

**NOTES:**

1. ALL DIMENSIONS AND TOLERANCES REFER TO ASME Y14.5-1994
2. DATUM PLANE IS LOCATED AT MOLDS PARTING LINE AND CONCURRENT WITH LEAD WHERE LEAD EXISTS PLASTIC BODY AT BOTTOM OF PARTING LINE.
3. DIMENSIONS A, B, AND D TO BE DETERMINED AT CENTERLINE BETWEEN DATUM PLANE AND SEATING PLANE.
4. DIMENSIONS A1 AND E1 DO NOT INCLUDE MOLD PROTRUSION.
5. DIMENSIONS D1 AND E1 DO NOT INCLUDE MOLD PROTRUSION AND ARE DETERMINED AT DATUM PLANE.
6. DIMENSIONS A, B, AND D TO BE DETERMINED AT SEATING PLANE.
7. DIMENSIONS A1 AND E1 DO NOT INCLUDE MOLD PROTRUSION AND ARE DETERMINED AT DATUM PLANE.
8. DIMENSIONS A, B, AND D TO BE DETERMINED AT SEATING PLANE.
9. DIMENSIONS A1 AND E1 DO NOT INCLUDE MOLD PROTRUSION AND ARE DETERMINED AT DATUM PLANE.
10. DIMENSIONS A, B, AND D TO BE DETERMINED AT SEATING PLANE.
11. DIMENSIONS A1 AND E1 DO NOT INCLUDE MOLD PROTRUSION AND ARE DETERMINED AT DATUM PLANE.
12. DIMENSIONS A, B, AND D TO BE DETERMINED AT SEATING PLANE.
13. DIMENSIONS A1 AND E1 DO NOT INCLUDE MOLD PROTRUSION AND ARE DETERMINED AT DATUM PLANE.
14. DIMENSIONS A, B, AND D TO BE DETERMINED AT SEATING PLANE.
15. DIMENSIONS A1 AND E1 DO NOT INCLUDE MOLD PROTRUSION AND ARE DETERMINED AT DATUM PLANE.

(JEDEC VARIATION)  
ALL DIMENSIONS IN MILLIMETERS

S	Y	B	D	N	T	E
A	MIN.	NDM.	MAX.			
A1	0.05		1.60			13
Ae	1.35	1.40	1.45			
D		22.00 BSC.				4
D1		20.00 BSC.				7.8
E		22.00 BSC.				4
E1		20.00 BSC.				7.8
L	0.45	0.60	0.75			
N		128, 144				
e		0.50 BSC.				9
b	0.17	0.22	0.27			
b1	0.17	0.20	0.23			
ccc						0.08
ddd						0.08

\* NOTE: THE 128 LEAD IS A COMPARANT DEPOPULATION OF THE 144 LEAD MS-065 VARIATION BFL.

(JEDEC VARIATION)  
ALL DIMENSIONS IN MILLIMETERS

S	Y	B	D	N	T	E
A	MIN.	NDM.	MAX.			
A1	0.05		1.60			13
Ae	1.35	1.40	1.45			
D		22.00 BSC.				4
D1		20.00 BSC.				7.8
E		22.00 BSC.				4
E1		20.00 BSC.				7.8
L	0.45	0.60	0.75			
N		176 LD				
e		0.40 BSC.				9
b	0.13	0.18	0.23			
b1	0.13	0.16	0.19			
ccc						0.08
ddd						0.07

9. ALL DIMENSIONS ARE IN MILLIMETERS.
10. THE EXPOSED PAD IS CONCURRENT WITH THE TOP OR BOTTOM SIDE OF THE PACKAGE AND NOT ALLOWED TO PROTRUDE BEYOND THAT SURFACE.
11. THIS DRAWING CONFORMS TO JEDEC REGISTERED OUTLINE MS-066-C.
12. THIS DRAWING CONFORMS TO JEDEC REGISTERED OUTLINE MS-066-C.
13. THE EXPOSED PAD DIMENSION WAS NOT SPECIFIED ON JEDEC REGISTERED OUTLINE MS-066-C.
14. AT IS DEFINED AS THE DISTANCE FROM THE SEATING PLANE TO THE LOWEST POINT OF THE PACKAGE BODY.
15. AT IS DEPENDENT ON THE DIE SIZE.
16. THE ACTUAL DIMENSIONS ARE SPECIFIED ON THE BONDING DIAGRAM.
17. THE EXPOSED PAD AND IS DEPENDENT ON THE DIE SIZE.
18. THE ACTUAL DIMENSIONS ARE SPECIFIED ON THE BONDING DIAGRAM.
19. THE EXPOSED PAD SHALL BE CONFORMANT WITH BOTTOM OF PACKAGE WITHIN 0.05.
20. CORNER CHAMFER OF EXPOSED DIE PAD SHALL BE WITHIN 0.30 MM.

AMKOR/ANAM CONFIDENTIAL

AMkor Technology, Inc.  
Chandler, Arizona, USA  
Ankor Technology Singapore, Inc.  
Singapore

AMkor/ANAM  
Solutions

PACKAGE OUTLINE MATRIX, LQFP  
20 X 20 mm BODY, 1.00/0.10 mm FORM,  
1.40 mm THICK (OPTIONAL, #7AD)

PRINTING IS SCALED TO FIT  
DO NOT SCALE DRAWING

32778

2 OF 2

10