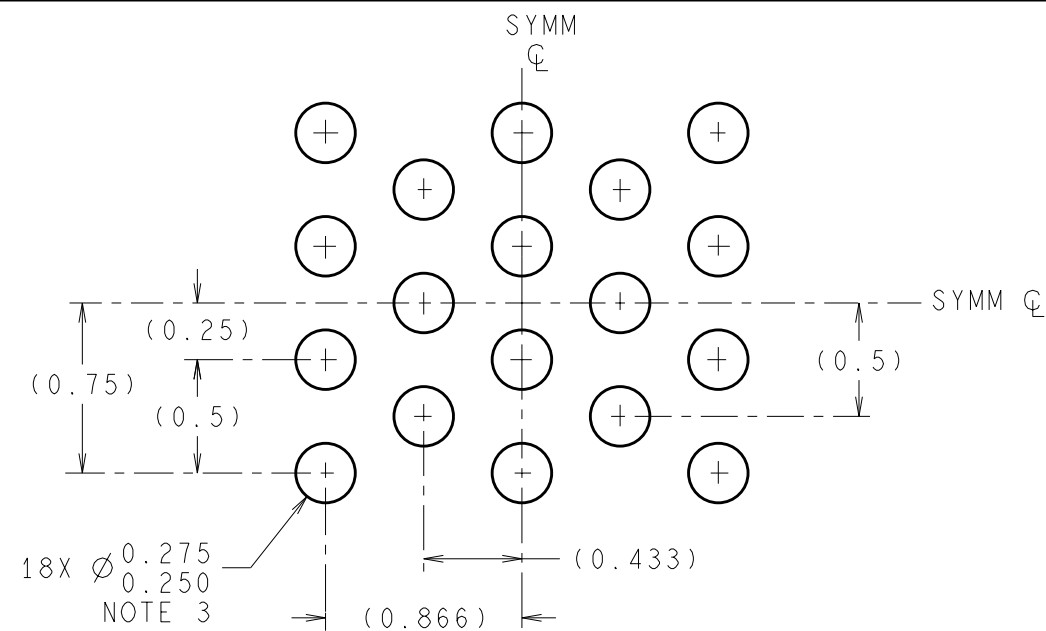
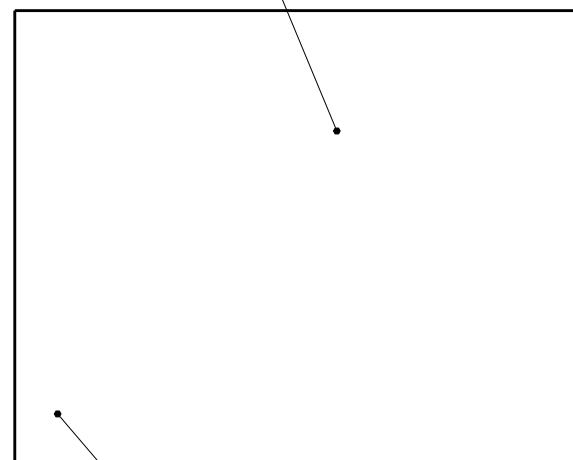


REVISIONS				
REV	DESCRIPTION	E.C.N.	DATE	BY/APP'D
A	RELEASE TO DOCUMENT CONTROL	588	02/26/2002	MS/VA
B	DIM 0.265/ 0.215 WAS 0.235/ 0.205; DIM 0.125/ 0.050 WAS 0.075/ 0.050; REVISE NOTE 2; ADD 'Z' 1945 & '1' 1970 TO X1 COLUMN; ADD 'Z' 2174 & '1' 2199 TO X2 COLUMN; UPDATE NOTE 6.	851	05/02/2003	MS/HN
C	BUMP DIA 0.335/ 0.305 WAS 0.31/ 0.29; UPDATE NOTE 6.	1286	01/21/2004	MS/HN
D	COLUMN X2 DESIGNATOR: RENUMBER Z & 1-6 TO 2-8; UPDATE NOTE 6 & DATUM C LOCATION.	1696	01/25/2005	MS/VP

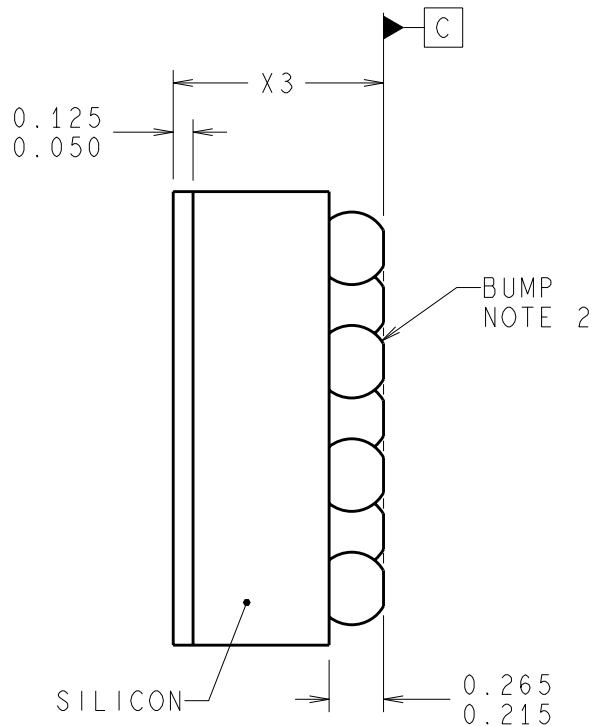


LAND PATTERN RECOMMENDATION

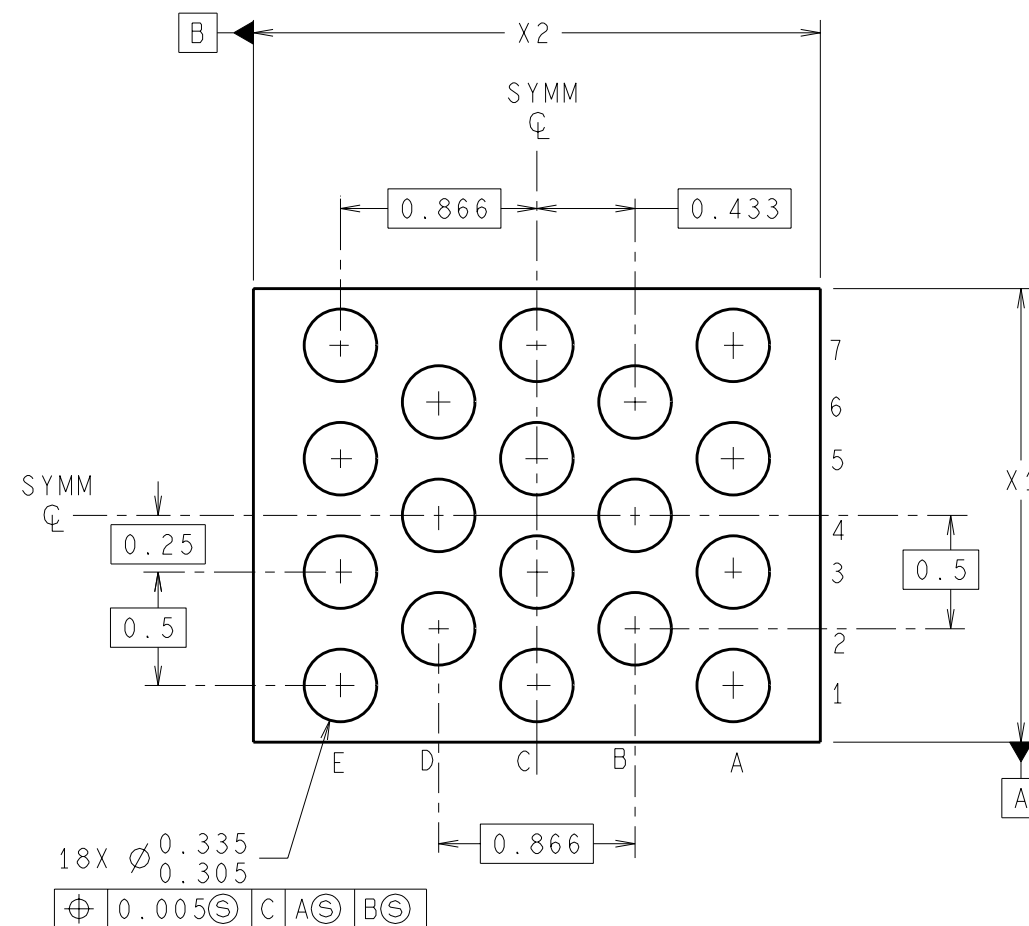
TOP SIDE COATING
NOTE 1



BUMP A1 CORNER
NOTE 4



DIMENSIONS ARE IN MILLIMETERS
DIMENSIONS IN () FOR REFERENCE ONLY




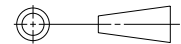
NOTES: UNLESS OTHERWISE SPECIFIED

- EPOXY COATING.
- FOR SOLDER BUMP COMPOSITION, SEE "SOLDER INFORMATION" IN THE PACKAGING SECTION OF THE NATIONAL SEMICONDUCTOR WEB PAGE (www.national.com).
- RECOMMEND NON-SOLDER MASK DEFINED LANDING PAD.
- PIN A1 IS ESTABLISHED BY LOWER LEFT CORNER WITH RESPECT TO TEXT ORIENTATION.
- XXX IN DRAWING NUMBER REPRESENTS PACKAGE SIZE VARIATION WHERE X1 IS PACKAGE WIDTH, X2 IS PACKAGE LENGTH AND X3 IS PACKAGE HEIGHT (SEE TABLE, SHEET 2).
- NO JEDEC REGISTRATION AS OF JANUARY 2005.

APPROVALS		DATE	 National Semiconductor 2900 Semiconductor Dr., Santa Clara, CA 95052-8090	THIN MICRO SMD, 18 BUMP(LARGE), 0.5mm PITCH
DRAWN	MARTA SUCHY	02/26/2002		
DFTG. CHK.	THANH LEQUANG	01/25/2005		
ENGR. CHK.	VIRAJ PATWARDHAN	01/25/2005		
PROJECTION	SCALE	SIZE	DRAWING NUMBER	REV
 MM	NTS	B	(SC)MKT-TLA18XXX	D
FORMERLY: N/A			SHEET 1 of 2	

REVISIONS				
REV	DESCRIPTION	E.C.N.	DATE	BY/APP'D
SEE SHEET 1				

PACKAGE DIMENSIONS					
X1 DESIGNATOR	X1 PACKAGE WIDTH $\pm 30\mu\text{m}$	X2 DESIGNATOR	X2 PACKAGE LENGTH $\pm 30\mu\text{m}$	X3 DESIGNATOR	X3 PACKAGE HEIGHT $\pm 75\mu\text{m}$
Z	1945	Z	2174	A	600
1	1970	1	2199		
A	1996	A	2225		
B	2022	B	2250		
C	2047	C	2276		
D	2073	D	2301		
E	2098	E	2327		
F	2123	F	2352		
G	2149	G	2377		
H	2174	H	2403		
J	2200	J	2428		
K	2225	K	2454		
L	2250	L	2479		
M	2276	M	2504		
N	2301	N	2530		
P	2327	P	2555		
Q	2352	Q	2581		
R	2377	R	2606		
S	2403	S	2631		
T	2428	T	2657		
U	2454	U	2682		
V	2479	V	2708		
		W	2733		
		X	2758		
		Y	2784		
		2	2809		
		3	2835		
		4	2860		
		5	2885		
		6	2911		
		7	2936		
		8	2962		

APPROVALS		DATE	 2900 Semiconductor Dr., Santa Clara, CA 95052-8090 THIN MICRO SMD, 18 BUMP(LARGE), 0.5mm PITCH	
DRAWN	MARTA SUCHY	02/26/2002		
DFTG. CHK.	THANH LEQUANG	01/25/2005		
ENGR. CHK.	VIRAJ PATWARDHAN	01/25/2005		
PROJECTION		SCALE	SIZE	DRAWING NUMBER
 MM		NTS	B	(SC)MKT-TLA18XXX
		FORMERLY: N/A	REV D	
		SHEET 2 of 2		