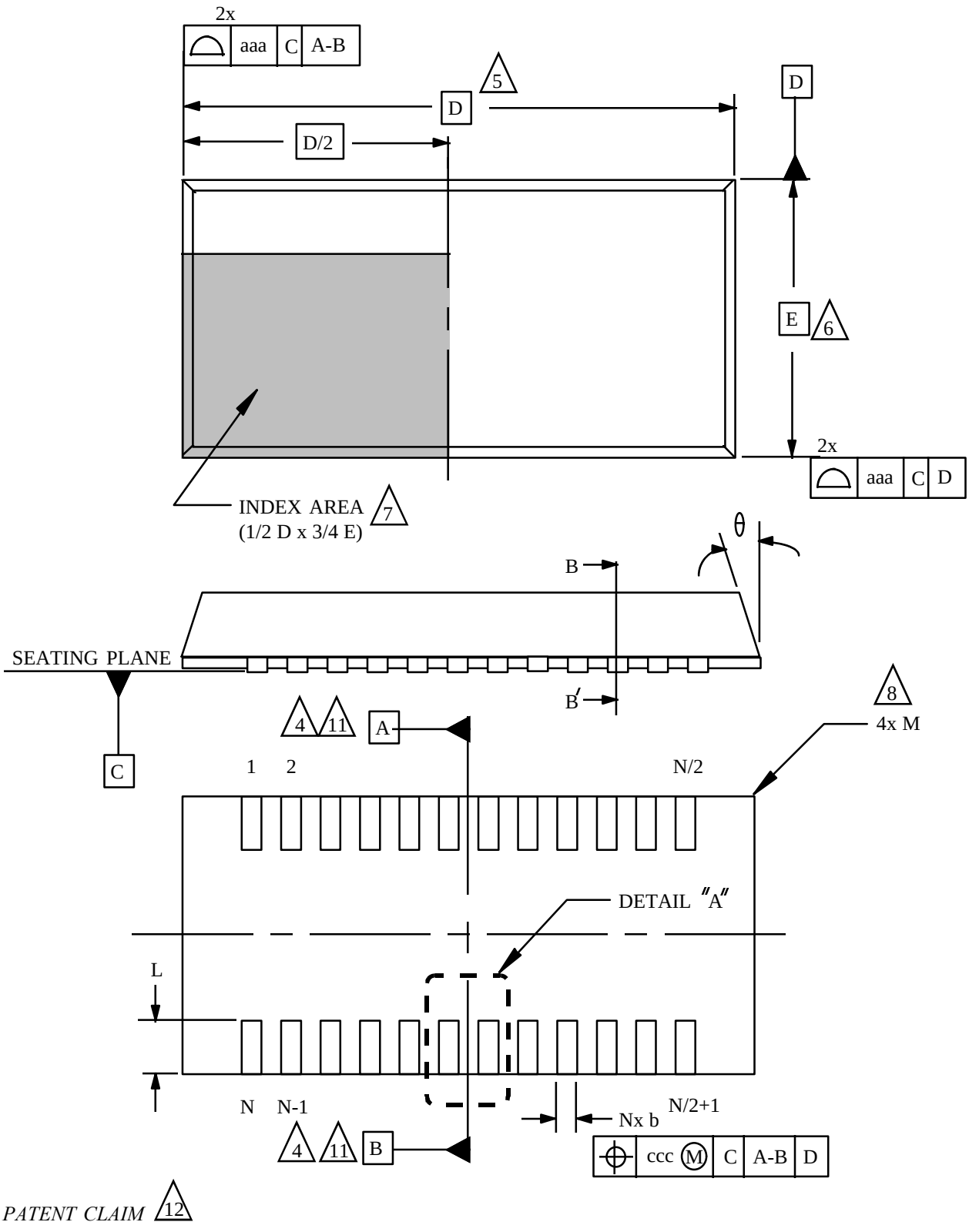
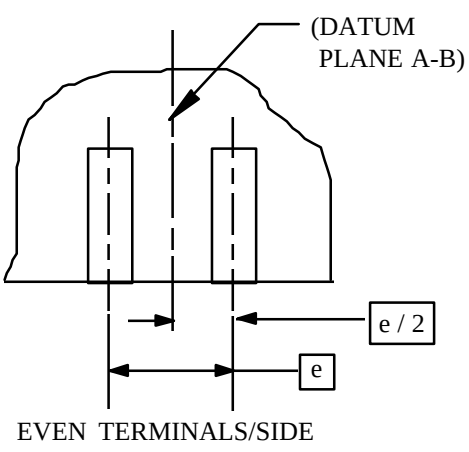
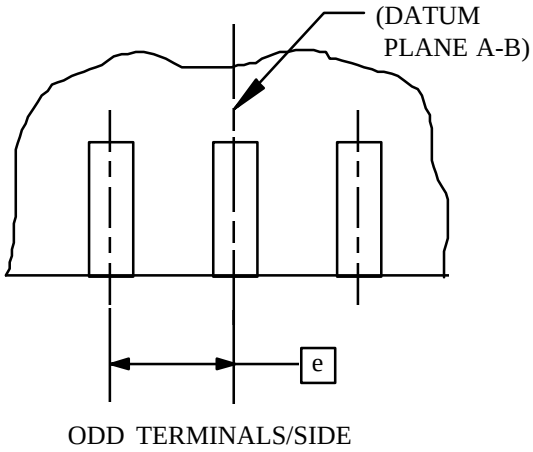


PATENT CLAIM 12

JEDEC SOLID STATE PRODUCT OUTLINES	THIS ***REGISTERED OUTLINE*** HAS BEEN PREPARED BY THE JEDEC JC-II COMMITTEE AND REFLECTS A PRODUCT WITH ANTICIPATED USAGE IN THE ELECTRONICS INDUSTRY;CHANGES ARE LIKELY TO OCCUR.				
TITLE : PLASTIC ULTRA-THIN SMALL OUTLINE NO-LEAD PACKAGE	JESD-30 DESIGNATOR R-PDSO-N	ISSUE C	DATE Apr 98	MO-196	SHEET 1 OF 8

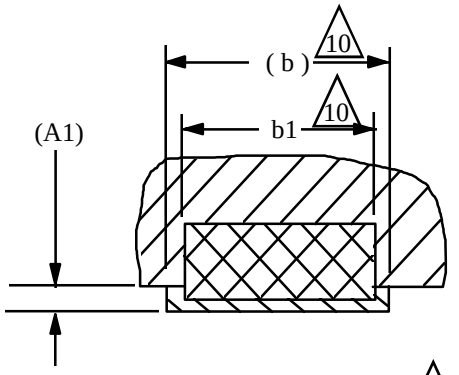


EVEN TERMINALS/SIDE

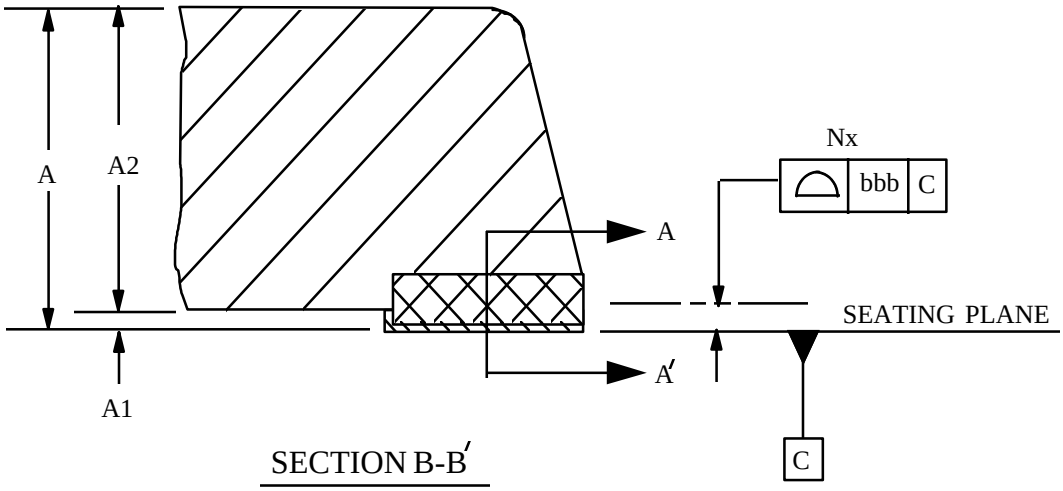


ODD TERMINALS/SIDE

DETAIL "A"



SECTION A-A′ 9



SECTION B-B′

JEDEC SOLID STATE PRODUCT OUTLINES	TITLE : PLASTIC ULTRA-THIN SMALL OUTLINE NO-LEAD PACKAGE	ISSUE C	DATE Apr 98	MO-196	SHEET 2 OF 8

USON Options Designators

The USON Variations will comprise three digits.

First digit is the body length - D

Second digit is the body width - E

Third digit is the lead pitch - e

FIRST DIGIT CODE		SECOND DIGIT CODE		THIRD DIGIT CODE	
D Dimension	Letter Code	E Dimension	Letter Code	e Dimension	Letter Code
7mm	A	3mm	A	1.25mm	A
8	B	4	B	1.00	B
9	C	5	C	0.80	C
10	D	6	D	0.65	D
11	E	7	E	0.50	E
12	F	8	F		
13	G	9	G		
14	H	10	H		
15	J	11	J		
16	K	12	K		
17	L	13	L		
18	M				
19	N				
20	P				
21	Q				
22	R				
23	S				
24	T				
25	U				
26	V				

Example : A 36 L USON which is 15mm long(D dimension) X 8mm wide (E dimension) and a 0.80 pitch will be option JFC.

SYMBOL	DIMENSIONS IN MILLIMETER									NOTE
	⚠13 VARIATIONS									
	AA			FEC			FEE			
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.	
A				—	—	0.90	—	—	0.90	
A1				0.00	—	0.05	0.00	—	0.05	9
A2				0.65	0.75	0.85	0.65	0.75	0.85	
b				0.35	—	0.50	0.25	—	0.40	9,10
b1				0.35	0.40	0.45	0.25	0.30	0.35	9,10
D				12.00 BSC.			12.00 BSC.			5
E				7.00 BSC.			7.00 BSC.			6
e				0.80 BSC.			0.50 BSC.			
L				0.50	0.75	0.90	0.35	0.50	0.75	
M				—	—	0.50	—	—	0.50	8
θ				3°	—	16°	3°	—	16°	
aaa				0.10			0.10			
bbb				0.05			0.05			
ccc				0.05			0.05			
N				28			46			3
Notes				1,2,14			1,2,14			
REF	11.11-475/11.11-497			11.11-497			11.11-497			
Issue	A / B			B			B			

SYMBOL	DIMENSIONS IN MILLIMETER									NOTE
	VARIATIONS									
	FHE			HFE			JHC			
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.	
A	—	—	0.90	—	—	0.90	—	—	0.90	
A1	0.00	—	0.05	0.00	—	0.05	0.00	—	0.05	9
A2	0.65	0.75	0.85	0.65	0.75	0.85	0.65	0.75	0.85	
b	0.25	—	0.40	0.25	—	0.40	0.35	—	0.50	9,10
b1	0.25	0.30	0.35	0.25	0.30	0.35	0.35	0.40	0.45	9,10
D	12.00 BSC			14.00 BSC.			15.00 BSC.			5
E	10.00 BSC.			8.00 BSC.			10.00 BSC.			6
e	0.50 BSC.			0.50 BSC.			0.80 BSC.			
L	0.35	0.50	0.75	0.35	0.50	0.75	0.50	0.75	0.90	
M	—	—	0.50	—	—	0.50	—	—	0.50	8
θ	3°	—	16°	3°	—	16°	3°	—	16°	
aaa	0.10			0.10			0.10			
bbb	0.05			0.05			0.05			
ccc	0.05			0.05			0.05			
N	46			54			36			3
Notes	1,2,14			1,2,14			1,2,14			
REF	11.11-497			11.11-508			11.11-497			
Issue	B			C			B			

SYMBOL	DIMENSIONS IN MILLIMETER									NOTE
	VARIATIONS									
	JHE									
	MIN.	NOM.	MAX.							
A	—	—	0.90							
A1	0.00	—	0.05							9
A2	0.65	0.75	0.85							
b	0.25	—	0.40							9,10
b1	0.25	0.30	0.35							9,10
D	15.00 BSC.									5
E	10.00 BSC.									6
e	0.50 BSC.									
L	0.35	0.50	0.75							
M	—	—	0.50							8
θ	3°	—	16°							
aaa	0.10									
bbb	0.05									
ccc	0.05									
N	58									3
Notes	1,2,14									
REF	11.11-497									
Issue	B									

NOTES :

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

2. ALL DIMENSION ARE IN MILLIMETERS.

3. N IS THE NUMBER OF TERMINALS.

4. DATUMS A AND B TO BE DETERMINED 0.10 mm FROM THE TERMINAL TIP.

5. DIMENSION D DOES NOT INCLUDE MOLD PROTRUSIONS OR GATE BURRS. MOLD PROTRUSIONS AND GATE BURRS SHALL NOT EXCEED 0.15 mm PER SIDE.

6. DIMENSION E DOES NOT INCLUDE INTERTERMINAL MOLD PROTRUSIONS OR TERMINAL PROTRUSIONS. INTERTERMINAL MOLD PROTRUSIONS AND/OR TERMINAL PROTRUSIONS SHALL NOT EXCEED 0.20 mm PER SIDE.

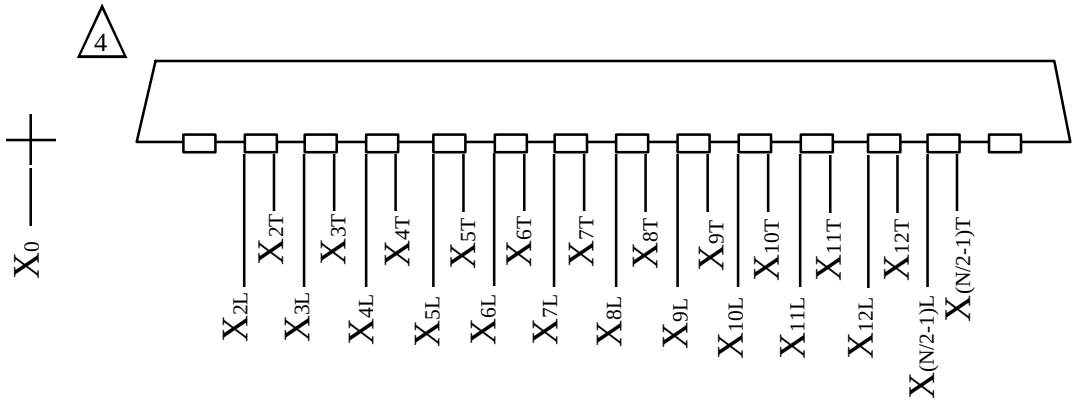
7. THE TERMINAL #1 IDENTIFIER AND TERMINAL NUMBERING CONVENTION SHALL CONFORM TO JESD 95-1 SPP-012.DETAILS OF TERMINAL #1 IDENTIFIER ARE OPTIONAL, BUT MUST BE LOCATED WITHIN THE ZONE INDICATED. THE TERMINAL #1 IDENTIFIER MAY BE EITHER A MOLDED OR A MARKED FEATURE.

8. EXACT DESIGN OF THIS CORNER FEATURE IS OPTIONAL.

9. DIMENSION b1 APPLIES TO BASE METAL ONLY. DIMENSION b APPLIES TO PLATED TERMINALS. DIMENSION A1 IS PRIMARILY TERMINAL PLATING, BUT MAY,OR MAY NOT INCLUDE A SMALL PROTRUSION OF TERMINAL BELOW THE BOTTOM SURFACE OF THE PACKAGE.

10. THESE DIMENSIONS APPLY TO FLAT SECTION OF TERMINALS BETWEEN 0.10 mm AND 0.25 mm FROM TERMINAL TIP.

11 DETERMINATION OF DATUM A-B,



28 TERMINAL DEVICE SHOWN FOR ILLUSTRATION ONLY.
L = LEADING EDGE OF TERMINAL TIP.
T = TRAILING EDGE OF TERMINAL TIP.

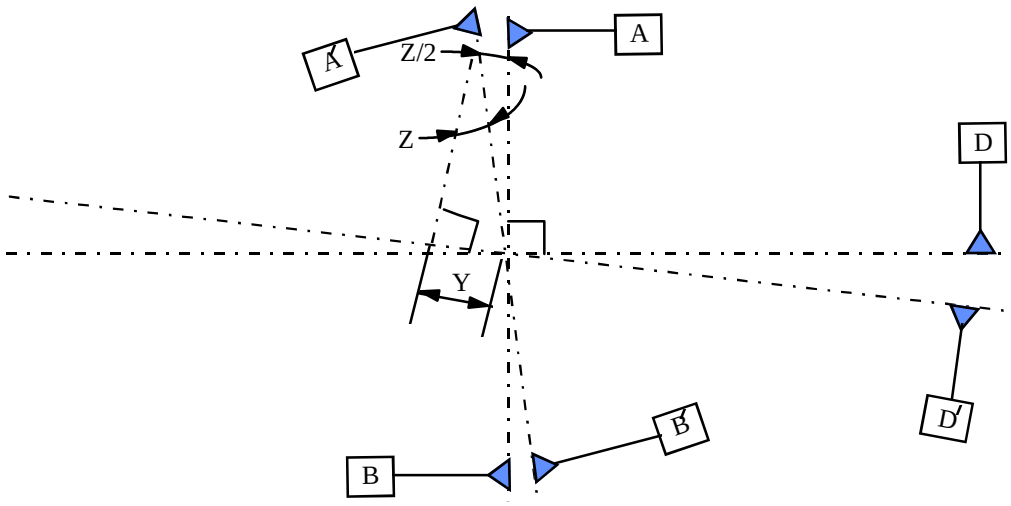
$$X = \text{DATUM LOCATION} = \frac{\sum_{J=2}^{(N/2)-1} (X_{JT} - ((X_{JT} - X_{JL})/2)) - X_0}{(N/2) - 2}$$

$$X = \text{DATUM LOCATION} = \frac{\sum_{J=(N/2+2)}^{N-1} (X_{JT} - ((X_{JT} - X_{JL})/2)) - X_0}{(N/2) - 2}$$

X = A´, B´, DETERMINE DATUM A´, B´ FOR THE TWO SIDES OF THE DEVICE.

X0 IS ARBITRARY MACHINE ZERO. THE TERMINAL EDGES ARE DETERMINED 0.1 mm FROM THE TERMINAL TIP.

11. DETERMINATION OF DATUM A-B (CONTINUED)



DETERMINE DATUMS A-B AND D BY ROTATING THROUGH ANGLE Z/2 TO GENERATE DATUMS WHICH ARE MUTUALLY PERPENDICULAR. (THIS FIGURE EXAGGERATES THE MAGNITUDE OF Z.)
ASME Y14.5-1994 DOES NOT RECOGNIZE THE SHIFTING OF DATUMS AS SPECIFIED ABOVE FOR ESTABLISHING THE PERPENDICULARITY OF THE DATUM PLANES.

12. LG SEMICON CORPORATION HAS STATED THAT U.S. PATENT 5,363,279 MAY RELATE TO CERTAIN FEATURES OF THESE PACKAGE OUTLINES. FUJITSU HAS STATED THAT U.S. PATENT 5,519,251 MAY RELATE TO A CERTAIN IMPLEMENTATION OF SOME OF THESE PACKAGES. LICENSING OF THIS TECHNOLOGY IS AVAILABLE IN COMPLIANCE WITH PARAGRAPH 3.4 (2) OF EIA ENGINEER PUBLICATION EP-7A.

13. THIS REGISTRATION PREVIOUSLY INCLUDED VARIATION AA , 28L 7.20x13.60x0.80 PITCH. THIS PACKAGE IS NOW VARIATION AC IN MO-197.

14. ANY NEW PACKAGES APPENDED TO THIS REGISTRATION MUST CONFORM TO USON DESIGN GUIDE - JEDEC STANDARD NO. 95-1, SECTION 16.