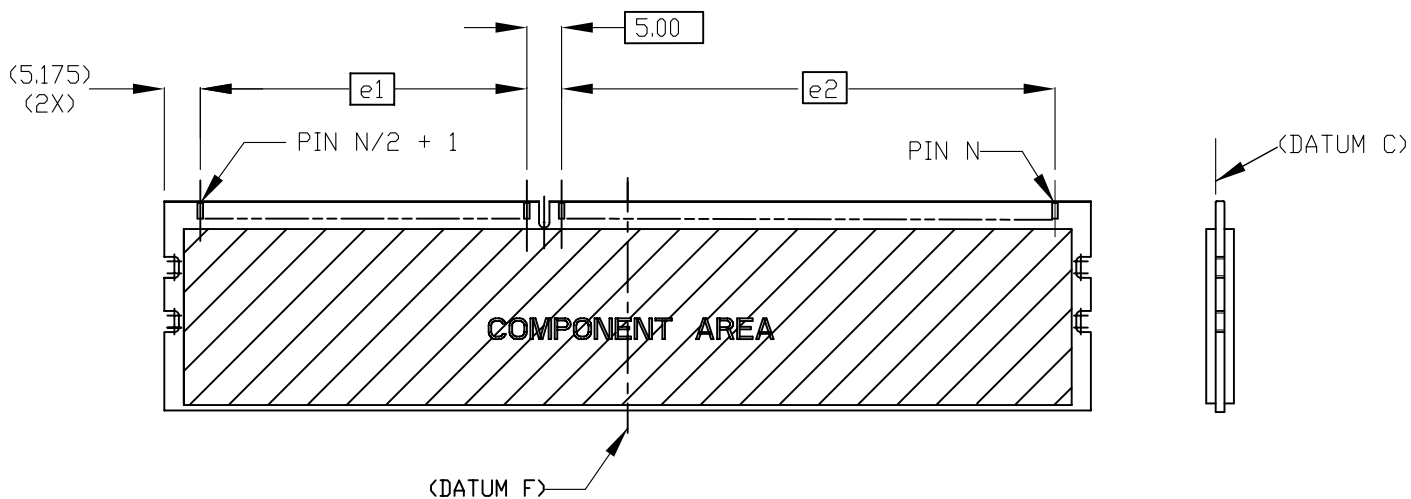


FRONT SIDE



BACK SIDE

KEY CONFIGURATION
SEE PAGE 5

VARIATIONS AB, BB, CB, GB, HB

JEDEC
SOLID STATE
PRODUCT OUTLINE

THIS REGISTERED OUTLINE HAS BEEN PREPARED AND PUBLISHED BY THE JEDEC JC-11 COMMITTEE AND REFLECTS A PRODUCT WITH ANTICIPATED USE IN THE ELECTRONICS INDUSTRY. CHANGES ARE LIKELY TO OCCUR.

TITLE: DDR3 SDRAM DIMM
(DUAL INLINE MEMORY MODULE)
FAMILY with 1.00mm CONTACT CENTERS

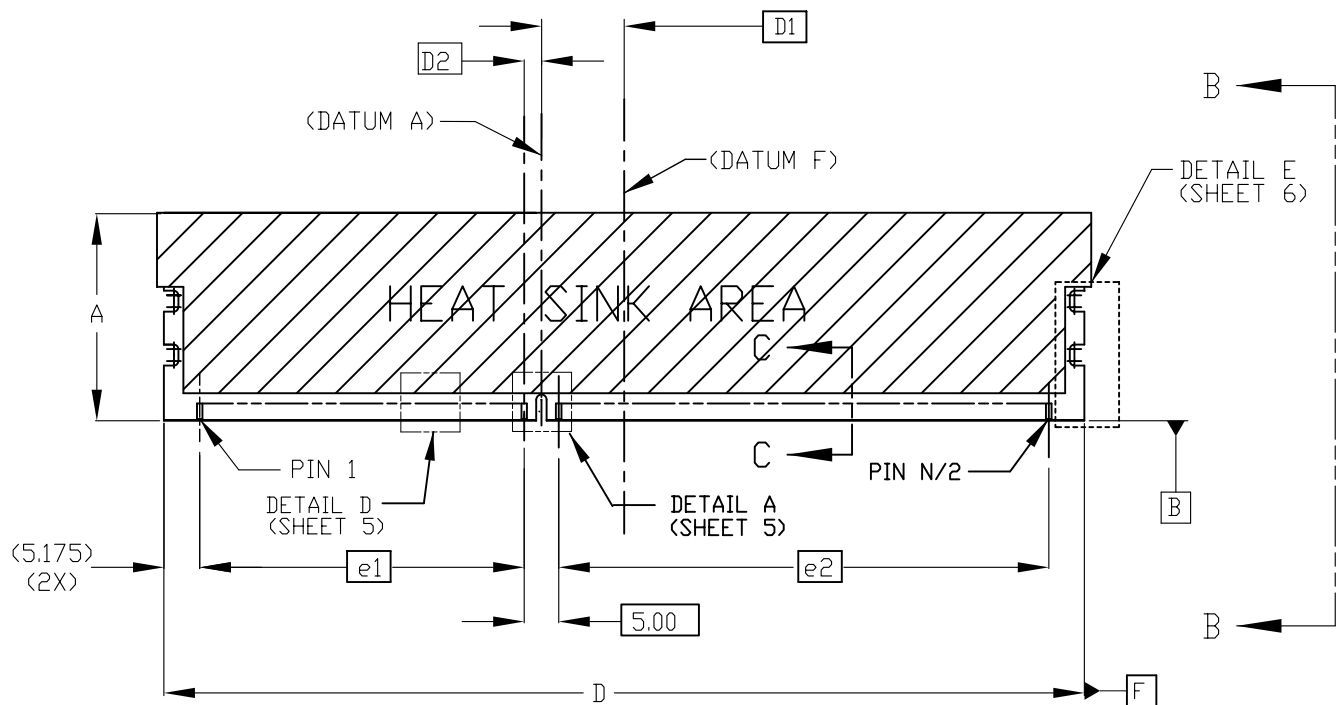
DESIGNATOR:
DIM

ISSUE:
E

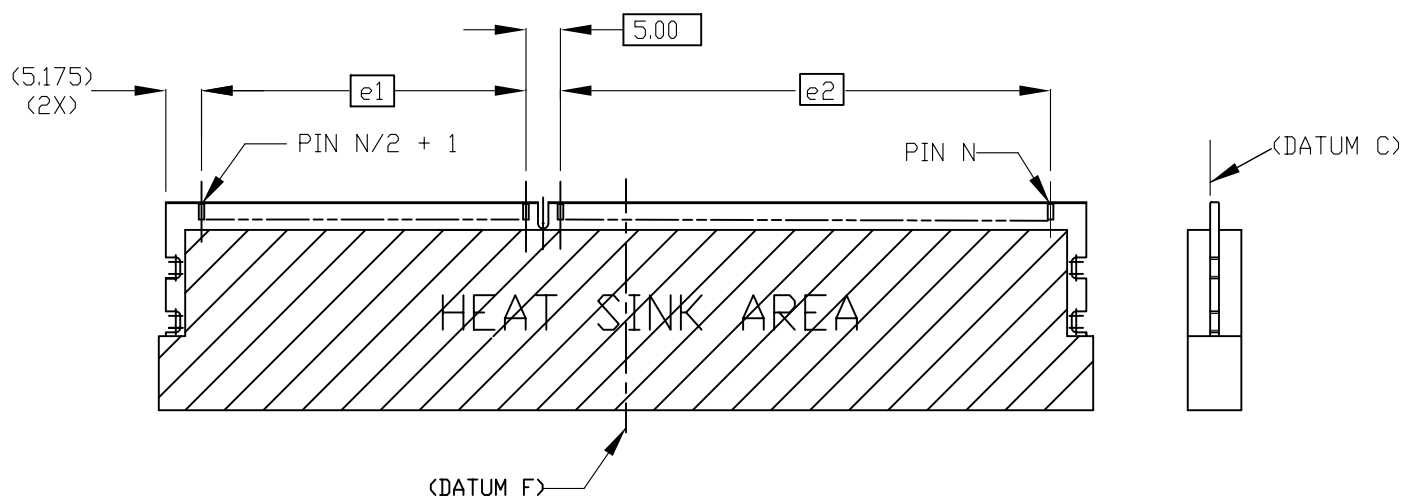
DATE:
AUG 08

ITEM
MD-269

PAGE:
1 OF 19



FRONT SIDE

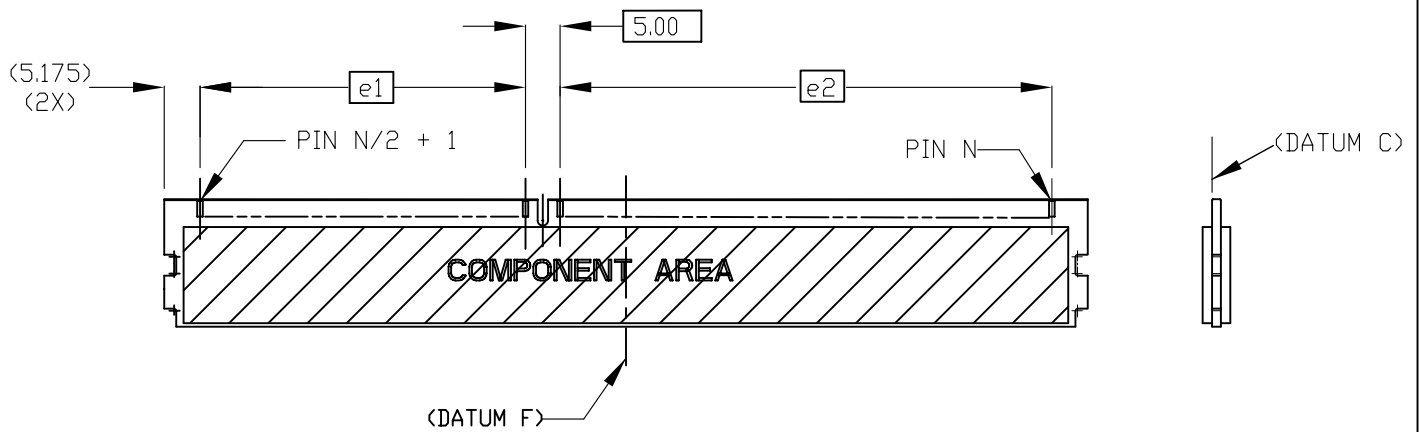
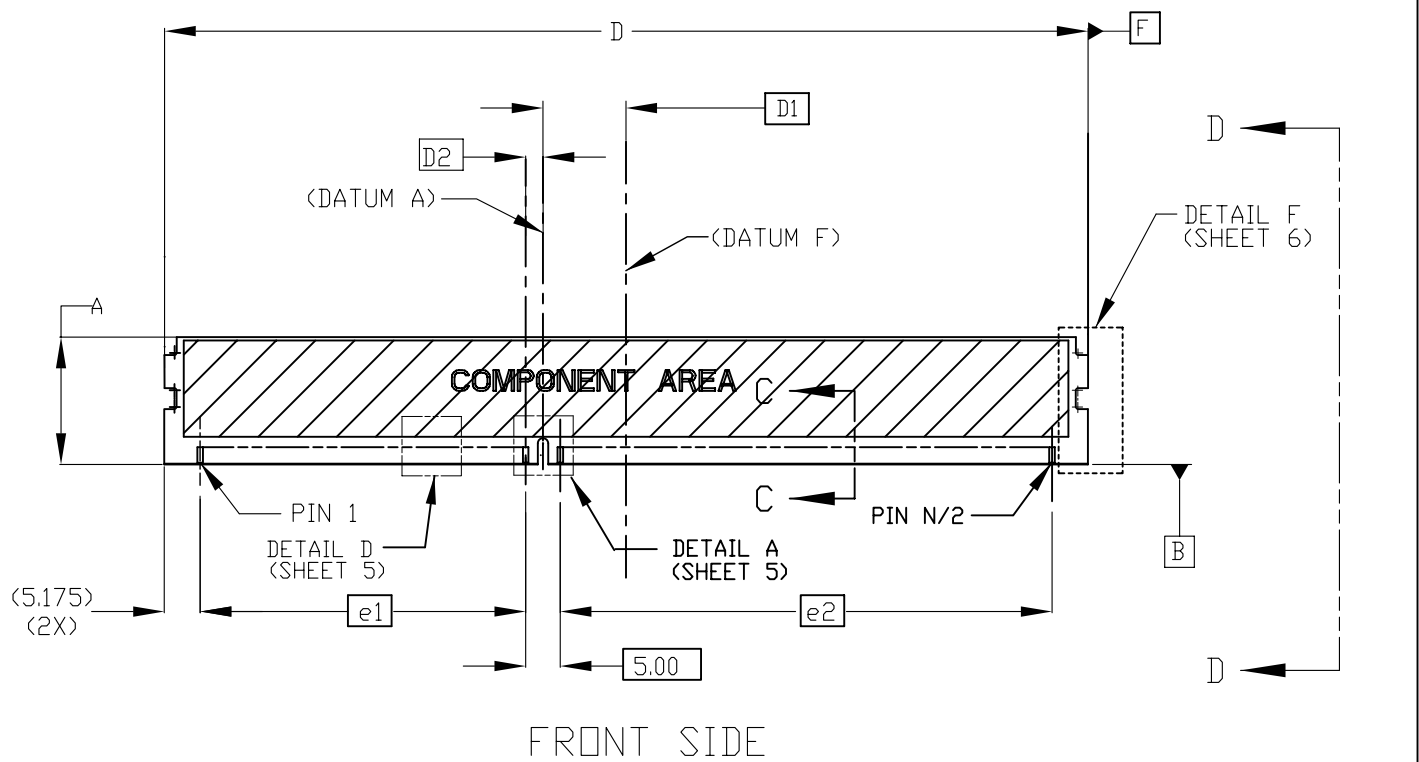


BACK SIDE

KEY CONFIGURATION
SEE PAGE 5

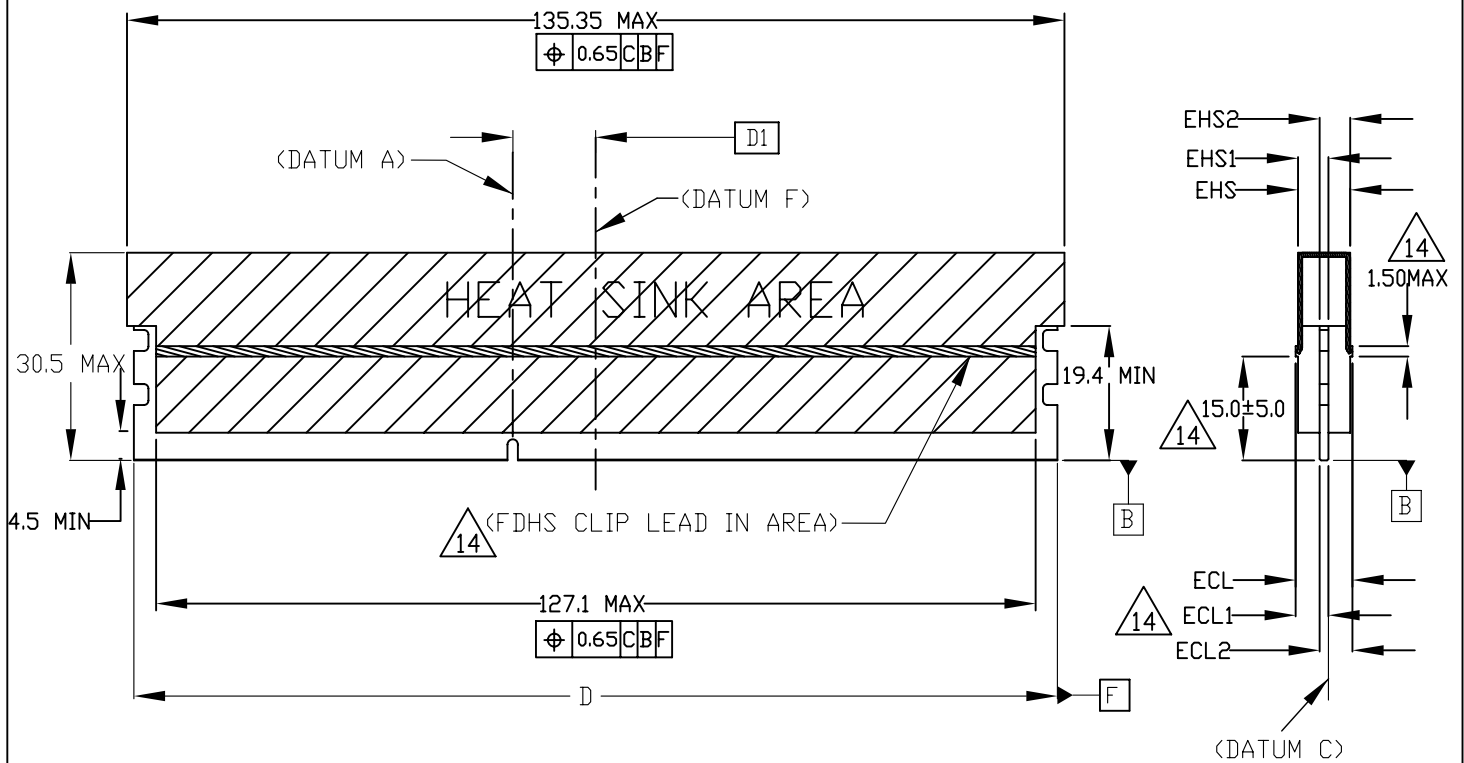
VARIATIONS HSAB, HSGB, HSHB

<p>TITLE: JEDEC SOLID STATE PRODUCT OUTLINE</p>	<p>DDR3 SDRAM DIMM (DUAL INLINE MEMORY MODULE) FAMILY with 1.00mm CONTACT CENTERS</p>	<p>ISSUE: E</p>	<p>DATE: AUG 08</p>	<p>ITEM MD-269</p>	<p>PAGE: 2 OF 19</p>
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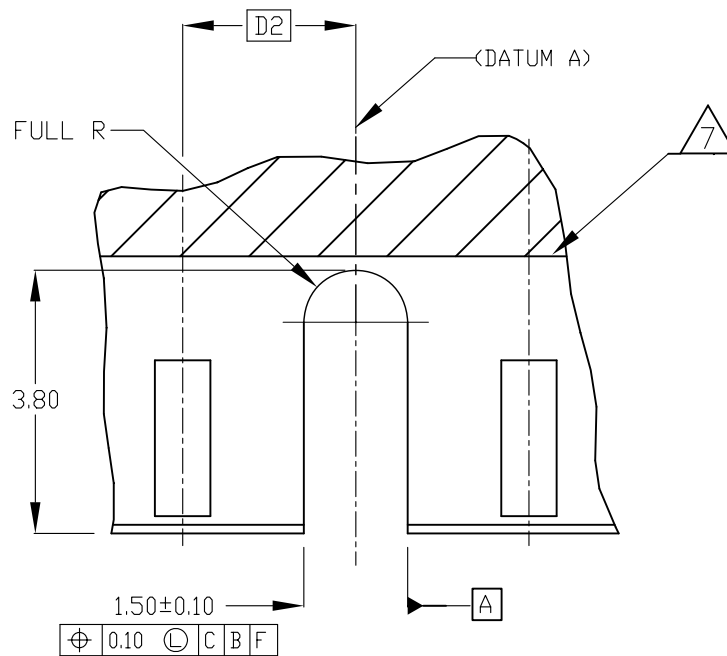


KEY CONFIGURATION
SEE PAGE 5

VARIATIONS DB, EB, FB

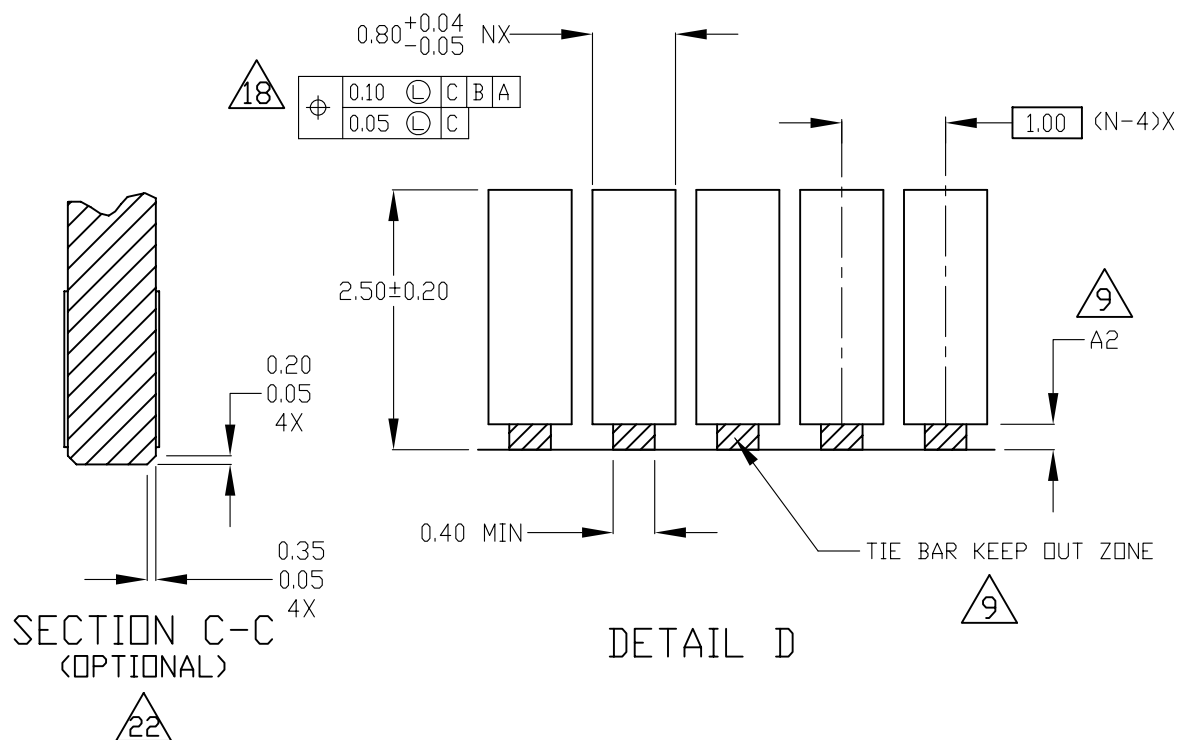


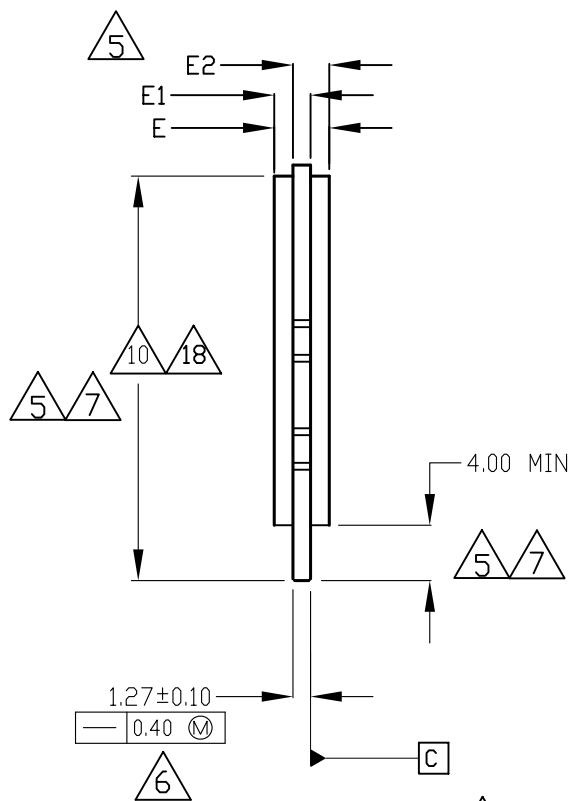
FDHS VOLUMETRIC KEEPIN
VARIATIONS HSAB, HSGB, HSHB



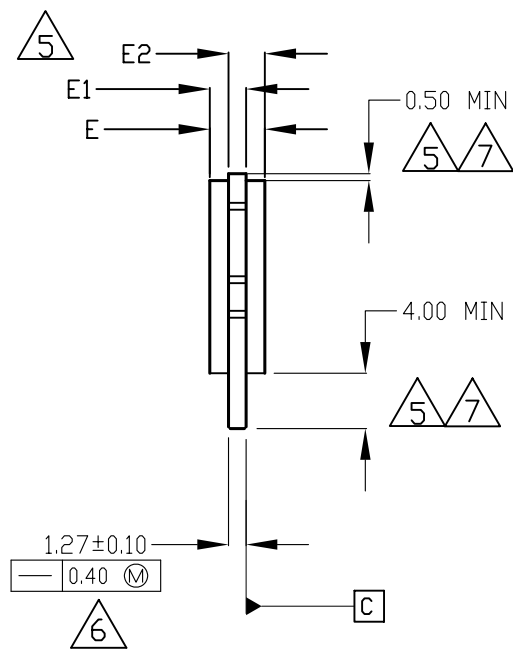
4

DETAIL A: KEY ZONE

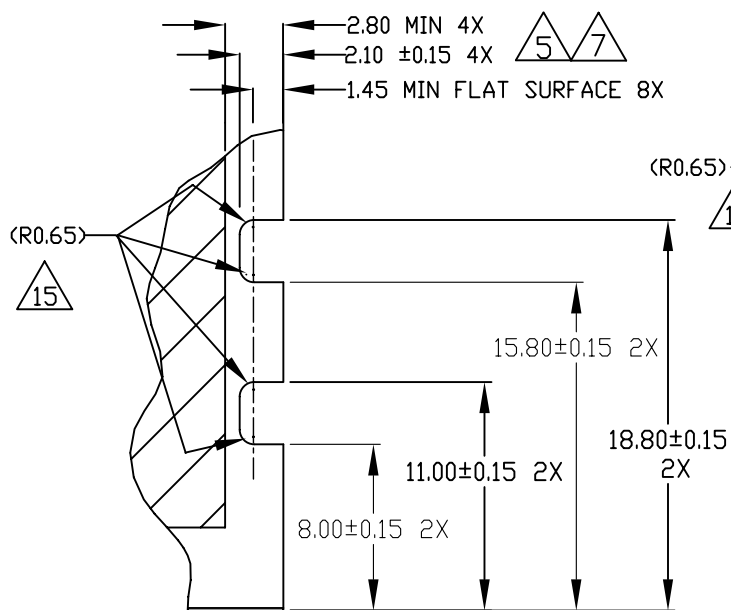




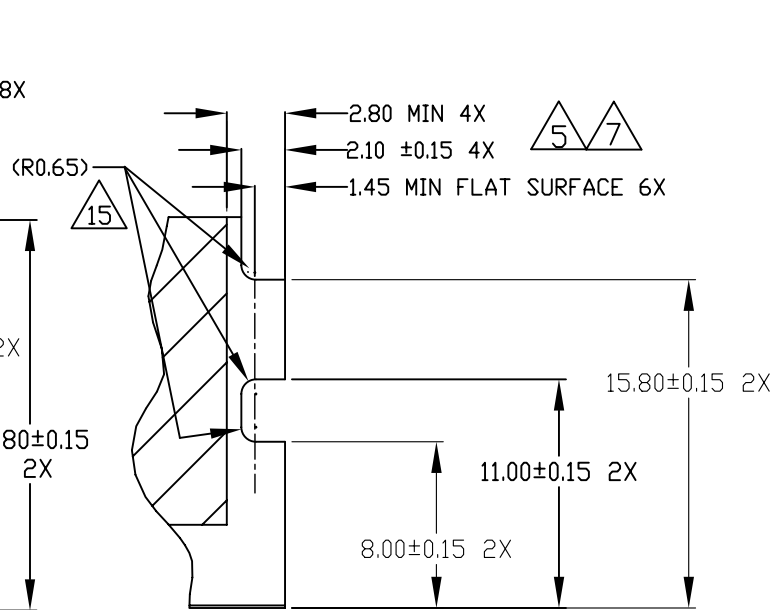
VIEW B-B $\triangle 12$
VARIATIONS AB, BB, CB, GB, HB



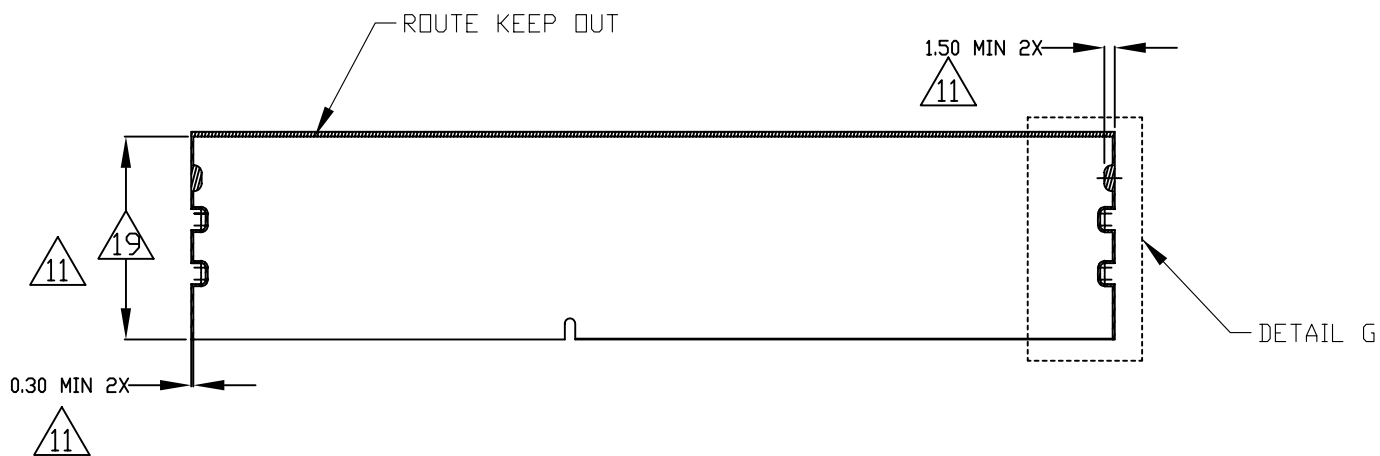
VIEW D-D $\triangle 12$
VARIATIONS DB, EB, FB



VARIATIONS AB, BB, CB, GB, HB
DETAIL E $\triangle 12$

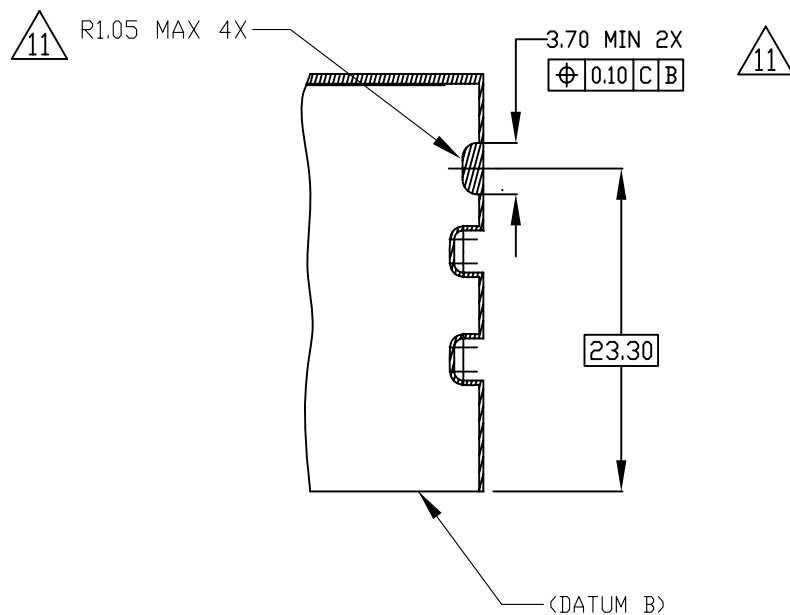


VARIATIONS DB, EB, FB
DETAIL F $\triangle 12$



FRONT SIDE

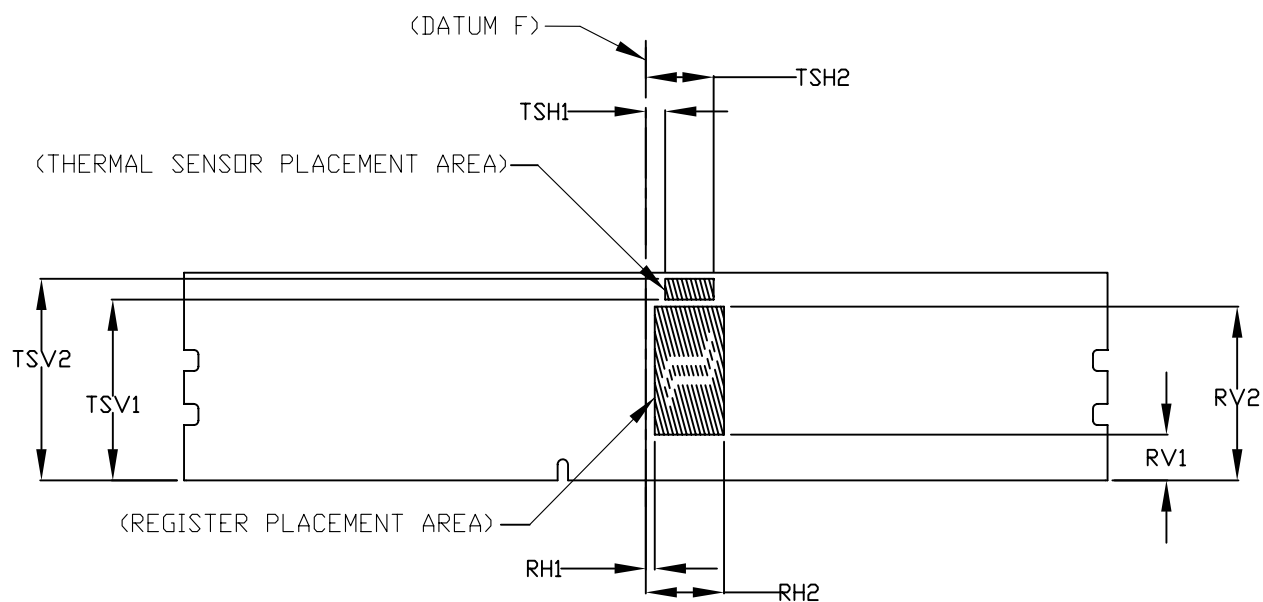
ROUTE KEEPOUT - RDIMM (BOTH SIDES)
(REFERENCE TO DIMM NOMINAL DIMENSIONS)



DETAIL G

ROUTE KEEPOUT

(REFERENCE TO DIMM NOMINAL DIMENSIONS)


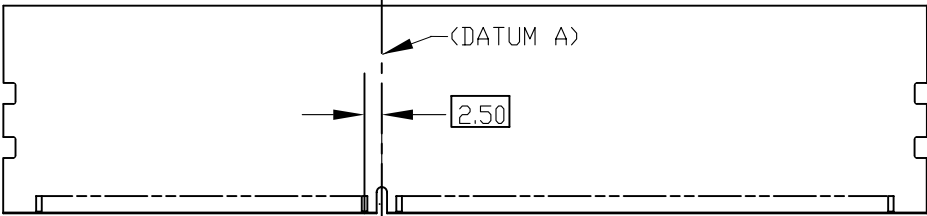


FRONT SIDE

THERMAL SENSOR AND REGISTER LOCATIONS
VARIATIONS AB, BB, CB, HB, GB

13

MECHANICAL KEYING (FRONT VIEWS)

VARIATION	VDD	KEY POSITION	
xB	1.5V		

COMMON DIMENSION TABLE

SYMBOL	MIN	NOM	MAX	NOTES
A2	0.05	0.20	0.35	
D	133.20	133.35	133.50	
e1		47.00 BASIC		
e2		71.00 BASIC		
N		240		8
NOTES	1, 2, 3			
REF	11.14-086			
ISSUE	A			

THERMAL SENSOR AND REGISTER PLACEMENT DIMENSION TABLE

SYMBOL	RDIMM			UDIMM						NOTES
	MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
TSH1	2.80	-	-	2.80	-	-				
TSH2	-	-	9.80	-	-	9.80				
TSV1	25.60	-	-	9.00	-	-				
TSV2	-	-	29.10	-	-	17.5				
RH1	1.30	-	-	-	-	-				
RH2	-	-	11.30	-	-	-				
RV1	6.60	-	-	-	-	-				
RV2	-	-	25.60	-	-	-				
NOTES	1, 2, 3									
REF	11.14-120									
ISSUE	D									

LP VARIATIONS

SYMBOL	AB			BB			CB			NOTES
	MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
A	29.85	30.00	30.50	29.85	30.00	30.50	29.85	30.00	30.50	
D1	12.00 BASIC			12.00 BASIC			12.00 BASIC			4
D2	2.50 BASIC			2.50 BASIC			2.50 BASIC			4
E	-	-	4.00	-	-	6.75	-	-	7.55	
E1	-	-	2.70	-	-	4.05	-	-	4.45	
E2	-	-	2.70	-	-	4.05	-	-	4.45	
NOTES	1, 2, 3, 10, 12									
REF	14-086									
ISSUE	A									

SYMBOL	GB			HB						NOTES
	MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
A	29.85	30.00	30.50	29.85	30.00	30.50				
D1	12.00 BASIC			12.00 BASIC						4
D2	2.50 BASIC			2.50 BASIC						4
E	-	-	4.00	-	-	6.75	-	-	-	
E1	-	-	2.70	-	-	4.05	-	-	-	
E2	-	-	2.70	-	-	4.05	-	-	-	
NOTES	1, 2, 3, 12, 18									
REF	14-127									
ISSUE	E									

VLP VARIATIONS

SYMBOL	DB			EB			FB			NOTES
	MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
A	18.60	18.75	18.90	18.60	18.75	18.90	18.60	18.75	18.90	
D1	12.00 BASIC			12.00 BASIC			12.00 BASIC			4
D2	2.50 BASIC			2.50 BASIC			2.50 BASIC			4
E	-	-	4.00	-	-	6.75	-	-	7.55	
E1	-	-	2.70	-	-	4.05	-	-	4.45	
E2	-	-	2.70	-	-	4.05	-	-	4.45	
NOTES	1, 2, 3, 12									
REF	14-086									
ISSUE	A									

FDHS VARIATIONS

SYMBOL	HSAB									NOTES
	MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
A	29.85	30.00	30.50							
D1	12.00 BASIC									4
D2	2.50 BASIC									4
EHS	-	-	7.55	-	-	-	-	-	-	
EHS1	-	-	4.45	-	-	-	-	-	-	
EHS2	-	-	4.45	-	-	-	-	-	-	
ECL	-	-	8.5	-	-	-	-	-	-	
ECL1	-	-	4.95	-	-	-	-	-	-	
ECL2	-	-	4.95	-	-	-	-	-	-	
NOTES	1, 2, 3									
REF	11.14-120									
ISSUE	D									

SYMBOL	HSGB			HSHB				NOTES
	MIN	NOM	MAX	MIN	NOM	MAX		
A	29.85	30.00	30.50	29.85	30.00	30.50		
D1	12.00 BASIC			12.00 BASIC				4
D2	2.50 BASIC			2.50 BASIC				4
EHS	–	–	7.55	–	–	9.55		
EHS1	–	–	4.45	–	–	5.45		
EHS2	–	–	4.45	–	–	5.45		
ECL	–	–	8.5	–	–	10.0		
ECL1	–	–	4.95	–	–	5.95		
ECL2	–	–	4.95	–	–	5.95		
NOTES	1, 2, 3							
REF	14-127							
ISSUE	E							

NOTES:

1. DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5M-1994.

2. TOLERANCES ON ALL DIMENSIONS ± 0.15 UNLESS OTHERWISE NOTED.

3. ALL DIMENSIONS ARE IN MILLIMETERS (mm).

△ 4 THE JC-45 COMMITTEE CONTROLS THE SIGNIFICANCE OF THE OFFSET KEY POSITION. IT IS SHOWN FOR REFERENCE ONLY AND IS SUBJECT TO CHANGE.

△ 5 DIMENSION APPLICABLE WHEN COMPONENTS MOUNTED ON ONE OR BOTH SIDES.

△ 6 CARD THICKNESS APPLIES ACROSS TABS AND INCLUDES PLATING AND/OR METALLIZATION. STRAIGHTNESS CALLOUT APPLIES TO ZONE DEFINED BY THE 4.00MM CONTACT AREA DIMENSION FOR THE ENTIRE LENGTH OF 133.35MM.

△ 7 BORDER OF COMPONENT AREA. PCB THICKNESS NOT TO EXCEED OUTSIDE THE COMPONENT AREA.

8. N IS THE TOTAL NUMBER OF CIRCUIT CONTACTS (PINS, LEADS, TABS, PADS).

△ 9 LEADING EDGE OF CONTACT PADS SPECIFIED BY THE KEEPOUT ZONE SHALL BE FREE OF BURRS AND EXTERNAL TIE BARS FOR OPTIMUM PERFORMANCE. THE TIE BAR IS TO BE ON AN INTERNAL LAYER SO THAT THE REMNANT CANNOT CAUSE CONTACT DAMAGE.

△ 10 THE COMPONENT KEEPIN ON VIEW B-B DIFFERS BETWEEN UDIMM AND RDIMM.
UDIMM: 29.5MM MAX COMPONENT KEEPIN.
RDIMM: 29.2MM MAX COMPONENT KEEPIN.

△ 11 ROUTE KEEP OUT REFERENCE TO THE MEMORY MODULE AT NOMINAL DIMENSION CONDITIONS AT ALL LAYERS.

△ 12 VIEWS DEPICT DIMM WITHOUT THE FULL DIMM HEAT SPREADER (FDHS) ATTACHED.

△ 13 VIEW DEPICTS PLACEMENT LOCATIONS FOR THE THERMAL SENSOR AND REGISTER FOR THE RDIMM. THE THERMAL SENSOR PLACEMENT AREA IS FOR ALL RDIMM RAW CARDS. THE REGISTER PLACEMENT AREA IS REQUIRED FOR ALL RDIMM RAW CARDS WHERE THE REGISTER AND THE DRAM HEIGHTS ARE NOT EQUAL. PLEASE REFER TO DDR3 RDIMM SPECIFICATION FOR SPECIFIC RAW CARD REQUIREMENTS.

△ 14 DIMENSIONS AND HATCHED AREA DEPICT LOCATION FOR THE HEAT SPREADER CLIP LEAD IN FEATURE WHICH MAY PROTRUDE HIGHER THAN THE EHS DIMENSION.

△ 15 THE (R0.65) DIMENSION IS FOR REFERENCE ONLY. THE 1.45MM MIN FLAT AND THE 2.10 ± 0.15 MM 4X CONTROL THE FEATURE.

16. THE THERMAL SENSOR MUST NOT CONTACT THE HEAT SPREADER OR THE THERMAL INTERFACE MATERIAL. A 0.15 MM GAP IS REQUIRED.

17. VARIATION HSAB IS DEFINED AS VARIATION AB WITH THE FULL DIMM HEAT SPREADER ATTACHED. MODULE AB IS DEFINED FOR BOTH SINGLE AND DUAL DIE APPLICATIONS.

△ 18 COMPONENT KEEPIN ON VIEW B-B FOR VARIATIONS GB and HB:
UDIMM: 29.5MM MAX COMPONENT KEEPIN.
RDIMM: 29.5MM MAX COMPONENT KEEPIN EXCEPT INSIDE 0.3MM HORIZONTAL SPAN OF HEATSINK NOTCH EDGES WHERE KEEP-IN IS 29.2MM MAX.

TITLE: JEDEC SOLID STATE PRODUCT OUTLINE	DDR3 SDRAM DIMM (DUAL INLINE MEMORY MODULE) FAMILY with 1.00mm CONTACT CENTERS	ISSUE: E	DATE: AUG 08	ITEM MD-269	PAGE: 13 OF 19
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NOTES:

19

MAX ROUTE KEEP-OUT IS 29.3MM
FOR VARIATIONS GB AND HB: MAX ROUTE KEEP-OUT IS 29.7MM EXCEPT AREAS INSIDE 0.3MM
HORIZONTAL SPAN OF HEATSINK NOTCH EDGES WHERE MAX ROUTE KEEP-OUT IS 29.3MM.

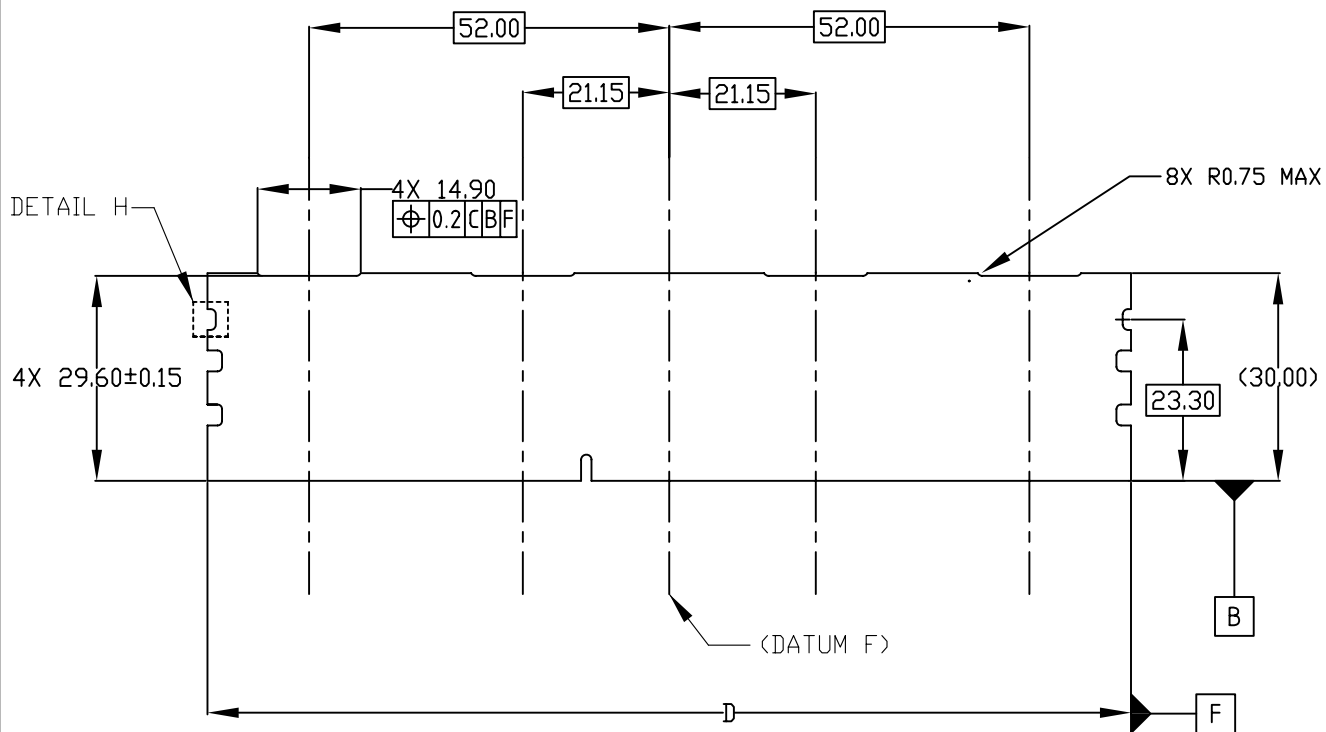
20. PASSIVE COMPONENTS LOCATED UNDER THE HEAT SINK AREA SHALL MAINTAIN MINIMUM CLEARANCE
OF 0.13MM. IN THE EVENT THE MINIMUM COMPONENT CLEARANCE CANNOT BE MAINTAINED A
SECONDARY ELECTRICAL INSULATOR MUST BE EMPLOYED TO PREVENT SHORTING.

APPLICATION NOTES:

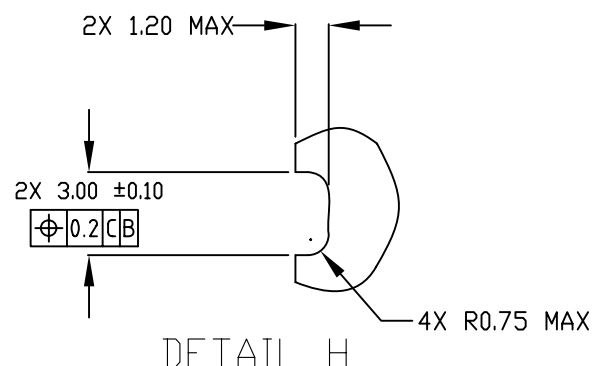
2) ALTERNATIVE PLATING: GOLD PLATING 0.05-0.75 MICROMETERS OVER NICKEL 2.00 MICROMETERS MINIMUM MUST USE AN ELECTRONIC CONTACT GRADE CORROSIVE BARRIER LUBRICANT.

THE 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.

24. VARIATION HSAB FDHS REFERENCE NOTCH.



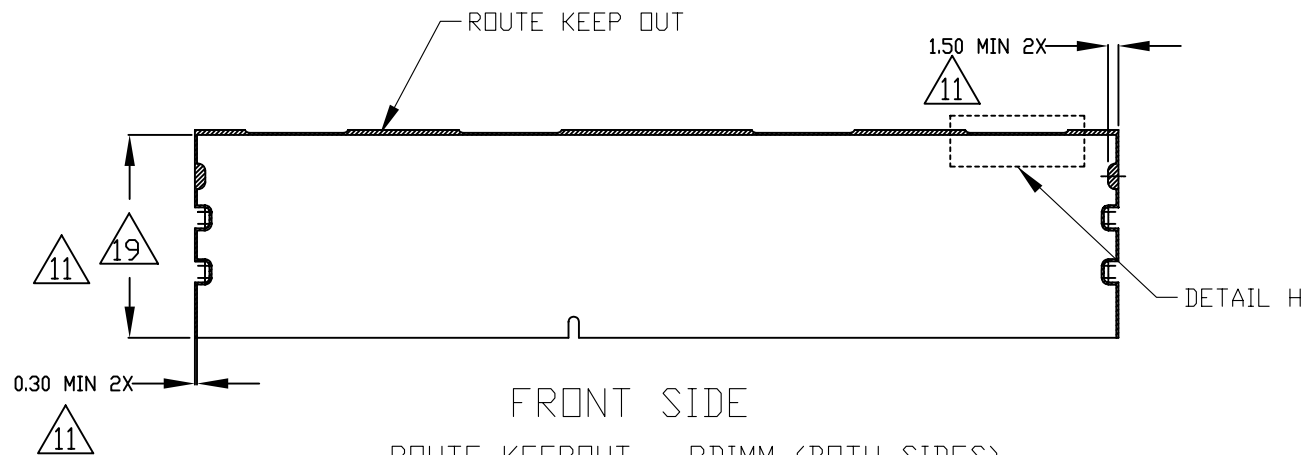
FRONT SIDE VIEW
FDHS NOTCH REFERENCE DESIGN



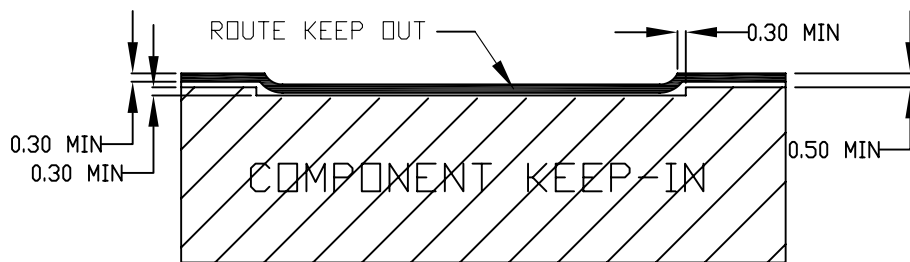
TITLE: JEDEC SOLID STATE PRODUCT OUTLINE	DDR3 SDRAM DIMM (DUAL INLINE MEMORY MODULE) FAMILY with 1.00mm CONTACT CENTERS	ISSUE: E	DATE: AUG 08	ITEM MD-269	PAGE: 15 OF 19
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APPLICATION NOTES:

25. LP VARIATIONS GB AND HB ROUTE KEEP-OUT AND COMPONENT KEEP-IN REFERENCE:



FRONT SIDE
ROUTE KEEPOUT - RDIMM (BOTH SIDES)
(REFERENCE TO VARIATION HSAB NOMINAL DIMENSIONS)



DETAIL H
ROUTE KEEPOUT AND COMPONENT KEEP-IN
(REFERENCE TO VARIATION HSAB NOMINAL DIMENSIONS)

CHANGE RECORD

IF THE CHANGE INVOLVES ANY WORDS ADDED OR DELETED (EXCLUDING DELETION OF ACCIDENTALLY REPEATED WORDS), THE CHANGE IS INCLUDED. PUNCTUATION CHANGES MAY OR MAY NOT BE INCLUDED.

INITIAL ISSUE: A	DATE: DECEMBER 2005	ITEM: JC11.14-086
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REVISION HISTORY

ISSUE: B	DATE: APRIL 2006	Item: JC11.14-095
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LOCATION:	CHANGE FROM:	CHANGE TO:
PAGE 4, DETAIL E & F	DEPTH OF LATCH NOTCH FROM 1.90	CHANGED TO 2.10 +/-0.15
PAGE 4, DETAIL E & F	RADIUS: FROM R0.30 MIN	RADIUS: FROM R0.70 MAX

ISSUE: C	DATE: SEPT 2007	Item: JC11.14-115 & 116
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LOCATION:	CHANGE FROM:	CHANGE TO:
PAGE 5, ROUTE KEEPOUT	N/A	ADDED PAGE 5, DETAIL G
PAGE 4, VIEW B-B	0.5 MIN	ADDED NOTE 10
PAGE 4, VIEW D-D	N/A	ADDED VIEW D-D
PAGE 2	VIEW B-B	VIEW D-D
PAGE 10	N/A	ADDED NOTES 10 & 11.
PAGES 10-11	APL. NOTES 10-12	RENAMED 12-14.
PAGE RENUMBERING	PAGES 5,6,7,8,9,10	PAGES 6,7,8,9,10,11
PAGES 10-11	N/A	UPDATED FONT STYLE/SIZE
PAGE 9, VARIATIONS: DA, DB, DC, EA, EB, EC FA, FB & FC.	18.25 (MIN), 18.40(NOM) & 18.55(MAX)	18.60 (MIN), 18.75(NOM) & 18.90(MAX)

TITLE: JEDEC SOLID STATE PRODUCT OUTLINE	DDR3 SDRAM DIMM (DUAL INLINE MEMORY MODULE) FAMILY with 1.00mm CONTACT CENTERS	ISSUE: E	DATE: AUG 08	ITEM MD-269	PAGE: 17 OF 19
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CHANGE RECORD CONT.

ISSUE: D	DATE: FEB 2008	Item: 11.14-120
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LOCATION:	CHANGE FROM:	CHANGE TO:
PAGES 1 & 3	SHEET 3	SHEET 5
PAGE 2	N/A	ADDED PAGE 2
PAGE 4	N/A	ADDED PAGE 4
PAGE 5	0.20 MM	0.35MM
PAGE 5 & 9	CENTER KEY ZONE	KEY ZONE
PAGES 6, NOTE 10	TOP REFERENCE	BOTTOM EDGE REFERENCE
PAGE 6	POSITIONAL TOLERANCE	8.00MM AND 15.80MM
PAGE 7	0.7MM MAX TOP REFERENCE	29.30MM MAX BOTTOM REFERENCE
PAGE 7	R1.00 MAX	R1.05 MAX
PAGE 8.	N/A	ADDED PAGE 8 TO DEFINE THERMAL SENSOR AND REGISTER LOCATIONS
PAGE 9	xA, xB AND xC	xB
PAGE 10	A1 AND A3	REMOVED A1 & A3
PAGE 10	N/A	ADDED THERMAL SENSOR VARIABLE TABLE.
PAGE 11	N/A	UPDATED VARIATIONS TABLE
PAGE 12	N/A	ADDED HSAB FDHS VARIATION
PAGE 13	N/A	ADDED NOTES 12-17
PAGE 14	N/A	ADDED APPLICATION NOTE 21.
PAGE 7	46.60	23.30 CORRECTED SCALE ERROR.

TITLE: JEDEC SOLID STATE PRODUCT OUTLINE	DDR3 SDRAM DIMM (DUAL INLINE MEMORY MODULE) FAMILY with 1.00mm CONTACT CENTERS	ISSUE: E	DATE: AUG 08	ITEM MD-269	PAGE: 18 OF 19
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CHANGE RECORD CONT.

ISSUE: E	DATE: AUG 08	Item: JC11.14-126 & -127
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LOCATION:	CHANGE FROM:	CHANGE TO:
PAGE 1	N/A	ADDED REFERENCE TO VARIATIONS GB AND HB
PAGES 2 & 4	N/A	ADDED REFERENCE TO VARIATIONS HSGB AND HSHB
PAGE 4	N/A	ADDED DIM 4.5mm MIN
PAGE 5	NOTE NUMBER 19	RENUMBERED TO 21
PAGE 5	DETAIL D DIMENSIONAL TOLERANCE OF ± 0.05	+0.04/-0.05
PAGE 6	N/A	ADDED NOTE 18 AND REFERENCE TO VARIATIONS GB & HB
PAGE 7	"29.30mm MAX" ROUTE KEEP OUT	NOTE 19
PAGE 8	N/A	ADDED HB & GB
PAGE 11	N/A	ADDED NEW LP VARIATIONS GB & HB
PAGE 12	N/A	ADDED NEW VARIATIONS HSGB & HSHB
PAGE 13	N/A	ADDED NOTE 18
PAGE 14	N/A	ADDED NOTES 19 + 20
PAGE 15	NOTES 18-21	RENUMBERED TO 20-23
PAGE 16	N/A	ADDED NOTE 24

TITLE: JEDEC SOLID STATE PRODUCT OUTLINE	DDR3 SDRAM DIMM (DUAL INLINE MEMORY MODULE) FAMILY with 1.00mm CONTACT CENTERS	ISSUE: E	DATE: AUG 08	ITEM MD-269	PAGE: 19 OF 19
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