

10

TERMINAL 1 INDEX AREA  
E/4 x D

6

2X

2x

TOP VIEW

(DATUM A)

DETAIL A

(DATUM B)

8

BOTTOM VIEW

SIDE VIEW

DETAIL B

5

4

8

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: PLASTIC ULTRA AND SUPER THIN  
SMALL OUTLINE, NON-LEADED  
PACKAGE FAMILY

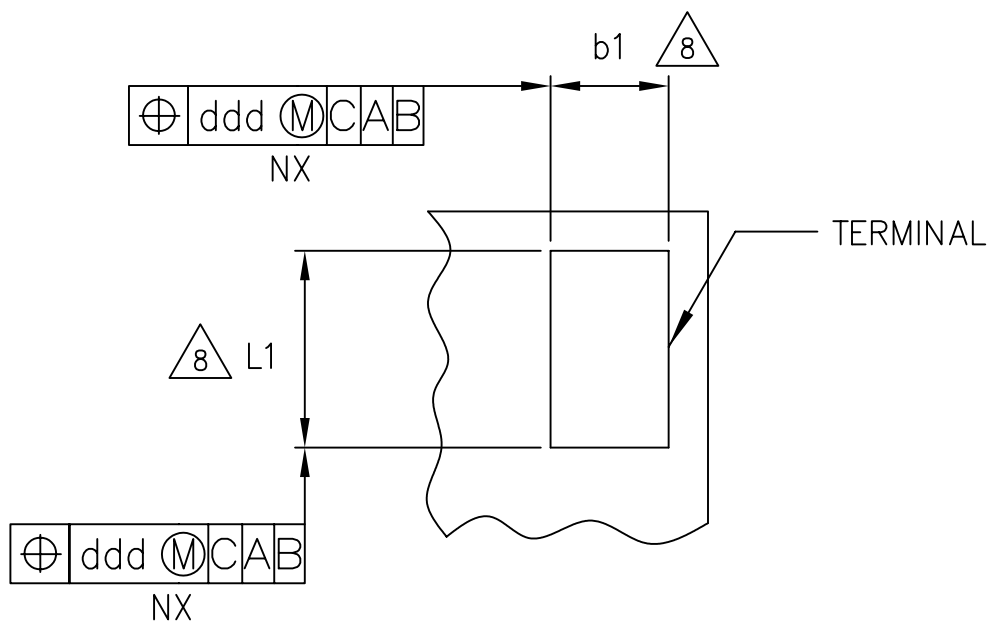
PACKAGE DESIGNATOR:  
(U,X2)F-PSON

ISSUE:  
C

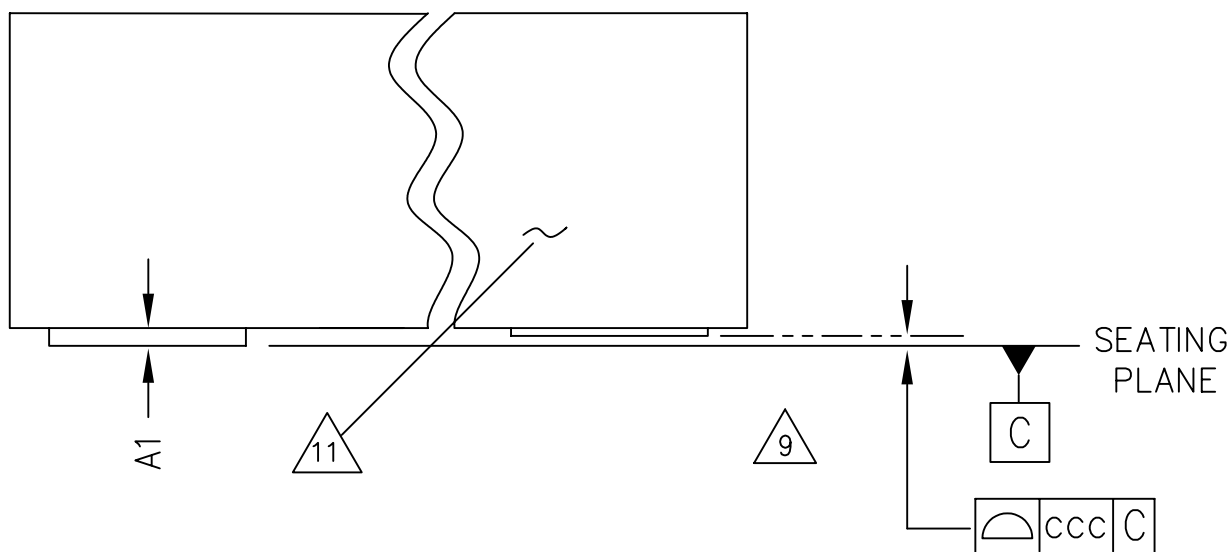
DATE:  
MARCH  
2010

MO-236

SHEET:  
1 of 9



DETAIL A



DETAIL B  
(ROTATED 90° CW)

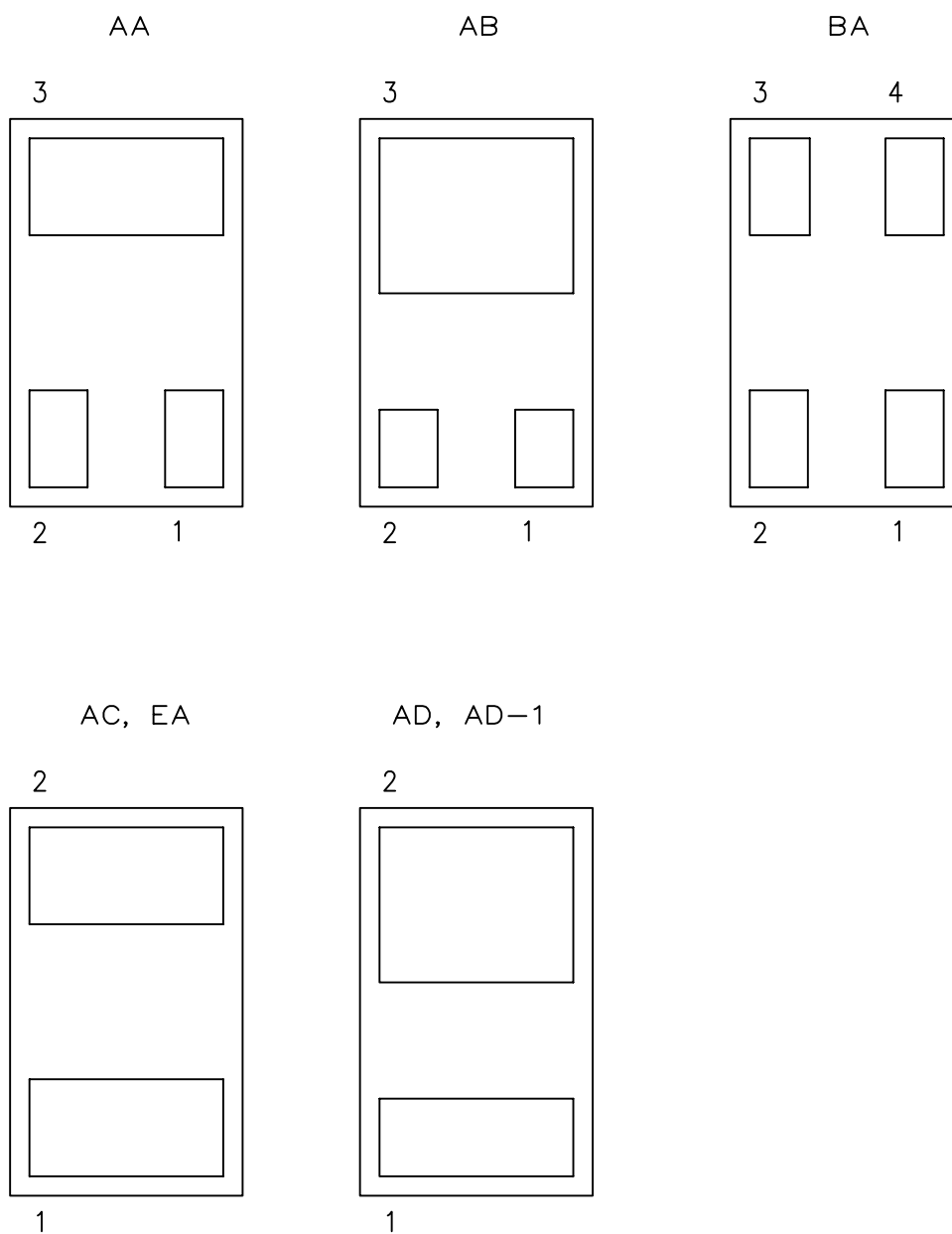


FIGURE 1: TERMINAL PATTERNS  
BOTTOM VIEW



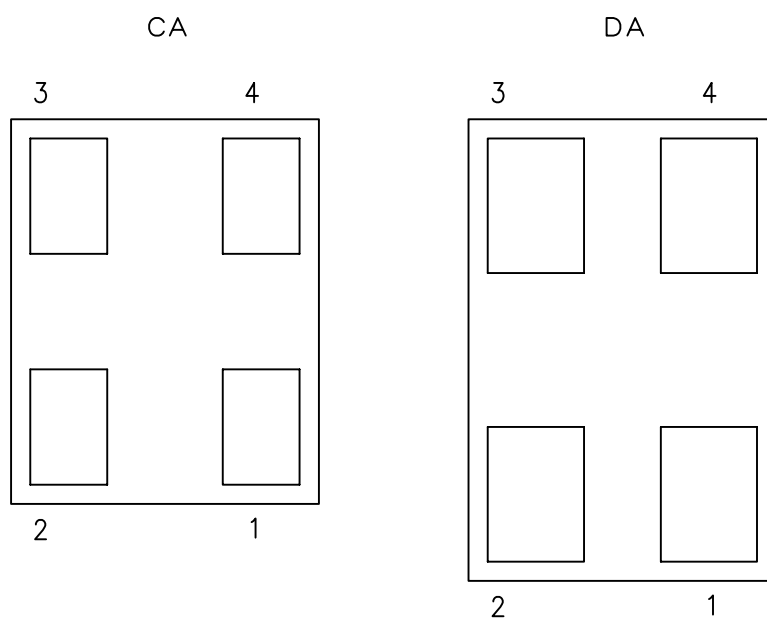


FIGURE 2: TERMINAL PATTERNS  
BOTTOM VIEW



TABLE 1: VARIATIONS

VAR SYMBOL	AA			AB			AC			NOTE
	MINIMUM	NOMINAL	MAXIMUM	MINIMUM	NOMINAL	MAXIMUM	MINIMUM	NOMINAL	MAXIMUM	
A	0.45	—	0.60	0.45	—	0.60	0.45	—	0.60	5
A1	0.00	—	0.05	0.00	—	0.05	0.00	—	0.05	9
A2	0.40	—	0.60	0.40	—	0.60	0.40	—	0.60	
b1	0.10	0.15	0.20	0.10	0.15	0.20	0.45	0.50	0.55	8
b2	0.45	0.50	0.55	0.45	0.50	0.55	0.45	0.50	0.55	8
D	0.60 BSC			0.60 BSC			0.60 BSC			
E	1.00 BSC			1.00 BSC			1.00 BSC			
e	0.35 BSC			0.35 BSC			—			3
e1	0.65 BSC			0.60 BSC			0.65 BSC			
e2	0.325 BSC			0.25 BSC			0.325 BSC			
L1	0.20	0.25	0.30	0.15	0.20	0.25	0.20	0.25	0.30	8
L2	0.20	0.25	0.30	0.35	0.40	0.45	0.20	0.25	0.30	8
N	3			3			2			
TERMINAL PATTERN FIG.	1			1			1			
Notes	1, 2			1, 2			1, 2			
Ref	10–442			10–442			10–442			
Issue	B			B			B			

TABLE 2: VARIATIONS

VAR SYMBOL	AD			AD–1			BA			NOTE
	MINIMUM	NOMINAL	MAXIMUM	MINIMUM	NOMINAL	MAXIMUM	MINIMUM	NOMINAL	MAXIMUM	
A	0.45	—	0.60	0.28	—	0.32	0.45	—	0.60	5
A1	0.00	—	0.05	0.00	—	0.05	0.00	—	0.05	9
A2	0.40	—	0.60	0.27	—	0.32	0.40	—	0.60	
b1	0.45	0.50	0.55	0.20	0.25	0.30	0.10	0.15	0.20	8
b2	0.45	0.50	0.55	0.20	0.25	0.30	0.10	0.15	0.20	8
D	0.60 BSC			0.30 BSC			0.60 BSC			
E	1.00 BSC			0.60 BSC			1.00 BSC			
e	—			—			0.35 BSC			3
e1	0.60 BSC			0.35 BSC			0.65 BSC			
e2	0.25 BSC			0.172 BSC			0.325 BSC			
L1	0.15	0.20	0.25	0.13	0.18	0.23	0.20	0.25	0.30	8
L2	0.35	0.40	0.45	0.14	0.19	0.24	0.20	0.25	0.30	8
N	2			2			4			
TERMINAL PATTERN FIG.	1			1			1			
Notes	1, 2			1, 2			1, 2			
Ref	10–442			11–XXX			10–442			
Issue	B			(C)			B			

TABLE 3: VARIATIONS										
VAR SYMBOL	CA			DA			EA			NOTE
	MINIMUM	NOMINAL	MAXIMUM	MINIMUM	NOMINAL	MAXIMUM	MINIMUM	NOMINAL	MAXIMUM	
A	0.55	—	0.65	0.45	—	0.60	>0.30	—	0.40	5
A1	0.00	—	0.05	0.00	—	0.05	0.00	—	0.05	9
A2	0.50	—	0.65	0.40	—	0.60	—	—	—	
b1	0.15	0.20	0.25	0.20	0.25	0.30	0.45	0.50	0.55	8
b2	0.10	0.15	0.20	0.20	0.25	0.30	0.45	0.50	0.55	8
D	0.80 BSC			0.80 BSC			0.60 BSC			
E	1.00 BSC			1.20 BSC			1.00 BSC			
e	0.50 BSC			0.45 BSC			—			3
e1	0.60 BSC			0.75 BSC			0.65 BSC			
e1	0.30 BSC			0.375 BSC			0.325 BSC			
L1	0.25	0.30	0.35	0.30	0.35	0.40	0.20	0.25	0.30	8
L2	0.25	0.30	0.35	0.30	0.35	0.40	0.20	0.25	0.30	8
N	4			4			2			
TERMINAL PATTERN FIG.	2			2			1			
Notes	1, 2			1, 2			1, 2			
Ref	10–442			10–442			10–442			
Issue	B			B			B			

TABLE 4: TOLERANCES OF FORM AND POSITION		
SYMBOL		NOTE
aaa	0.05	
ccc	0.03	
ddd	0.10	
Notes	1, 2	
Ref	10–422	
Issue	A	

## NOTES:

1 DIMENSIONING AND TOLERANCING PER ASME Y14.5M–1994.

2 ALL DIMENSIONS ARE IN MILLIMETERS.

3 "e" REPRESENTS THE TERMINAL GRID PITCH.

4 1.0 X 0.6 PACKAGE VARIATION AA IS SHOWN FOR ILLUSTRATION ONLY.

5 THIS DIMENSION INCLUDES STAND-OFF HEIGHT "A1", AND PACKAGE BODY THICKNESS, BUT DOES NOT INCLUDE ATTACHED FEATURES, e.g., EXTERNAL HEATSINK OR CHIP CAPACITORS. AN INTEGRAL HEATSLUG IS NOT CONSIDERED AS ATTACHED FEATURE.

6 A VISUAL INDEX FEATURE MUST BE LOCATED WITHIN THE HATCHED AREA. THE HATCHED AREA USED IN THIS REGISTRATION IS DEFINED BY A LEGACY METHOD WHICH PERMITS THIS AREA TO TRAVERSE THE ENTIRE WIDTH OF THE COMPONENT AND THEREFORE DOES NOT COMPLY WITH DESIGN GUIDES 4.8, 4.16, & 4.20 WHICH PLACE DIFFERENT RESTRICTIONS ON THE HATCHED AREA.

INDEX FEATURES ON THE BOTTOM SURFACE OF THE PACKAGE ARE ALLOWED. TYPICAL FEATURE IS A CHAMFER OR "MOUSE BITE" LOCATED ON THE EDGE OF THE PIN 1 FEATURE.

7 THESE PACKAGES ARE USED PRINCIPALLY FOR DISCRETE DEVICES.

8 DIMENSIONS b1, b2, L1, L2 APPLY TO PLATED TERMINALS.

9 DIMENSION A1 IS PRIMARILY TERMINAL PLATING, AND DOES NOT INCLUDE SMALL METAL PROTRUSIONS.

10 A COMPANY HAS ISSUED PATENTS THAT MAY APPLY TO THIS REGISTRATION. IF THE CURRENT ISSUED PATENTS OR LATER PATENTS DO APPLY, THIS COMPANY INTENDS TO COMPLY WITH THE JEDEC PATENT POLICY. REFERENCE PATENTS ARE AS FOLLOWS:

INFINEON: PATENT PENDING

11 BASED ON CONSTRUCTION METHOD, THE SIDE SURFACES OF THE PACKAGE MAY INCLUDE SOME METALLIZED SUPPORT FEATURES NON-CRITICAL TO THE FUNCTIONALITY OF THE PACKAGE. D AND E VALUES ARE INCLUSIVE OF THESE FEATURES.

JEDEC SOLID STATE PRODUCT OUTLINE	TITLE: PLASTIC ULTRA AND SUPER THIN SMALL OUTLINE, NON-LEADED PACKAGE FAMILY	ISSUE: C	DATE: MARCH 2010	MO-236	SHEET: 7 of 9
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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.

Initial Issue: A	Date: NOV. 2002	JC 11 Item Number :10-422

### Change Record History

Issue: B	Date : MAR2007	Item Number 10-442
Location	Changed from:	Changed to:
ALL PAGES: TITLES	PLASTIC ULTRA THIN SMALL OUTLINE, NON-LEADED PACKAGE FAMILY	PLASTIC ULTRA AND SUPER THIN SMALL OUTLINE, NON-LEADED PACKAGE FAMILY
Page 1; PACKAGE DESIGNATOR:	P-USO-N	(U,X2)F-PSO-N
Page 6; VARIATIONS TABLE		ADDED VARIATION EA: "EA" SAME AS "AC" BUT "A" MAX = 0.4mm
Pages 5 & 6; VARIATIONS TABLES		ADDED ROWS TO TABLES WITH LINKS TO TERMINAL PATTERNS FOR EACH VARIATION
Pages 3; TERMINAL PATTERN "AC"	AC	AC, EA
Page 7 Notes & Page 1		> ADDED NOTE:10 JEDEC PATENT "BROILER PLATE" > ADDED NOTE 10 TO "PATENT PENDING" ON PAGE 1. > ADDED TEXT TO NOTE 6 TO ALERT USER THAT THE "INDEX FEATURE" DEFINITION IN THIS DOCUMENT IS A LEGACY AND DOES NOT AGREE WITH DESIGN GUIDES: 4.8, 4.16 OR 4.20
Pages 1 & 2		REORIENTED TOP VIEW ON PAGE1: ROTATED 180° TO PLACE INDEX FEATURE AT BOTTOM. ROTATED BOTTOM & SIDE VIEWS TO AGREE. ROTATED DETAILS "A" & "B" TO AGREE.
Page 1		REMOVED "BASIC BOX" FROM DIMENSIONS: A, & A2. UPDATED SYMBOLS IN FEATURE CONTROL FRAMES: REPLACED "d" WITH PROFILE SYMBOL
Page 2		> REMOVED "BASIC BOX" SYMBOL FROM DIMENSIONS: A1, b1 & L1 SINCE THESE ARE NOT BASIC DIMENSIONS. > UPDATED SYMBOLS IN FEATURE CONTROL FRAMES RELATED TO DIMENSIONS b1 & L1: a)REPLACED "J" WITH POSITION "TARGET" SYMBOL. b)ADDED "MAX MATERIAL" CONDITION c)CHANGED DATUM REFERENCE FROM: A B TO A B C > REPLACED "d" SYMBOL IN THE FEATURE CONTROL FRAME ASSOCIATED WITH DIM A1 WITH PROFILE SYMBOL.

JEDEC SOLID STATE PRODUCT OUTLINE	TITLE: PLASTIC ULTRA AND SUPER THIN SMALL OUTLINE, NON-LEADED PACKAGE FAMILY	ISSUE: C	DATE: MARCH 2010	MO-236	SHEET: 8 of 9
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## Change Record

Issue: B	Date : MAR 2007	Item Number 10-442
Location	Changed from:	Changed to:
Page 5, Variation Table 1	Variation AB: "e1" = 0.65 BSC Variation AC: "e1" = 0.35 BSC	Variation AB: "e1" = 0.60 BSC Variation AC: "e1" = 0.65 BSC
Page 5, Variation Table 2	Variation AD: "e1" = 0.35 BSC	Variation AD: "e1" = 0.60 BSC
Issue: C	Date : OCT 2009	Item Number 11-XXX
Location	Changed from:	Changed to:
Page 2, DETAIL B	–	ADDED OPT. METALLIZED FEATURES
Page 1, BOTTOM VIEW Pages 5 and 6	DELETED DIMENSION e1/2	ADDED DIMENSION e2 AND ADDED VALUES FOR e2 ON VARIATION TABLES 1,2,&3
Page 1, SIDE VIEW Page 2, DETAIL B	SEATING PLANE AND PROFILE TOLERANCING ON DETAIL B	MOVED SEATING PLANE AND PROFILE TOLERANCE TO PAGE 1 SIDE VIEW
Page 3, FIG 1 / PAGE 4, FIG 2	–	ADDED REFERENCE TO NOTE 6
Page 5, TABLE 2	–	ADDED VARIATION AD-1
Page 7, NOTE 6	–	ADDED PROVISION FOR PIN 1 INDEX ON THE PACKAGE BOTTOM SURFACE.
Page 7, NOTE 11	–	ADDED NOTE 11 FOR NON CRITICAL METALLIZED FEATURES