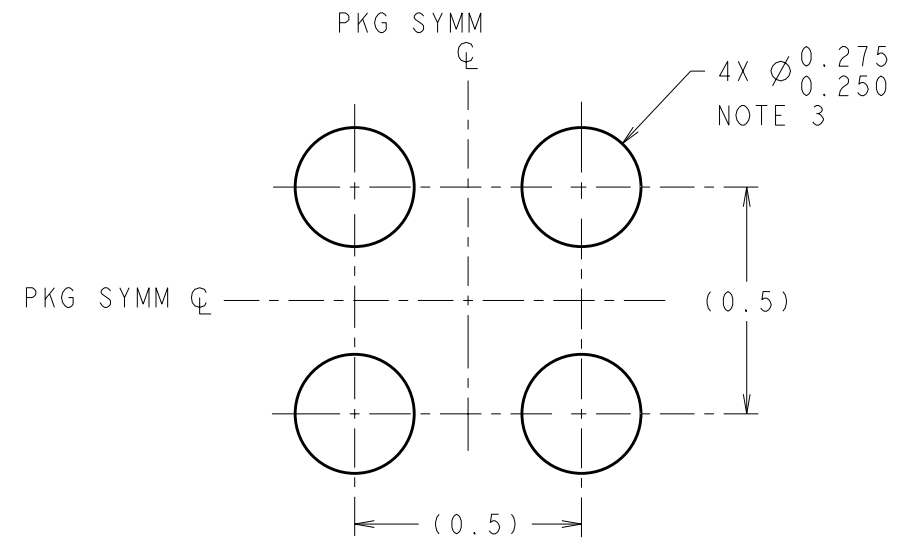
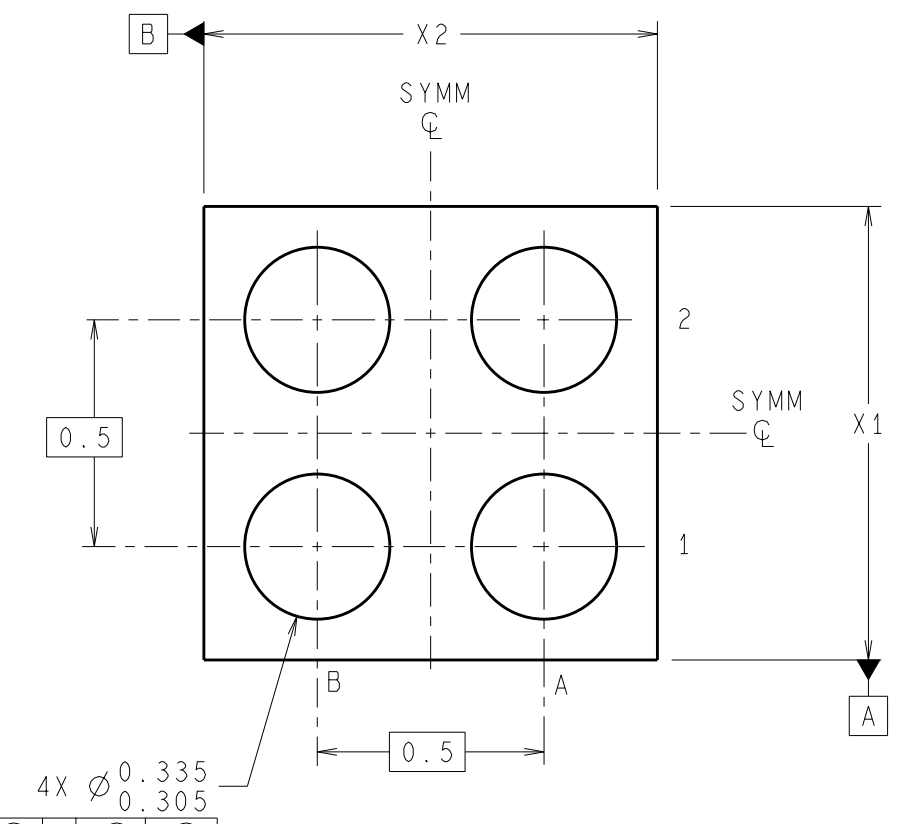
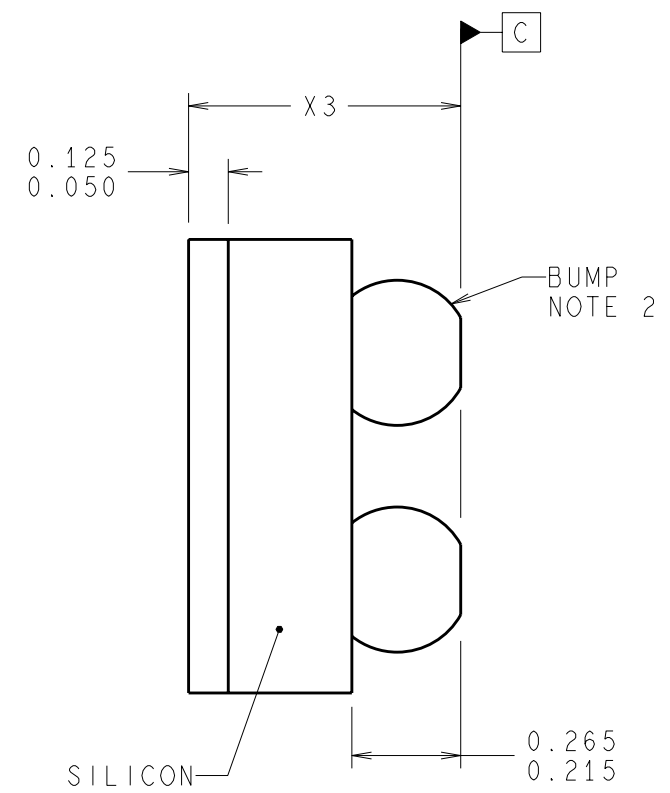
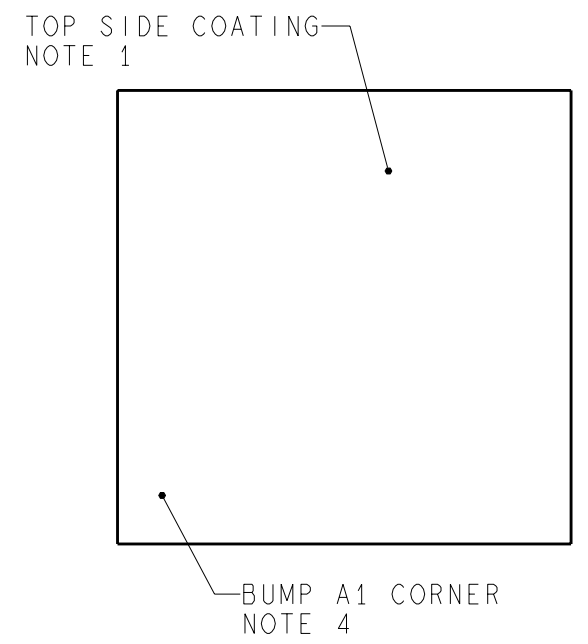


REVISIONS				
REV	DESCRIPTION	E.C.N.	DATE	BY/APP'D
A	RELEASE TO DOCUMENT CONTROL	638	03/15/2002	MS/VA
B	DIM 0.265/ 0.215 WAS 0.235/ 0.205; DIM 0.125/ 0.050 WAS 0.075/ 0.050; REVISE NOTE 2; ADD 'Z' 963 & '1' 988 TO X1 & X2 COLUMNS.	844	04/28/2003	MS/HN
C	BUMP DIA 0.335/ 0.305 WAS 0.31/ 0.29	1280	01/19/2004	MS/HN
D	POSITIONAL TOL 0.005 WAS 0.001; REVISE DATUM C LOCATION.	1685	03/15/2005	MS/VP



**DIMENSIONS ARE IN MILLIMETERS**  
DIMENSIONS IN ( ) FOR REFERENCE ONLY

**LAND PATTERN RECOMMENDATION**



$\oplus$	0.005	$\textcircled{C}$	$\textcircled{A}$	$\textcircled{B}$
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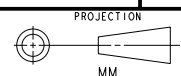
NOTES: UNLESS OTHERWISE SPECIFIED

1. EPOXY COATING.
2. FOR SOLDER BUMP COMPOSITION, SEE "SOLDER INFORMATION" IN THE PACKAGING SECTION OF THE NATIONAL SEMICONDUCTOR WEB PAGE ([www.national.com](http://www.national.com)).
3. RECOMMEND NON-SOLDER MASK DEFINED LANDING PAD.
4. PIN A1 IS ESTABLISHED BY LOWER LEFT CORNER WITH RESPECT TO TEXT ORIENTATION.
5. 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).
6. REFERENCE JEDEC REGISTRATION MO-211, VARIATION BA.

APPROVALS		DATE	 <b>National Semiconductor</b> 2900 Semiconductor Dr., Santa Clara, CA 95052-8090 <b>THIN MICRO SMD,</b> <b>4 BUMP (LARGE),</b> <b>0.5mm PITCH</b>	
DRAWN	<b>MARTA SUCHY</b>	03/15/2002		
DFTG. CHK.	<b>THANH LEQUANG</b>	03/15/2005		
ENGR. CHK.	<b>VIRAJ PADWARDHAN</b>	03/15/2005		
PROJECTION	SCALE	SIZE	DRAWING NUMBER	REV
	MM	NTS	B (SC)MKT-TLA04XXX	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	963	Z	963	A	600
1	988	1	988		
A	1014	A	1014		
B	1040	B	1040		
C	1065	C	1065		
D	1090	D	1090		
E	1116	E	1116		
F	1141	F	1141		
G	1167	G	1167		
H	1192	H	1192		
J	1217	J	1217		
K	1243	K	1243		
L	1268	L	1268		
M	1294	M	1294		
N	1319	N	1319		
P	1344	P	1344		
Q	1370	Q	1370		
R	1395	R	1395		
S	1421	S	1421		
T	1446	T	1446		
U	1471	U	1471		
V	1497	V	1497		
W	1522	W	1522		
X	1548	X	1548		
Y	1573	Y	1573		
2	1598	2	1598		
3	1624	3	1624		
4	1649	4	1649		
5	1675	5	1675		
6	1700	6	1700		

APPROVALS		DATE	 2900 Semiconductor Dr., Santa Clara, CA 95052-8090
DRAWN	<b>MARTA SUCHY</b>	03/15/2002	
DFTG. CHK.	THANH LEQUANG	03/15/2005	
ENGR. CHK.	VIRAJ PADWARDHAN	03/15/2005	
 PROJECTION MM			THIN MICRO SMD, 4 BUMP(LARGE), 0.5mm PITCH
SCALE	SIZE	DRAWING NUMBER	REV
NTS	B	(SC)MKT-TLA04XXX	D
FORMERLY: N/A			SHEET 2 of 2