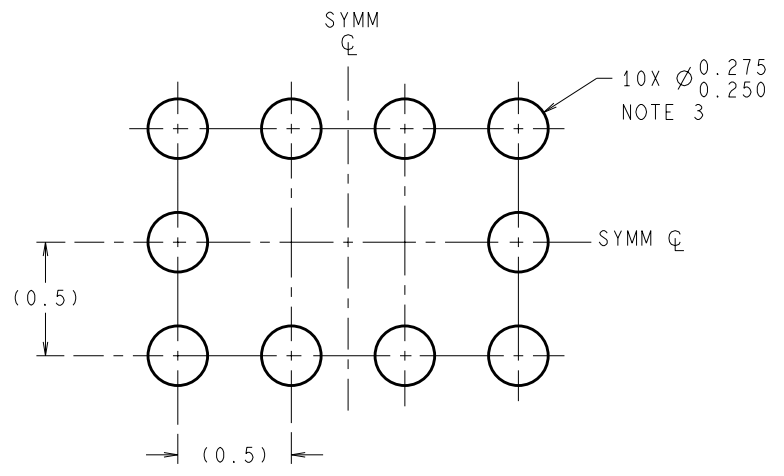
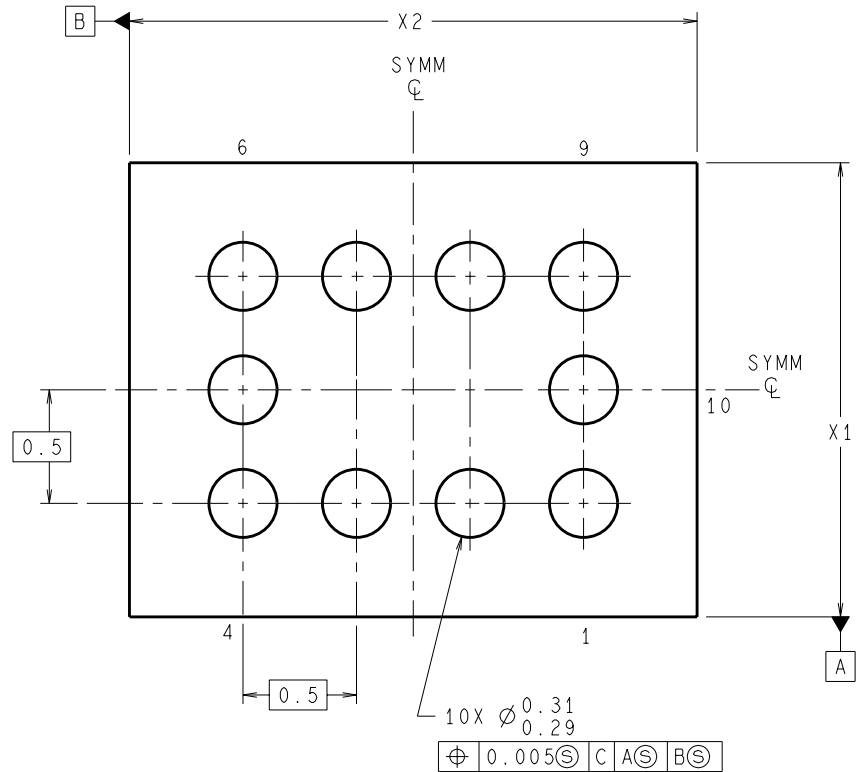
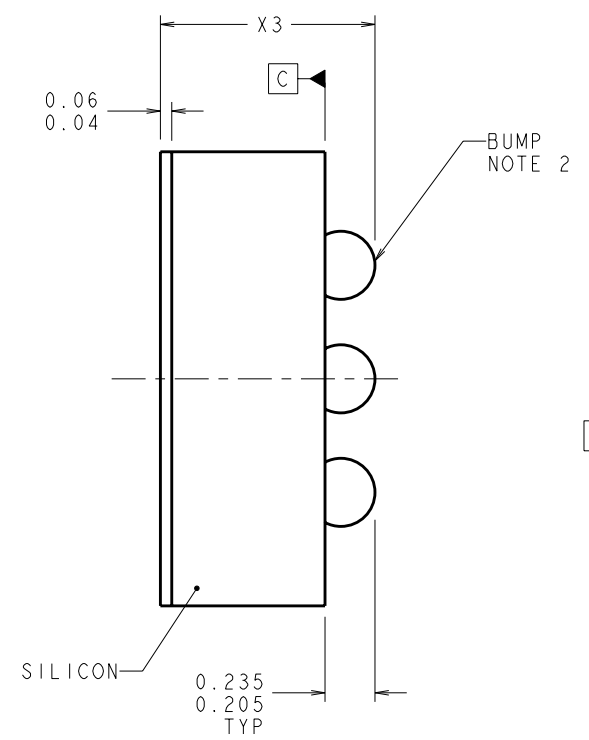
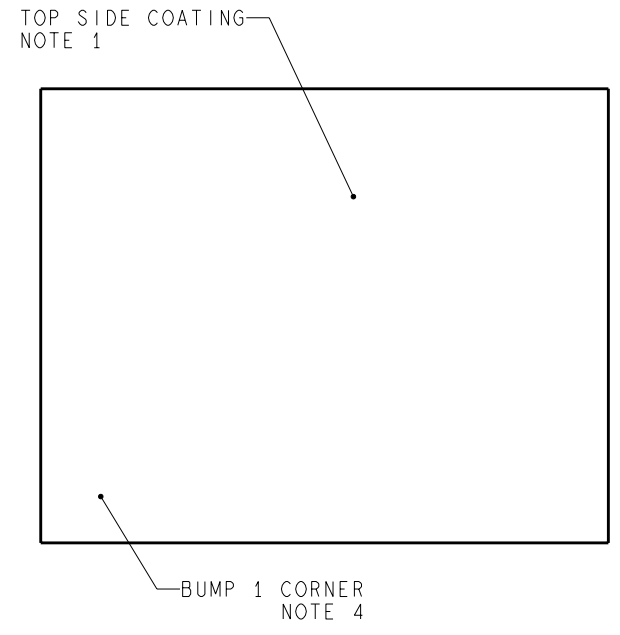


REVISIONS				
LTR	DESCRIPTION	E.C.N.	DATE	BY/APP'D
A	RELEASE TO DOCUMENT CONTROL	12283	08/25/1999	MS/ECH
B	UPDATE PACKAGE DIM. TABLE.	12313	10/13/1999	MS/NK



LAND PATTERN RECOMMENDATION



DIMENSIONS ARE IN MILLIMETERS


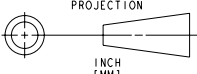
NOTES: UNLESS OTHERWISE SPECIFIED

1. EPOXY COATING.
2. 63 Sn / 37 Pb EUTECTIC BUMP.
3. RECOMMEND NON-SOLDER MASK DEFINED LANDING PAD.
4. PIN 1 IS ESTABLISHED BY LOWER LEFT CORNER WITH RESPECT TO TEXT ORIENTATION. REMAINING PINS ARE NUMBERED COUNTERCLOCKWISE.
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).
EXAMPLE: BPA10EFB HAS WIDTH=1387, LENGTH=1920, HEIGHT=945
6. NO JEDEC REGISTRATION AS OF OCT. 1999.

APPROVALS		DATE		 National Semiconductor 2900 Semiconductor Dr., Santa Clara, CA 95052-8090	
DRAWN MARTA SUCHY		08/25/1999			
DFTG. CHK. THANH LEQUANG		10/13/1999			
ENGR. CHK. NIKHIL KELKAR		10/13/1999		MICRO SMD, 10 BUMP, 0.5mm PITCH	
 INCH [MM]		SCALE N/A	SIZE C		
DO NOT SCALE DRAWING				SHEET 1 of 2	

REVISIONS				
LTR	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 $\pm 50\mu\text{m}$
A	1514	A	1996	A	795
B	1539	B	2022	B	945
C	1565	C	2047	C	995
D	1590	D	2073		
E	1615	E	2098		
F	1641	F	2123		
G	1666	G	2149		
H	1692	H	2174		
J	1717	J	2200		
K	1742	K	2225		
L	1768	L	2250		
M	1793	M	2276		
N	1819	N	2301		
P	1844	P	2327		
Q	1869	Q	2352		
R	1895	R	2377		
S	1920	S	2403		
T	1946	T	2428		
U	1971	U	2454		
V	1996	V	2479		
		W	2504		

APPROVALS	DATE	 National Semiconductor 2900 Semiconductor dr, Santa Clara, CA 95052-8090			
DRAWN MARTA SUCHY	08/25/1999				
DFTG. CHK. THANH LEQUANG	10/13/1999				
ENGR. CHK. NIKHIL KELKAR	10/13/1999	MICRO SMD, 10 BUMP, 0.5mm PITCH			
		SCALE	SIZE	DRAWING NUMBER	REV
		N/A	C	(SC)MKT-BPA10XXX	B
DO NOT SCALE DRAWING				SHEET 2 of 2	