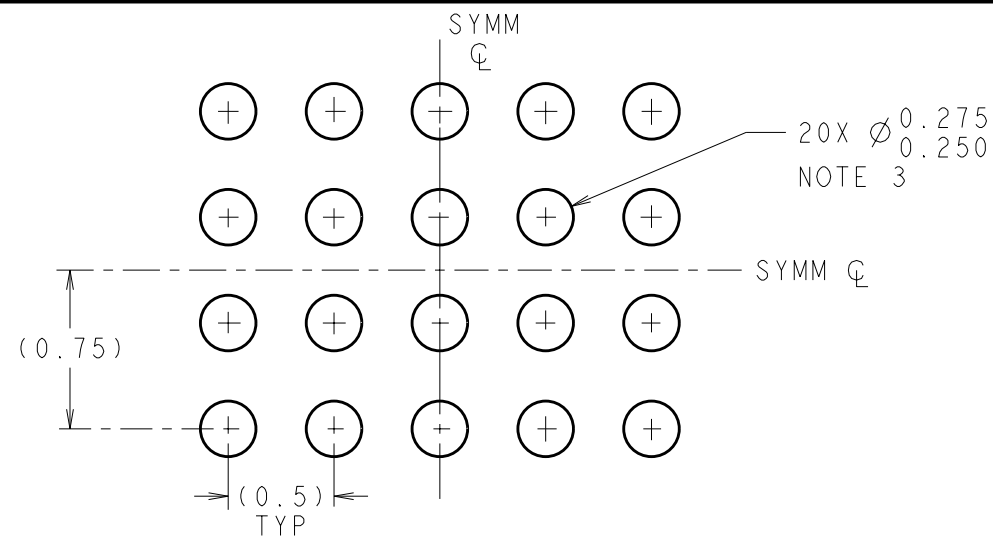


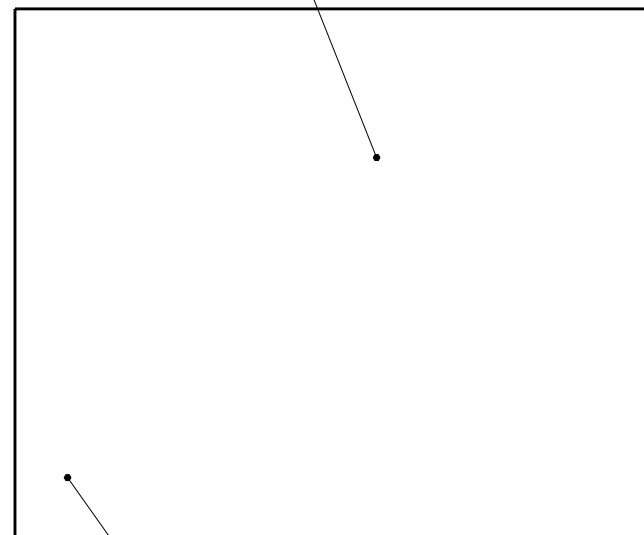
REVISIONS				
REV	DESCRIPTION	E.C.N.	DATE	BY/APP'D
A	RELEASE TO DOCUMENT CONTROL	589	02/26/2002	MS/VA
B	DIM 0.265/ 0.215 WAS 0.235/ 0.205; DIM 0.125/ 0.050 WAS 0.075/ 0.050; REVISE NOTE 2; ADD 'Z' 1945 & '1' 1970 TO X1 AND 'Z' 2441 & '1' 2466 TO X2 COLUMNS.	852	05/02/2003	MS/HN
C	BUMP DIA 0.335/ 0.305 WAS 0.31/ 0.29	1292	01/21/2004	MS/HN



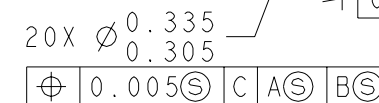
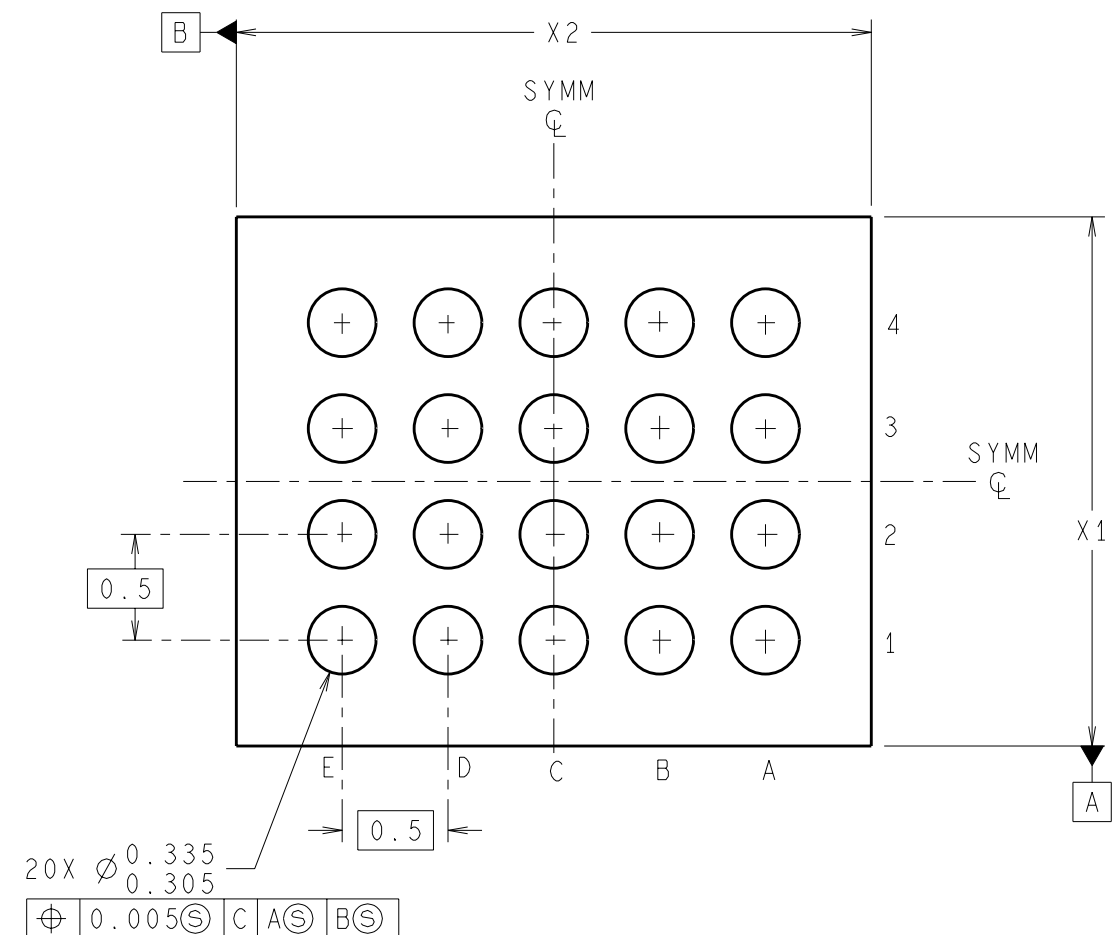
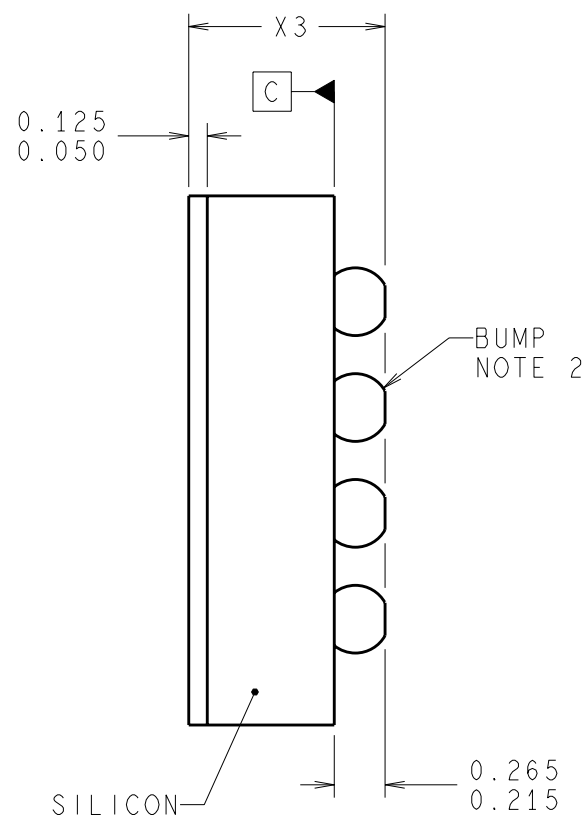
DIMENSIONS ARE IN MILLIMETERS
DIMENSIONS IN () FOR REFERENCE ONLY

LAND PATTERN RECOMMENDATION

TOP SIDE COATING
NOTE 1



BUMP A1 CORNER
NOTE 4




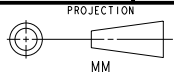
NOTES: UNLESS OTHERWISE SPECIFIED

1. EPOXY COATING.
2. FOR SOLDER BUMP COMPOSITION, SEE "SOLDER INFORMATION" IN THE PACKAGING SECTION OF THE NATIONAL SEMICONDUCTOR WEB PAGE (www.national.com).
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 DG.

APPROVALS		DATE	 National Semiconductor 2900 Semiconductor Dr., Santa Clara, CA 95052-8090	
DRAWN	MARTA SUCHY	02/26/2002		
DFTG. CHK.	THANH LEQUANG	01/29/2004	THIN MICRO SMD, 20 BUMP(LARGE), 0.5mm PITCH	
ENGR. CHK.	HAU NGUYEN	01/29/2004		
PROJECTION	SCALE	SIZE	DRAWING NUMBER	REV
 MM	NTS	B	(SC)MKT-TLA20XXX	C
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	2441	A	600
1	1970	1	2466		
A	1996	A	2492		
B	2022	B	2517		
C	2047	C	2543		
D	2073	D	2568		
E	2098	E	2593		
F	2123	F	2619		
G	2149	G	2644		
H	2174	H	2670		
J	2200	J	2695		
K	2225	K	2720		
L	2250	L	2746		
M	2276	M	2771		
N	2301	N	2797		
P	2327	P	2822		
Q	2352	Q	2847		
R	2377	R	2873		
S	2403	S	2898		
T	2428	T	2924		
U	2454	U	2949		

APPROVALS		DATE	 National Semiconductor <small>2900 Semiconductor Dr., Santa Clara, CA 95052-8090</small>		
DRAWN	MARTA SUCHY	02/26/2002			
DFTG. CHK.	THANH LEQUANG	01/29/2004			
ENGR. CHK.	HAU NGUYEN	01/29/2004			
 PROJECTION MM		SCALE	SIZE	DRAWING NUMBER	REV
		NTS	B	(SC)MKT-TLA20XXX	C
		FORMERLY: N/A		SHEET 2 of 2	