLK47	45	DRO77 IO35	46
DRO64 IO22	46	DRO78 IO36	47
DRO65 IO23	47	DRO79 IO37	48
GND	48	GND	49
GND	49	GND	50
GND	50	GND	

2.4 Burn-in board size



3. Power supply

3.1 Specification

Power Supply	Operation Range	Current Capacity (Per Board)	Resolution	Step
DPS1	3V ~ 10V	15A	10mV	0.1V
DPS2	3V ~ 10V	3A	10mV	0.1V

NOTE:

1) DPS2 is optional

2) On/Off Sequence Sequence of each power supply can be set by a program.

4. Chamber

4.1	Method	Forced-hot blast-circulation Method		
4.2	Temperature Distribution Range	±3°C		
4.3	Allowable Thermal Load	Inside of Chamber	at +70°C	1.5kw
			at +150°C	3.0kw
4.4	Operational Temperature Range	0°C ~ 28°C		
4.5	Furnace Air-speed	About 1.5m/sec. fixed.		
4.6	Temperature Rising Time	From room temp. up to 125°C	About 40 min.	
4.7	Temperature Falling Time	From 125°C down to room temp.+30°C	About 50min.	
		(with no burn-in board loading)		
4.8	Exhaust			
	a) Amount	Forced Exhaust	16 m ³ /min.Max	
	b) Flange Bore	5 inches		
4.9	Size and Weight			
	a) Outer Size	2470mm (W) × 1470mm (D) × 2350mm (H)		
	b) Weight	About 1600kg		
4.10	Construction			
	a) External Material	SECC zinc plating steel		
	b) Painting Color	Main Body	ML401T	
		Doors	FL401T	
	c) Material of Inside of Chamber	SUS430 Stainless Steel Plate, Silicone Rubber		
	d) Insulator	Glass Wool		
4.11	Heater	Strip Heater 14kw		

4.12	Blower	
	a) Method	Sirocco Fan
	b) Capacity of Motor	3 hp × 1 pcs, 2 hp × 1 pcs..
4.13	Temperature Controller	
	a) Method	Direct Digital Control by Micro Computer
	b) Set Range	0°C ~ +200°C
	c) Resolution	0.1°C
	d) Precision Setting	±(0.3% F.S + 1DIGIT)
4.14	Temperature Recorder	
	a) Method	Dot-Printing Type Recorder
	b) Scale Range	0°C ~ +200°C
	d) Number of Measured Points	6 points
4.15	Security Functions	
	a) Automatic High Limit	Auto-setting at setting temperature + 10°C
	b) High Temperature Limit setting	Set on a rotary switch.

5. Timing Generator

5.1	Cycle Time	200ns to 40μs ,50ns resolution
5.2	Clock Delay	0ns to (Period – 100 ns) , 50ns resolution
5.3	Minimum Pulse Width	50 ns
5.4	Comparator Strobe	20 ns to (period –100 ns), 50ns resolution
5.5	On The Fly	16 Sets
5.6	Clock Phase (Driver)	Per pin
5.7	Strobe Method	Edge strobe

6. Pattern Generator

6.1	Method	1) Algorithmic Logic Pattern Generation (Option) 2) Logic Patterns Control
6.2	ALPG (option)	
	Address generator	X= 16 bit , Y= 16 bit
	Pattern function	+ , - , LOAD
	Address mode	Normal , Multiplex
	Data generator	16 bit max.
	Data Function	LOAD , AND , OR ,XOR , ×2 , ÷2 , + , -

6.3 Logic Pattern Control

Vector Width	96 bits MAX.
Vector Depth	128k
Repeat	2 to 64k
Loop Counter	4
Jump	Conditional , Unconditional

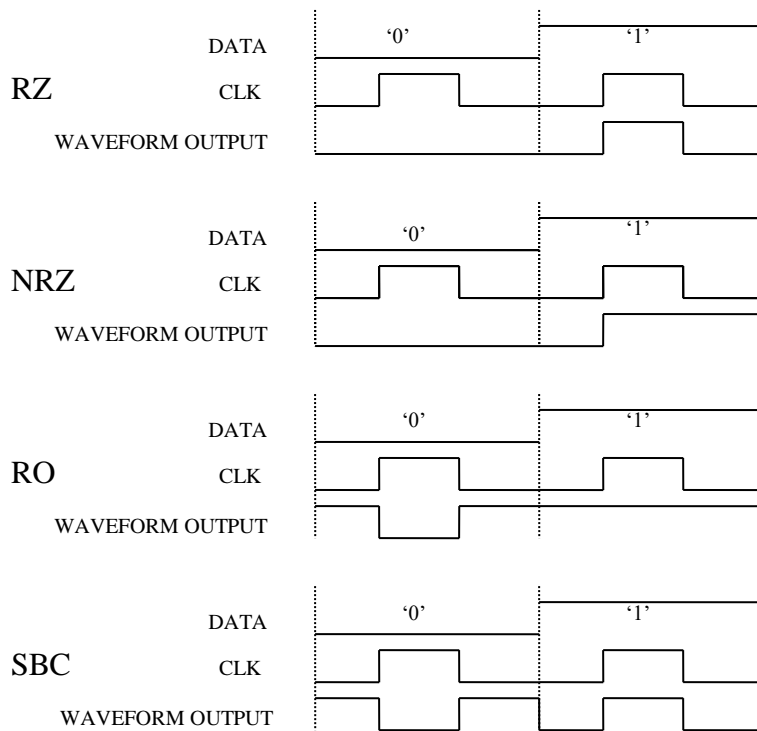
6.4 Timer For Refresh : 1 μ s~1000sec

6.5 Interrupt Timer Interrupt

7.Wave Format

Provide 4 kinds of Wave Format :

RZ, NRZ, RO, SBC.



8.Address Scrambler

8.1 Method	Programmable Memory Method
8.2 Address	AND,OR,EOR,INVERT

9.Driver Control Board

- 9.1 Driver Channel 48CH, 96(MAX).
- 9.2 Comparator 48CH, 96CH(MAX).
- 9.3 Tri-state control Per pin
- 9.4 Overshoot $\leq 10\%$ of VIH with fine tune C use by diagnostic board.
- 9.5 Undershoot $\leq 10\%$ of VIH with fine tune C use by diagnostic board.
- 9.6 Noise Level $\leq 500\text{mV}$
- 9.7 Driver Function 48CH, 96 (MAX)
- Address :32bit (min 16 bit)
- Control Clock :32bit (min 8 bit)
- Data :32bit (max 64 bit)

9.8 Reference Voltage

Reference Voltage	Operation Range	Capacity per Channel	Resolution	Precision	Tr/Tf
VIH	1.5V ~ 8V	200mA	10mV	$\pm 0.1\text{V}$	$\leq 50\text{ns}(1000\text{pf}, 0\text{v}\sim 5\text{v}, 10\%\sim 90\%)$
VIL	$< 0.4\text{V}$	200mA	-	-	-
VTH	0V ~ 8V	-	10mV	$\pm 0.1\text{V}$	-

10.Self Diagnosis (Option)

- 10.1 Method Comparator judge by driver signals returning from diagnostic Boards. (Diagnostic boards are sold separately from B1120M burn-in system.)
- 10.2 Check Items
- Interference between signals
 - Voltage level

11.Burn-in Controller

- 11.1 Processor Pentium-100 PC with 16 M DRAM
- 11.2 Hard Disk 1.2GB
- 11.3 Floppy Disk Supported 3.5 inch 2HD (1.44MB format)
- 11.4 Operator Panel 15 inches, VGA monitor
- 11.5 Software Novellus application software

12. Software

12.1 Burn-In Program

a) Burn-in Flow

Burn-in plan sequence with temperature and duration.

b) Burn-in Plan

1) DUT power setting

2) Burn-in Pattern selection (multiple)

3) Debug Utility setting (one pattern at a time).

12.2 Burn-In Pattern

Up to n Pattern files are usable per
burn-in condition.

1) Device Define

2) Header Define

3) Pin Group Define

(n is limited only a hard disk capacity.)

4) Timing Set Define

5) Wave Format Define

13. Essential Equipment Preparation

13.1 Power Requirement

AC208V 3Φ, 5W 60Hz Capacity 75A

13.2 Total Weight 1600kg