

MO-094

TapePak[®]
MOLDED CARRIER
RING FAMILY

TABLE I

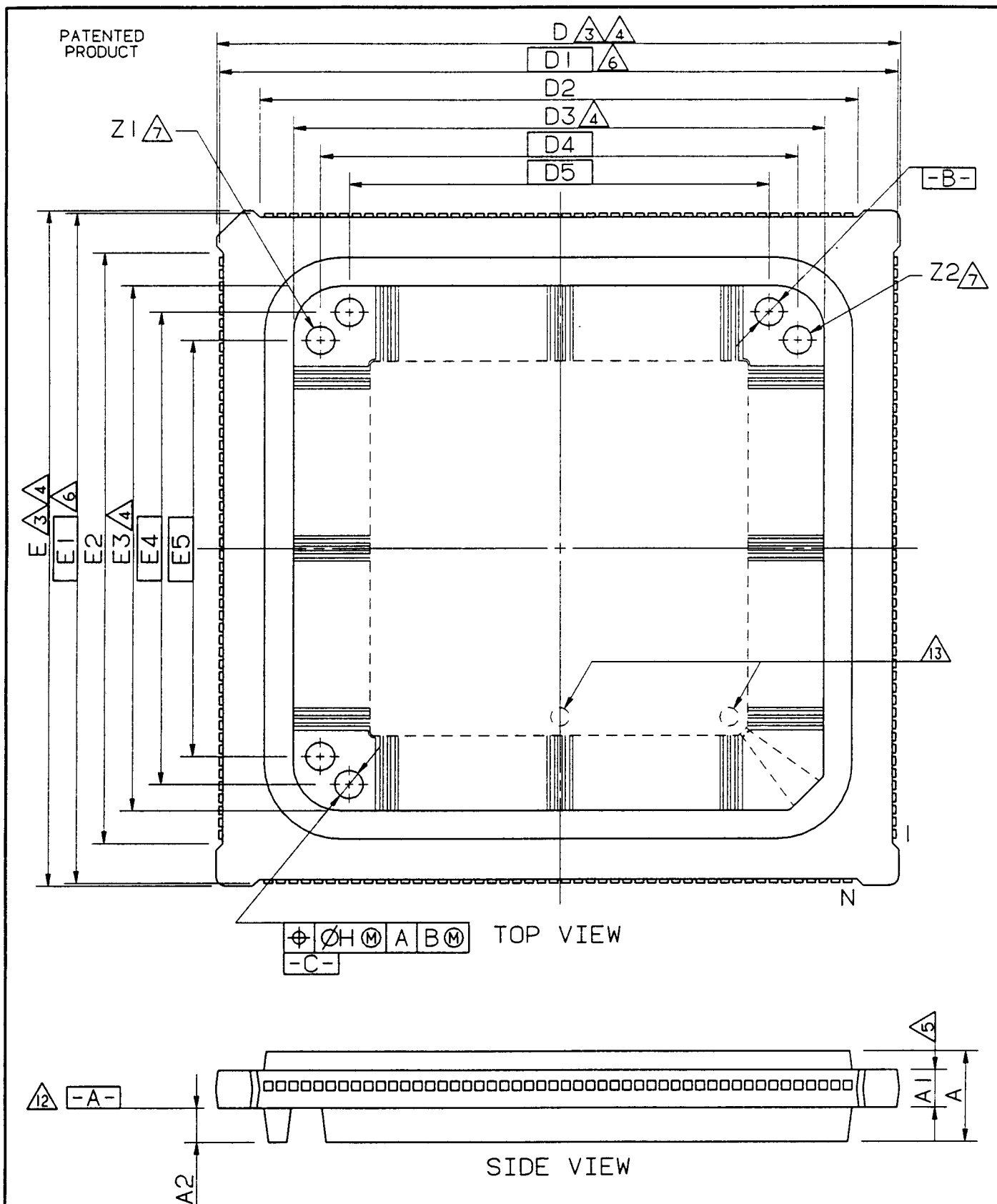
SUMMARY OF VARIATIONS

TEST PITCH	SIZE	N	VARIATION
0.65	36×36	192	AA
	46×46	256	AB
	56×56	312	AC
	66×66	376	AD
	76×76	440	AE
	86×86	496	AF
0.5	36×36	248	BA
	46×46	328	BB
	56×56	408	BC
	66×66	488	BD
	76×76	568	BE
	86×86	648	BF
0.4	36×36	312	CA
	46×46	408	CB
	56×56	512	CC
	66×66	608	CD
	76×76	712	CE
	86×86	808	CF
0.3	36×36	416	DA
	46×46	552	DB
	56×56	680	DC
	66×66	816	DD
	76×76	952	DE
	86×86	1080	DF

TABLE 2

APPLICATION NOTES

PACKAGE RING SIZE	QFP EIAJ ED-7404	F-QFP EIAJ ED-7404-1	LPPQFP JEDEC MO-086	PQFP JEDEC MO-069
36×36	10×10 7×10 14×14 10×14 20×20 14×20	10×10 7×10 12×12 10×14 14×14 14×20 20×20	44 52 68 84 100	52 68 84
46×46	20×20 20×28 28×28	20×20 14×20 24×24 20×28 28×28	84 100 132 148 164	84 100 132
56×56	28×28 20×28 40×40 28×40	28×28 20×28 32×32 28×40 36×36 40×40	148 164	164 196 244
66×66	40×40 28×40	40×40 44×44	--	--
76×76	56×56 40×56	40×40 44×44	--	--
86×86	--	--	--	--



JEDEC SOLID STATE PRODUCT OUTLINES	TITLE TapePak® MOLDED CARRIER RING FAMILY	ISSUE C	DATE March 1993	MO-094	SHEET 3 OF 20
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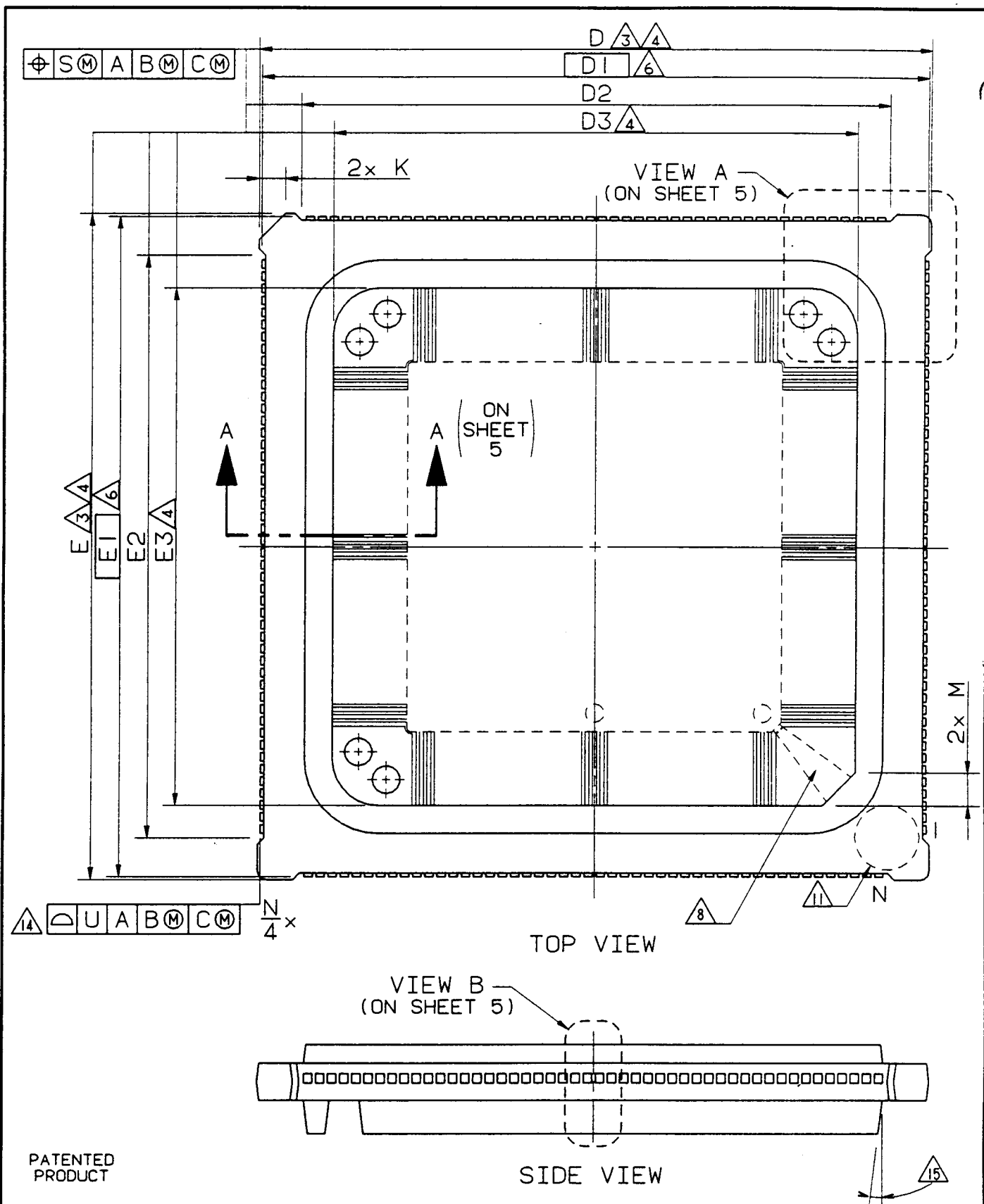
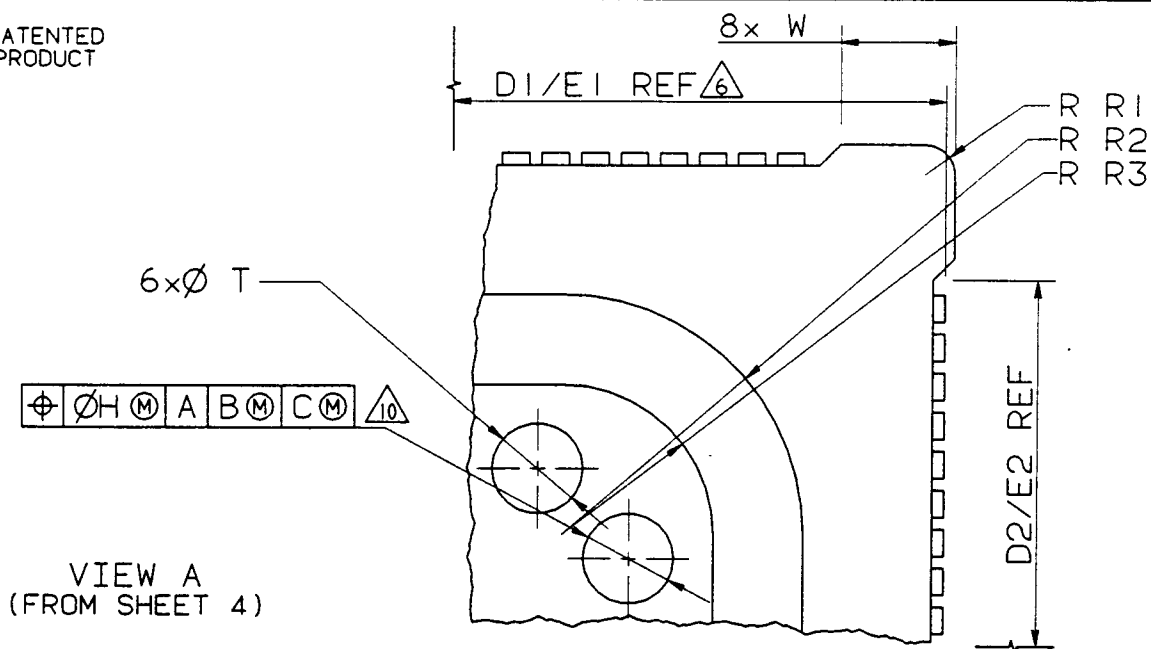


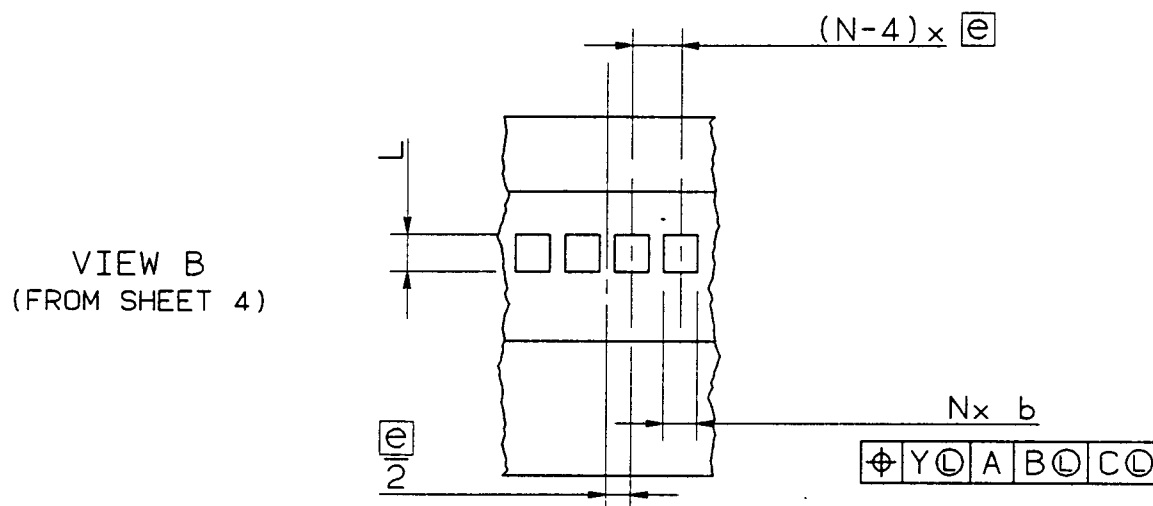
FIGURE 2 DETAIL, SECTION AND TRUE POSITION CALLOUTS

JEDEC SOLID STATE PRODUCT OUTLINES	TITLE TapePak® MOLDED CARRIER RING FAMILY	ISSUE C	DATE March 1993	MO-094	SHEET 4 OF 20
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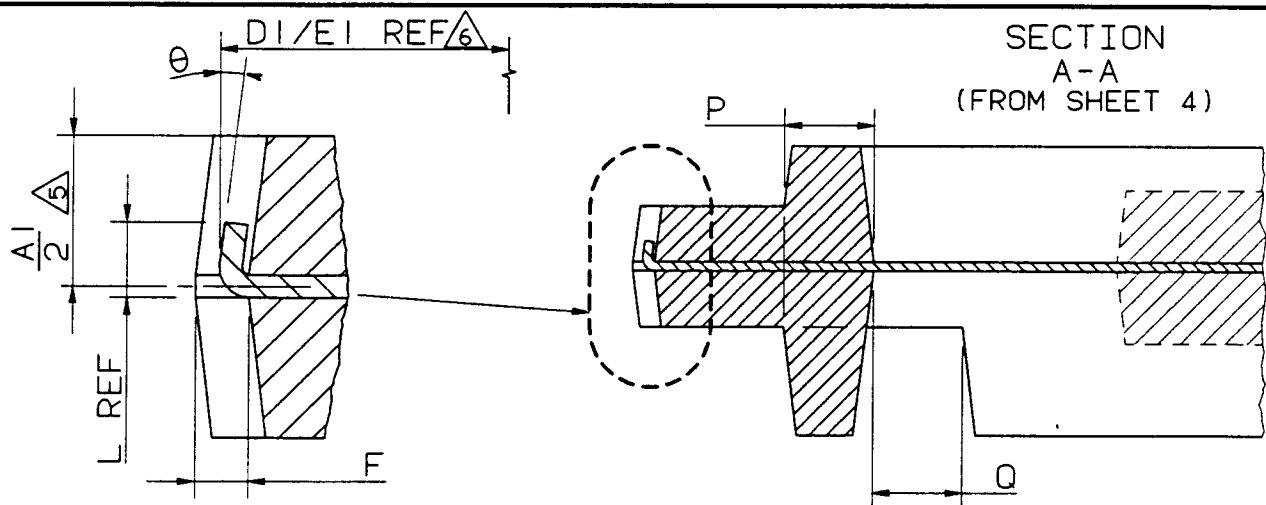
PATENTED
PRODUCT



VIEW A
(FROM SHEET 4)



VIEW B
(FROM SHEET 4)



SECTION
A-A
(FROM SHEET 4)

JEDEC
SOLID STATE PRODUCT
OUTLINES

TITLE TapePak®
MOLDED CARRIER RING
FAMILY

ISSUE
C

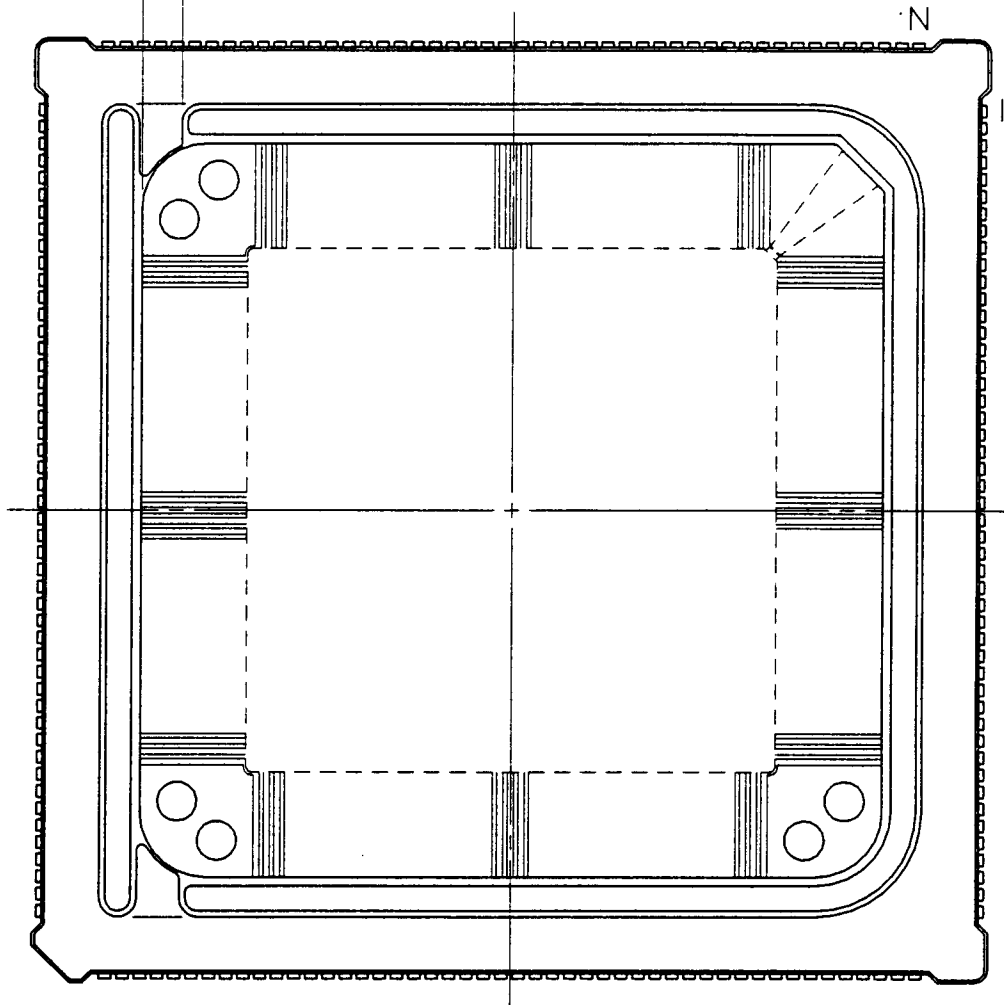
DATE
March
1993

MO-094

SHEET
5 OF 20

PATENTED
PRODUCT

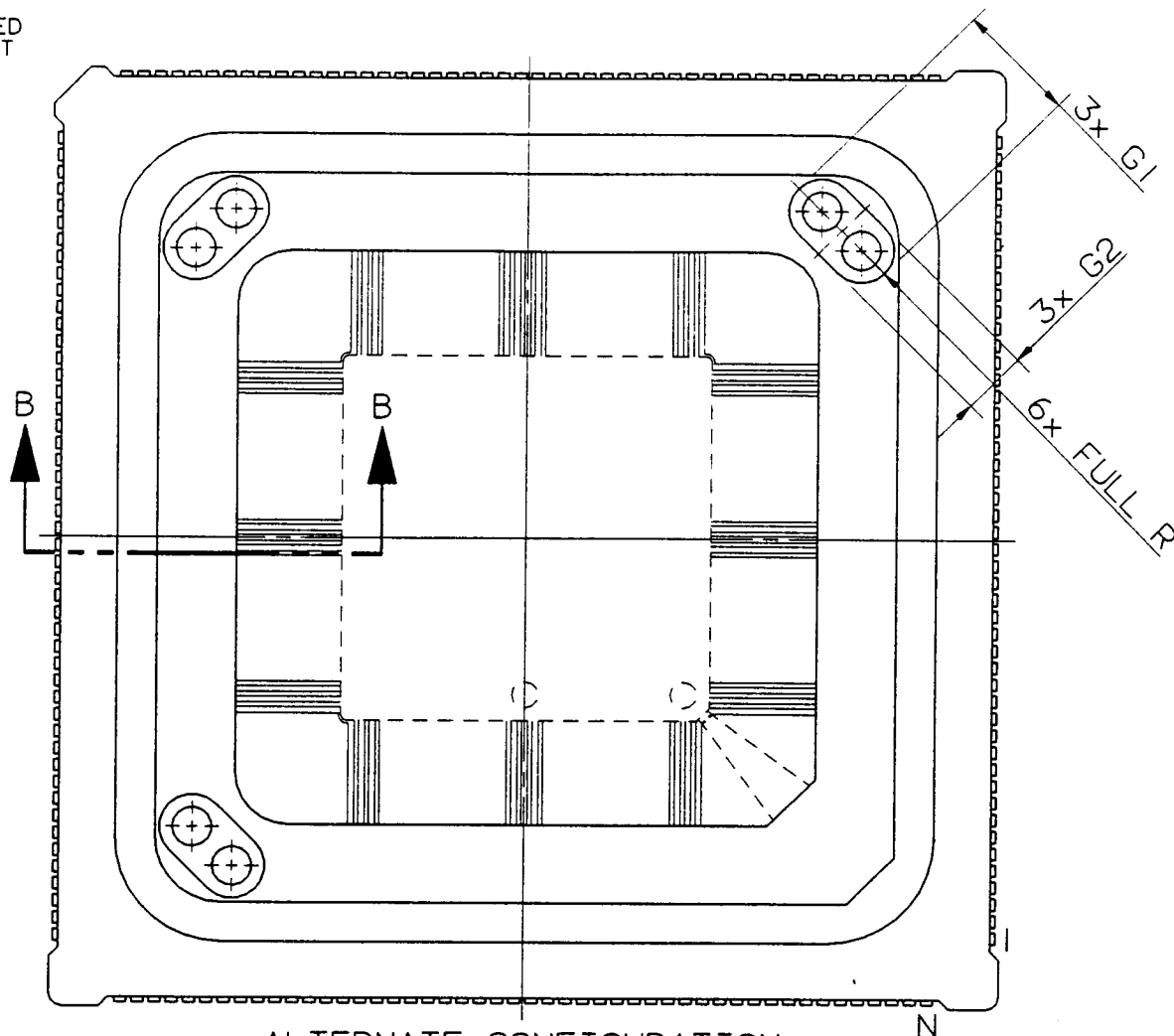
2x Q REF



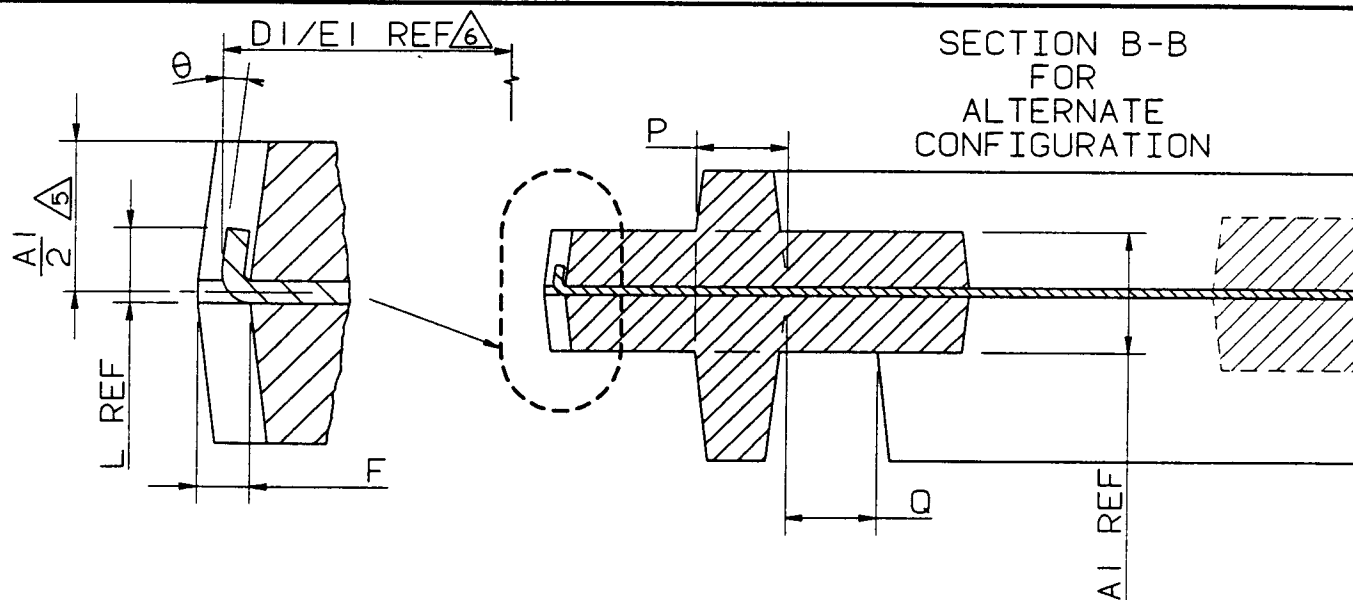
BOTTOM VIEW
DEPICTING ORIENTATION SLOT
DRAFT FEATURES SHOWN FOR CLARITY

JEDEC SOLID STATE PRODUCT OUTLINES	TITLE TapePak® MOLDED CARRIER RING FAMILY	ISSUE C	DATE March 1993	MO-094	SHEET 6 OF 20
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PATENTED
PRODUCT



ALTERNATE CONFIGURATION
(INSIDE WEB OPTIONAL FOR SMALLER PACKAGES)



JEDEC
SOLID STATE PRODUCT
OUTLINES

TITLE TapePak®
MOLDED CARRIER RING
FAMILY













ISSUE
C

DATE
March
1993

MO-094

SHEET
7 OF 20

NOTES:

1. ALL DIMENSIONS AND TOLERANCES CONFORM TO ANSI Y14.5M-1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3.  D AND E DIMENSIONS DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE MOLD PROTRUSION IS 0.2 mm PER SIDE.
4.  D, D3, E AND E3 DIMENSIONS INCLUDE MOLD MISMATCH, AND ARE MEASURED AT THE PARTING LINE.
5.  A1 DIMENSION CENTERED ABOUT CENTERLINE OF LEAD MATERIAL.
6.  DIMENSIONS D1 AND E1 ARE FROM OUTSIDE EDGE TO OUTSIDE EDGE OF THE TEST POINTS.
7.  THERE ARE SIX LOCATING HOLES IN THE RING. B AND C DATUM HOLES ARE TO BE USED FOR TRIM, FORM AND EXCISE OF THE MOLDED PACKAGE ONLY. HOLES Z1 AND Z2 ARE TO BE USED FOR ELECTRICAL TESTING ONLY.
8.  LOCATION OF THE SECONDARY GATE(GATE FOR THE MOLDED PACKAGE INSIDE THE CARRIER RING) IS 180° WITH RESPECT TO THE CHAMFERED CORNER OF THE CARRIER RING. THERE ARE NO HOLES ON THIS CORNER OF THE CARRIER RING. THE GATE, IF PRESENT, MAY BE ON THE TOP, BOTTOM OR BOTH SIDES OF THE LEADFRAME AS REQUIRED FOR GATING THE PARTICULAR PACKAGE.
9. IN THE INTEREST OF MORE COMPLETE STANDARDIZATION, THE RINGS SHOULD NOT BE DEPOPULATED.
10.  NON-DATUM HOLES ONLY.
11.  THIS AREA RESERVED FOR VACUUM PICKUP ON EACH OF THE FOUR CORNERS OF THE RING AND MUST BE FLAT WITHIN .025 mm. NO EJECTOR PINS IN THIS AREA.
12.  DATUM A SURFACE FOR SEATING IN SOCKET APPLICATIONS.
13.  PIN 1 ORIENTATION WITH RESPECT TO CARRIER RING AS INDICATED.
14.  COPLANARITY APPLIES TO ALL FOUR TEST POINT ROWS.
15.  DRAFT ANGLE 7±1° ON ALL RING FEATURES ON ALL VARIATIONS.
16. FOR RING-PACKAGE COMBINATIONS SEE TABLE 2, APPLICATION NOTES.
17. THIS TECHNOLOGY WAS DEVELOPED IN THE U.S.A. BY NATIONAL SEMICONDUCTOR CORPORATION AND MOTOROLA INC., WHO HAVE PATENTS IN THE U.S.A. PRODUCTS EMPLOYING THIS TECHNOLOGY ARE PRESENTLY MANUFACTURED BY NATIONAL SEMICONDUCTOR AND MOTOROLA INC., THROUGH WHOM LICENSING IS AVAILABLE IN COMPLIANCE WITH PARAGRAPH 3.4(B) OF E.I.A. ENGINEERING PUBLICATION 7-A.

JEDEC SOLID STATE PRODUCT OUTLINES	TITLE TapePak MOLDED CARRIER RING FAMILY	ISSUE C	DATE March 1993	MO-094	SHEET 8 OF 20
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SYMBOL	VARIATIONS (ALL DIMENSIONS IN MILLIMETERS)							
	AA			NOTE	AB			NOTE
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.	
A	4.70	4.80	4.90		4.70	4.80	4.90	
A1	1.90	2.00	2.10	5	1.90	2.00	2.10	5
A2	1.70	1.80	1.90		1.70	1.80	1.90	
D	35.87	36.00	36.13	3,4	45.87	46.00	46.13	3,4
D1	--	35.7 BSC	--	6	--	45.7 BSC	--	6
D2	31.37	31.50	31.63		41.37	41.50	41.63	
D3	27.87	28.00	28.13	4	37.87	38.00	38.13	4
D4	--	25.2 BSC	--		--	35.2 BSC	--	
D5	--	22.2 BSC	--		--	32.2 BSC	--	
E	35.87	36.00	36.13	3,4	45.87	46.00	46.13	3,4
E1	--	35.7 BSC	--	6	--	45.7 BSC	--	6
E2	31.37	31.50	31.63		41.37	41.50	41.63	
E3	27.87	28.00	28.13	4	37.87	38.00	38.13	4
E4	--	25.2 BSC	--		--	35.2 BSC	--	
E5	--	22.2 BSC	--		--	32.2 BSC	--	
F	0.20	0.35	0.50		0.20	0.35	0.50	
G1	4.47	4.60	4.73		4.47	4.60	4.73	
G2	2.37	2.50	2.63		2.37	2.50	2.63	
K	1.27	1.40	1.53		1.27	1.40	1.53	
L	0.45	0.65	0.85		0.45	0.65	0.85	
M	1.30	1.80	2.30		1.30	1.80	2.30	
N		192		9		256		9
P	1.37	1.50	1.63		1.37	1.50	1.63	
Q	1.37	1.50	1.63		1.37	1.50	1.63	
R1	0.40	0.50	0.60		0.40	0.50	0.60	
R2	3.50	4.00	4.50		3.50	4.00	4.50	
R3	2.00	2.50	3.00		2.00	2.50	3.00	
T	1.45	1.50	1.55		1.45	1.50	1.55	
W	1.77	1.90	2.03		1.77	1.90	2.03	
b	0.40	0.45	0.50		0.40	0.45	0.50	
e	--	0.65 BSC	--		--	0.65 BSC	--	
θ	0°	--	--		0°	--	--	
	TOLERANCES				TOLERANCES			
H		0.05		10		0.05		10
S		0.10				0.10		
U		0.25				0.25		
Y		0.07				0.07		
NOTE	1,2,5,7,8,11,12,13,14,15,16,17							
REF.	11-268							
ISSUE	A							
JEDEC SOLID STATE PRODUCT OUTLINES		TITLE TapePak MOLDED CARRIER RING FAMILY			ISSUE C	DATE March 1993	MO-094	SHEET 9 OF 20

SYMBOL	VARIATIONS (ALL DIMENSIONS IN MILLIMETERS)									
	AC			NOTE	AD			NOTE		
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.			
A	4.70	4.80	4.90	5	4.70	4.80	4.90	5		
A1	1.90	2.00	2.10		1.90	2.00	2.10			
A2	1.70	1.80	1.90		1.70	1.80	1.90			
D	55.87	56.00	56.13		3,4	65.87	66.00		66.13	3,4
D1	--	55.7 BSC	--		6	--	65.7 BSC		--	6
D2	51.37	51.50	51.63	4	61.37	61.50	61.63	4		
D3	47.87	48.00	48.13		57.87	58.00	58.13			
D4	--	45.2 BSC	--		--	55.2 BSC	--			
D5	--	42.2 BSC	--		--	52.2 BSC	--			
E	55.87	56.00	56.13		3,4	65.87	66.00		66.13	3,4
E1	--	55.7 BSC	--	6	--	65.7 BSC	--	6		
E2	51.37	51.50	51.63	4	61.37	61.50	61.63	4		
E3	47.87	48.00	48.13		57.87	58.00	58.13			
E4	--	45.2 BSC	--		--	55.2 BSC	--			
E5	--	42.2 BSC	--		--	52.2 BSC	--			
F	0.20	0.35	0.50			0.20	0.35		0.50	
G1	4.47	4.60	4.73	9	4.47	4.60	4.73	9		
G2	2.37	2.50	2.63		2.37	2.50	2.63			
K	1.27	1.40	1.53		1.27	1.40	1.53			
L	0.45	0.65	0.85		0.45	0.65	0.85			
M	1.30	1.80	2.30		1.30	1.80	2.30			
N		312				400				
P	1.37	1.50	1.63		1.37	1.50	1.63			
Q	1.37	1.50	1.63		1.37	1.50	1.63			
R1	0.40	0.50	0.60		0.40	0.50	0.60			
R2	3.50	4.00	4.50		3.50	4.00	4.50			
R3	2.00	2.50	3.00		2.00	2.50	3.00			
T	1.45	1.50	1.55		1.45	1.50	1.55			
W	1.77	1.90	2.03		1.77	1.90	2.03			
b	0.40	0.45	0.50		0.40	0.45	0.50			
e	--	0.65 BSC	--		--	0.65 BSC	--			
θ	0°	--	--	0°	--	--				
	TOLERANCES			10	TOLERANCES			10		
H	0.05				0.05					
S	0.10				0.10					
U	0.25				0.25					
Y	0.07				0.07					
NOTE	1, 2, 5, 7, 8, 11, 12, 13, 14, 15, 16, 17									
REF.	11-268				11-280					
ISSUE	A				B					
JEDEC SOLID STATE PRODUCT OUTLINES			TITLE TapePak MOLDED CARRIER RING FAMILY		ISSUE C	DATE March 1993	MO-094	SHEET 10 OF 20		

SYMBOL	VARIATIONS (ALL DIMENSIONS IN MILLIMETERS)									
	AE			NOTE	AF			NOTE		
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.			
A	4.70	4.80	4.90	5	4.70	4.80	4.90	5		
A1	1.90	2.00	2.10		1.90	2.00	2.10			
A2	1.70	1.80	1.90		1.70	1.80	1.90			
D	75.87	76.00	76.13	3,4	85.87	86.00	86.13	3,4		
D1	--	75.7 BSC	--	6	--	85.7 BSC	--	6		
D2	71.37	71.50	71.63	4	81.37	81.50	81.63	4		
D3	67.87	68.00	68.13		77.87	78.00	78.13			
D4	--	65.2 BSC	--		--	75.2 BSC	--			
D5	--	62.2 BSC	--	3,4	--	72.2 BSC	--	3,4		
E	75.87	76.00	76.13		85.87	86.00	86.13			
E1	--	75.7 BSC	--		6	--	85.7 BSC		--	6
E2	71.37	71.50	71.63	4	81.37	81.50	81.63	4		
E3	67.87	68.00	68.13		77.87	78.00	78.13			
E4	--	65.2 BSC	--		--	75.2 BSC	--			
E5	--	62.2 BSC	--	9	--	72.2 BSC	--	9		
F	0.20	0.35	0.50		0.20	0.35	0.50			
G1	4.47	4.60	4.73		4.47	4.60	4.73			
G2	2.37	2.50	2.63	9	2.37	2.50	2.63	9		
K	1.27	1.40	1.53		1.27	1.40	1.53			
L	0.45	0.65	0.85		0.45	0.65	0.85			
M	1.30	1.80	2.30	9	1.30	1.80	2.30	9		
N		440				496				
P	1.37	1.50	1.63		1.37	1.50	1.63			
Q	1.37	1.50	1.63	9	1.37	1.50	1.63	9		
R1	0.40	0.50	0.60		0.40	0.50	0.60			
R2	3.50	4.00	4.50		3.50	4.00	4.50			
R3	2.00	2.50	3.00	9	2.00	2.50	3.00	9		
T	1.45	1.50	1.55		1.45	1.50	1.55			
W	1.77	1.90	2.03		1.77	1.90	2.03			
b	0.40	0.45	0.50	9	0.40	0.45	0.50	9		
e	--	0.65 BSC	--		--	0.65 BSC	--			
θ	0°	--	--		0°	--	--			
H S U Y	TOLERANCES			10	TOLERANCES			10		
	0.05				0.05					
	0.10				0.10					
	0.25				0.25					
Y	0.07			10	0.07			10		
NOTE	1,2,5,7,8,11,12,13,14,15,16,17									
REF.	11-280									
ISSUE	B									
JEDEC SOLID STATE PRODUCT OUTLINES		TITLE TapePak MOLDED CARRIER RING FAMILY			ISSUE C	DATE March 1993	MO-094		SHEET 11 OF 20	

SYMBOL	VARIATIONS (ALL DIMENSIONS IN MILLIMETERS)							NOTE
	BA			NOTE	BB			
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.	
A	4.70	4.80	4.90	5	4.70	4.80	4.90	5
A1	1.90	2.00	2.10		1.90	2.00	2.10	
A2	1.70	1.80	1.90		1.70	1.80	1.90	
D	35.87	36.00	36.13	3,4	45.87	46.00	46.13	3,4
D1	--	35.7 BSC	--	6	--	45.7 BSC	--	6
D2	31.37	31.50	31.63	4	41.37	41.50	41.63	4
D3	27.87	28.00	28.13		37.87	38.00	38.13	
D4	--	25.2 BSC	--		--	35.2 BSC	--	
D5	--	22.2 BSC	--	3,4	--	32.2 BSC	--	3,4
E	35.87	36.00	36.13		45.87	46.00	46.13	
E1	--	35.7 BSC	--		6	--	45.7 BSC	
E2	31.37	31.50	31.63	4	41.37	41.50	41.63	4
E3	27.87	28.00	28.13		37.87	38.00	38.13	
E4	--	25.2 BSC	--		--	35.2 BSC	--	
E5	--	22.2 BSC	--	9	--	32.2 BSC	--	9
F	0.20	0.35	0.50		0.20	0.35	0.50	
G1	4.47	4.60	4.73		4.47	4.60	4.73	
G2	2.37	2.50	2.63	9	2.37	2.50	2.63	9
K	1.27	1.40	1.53		1.27	1.40	1.53	
L	0.45	0.65	0.85		0.45	0.65	0.85	
M	1.30	1.80	2.30	9	1.30	1.80	2.30	9
N		248				328		
P	1.37	1.50	1.63		1.37	1.50	1.63	
Q	1.37	1.50	1.63	10	1.37	1.50	1.63	10
R1	0.40	0.50	0.60		0.40	0.50	0.60	
R2	3.50	4.00	4.50		3.50	4.00	4.50	
R3	2.00	2.50	3.00	10	2.00	2.50	3.00	10
T	1.45	1.50	1.55		1.45	1.50	1.55	
W	1.77	1.90	2.03		1.77	1.90	2.03	
b	0.30	0.35	0.40	10	0.30	0.35	0.40	10
e	--	0.50 BSC	--		--	0.50 BSC	--	
θ	0°	--	--		0°	--	--	
	TOLERANCES			10	TOLERANCES			10
H	0.05				0.05			
S	0.10				0.10			
U	0.25				0.25			
Y	0.07				0.07			
NOTE	1,2,5,7,8,11,12,13,14,15,16,17							
REF.	11-268							
ISSUE	A							
JEDEC SOLID STATE PRODUCT OUTLINES			TITLE TapePak MOLDED CARRIER RING FAMILY		ISSUE C	DATE March 1993	MO-094	SHEET 12 OF 20

SYMBOL	VARIATIONS (ALL DIMENSIONS IN MILLIMETERS)									
	BC			NOTE	BD			NOTE		
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.			
A	4.70	4.80	4.90	5	4.70	4.80	4.90	5		
A1	1.90	2.00	2.10		1.90	2.00	2.10			
A2	1.70	1.80	1.90		1.70	1.80	1.90			
D	55.87	56.00	56.13		3,4	65.87	66.00		66.13	3,4
D1	--	55.7 BSC	--		6	--	65.7 BSC		--	6
D2	51.37	51.50	51.63	4	61.37	61.50	61.63	4		
D3	47.87	48.00	48.13		57.87	58.00	58.13			
D4	--	45.2 BSC	--		--	55.2 BSC	--			
D5	--	42.2 BSC	--		--	52.2 BSC	--			
E	55.87	56.00	56.13		3,4	65.87	66.00		66.13	3,4
E1	--	55.7 BSC	--	6	--	65.7 BSC	--	6		
E2	51.37	51.50	51.63	4	61.37	61.50	61.63	4		
E3	47.87	48.00	48.13		57.87	58.00	58.13			
E4	--	45.2 BSC	--		--	55.2 BSC	--			
E5	--	42.2 BSC	--		--	52.2 BSC	--			
F	0.20	0.35	0.50			0.20	0.35		0.50	
G1	4.47	4.60	4.73		4.47	4.60	4.73			
G2	2.37	2.50	2.63		2.37	2.50	2.63			
K	1.27	1.40	1.53		1.27	1.40	1.53			
L	0.45	0.65	0.85		0.45	0.65	0.85			
M	1.30	1.80	2.30		1.30	1.80	2.30			
N		408		9		520		9		
P	1.37	1.50	1.63		1.37	1.50	1.63			
Q	1.37	1.50	1.63		1.37	1.50	1.63			
R1	0.40	0.50	0.60		0.40	0.50	0.60			
R2	3.50	4.00	4.50		3.50	4.00	4.50			
R3	2.00	2.50	3.00		2.00	2.50	3.00			
T	1.45	1.50	1.55		1.45	1.50	1.55			
W	1.77	1.90	2.03		1.77	1.90	2.03			
b	0.30	0.35	0.40		0.30	0.35	0.40			
e	--	0.50 BSC	--		--	0.50 BSC	--			
θ	0°	--	--		0°	--	--			
H S U Y	TOLERANCES			10	TOLERANCES			10		
	0.05				0.05					
	0.10				0.10					
	0.25				0.25					
	0.07				0.07					
NOTE	1,2,5,7,8,11,12,13,14,15,16,17									
REF.	11-268				11-280					
ISSUE	A				B					
JEDEC SOLID STATE PRODUCT OUTLINES			TITLE TapePak MOLDED CARRIER RING FAMILY		ISSUE C	DATE March 1993	MO-094	SHEET 13 OF 20		

SYMBOL	VARIATIONS (ALL DIMENSIONS IN MILLIMETERS)									
	BE			NOTE	BF			NOTE		
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.			
A	4.70	4.80	4.90	5	4.70	4.80	4.90	5		
A1	1.90	2.00	2.10		1.90	2.00	2.10			
A2	1.70	1.80	1.90		1.70	1.80	1.90			
D	75.87	76.00	76.13		3,4	85.87	86.00		86.13	3,4
D1	--	75.7 BSC	--		6	--	85.7 BSC		--	6
D2	71.37	71.50	71.63	4	81.37	81.50	81.63	4		
D3	67.87	68.00	68.13		77.87	78.00	78.13			
D4	--	65.2 BSC	--		--	75.2 BSC	--			
D5	--	62.2 BSC	--		--	72.2 BSC	--			
E	75.87	76.00	76.13		3,4	85.87	86.00		86.13	3,4
E1	--	75.7 BSC	--	6	--	85.7 BSC	--	6		
E2	71.37	71.50	71.63	4	81.37	81.50	81.63	4		
E3	67.87	68.00	68.13		77.87	78.00	78.13			
E4	--	65.2 BSC	--		--	75.2 BSC	--			
E5	--	62.2 BSC	--		--	72.2 BSC	--			
F	0.20	0.35	0.50			0.20	0.35		0.50	
G1	4.47	4.60	4.73	9	4.47	4.60	4.73	9		
G2	2.37	2.50	2.63		2.37	2.50	2.63			
K	1.27	1.40	1.53		1.27	1.40	1.53			
L	0.45	0.65	0.85		0.45	0.65	0.85			
M	1.30	1.80	2.30		1.30	1.80	2.30			
N		568				648				
P	1.37	1.50	1.63		1.37	1.50	1.63			
Q	1.37	1.50	1.63		1.37	1.50	1.63			
R1	0.40	0.50	0.60		0.40	0.50	0.60			
R2	3.50	4.00	4.50		3.50	4.00	4.50			
R3	2.00	2.50	3.00		2.00	2.50	3.00			
T	1.45	1.50	1.55		1.45	1.50	1.55			
W	1.77	1.90	2.03		1.77	1.90	2.03			
b	0.30	0.35	0.40		0.30	0.35	0.40			
e	--	0.50 BSC	--		--	0.50 BSC	--			
θ	0°	--	--	0°	--	--				
	TOLERANCES			10	TOLERANCES			10		
H	0.05				0.05					
S	0.10				0.10					
U	0.25				0.25					
Y	0.07				0.07					
NOTE	1, 2, 5, 7, 8, 11, 12, 13, 14, 15, 16, 17									
REF.	11-280									
ISSUE	B									
JEDEC SOLID STATE PRODUCT OUTLINES			TITLE TapePak MOLDED CARRIER RING FAMILY		ISSUE C	DATE March 1993	MO-094	SHEET 14 OF 20		

SYMBOL	VARIATIONS (ALL DIMENSIONS IN MILLIMETERS)									
	CA			NOTE	CB			NOTE		
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.			
A	4.70	4.80	4.90	5	4.70	4.80	4.90	5		
A1	1.90	2.00	2.10		1.90	2.00	2.10			
A2	1.70	1.80	1.90		1.70	1.80	1.90			
D	35.87	36.00	36.13		3,4	45.87	46.00		46.13	3,4
D1	--	35.7 BSC	--		6	--	45.7 BSC		--	6
D2	31.37	31.50	31.63	4	41.37	41.50	41.63	4		
D3	27.87	28.00	28.13		37.87	38.00	38.13			
D4	--	25.2 BSC	--		--	35.2 BSC	--			
D5	--	22.2 BSC	--		--	32.2 BSC	--			
E	35.87	36.00	36.13		3,4	45.87	46.00		46.13	3,4
E1	--	35.7 BSC	--	6	--	45.7 BSC	--	6		
E2	31.37	31.50	31.63	4	41.37	41.50	41.63	4		
E3	27.87	28.00	28.13		37.87	38.00	38.13			
E4	--	25.2 BSC	--		--	35.2 BSC	--			
E5	--	22.2 BSC	--		--	32.2 BSC	--			
F	0.20	0.35	0.50			0.20	0.35		0.50	
G1	4.47	4.60	4.73		4.47	4.60	4.73			
G2	2.37	2.50	2.63		2.37	2.50	2.63			
K	1.27	1.40	1.53		1.27	1.40	1.53			
L	0.45	0.65	0.85		0.45	0.65	0.85			
M	1.30	1.80	2.30		1.30	1.80	2.30			
N		312		9		408		9		
P	1.37	1.50	1.63		1.37	1.50	1.63			
Q	1.37	1.50	1.63		1.37	1.50	1.63			
R1	0.40	0.50	0.60		0.40	0.50	0.60			
R2	3.50	4.00	4.50		3.50	4.00	4.50			
R3	2.00	2.50	3.00		2.00	2.50	3.00			
T	1.45	1.50	1.55		1.45	1.50	1.55			
W	1.77	1.90	2.03		1.77	1.90	2.03			
b	0.22	0.25	0.28		0.22	0.25	0.28			
e	--	0.40 BSC	--		--	0.40 BSC	--			
θ	0°	--	--		0°	--	--			
	TOLERANCES			10	TOLERANCES			10		
H	0.05				0.05					
S	0.10				0.10					
U	0.25				0.25					
Y	0.04				0.04					
NOTE	1, 2, 5, 7, 8, 11, 12, 13, 14, 15, 16, 17									
REF.	11-280									
ISSUE	B									
JEDEC SOLID STATE PRODUCT OUTLINES		TITLE TapePak MOLDED CARRIER RING FAMILY		ISSUE C	DATE March 1993	MO-094		SHEET 15 OF 20		

SYMBOL	VARIATIONS (ALL DIMENSIONS IN MILLIMETERS)							NOTE		
	CC			NOTE	CD					
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.			
A	4.70	4.80	4.90	5	4.70	4.80	4.90	5		
A1	1.90	2.00	2.10		1.90	2.00	2.10			
A2	1.70	1.80	1.90		1.70	1.80	1.90			
D	55.87	56.00	56.13		3, 4	65.87	66.00		66.13	3, 4
D1	--	55.7 BSC	--		6	--	65.7 BSC		--	6
D2	51.37	51.50	51.63	4	61.37	61.50	61.63	4		
D3	47.87	48.00	48.13		57.87	58.00	58.13			
D4	--	45.2 BSC	--		--	55.2 BSC	--			
D5	--	42.2 BSC	--		--	52.2 BSC	--			
E	55.87	56.00	56.13		3, 4	65.87	66.00		66.13	3, 4
E1	--	55.7 BSC	--	6	--	65.7 BSC	--	6		
E2	51.37	51.50	51.63	4	61.37	61.50	61.63	4		
E3	47.87	48.00	48.13		57.87	58.00	58.13			
E4	--	45.2 BSC	--		--	55.2 BSC	--			
E5	--	42.2 BSC	--		--	52.2 BSC	--			
F	0.20	0.35	0.50		0.20	0.35	0.50			
G1	4.47	4.60	4.73	9	4.47	4.60	4.73	9		
G2	2.37	2.50	2.63		2.37	2.50	2.63			
K	1.27	1.40	1.53		1.27	1.40	1.53			
L	0.45	0.65	0.85		0.45	0.65	0.85			
M	1.30	1.80	2.30		1.30	1.80	2.30			
N		512				608				
P	1.37	1.50	1.63		1.37	1.50	1.63			
Q	1.37	1.50	1.63		1.37	1.50	1.63			
R1	0.40	0.50	0.60		0.40	0.50	0.60			
R2	3.50	4.00	4.50		3.50	4.00	4.50			
R3	2.00	2.50	3.00		2.00	2.50	3.00			
T	1.45	1.50	1.55		1.45	1.50	1.55			
W	1.77	1.90	2.03		1.77	1.90	2.03			
b	0.22	0.25	0.28		0.22	0.25	0.28			
e	--	0.40 BSC	--		--	0.40 BSC	--			
θ	0°	--	--	0°	--	--				
H S U Y	TOLERANCES			10	TOLERANCES			10		
	0.05				0.05					
	0.10				0.10					
	0.25				0.25					
Y	0.04				0.04					
NOTE	1, 2, 5, 7, 8, 11, 12, 13, 14, 15, 16, 17									
REF.	11-280									
ISSUE	B									
JEDEC SOLID STATE PRODUCT OUTLINES		TITLE TapePak MOLDED CARRIER RING FAMILY		ISSUE C	DATE March 1993	MO-094	SHEET 16 OF 20			

SYMBOL	VARIATIONS (ALL DIMENSIONS IN MILLIMETERS)									
	CE			NOTE	CF			NOTE		
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.			
A	4.70	4.80	4.90	5	4.70	4.80	4.90	5		
A1	1.90	2.00	2.10		1.90	2.00	2.10			
A2	1.70	1.80	1.90		1.70	1.80	1.90			
D	75.87	76.00	76.13		3, 4	85.87	86.00		86.13	3, 4
D1	--	75.7 BSC	--		6	--	85.7 BSC		--	6
D2	71.37	71.50	71.63	4	81.37	81.50	81.63	4		
D3	67.87	68.00	68.13		77.87	78.00	78.13			
D4	--	65.2 BSC	--		--	75.2 BSC	--			
D5	--	62.2 BSC	--		--	72.2 BSC	--			
E	75.87	76.00	76.13		3, 4	85.87	86.00		86.13	3, 4
E1	--	75.7 BSC	--	6	--	85.7 BSC	--	6		
E2	71.37	71.50	71.63	4	81.37	81.50	81.63	4		
E3	67.87	68.00	68.13		77.87	78.00	78.13			
E4	--	65.2 BSC	--		--	75.2 BSC	--			
E5	--	62.2 BSC	--		--	72.2 BSC	--			
F	0.20	0.35	0.50			0.20	0.35		0.50	
G1	4.47	4.60	4.73	9	4.47	4.60	4.73	9		
G2	2.37	2.50	2.63		2.37	2.50	2.63			
K	1.27	1.40	1.53		1.27	1.40	1.53			
L	0.45	0.65	0.85		0.45	0.65	0.85			
M	1.30	1.80	2.30		1.30	1.80	2.30			
N		712				808				
P	1.37	1.50	1.63		1.37	1.50	1.63			
Q	1.37	1.50	1.63		1.37	1.50	1.63			
R1	0.40	0.50	0.60		0.40	0.50	0.60			
R2	3.50	4.00	4.50		3.50	4.00	4.50			
R3	2.00	2.50	3.00	2.00	2.50	3.00	10			
T	1.45	1.50	1.55	1.45	1.50	1.55				
W	1.77	1.90	2.03	1.77	1.90	2.03				
b	0.22	0.25	0.28	0.22	0.25	0.28				
e	--	0.40 BSC	--	--	0.40 BSC	--				
θ	0°	--	--	0°	--	--				
	TOLERANCES			10	TOLERANCES					
H	0.05				0.05					
S	0.10				0.10					
U	0.25				0.25					
Y	0.04				0.04					
NOTE	1, 2, 5, 7, 8, 11, 12, 13, 14, 15, 16, 17									
REF.	11-280									
ISSUE	B									
JEDEC SOLID STATE PRODUCT OUTLINES			TITLE TapePak MOLDED CARRIER RING FAMILY		ISSUE C	DATE March 1993	MO-094	SHEET 17 OF 20		

SYMBOL	VARIATIONS (ALL DIMENSIONS IN MILLIMETERS)							NOTE
	DA			NOTE	DB			
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.	
A	4.70	4.80	4.90	5	4.70	4.80	4.90	5
A1	1.90	2.00	2.10		1.90	2.00	2.10	
A2	1.70	1.80	1.90		1.70	1.80	1.90	
D	35.87	36.00	36.13	3,4	45.87	46.00	46.13	3,4
D1	--	35.7 BSC	--	6	--	45.7 BSC	--	6
D2	31.37	31.50	31.63	4	41.37	41.50	41.63	4
D3	27.87	28.00	28.13		37.87	38.00	38.13	
D4	--	25.2 BSC	--		--	35.2 BSC	--	
D5	--	22.2 BSC	--	3,4	--	32.2 BSC	--	3,4
E	35.87	36.00	36.13		45.87	46.00	46.13	
E1	--	35.7 BSC	--		6	--	45.7 BSC	
E2	31.37	31.50	31.63	4	41.37	41.50	41.63	4
E3	27.87	28.00	28.13		37.87	38.00	38.13	
E4	--	25.2 BSC	--		--	35.2 BSC	--	
E5	--	22.2 BSC	--	9	--	32.2 BSC	--	9
F	0.20	0.35	0.50		0.20	0.35	0.50	
G1	4.47	4.60	4.73		4.47	4.60	4.73	
G2	2.37	2.50	2.63	9	2.37	2.50	2.63	9
K	1.27	1.40	1.53		1.27	1.40	1.53	
L	0.45	0.65	0.85		0.45	0.65	0.85	
M	1.30	1.80	2.30	9	1.30	1.80	2.30	9
N		416				552		
P	1.37	1.50	1.63		1.37	1.50	1.63	
Q	1.37	1.50	1.63	10	1.37	1.50	1.63	10
R1	0.40	0.50	0.60		0.40	0.50	0.60	
R2	3.50	4.00	4.50		3.50	4.00	4.50	
R3	2.00	2.50	3.00	10	2.00	2.50	3.00	10
T	1.45	1.50	1.55		1.45	1.50	1.55	
W	1.77	1.90	2.03		1.77	1.90	2.03	
b	0.16	0.18	0.20	10	0.16	0.18	0.20	10
e	--	0.30 BSC	--		--	0.30 BSC	--	
θ	0°	--	--		0°	--	--	
H	TOLERANCES			10	TOLERANCES			10
S	0.05				0.05			
U	0.10				0.10			
Y	0.25				0.25			
	0.03			10	0.03			10
NOTE	1,2,5,7,8,11,12,13,14,15,16,17							
REF.	11-280							
ISSUE	B							
JEDEC SOLID STATE PRODUCT OUTLINES			TITLE TapePak MOLDED CARRIER RING FAMILY		ISSUE C	DATE March 1993	MO-094	SHEET 18 OF 20

SYMBOL	VARIATIONS (ALL DIMENSIONS IN MILLIMETERS)									
	DC			NOTE	DD			NOTE		
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.			
A	4.70	4.80	4.90	5	4.70	4.80	4.90	5		
A1	1.90	2.00	2.10		1.90	2.00	2.10			
A2	1.70	1.80	1.90		1.70	1.80	1.90			
D	55.87	56.00	56.13		3,4	65.87	66.00		66.13	3,4
D1	--	55.7 BSC	--		6	--	65.7 BSC		--	6
D2	51.37	51.50	51.63	4	61.37	61.50	61.63	4		
D3	47.87	48.00	48.13		57.87	58.00	58.13			
D4	--	45.2 BSC	--		--	55.2 BSC	--			
D5	--	42.2 BSC	--		--	52.2 BSC	--			
E	55.87	56.00	56.13		3,4	65.87	66.00		66.13	3,4
E1	--	55.7 BSC	--	6	--	65.7 BSC	--	6		
E2	51.37	51.50	51.63	4	61.37	61.50	61.63	4		
E3	47.87	48.00	48.13		57.87	58.00	58.13			
E4	--	45.2 BSC	--		--	55.2 BSC	--			
E5	--	42.2 BSC	--		--	52.2 BSC	--			
F	0.20	0.35	0.50			0.20	0.35		0.50	
G1	4.47	4.60	4.73	9	4.47	4.60	4.73	9		
G2	2.37	2.50	2.63		2.37	2.50	2.63			
K	1.27	1.40	1.53		1.27	1.40	1.53			
L	0.45	0.65	0.85		0.45	0.65	0.85			
M	1.30	1.80	2.30		1.30	1.80	2.30			
N		680				816				
P	1.37	1.50	1.63		1.37	1.50	1.63			
Q	1.37	1.50	1.63		1.37	1.50	1.63			
R1	0.40	0.50	0.60		0.40	0.50	0.60			
R2	3.50	4.00	4.50		3.50	4.00	4.50			
R3	2.00	2.50	3.00		2.00	2.50	3.00			
T	1.45	1.50	1.55		1.45	1.50	1.55			
W	1.77	1.90	2.03		1.77	1.90	2.03			
b	0.16	0.18	0.20		0.16	0.18	0.20			
e	--	0.30 BSC	--		--	0.30 BSC	--			
θ	0°	--	--	0°	--	--				
	TOLERANCES			10	TOLERANCES			10		
H	0.05				0.05					
S	0.10				0.10					
U	0.25				0.25					
Y	0.03				0.03					
NOTE	1, 2, 5, 7, 8, 11, 12, 13, 14, 15, 16, 17									
REF.	11-280									
ISSUE	B									
JEDEC SOLID STATE PRODUCT OUTLINES		TITLE TapePak MOLDED CARRIER RING FAMILY		ISSUE C	DATE March 1993	MO-094		SHEET 19 OF 20		

SYMBOL	VARIATIONS (ALL DIMENSIONS IN MILLIMETERS)							NOTE		
	DE			NOTE	DF					
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.			
A	4.70	4.80	4.90	5	4.70	4.80	4.90	5		
A1	1.90	2.00	2.10		1.90	2.00	2.10			
A2	1.70	1.80	1.90		1.70	1.80	1.90			
D	75.87	76.00	76.13		3,4	85.87	86.00		86.13	3,4
D1	--	75.7 BSC	--		6	--	85.7 BSC		--	6
D2	71.37	71.50	71.63	4	81.37	81.50	81.63	4		
D3	67.87	68.00	68.13		77.87	78.00	78.13			
D4	--	65.2 BSC	--		--	75.2 BSC	--			
D5	--	62.2 BSC	--		--	72.2 BSC	--			
E	75.87	76.00	76.13		3,4	85.87	86.00		86.13	3,4
E1	--	75.7 BSC	--	6	--	85.7 BSC	--	6		
E2	71.37	71.50	71.63	4	81.37	81.50	81.63	4		
E3	67.87	68.00	68.13		77.87	78.00	78.13			
E4	--	65.2 BSC	--		--	75.2 BSC	--			
E5	--	62.2 BSC	--		--	72.2 BSC	--			
F	0.20	0.35	0.50			0.20	0.35		0.50	
G1	4.47	4.60	4.73	9	4.47	4.60	4.73	9		
G2	2.37	2.50	2.63		2.37	2.50	2.63			
K	1.27	1.40	1.53		1.27	1.40	1.53			
L	0.45	0.65	0.85		0.45	0.65	0.85			
M	1.30	1.80	2.30		1.30	1.80	2.30			
N		952				1080				
P	1.37	1.50	1.63		1.37	1.50	1.63			
Q	1.37	1.50	1.63		1.37	1.50	1.63			
R1	0.40	0.50	0.60		0.40	0.50	0.60			
R2	3.50	4.00	4.50		3.50	4.00	4.50			
R3	2.00	2.50	3.00	2.00	2.50	3.00	10			
T	1.45	1.50	1.55	1.45	1.50	1.55				
W	1.77	1.90	2.03	1.77	1.90	2.03				
b	0.16	0.18	0.20	0.16	0.18	0.20				
e	--	0.30 BSC	--	--	0.30 BSC	--				
θ	0°	--	--	0°	--	--				
H S U Y	TOLERANCES			10	TOLERANCES					
	0.05				0.05					
	0.10				0.10					
	0.25				0.25					
	0.03				0.03					
NOTE	1,2,5,7,8,11,12,13,14,15,16,17									
REF.	11-280									
ISSUE	B									
JEDEC SOLID STATE PRODUCT OUTLINES		TITLE TapePak MOLDED CARRIER RING FAMILY		ISSUE C	DATE March 1993	MO-094	SHEET 20 OF 20			