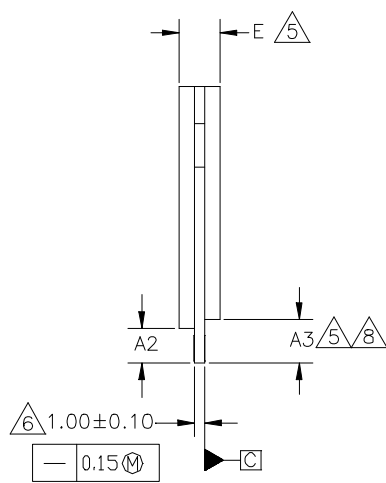
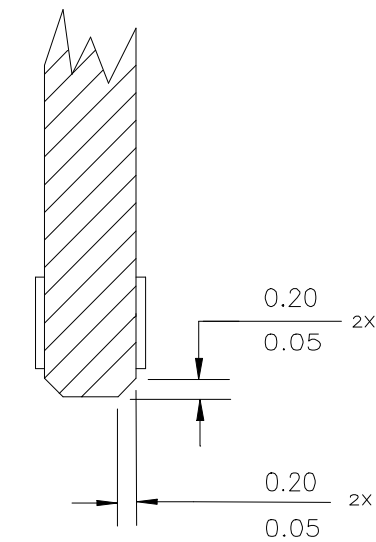


IT HAS BEEN STATED THAT U.S. PATENT NO. 5,227,664 (HELD BY HITACHI) MAY RELATE TO CERTAIN IMPLEMENTATIONS OF THIS PACKAGE OUTLINE.

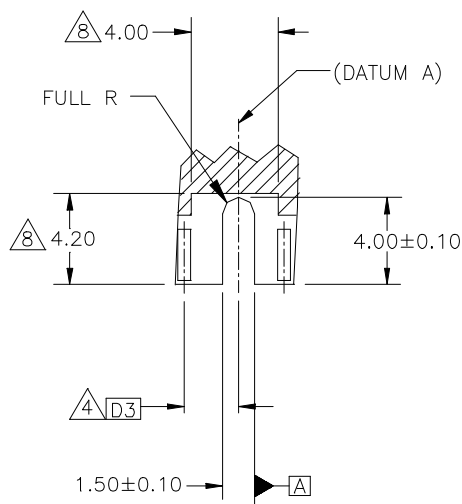
JEDEC SOLID STATE PRODUCT OUTLINE	THIS REGISTERED OUTLINE HAS BEEN PREPARED BY THE JEDEC JC-11 COMMITTEE AND REFLECTS A PRODUCT WITH ANTICIPATED USAGE IN THE ELECTRONICS INDUSTRY; CHANGES ARE LIKELY TO OCCUR.				
TITLE SMALL OUTLINE DUAL INLINE MEMORY MODULE (SODIMM) FAMILY, 0.8 LEAD CENTERS	DESIGNATOR D	ISSUE D	DATE JAN 01	MO-190	SHEET 1 OF 8



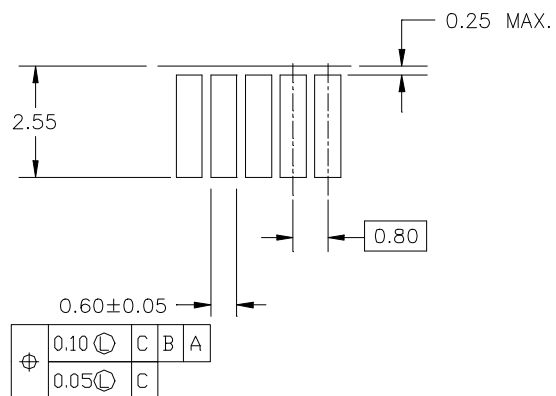
VIEW A-A



VIEW B-B
(OPTIONAL)



DETAIL Z



DETAIL Y

JEDEC SOLID STATE PRODUCT OUTLINE	TITLE SMALL OUTLINE DUAL INLINE' MEMORY MODULE (SODIMM) FAMILY, 0.8 LEAD CENTERS	ISSUE D	DATE JAN 01	MO-190	SHEET 2 OF 8
---	---	------------	----------------	--------	-----------------

DRAM VARIATIONS

	AA			AB			AC			NOTE
SYMBOL	MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
A	25.25	25.40	25.55	25.25	25.40	25.55	25.25	25.40	25.55	5 , 8
A1	6.00 BSC			6.00 BSC			6.00 BSC			
A2	3.20			3.20			3.20			
A3	4.00			4.00			4.00			
A4	20.00 BSC			20.00 BSC			20.00 BSC			
D	67.45	67.60	67.75	67.45	67.60	67.75	67.45	67.60	67.75	4
D1	24.50 BSC			24.50 BSC			24.50 BSC			
D2	63.60 BSC			63.60 BSC			63.60 BSC			
D3	1.75 BSC			2.50 BSC			3.25 BSC			
D4	1.35 BSC			2.10 BSC			2.85 BSC			
D5	4.05 BSC			4.80 BSC			5.55 BSC			5
E			3.80			3.80			3.80	
e1	23.20 BSC			23.20 BSC			23.20 BSC			
e2	32.80 BSC			32.80 BSC			32.80 BSC			
N	144			144			144			
ISSUE	B			B			B			
REF	11.14–031			11.14–031			11.14–031			
NOTES	1,2,3			1,2,3			1,2,3			

	BA			BB			BC			NOTE
SYMBOL	MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
A	31.60	31.75	31.90	31.60	31.75	31.90	31.60	31.75	31.90	5 , 8
A1	6.00 BSC			6.00 BSC			6.00 BSC			
A2	3.20			3.20			3.20			
A3	4.00			4.00			4.00			
A4	20.00 BSC			20.00 BSC			20.00 BSC			
D	67.45	67.60	67.75	67.45	67.60	67.75	67.45	67.60	67.75	4
D1	24.50 BSC			24.50 BSC			24.50 BSC			
D2	63.60 BSC			63.60 BSC			63.60 BSC			
D3	1.75 BSC			2.50 BSC			3.25 BSC			
D4	1.35 BSC			2.10 BSC			2.85 BSC			
D5	4.05 BSC			4.80 BSC			5.55 BSC			5
E			3.80			3.80			3.80	
e1	23.20 BSC			23.20 BSC			23.20 BSC			
e2	32.80 BSC			32.80 BSC			32.80 BSC			
N	144			144			144			
ISSUE	B			B			B			
REF	11.14–031			11.14–031			11.14–031			
NOTES	1,2,3			1,2,3			1,2,3			

JEDEC SOLID STATE PRODUCT OUTLINE	TITLE SMALL OUTLINE DUAL INLINE MEMORY MODULE (SODIMM) FAMILY, 0.8 LEAD CENTERS	ISSUE D	DATE JAN 01	MO-190	SHEET 3 OF 8

DRAM VARIATIONS

	CA			CB			CC			NOTE
SYMBOL	MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
A	37.95	38.10	38.25	37.95	38.10	38.25	37.95	38.10	38.25	5 , 8
A1	6.00 BSC			6.00 BSC			6.00 BSC			
A2	3.20			3.20			3.20			
A3	4.00			4.00			4.00			
A4	20.00 BSC			20.00 BSC			20.00 BSC			4
D	67.45	67.60	67.75	67.45	67.60	67.75	67.45	67.60	67.75	
D1	24.50 BSC			24.50 BSC			24.50 BSC			
D2	63.60 BSC			63.60 BSC			63.60 BSC			
D3	1.75 BSC			2.50 BSC			3.25 BSC			5
D4	1.35 BSC			2.10 BSC			2.85 BSC			
D5	4.05 BSC			4.80 BSC			5.55 BSC			
E			3.80			3.80			3.80	
e1	23.20 BSC			23.20 BSC			23.20 BSC			
e2	32.80 BSC			32.80 BSC			32.80 BSC			
N	144			144			144			
ISSUE	B			B			B			
REF	11.14–031			11.14–031			11.14–031			
NOTES	1,2,3			1,2,3			1,2,3			

	DA			DB			DC			NOTE
SYMBOL	MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
A	50.65	50.80	50.95	50.65	50.80	50.95	50.65	50.80	50.95	5 , 8
A1	6.00 BSC			6.00 BSC			6.00 BSC			
A2	3.20			3.20			3.20			
A3	4.00			4.00			4.00			
A4	20.00 BSC			20.00 BSC			20.00 BSC			
D	67.45	67.60	67.75	67.45	67.60	67.75	67.45	67.60	67.75	4
D1	24.50 BSC			24.50 BSC			24.50 BSC			
D2	63.60 BSC			63.60 BSC			63.60 BSC			
D3	1.75 BSC			2.50 BSC			3.25 BSC			
D4	1.35 BSC			2.10 BSC			2.85 BSC			
D5	4.05 BSC			4.80 BSC			5.55 BSC			5
E			3.80			3.80			3.80	
e1	23.20 BSC			23.20 BSC			23.20 BSC			
e2	32.80 BSC			32.80 BSC			32.80 BSC			
N	144			144			144			
ISSUE	B			B			B			
REF	11.14—031			11.14—031			11.14—031			
NOTES	1,2,3			1,2,3			1,2,3			

JEDEC SOLID STATE PRODUCT OUTLINE	TITLE SMALL OUTLINE DUAL INLINE MEMORY MODULE (SODIMM) FAMILY, 0.8 LEAD CENTERS	ISSUE D	DATE JAN 01	MO-190	SHEET 4 OF 8
---	--	------------	----------------	--------	-----------------

SGRAM VARIATIONS

	EA			EB			EC			NOTE
SYMBOL	MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
A	25.25	25.40	25.55	25.25	25.40	25.55	25.25	25.40	25.55	5 , 8
A1	6.00 BSC			6.00 BSC			6.00 BSC			
A2	3.20			3.20			3.20			
A3	4.00			4.00			4.00			
A4	20.00 BSC			20.00 BSC			20.00 BSC			
D	67.45	67.60	67.75	67.45	67.60	67.75	67.45	67.60	67.75	4
D1	20.50 BSC			20.50 BSC			20.50 BSC			
D2	63.60 BSC			63.60 BSC			63.60 BSC			
D3	1.75 BSC			2.50 BSC			3.25 BSC			
D4	1.35 BSC			2.10 BSC			2.85 BSC			
D5	8.05 BSC			8.80 BSC			9.55 BSC			5
E			7.50			7.50			7.50	
e1	19.20 BSC			19.20 BSC			19.20 BSC			
e2	36.80 BSC			36.80 BSC			36.80 BSC			
N	144			144			144			
ISSUE	B			B			B			
REF	11.14–031			11.14–031			11.14–031			
NOTES	1,2,3			1,2,3			1,2,3			

	FA			FB			FC			NOTE
SYMBOL	MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
A	31.60	31.75	31.90	31.60	31.75	31.90	31.60	31.75	31.90	5 , 8
A1	6.00 BSC			6.00 BSC			6.00 BSC			
A2	3.20			3.20			3.20			
A3	4.00			4.00			4.00			
A4	20.00 BSC			20.00 BSC			20.00 BSC			
D	67.45	67.60	67.75	67.45	67.60	67.75	67.45	67.60	67.75	4
D1	20.50 BSC			20.50 BSC			20.50 BSC			
D2	63.60 BSC			63.60 BSC			63.60 BSC			
D3	1.75 BSC			2.50 BSC			3.25 BSC			
D4	1.35 BSC			2.10 BSC			2.85 BSC			
D5	8.05 BSC			8.80 BSC			9.55 BSC			5
E			7.50			7.50			7.50	
e1	19.20 BSC			19.20 BSC			19.20 BSC			
e2	36.80 BSC			36.80 BSC			36.80 BSC			
N	144			144			144			
ISSUE	B			B			B			
REF	11.14–031			11.14–031			11.14–031			
NOTES	1,2,3			1,2,3			1,2,3			

JEDEC SOLID STATE PRODUCT OUTLINE	TITLE SMALL OUTLINE DUAL INLINE MEMORY MODULE (SODIMM) FAMILY, 0.8 LEAD CENTERS	ISSUE D	DATE JAN 01	MO-190	SHEET 5 OF 8

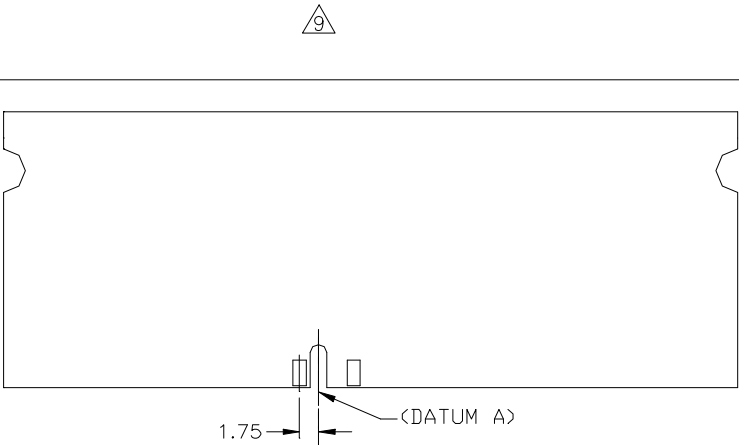
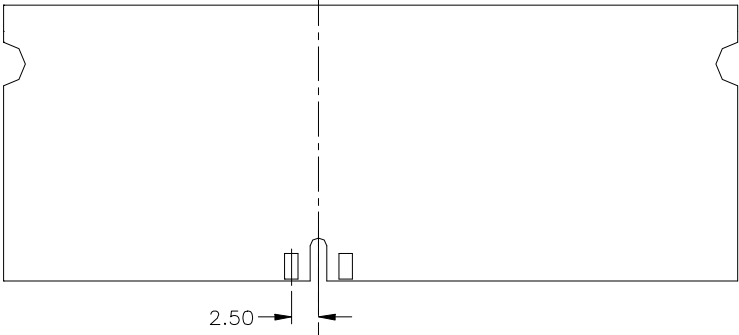
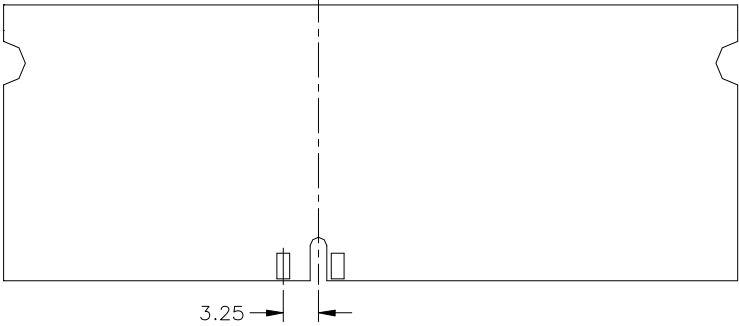
SGRAM VARIATIONS

	GA			GB			GC			NOTE
SYMBOL	MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
A	37.95	38.10	38.25	37.95	38.10	38.25	37.95	38.10	38.25	5 , 8
A1	6.00 BSC			6.00 BSC			6.00 BSC			
A2	3.20			3.20			3.20			
A3	4.00			4.00			4.00			
A4	20.00 BSC			20.00 BSC			20.00 BSC			
D	67.45	67.60	67.75	67.45	67.60	67.75	67.45	67.60	67.75	4
D1	20.50 BSC			20.50 BSC			20.50 BSC			
D2	63.60 BSC			63.60 BSC			63.60 BSC			
D3	1.75 BSC			2.50 BSC			3.25 BSC			
D4	1.35 BSC			2.10 BSC			2.85 BSC			
D5	8.05 BSC			8.80 BSC			9.55 BSC			5
E			7.50			7.50			7.50	
e1	19.20 BSC			19.20 BSC			19.20 BSC			
e2	36.80 BSC			36.80 BSC			36.80 BSC			
N	144			144			144			
ISSUE	B			B			B			
REF	11.14–031			11.14–031			11.14–031			
NOTES	1,2,3			1,2,3			1,2,3			

	HA			HB			HC			NOTE
SYMBOL	MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
A	50.65	50.80	50.95	50.65	50.80	50.95	50.65	50.80	50.95	5 , 8
A1	6.00 BSC			6.00 BSC			6.00 BSC			
A2	3.20			3.20			3.20			
A3	4.00			4.00			4.00			
A4	20.00 BSC			20.00 BSC			20.00 BSC			
D	67.45	67.60	67.75	67.45	67.60	67.75	67.45	67.60	67.75	4
D1	20.50 BSC			20.50 BSC			20.50 BSC			
D2	63.60 BSC			63.60 BSC			63.60 BSC			
D3	1.75 BSC			2.50 BSC			3.25 BSC			
D4	1.35 BSC			2.10 BSC			2.85 BSC			
D5	8.05 BSC			8.80 BSC			9.55 BSC			5
E			7.50			7.50			7.50	
e1	19.20 BSC			19.20 BSC			19.20 BSC			
e2	36.80 BSC			36.80 BSC			36.80 BSC			
N	144			144			144			
ISSUE	B			B			B			
REF	11.14–031			11.14–031			11.14–031			
NOTES	1,2,3			1,2,3			1,2,3			

JEDEC SOLID STATE PRODUCT OUTLINE	TITLE SMALL OUTLINE DUAL INLINE MEMORY MODULE (SODIMM) FAMILY, 0.8 LEAD CENTERS	ISSUE D	DATE JAN 01	MO-190	SHEET 6 OF 8

MECHANICAL KEYING (FRONT VIEWS)

POWER SUPPLY	
5.0V	
3.3V	
X.XV	

JEDEC SOLID STATE PRODUCT OUTLINE	TITLE SMALL OUTLINE DUAL INLINE MEMORY MODULE (SODIMM) FAMILY, 0.8 LEAD CENTERS	ISSUE D	DATE JAN 01	MO-190	SHEET 7 OF 8
---	--	------------	----------------	--------	-----------------

NOTES:

1. DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5M-1994.
2. TOLERANCES ON ALL DIMENSIONS ± 0.15 UNLESS OTHERWISE SPECIFIED.
3. ALL DIMENSIONS ARE mm.

△ 4 APPLICATION NOTE:
 VARYING THE POSITION OF THE NOTCH IDENTIFIES THE OPERATIONAL VOLTAGE:
 5.0 VOLT (xA). 3.3 VOLT (xB). X.X VOLT (xC).

△ 5 DIMENSIONS APPLICABLE WHEN COMPONENTS MOUNTED ON BOTH SIDES.

△ 6 CARD THICKNESS APPLIES ACROSS TABS AND INCLUDES PLATING
 AND/OR METALIZATION.

△ 7 APPLICATION NOTE:
 RECOMMENDED PLATING FOR CONTACT PADS ARE ;
 1) PREFERABLE PLATING : ELECTROLYTIC GOLD PLATING 0.76 MICROMETERS MINIMUM
 OVER ELECTROLYTIC NI 2.00 MICROMETERS MINIMUM.
 2) ALTERNATIVE PLATING : GOLD PLATING 0.05-0.75 MICROMETERS OVER NI 2.00
 MICROMETERS MINIMUM MUST USE AN ELECTRONIC CONTACT GRADE CORROSIVE
 BARRIER LUBRICANT.

△ 8 APPLICATION NOTE:
 BORDER OF COMPONENT AREA.

△ 9 THE JC-42.5 COMMITTEE CONTROLS THE INFORMATION IN THIS COLUMN.
 IT IS SHOWN HERE FOR REFERENCE ONLY, AND IS SUBJECT TO CHANGE.

△ 10 THE ADDITION OF THIS BEVEL IS A FABRICATION OPTION AND IS NOT REQUIRED.
 THE BEVEL AIDS THE INSERTION OF THE MODULE INTO THE CONNECTOR.
 THE BEVEL IS NOT TO HIT THE GOLD CONTACTS.

JEDEC SOLID STATE PRODUCT OUTLINE	TITLE SMALL OUTLINE DUAL INLINE MEMORY MODULE (SODIMM) FAMILY, 0.8 LEAD CENTERS	ISSUE D	DATE JAN 01	MO-190	SHEET 8 OF 8
---	--	------------	----------------	--------	-----------------