

DOUBLE SIDED MODULE

JEDEC SOLID STATE
PRODUCT OUTLINE
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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

204 PIN DDR3 SODIMM,
0.60 MM PITCH

PACKAGE DESIGNATOR

DIM

NUMBER

MO-268

ISSUE

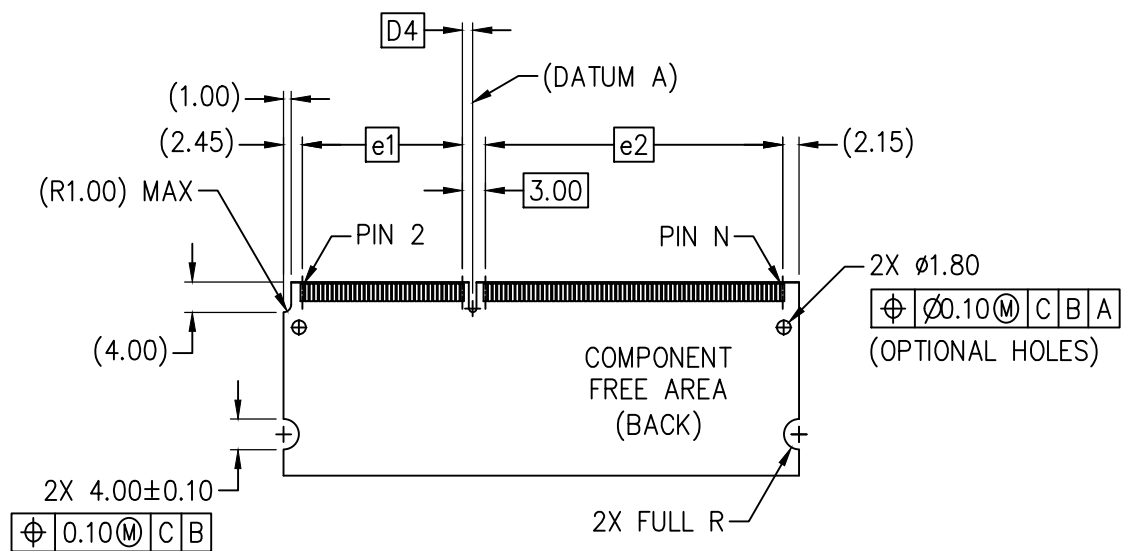
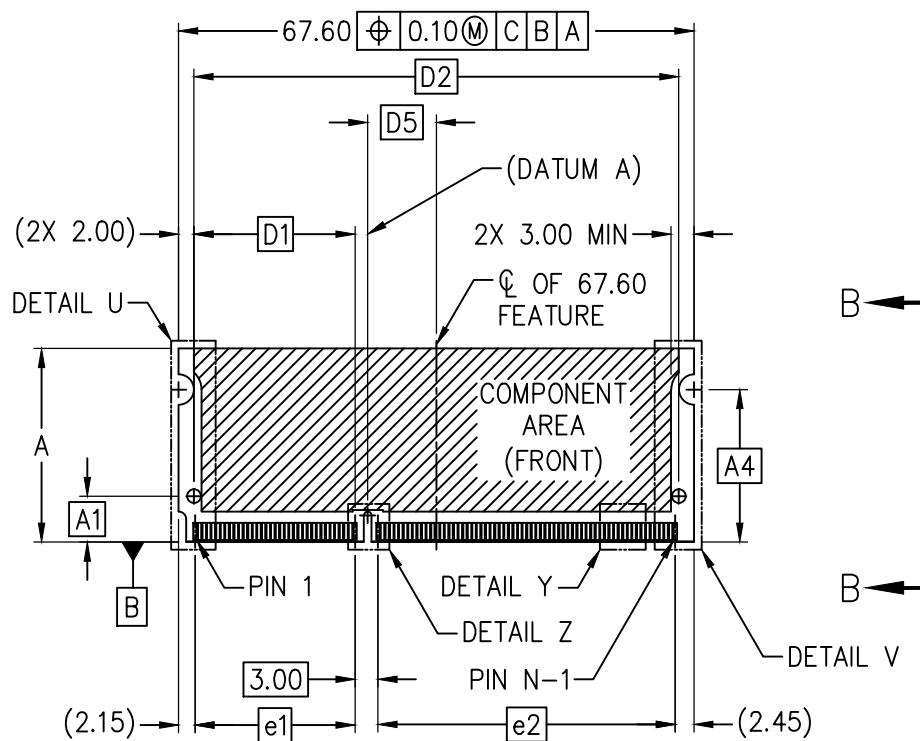
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DATE

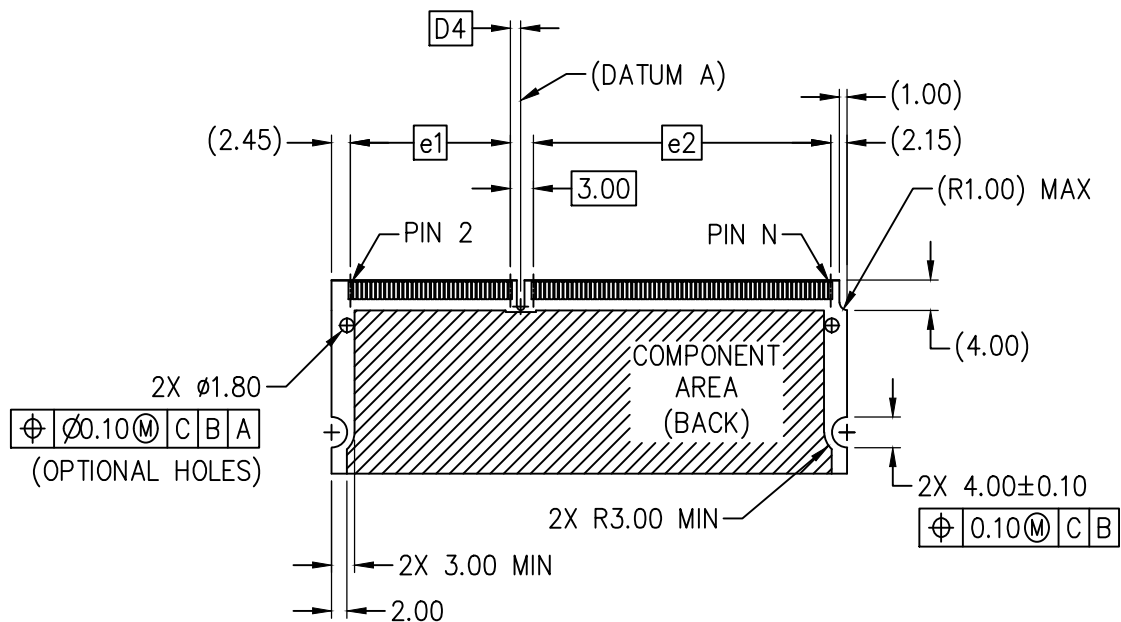
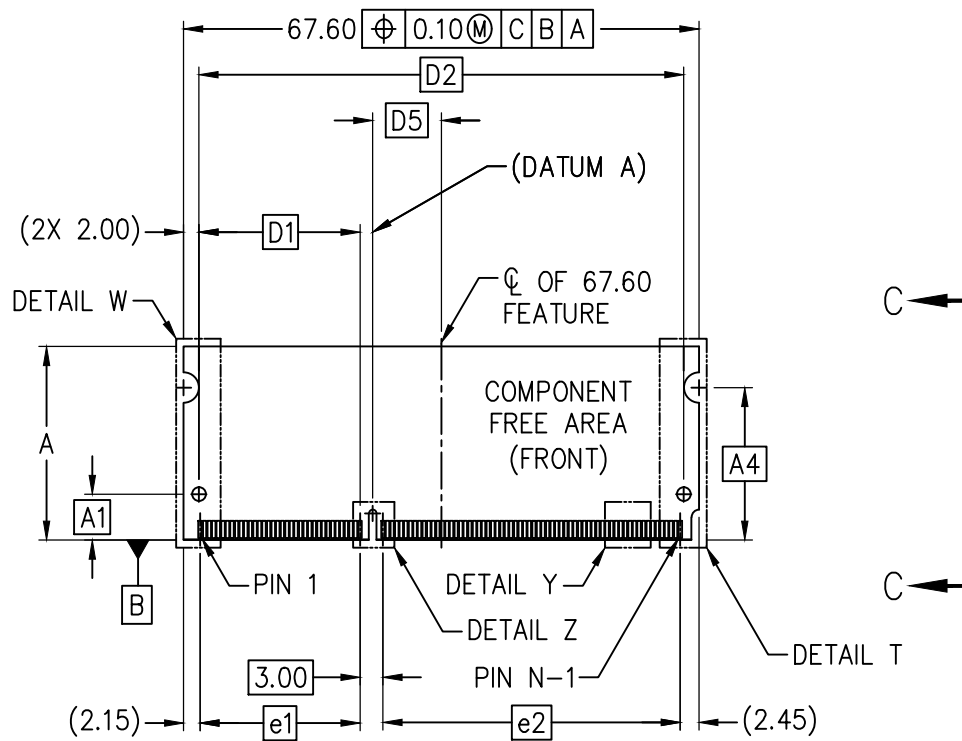
MAR 2014

SHEET

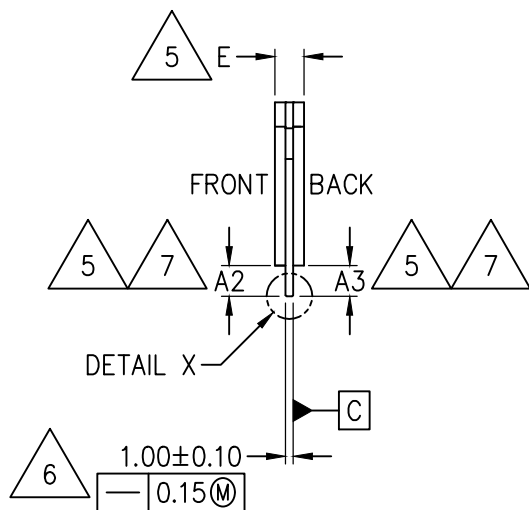
1 OF 20



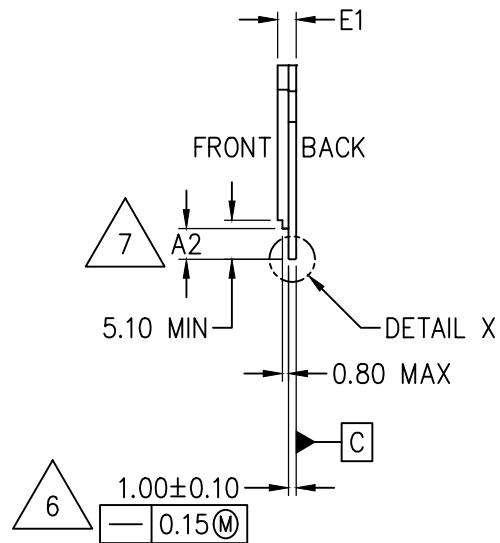
STANDARD SINGLE SIDED MODULE



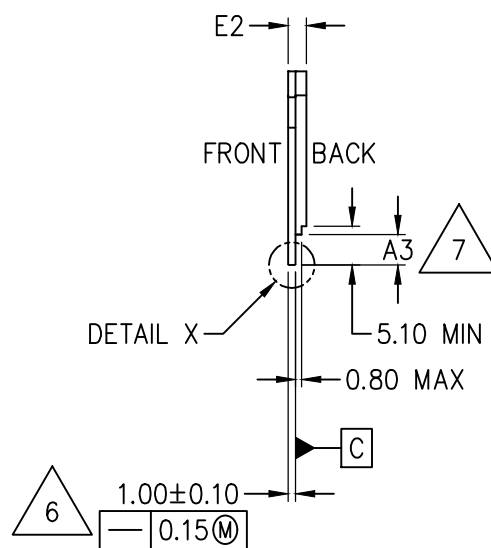
REVERSE SINGLE SIDED MODULE



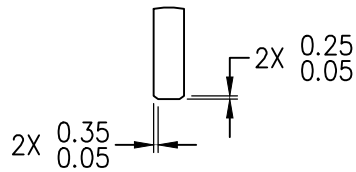
VIEW A-A



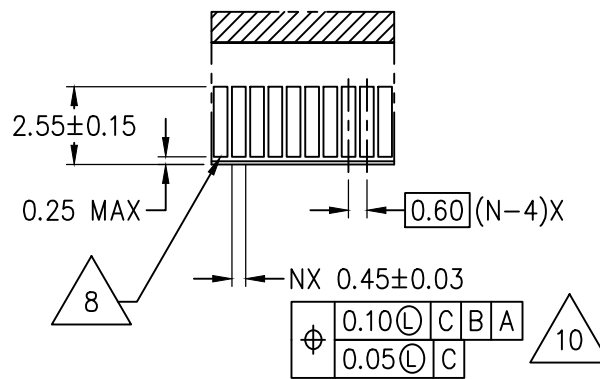
VIEW B-B



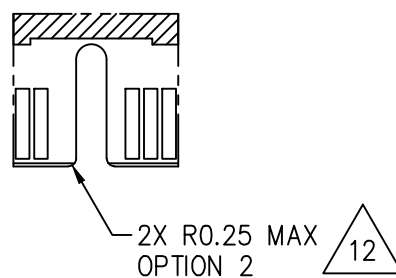
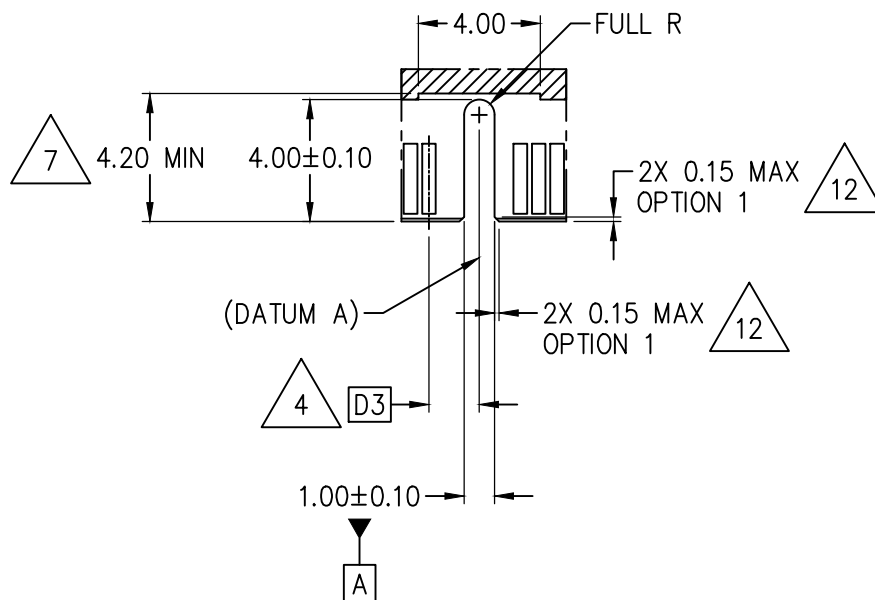
VIEW C-C



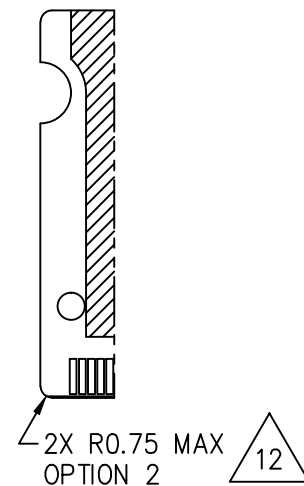
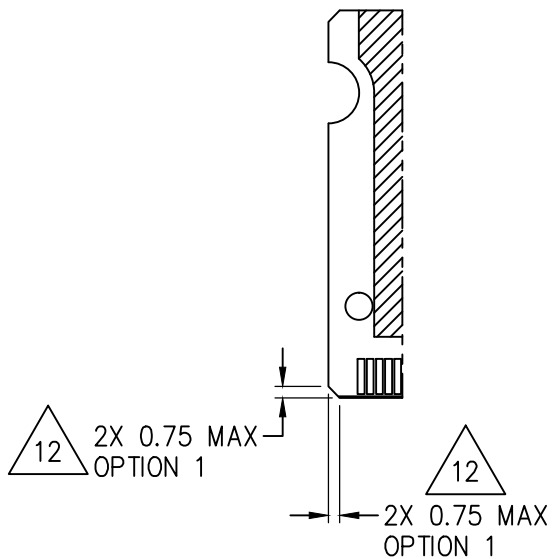
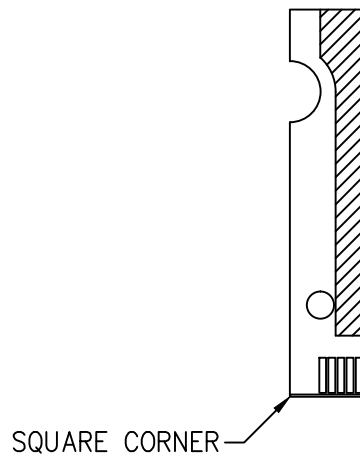
DETAIL X
(OPTIONAL)



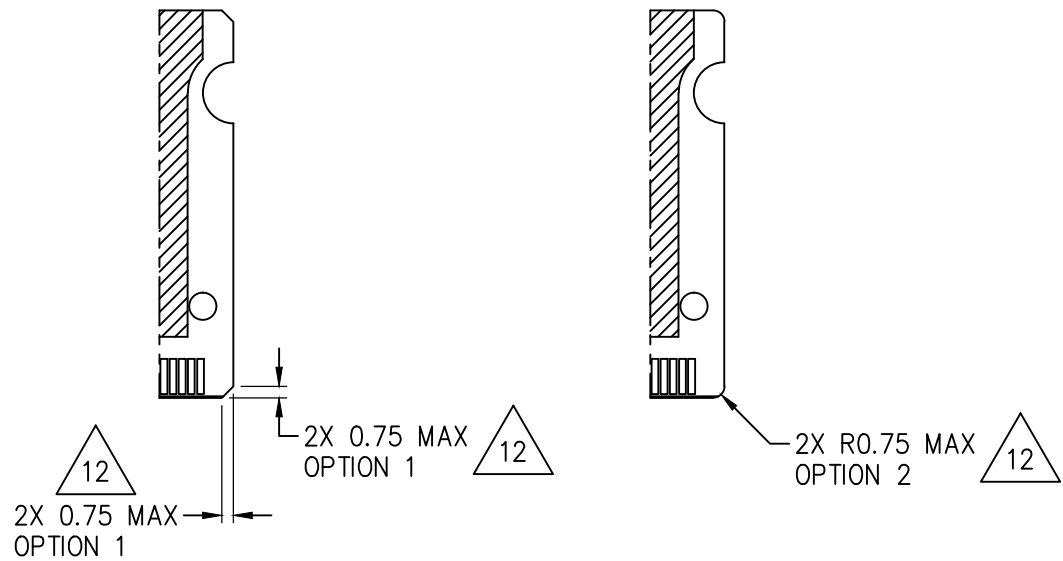
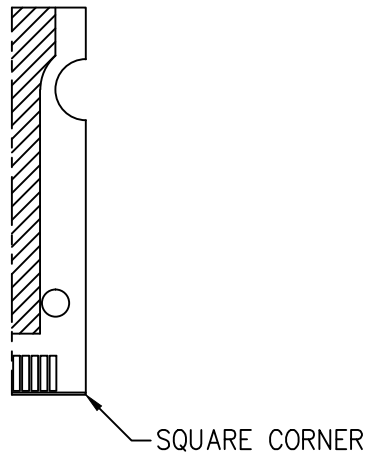
DETAIL Y



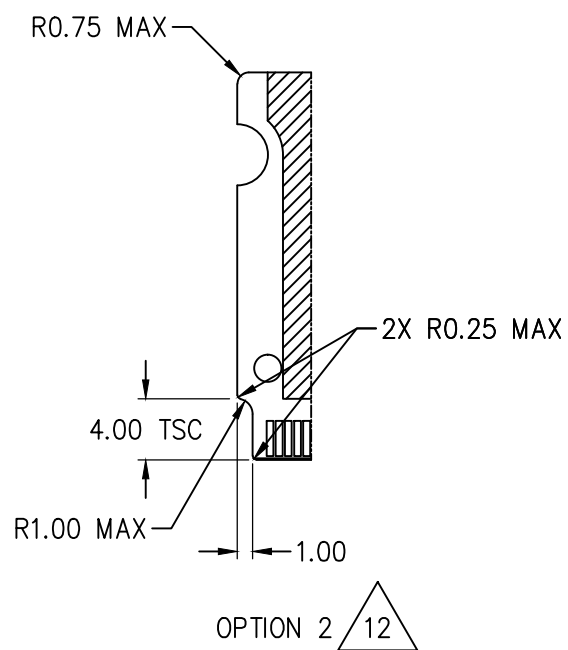
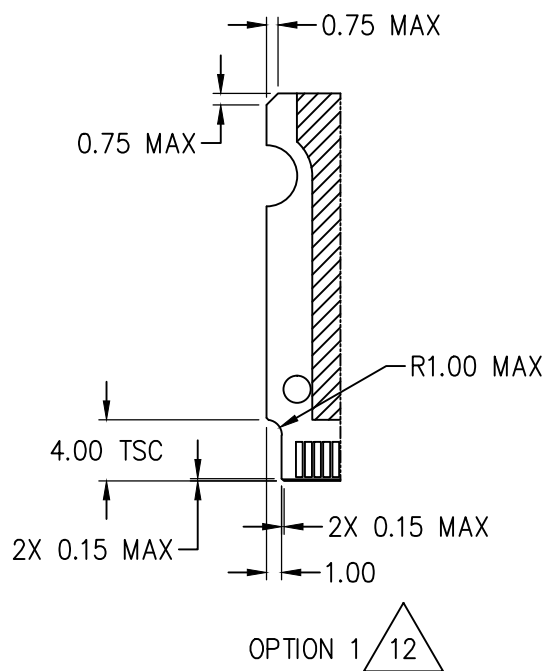
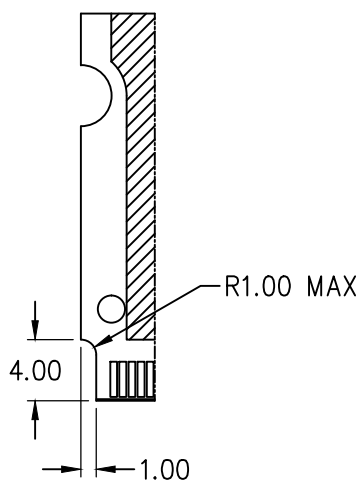
DETAIL Z



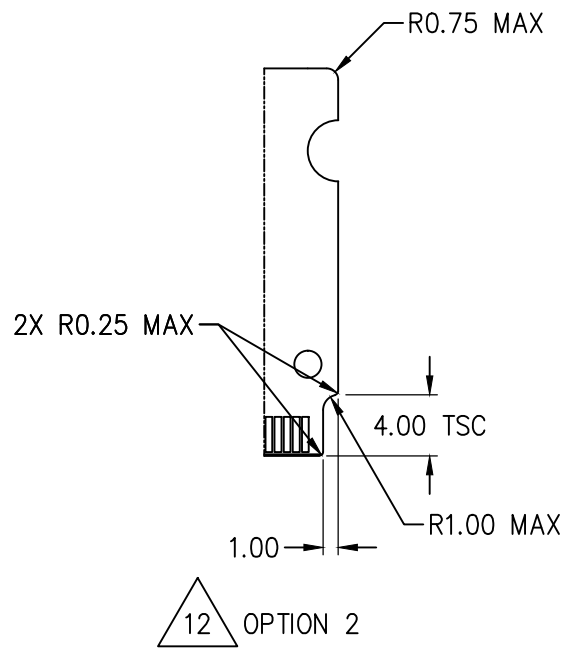
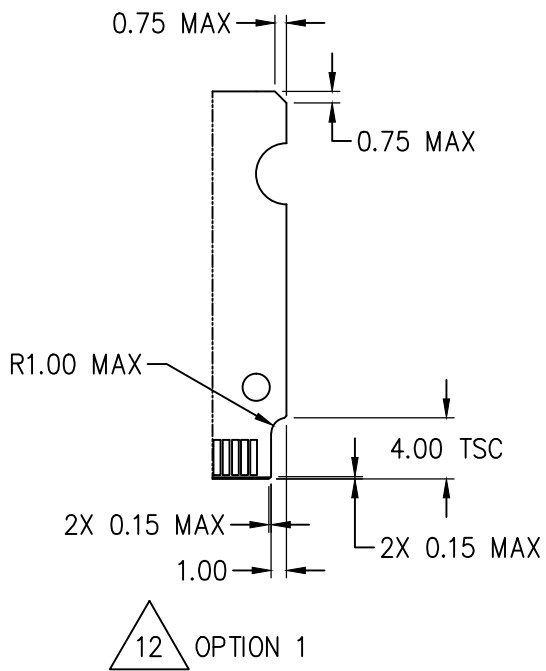
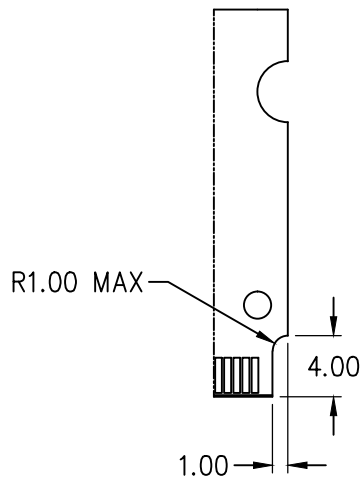
DETAIL W
SHOWN WITH COMPONENT AREA BUT CAN BE WITHOUT
COMPONENT AREA DEPENDING ON MODULE CONFIGURATION



DETAIL V



DETAIL U



DETAIL T

TABLE 1

COMMON DIMENSIONS				
SYMBOL	MIN	NOM	MAX	NOTES
A1	6.00 BASIC			
A2	4.00	---	---	5, 7
A3	4.00	---	---	5, 7
A4	20.00 BASIC			
D1	21.15 BASIC			
D2	63.60 BASIC			
e1	21.00 BASIC			
e2	39.00 BASIC			
N	204			
D3	1.65 BASIC			4
D4	1.35 BASIC			
D5	9.00 BASIC			
NOTES	1, 2, 3			
REF	14-085, 14-151			
ISSUE	E			

TABLE 2

VARIATIONS			
"A" DIMENSION	AA	BA	CA
MIN	25.25	31.60	29.85
NOMINAL	25.40	31.75	30.00
MAX	25.55	31.90	30.15
E	3.80 MAX		
NOTES	1, 2, 3		
REF	14-085, 14-151		
ISSUE	E		

TABLE 3

VARIATIONS			
"A" DIMENSION	AB	BB	CB
MIN	25.25	31.60	29.85
NOMINAL	25.40	31.75	30.00
MAX	25.55	31.90	30.15
E1	2.30 MAX		
NOTES	1, 2, 3		
REF	14–151		
ISSUE	E		

TABLE 4

VARIATIONS			
"A" DIMENSION	AC	BC	CC
MIN	25.25	31.60	29.85
NOMINAL	25.40	31.75	30.00
MAX	25.55	31.90	30.15
E2	2.30 MAX		
NOTES	1, 2, 3		
REF	14–151		
ISSUE	E		

VARIATION

XA: DRAM COMPONENTS ON BOTH SIDES

XB: DRAM COMPONENTS ON FRONT SIDE ONLY STANDARD MODULE

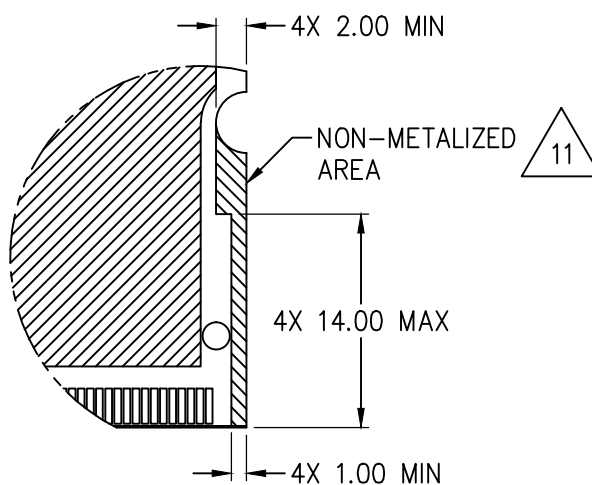
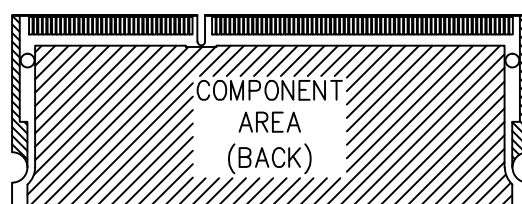
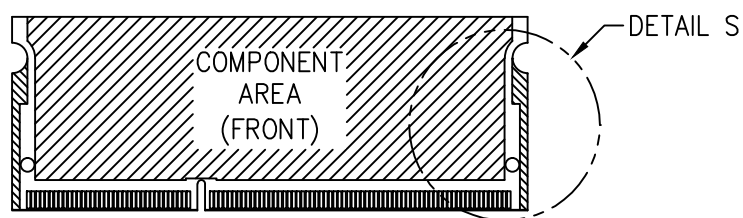
XC: DRAM COMPONENTS ON BACK SIDE ONLY REVERSE MODULE

AY: MODULE HEIGHT 25.40 NOMINAL

BY: MODULE HEIGHT 31.75 NOMINAL

CY: MODULE HEIGHT 30.00 NOMINAL

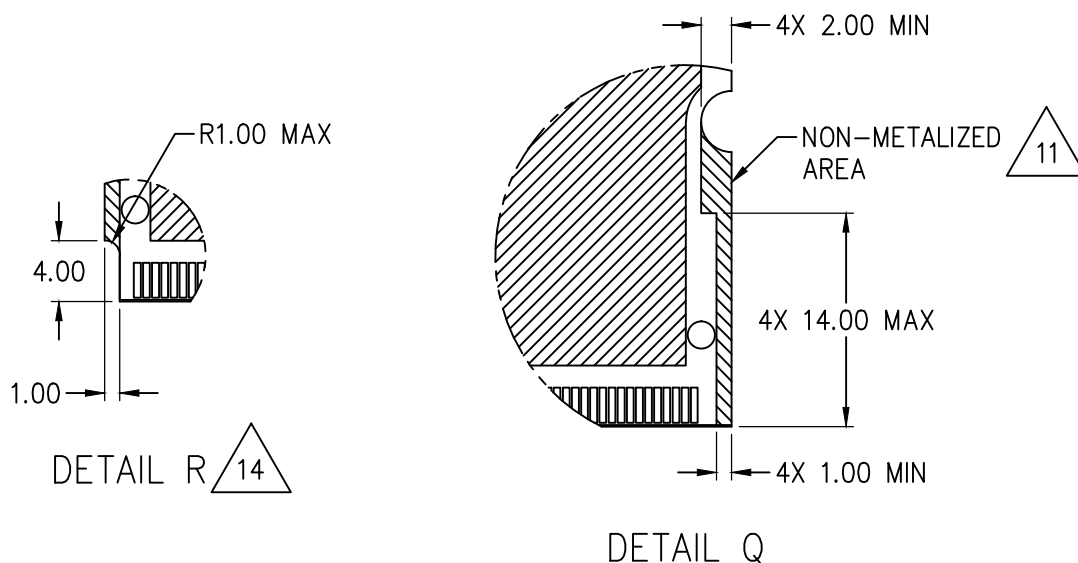
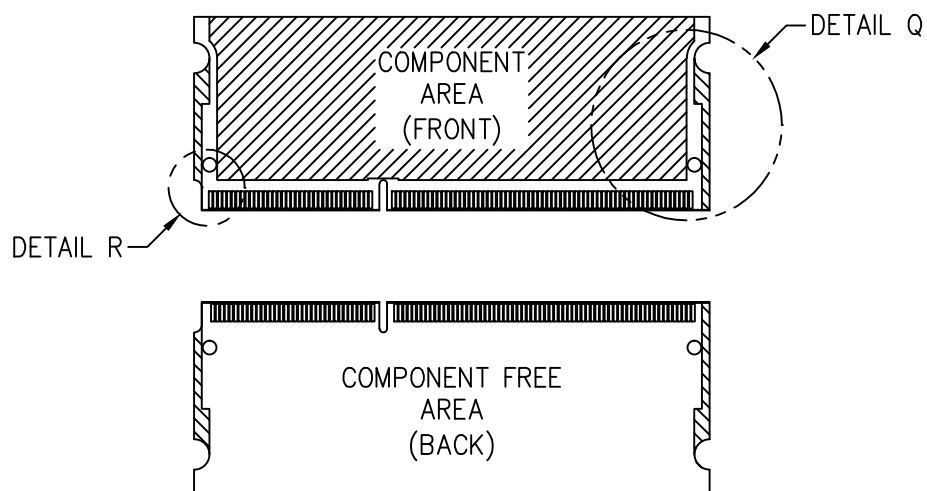
NON-METALIZED DEFINITION FOR OUTER LAYERS
OPTIONAL CHAMFER OR RADIUS DETAIL NOT SHOWN



DETAIL S

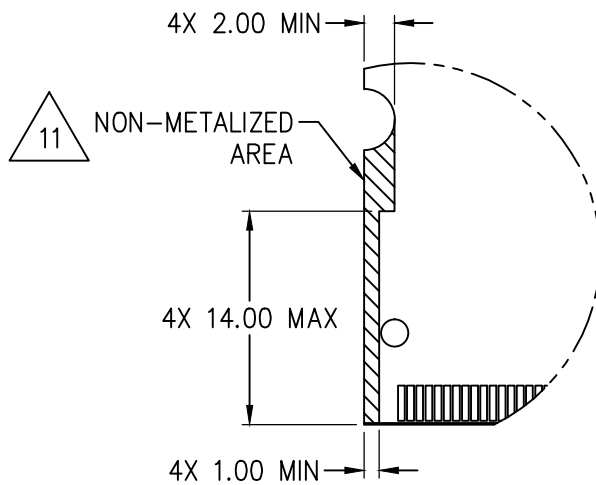
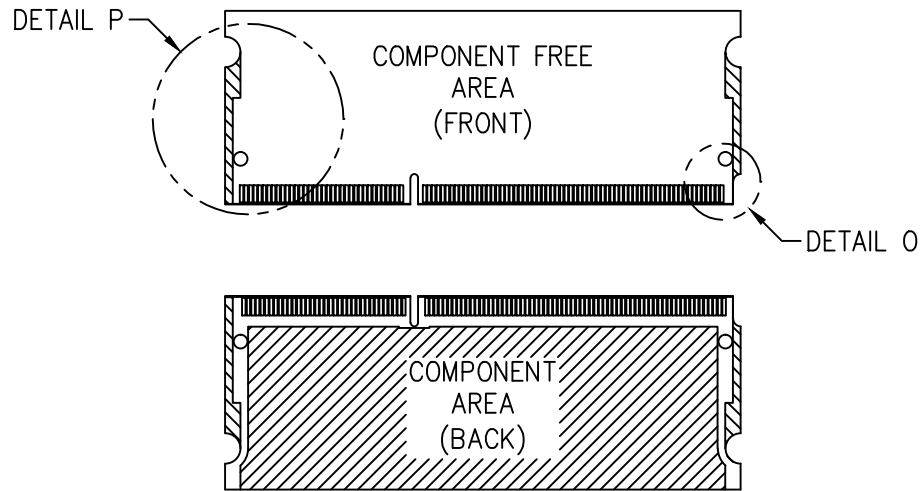
DOUBLE SIDED MODULE

NON-METALIZED DEFINITION FOR OUTER LAYERS
OPTIONAL CHAMFER OR RADIUS DETAIL NOT SHOWN

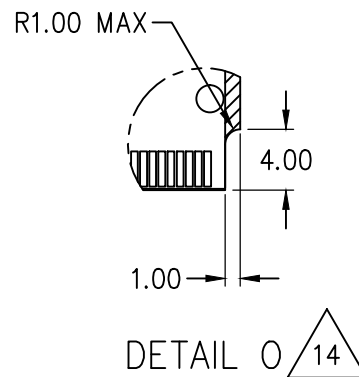


STANDARD SINGLE SIDED MODULE

NON-METALIZED DEFINITION FOR OUTER LAYERS
 OPTIONAL CHAMFER OR RADIUS DETAIL NOT SHOWN

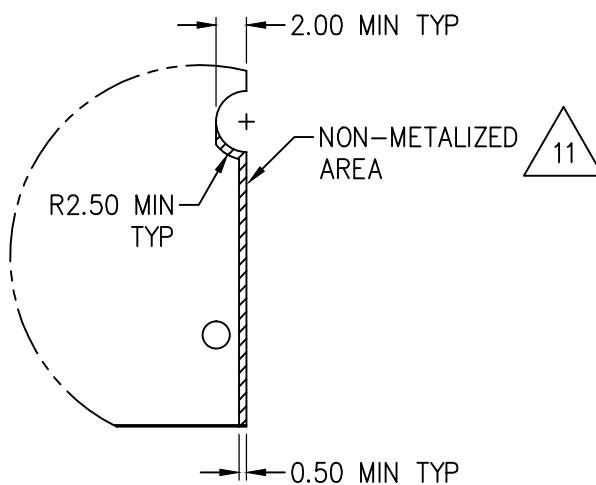
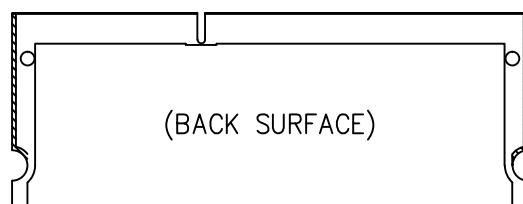
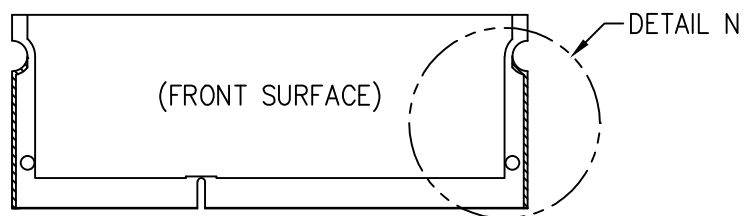


DETAIL P



REVERSE SINGLE SIDED MODULE

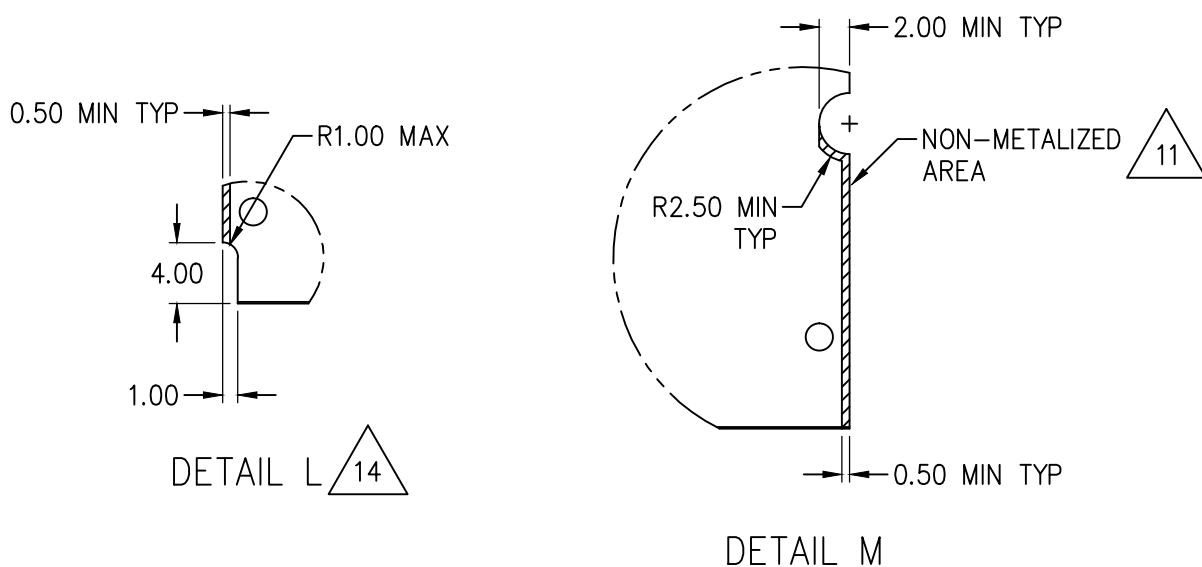
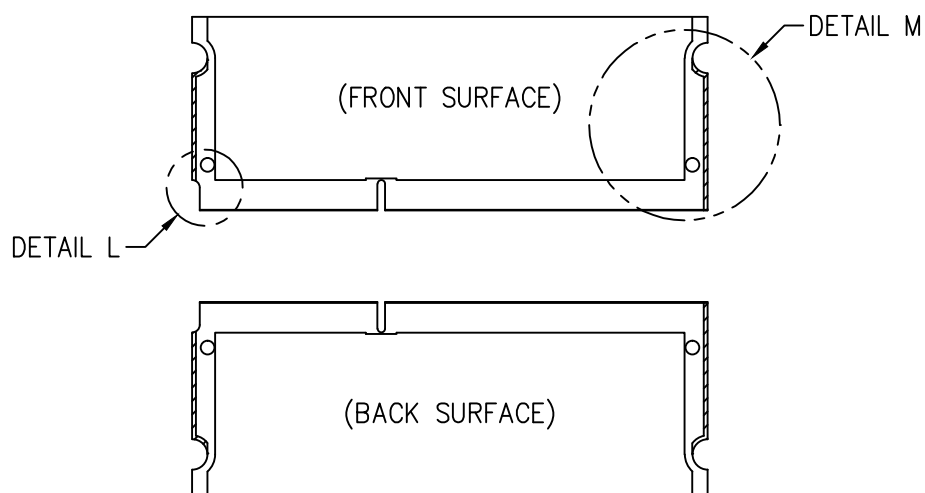
NON-METALIZED DEFINITION FOR ALL INNER LAYERS
OPTIONAL CHAMFER OR RADIUS DETAIL NOT SHOWN



DETAIL N

DOUBLE SIDED MODULE

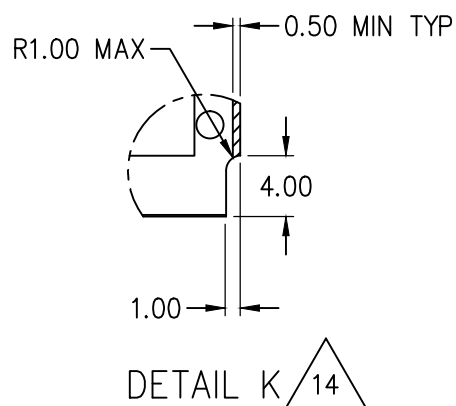
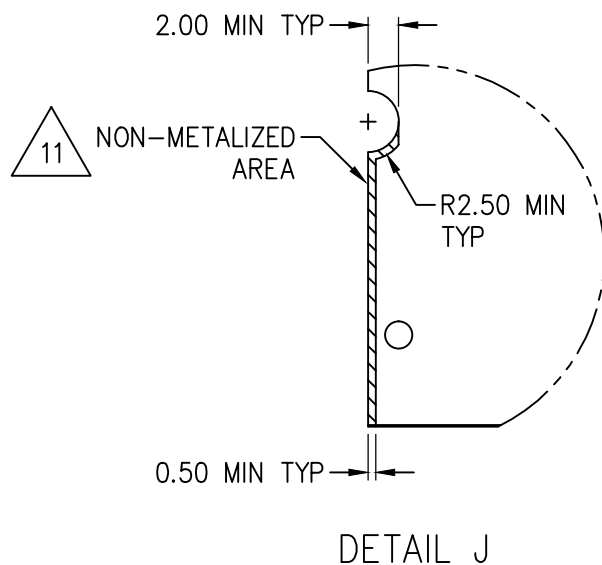
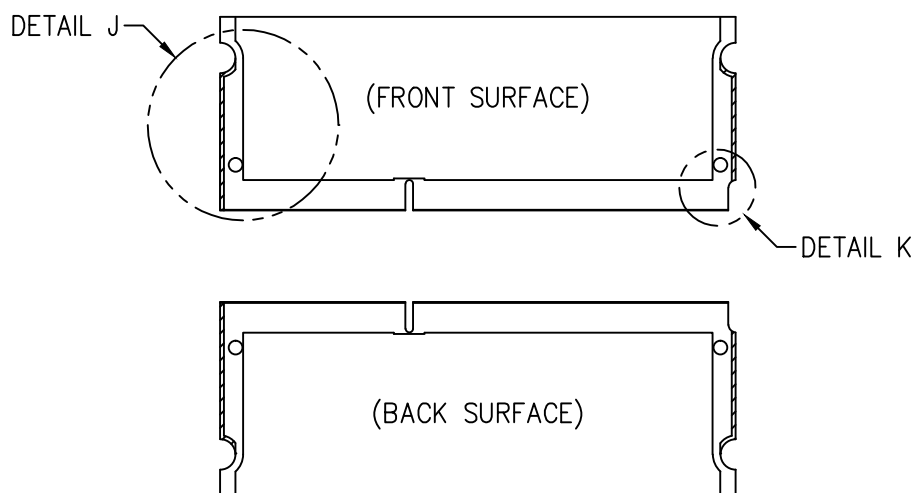
NON-METALIZED DEFINITION FOR ALL INNER LAYERS
 OPTIONAL CHAMFER OR RADIUS DETAIL NOT SHOWN



STANDARD SINGLE SIDED MODULE

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NON-METALIZED DEFINITION FOR ALL INNER LAYERS
 OPTIONAL CHAMFER OR RADIUS DETAIL NOT SHOWN



REVERSE SINGLE SIDED MODULE

NOTES:

1. DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5–2009.
2. TOLERANCES ON ALL DIMENSIONS ± 0.15 UNLESS OTHERWISE SPECIFIED.
3. ALL DIMENSIONS ARE MILLIMETERS.



THE POSITION OF THE ALIGNMENT KEY DOES NOT DEFINE THE MODULE VOLTAGE.
THE JC–45 COMMITTEE CONTROLS THIS INFORMATION.
IT IS SHOWN HERE FOR REFERENCE ONLY, AND SUBJECT TO CHANGE.



DIMENSIONS APPLICABLE WHEN COMPONENTS MOUNTED ON BOTH SIDES.
PCB THICKNESS NOT TO BE EXCEEDED OUTSIDE OF COMPONENT AREA.



CARD THICKNESS APPLIES ACROSS TABS AND INCLUDES PLATING AND METALIZED AREAS.



BORDER OF COMPONENT AREA IS HEIGHT LIMITED DEFINED BY 5.10, A2, AND A3 DIMENSIONS.



EDGE OF CONTACT PADS AND TIE BARS, IF PRESENT, SHALL BE FREE OF BURRS.

APPLICATION NOTES:



THE ADDITION OF THIS BEVEL IS A FABRICATION OPTION AND IS NOT REQUIRED.
THE BEVEL IS NOT TO HIT THE PLATED CONTACTS.



RECOMMENDED PLATING FOR CONTACT PADS ARE:

- 1) GOLD PLATING 0.76 MICROMETERS MINIMUM OVER 2.00
MICROMETERS MINIMUM NICKEL.
- 2) GOLD PLATING 0.05 MICROMETERS MINIMUM OVER 0.25
MICROMETERS MINIMUM PALLADIUM OVER 2.00
MICROMETERS MINIMUM NICKEL.
- 3) GOLD PLATING 0.05 MICROMETERS MINIMUM OVER 2.00
MICROMETERS MINIMUM NICKEL.

MODULE PLATING RECOMMENDATIONS TESTED PER INDUSTRY STANDARD EIA 364–1000.
RELIABILITY TESTING REQUIRES TEST MODULE, CONNECTOR, AND IDENTIFICATION OF
TEST CONDITIONS.



'METALIZED' IS DEFINED AS ANY METAL SURFACE THAT HAS A RETURN PATH TO POWER
SUPPLY OR GROUND, THROUGH A COMPONENT OR CONDUCTIVE PLANE VCC OR VDD,
BLIND OR PLATED THROUGH HOLE (PTH), AS WELL AS NARROW OR WIDE TRACES.
ANY SURFACE METALS SUCH AS CONNECTOR PIN IDENTIFICATION, PCB VENDOR CODE, ETC.
THAT DO NOT HAVE A METALS AS A RETURN PATH ARE ACCEPTABLE.
'NON–METALIZED' IS DEFINED AS THE OPPOSITE TO 'METALIZED' AND DOES NOT
INCLUDE ANY METAL OR CONDUCTIVE ELEMENTS THAT MAY CAUSE ELECTRICAL SHORT CIRCUIT.
HOWEVER, ANY SURFACE METALS SUCH AS CONNECTOR PIN IDENTIFICATION, PCB VENDOR
NAME OR CODE, ETC. THAT DOES NOT HAVE CONDUCTIVE RETURN PATH TO VCC OR VDD IS
ACCEPTABLE.



OPTIONAL CHAMFER OR RADIUS.

13. PATENT CLAIM:NANYA HAS ADVISED JEDEC OF US PATENT APPLICATION 13/473,060 THAT MAY BE RELATED TO CERTAIN IMPLEMENTATIONS OF THE PACKAGE OUTLINE.



APPLIES WHEN IMPLEMENTING CORNER KEY FOR SINGLE SIDED MODULES

CHANGE RECORD

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

INITIAL ISSUE: A	DATE: JAN 2006	ITEM NUMBER: 14-085
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CHANGE RECORD HISTORY:

ISSUE: B	DATE: NOV 2006	ITEM NUMBER: 14-106E
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LOCATION	CHANGED FROM:	CHANGED TO:
PAGE 1	PIN N/2	PIN N-1

ISSUE: C	DATE: JULY 2008	ITEM NUMBER: 14-117
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LOCATION:	CHANGED FROM:	CHANGED TO:
PAGE 1 THREE OF TOLERANCE BOX	ϕ 0.10 (M) C A B	ϕ 0.10 (M) C B A
PAGE 1	Q OF D	Q OF 67.6 FEATURE
PAGE 1	2X 4.00±0.10	2X ϕ 4.00±0.10
PAGE 2 DETAIL Z	4.20	4.20 MIN
PAGE 2 DETAIL X	2X ^{0.25} _{0.05}	2X ^{0.35} _{0.05}
PAGE 2 DETAIL Y	ϕ 0.10 (L) C A B	ϕ 0.10 (L) C B A
	ϕ 0.05 (L) C	ϕ 0.05 (L) C
	2.55	2.55±0.15
PAGE 1-9 TITLE	204 PIN DDR3 S.O.DIMM,	204 PIN DDR3 SODIMM,

ISSUE: D	DATE: AUGUST 2012	ITEM NUMBER: 14-135
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LOCATION:	CHANGED FROM:	CHANGED TO:
ALL SHEETS		UPDATED FORMAT
ALL SHEETS	0.60 LEAD CENTERS	0.60 MM PITCH
SHEET 1	4.20	REMOVED PATENT ISSUES NOTE
SHEET 1 HOLES	ϕ 0.10 (M) C B A	ϕ ϕ 0.10 (M) C B A
SHEET 1 SLOTS	2X ϕ 4.00±0.10	2X 4.00±0.10
	ϕ 0.10 (M) C B A	ϕ ϕ 0.10 (M) C B A
SHEET 1 AND 4		ADDED DETAIL U

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CHANGE RECORD

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

LOCATION:	CHANGED FROM:	CHANGED TO:
SHEET 2		MOVED DETAIL Z TO SHEET 3
SHEET 3		ADDED ADDITIONAL VIEW ADDED DATUM A ADDED OPTIONAL CHAMFER
SHEET 4		NEW SHEET
SHEET 5		ADDED TABLE NUMBERS COMBINED TABLES INTO 1 PAGE
SHEET 6, 7		ADDED OPTIONAL CHAMFER DETAIL NOT SHOWN
SHEET 8	AND/OR METALIZATION EDGE OF CONTACT PADS SHALL	AND/OR METALIZED AREAS. EDGE OF CONTACT PADS AND TIE BARS, IF PRESENT, SHALL BE FREE OF BURRS. 1) IMMERSION: 0.05 MICROMETERS MINIMUM GOLD GOLD OVER 2 MICROMETERS MINIMUM NICKEL THICKNESS. 2) ELECTROLYTIC: 0.76 MICROMETERS MINIMUM GOLD GOLD OVER 2 MICROMETERS MINIMUM NICKEL THICKNESS. 3) ELECTROLYTIC: 0.05 MICROMETERS MINIMUM GOLD GOLD OVER 0.80 MICROMETERS MINIMUM PALLADIUM-NICKEL. MODULE PLATING RECOMMENDATIONS TESTED PER INDUSTRY STANDARD. EIA 364-1000. RELIABILITY TESTING REQUIRES TEST MODULE, CONNECTOR, AND IDENTIFICATION OF TEST CONDITIONS.
NOTE 11	METALIZATION NON-METALIZATION	METALIZED NON-METALIZED REMOVED NOTE 10 (PATENT CLAIM) RENUMBERED 11 TO 10, 12 TO 11 ADDED NOTE 12
SHEET i	SHEET 9 OF 9	SHEET i
SHEET ii		NEW SHEET

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

ISSUE: E	DATE: MARCH 2014	ITEM NUMBER: 14-151
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LOCATION:	CHANGED FROM:	CHANGED TO:
SHEET 1		ADDED RT SIDE MODULE DETAIL ADDED 'DOUBLE SIDED MODULE'
SHEET 2		NEW SHEET FOR STANDARD SINGLE SIDED MODULE
SHEET 3		NEW SHEET FOR REVERSE SINGLE SIDED MODULE
SHEET 4	WAS SHEET 2	
	DELETED DETAILS X & Y AND MOVED TO SHEET 5	ADDED VIEWS B-B & C-C ADDED FRONT & BACK TEXT
SHEET 5	2.55	2.55±0.15
SHEET 6	WAS SHEET 3	
SHEET 7	WAS SHEET 4	ADDED SQUARE CORNER VIEW
	4X 0.75 MAX	2X 0.75 MAX
	2X R0.75 MAX	2X R0.75 MAX
SHEET 8		ADDED RT SIDE MODULE EDGE DETAIL FROM SHEETS 1 & 2
SHEETS 9 & 10		NEW SHEETS FOR LT & RT SIDE MODULE EDGE DETAILS WITH CORNER KEY
SHEET 11	WAS SHEET 5	MOVED E FROM TABLE 1 TO TABLE 2
SHEET 12		NEW SHEET FOR TABLES AND TEXT
SHEET 13	WAS SHEET 6	
	WAS 4X X.XX±0.10	CHANGED TO 4X X.XX MIN
		ADDED DOUBLE SIDED MODULE
SHEETS 14 & 15		NEW SHEETS FOR STANDARD & REVERSE SINGLE SIDED MODULE NON-METALIZED DEFINITION, OUTER LAYERS
SHEET 16	WAS SHEET 7	
	WAS 4X X.XX±0.10	CHANGED TO X.XX MIN TYP
		ADDED 'DOUBLE SIDED MODULE'

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CHANGE RECORD

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

LOCATION:		CHANGED FROM:	CHANGED TO:
SHEETS 17 & 18			NEW SHEETS FOR STANDARD & REVERSE SINGLE SIDED MODULE NON-METALIZED DEFINITION, INNER LAYERS
SHEET 19	NOTE 4	...NOTCH IDENTIFIES THE OPERATIONAL VOLTAGE: 1.5 VOLTS.	...ALIGNMENT KEY DOES NOT DEFINE THE MODULE VOLTAGE.
	NOTE 6	...PLATING AND/OR METALIZED...	...PLATING AND METALIZED...
	NOTE 7	...OF COMPONENT AREA.	...OF COMPONENT AREA IS HEIGHT LIMITED DEFINED BY 5.10, A2, AND A3 DIMENSIONS.
	NOTE 11	...OPPOSITE TO METALIZATION...	...OPOSITE TO METALIZED...
SHEET 20			NEW SHEET FOR NOTES 13 AND 14

ISSUE: –	DATE: –	ITEM NUMBER: –
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LOCATION:	CHANGED FROM:	CHANGED TO: