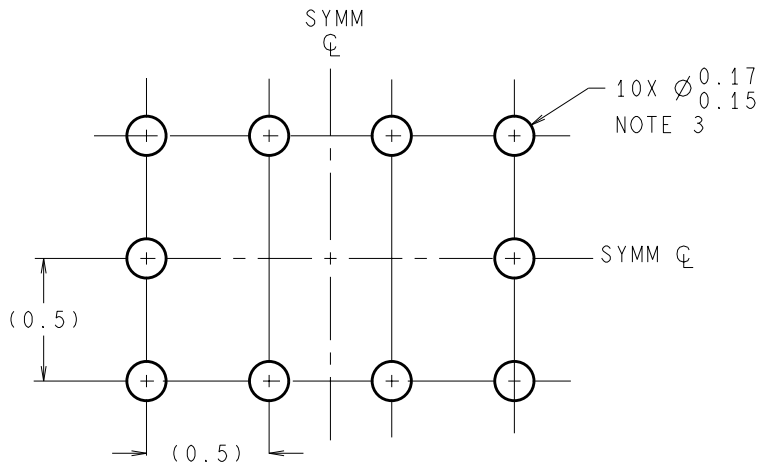
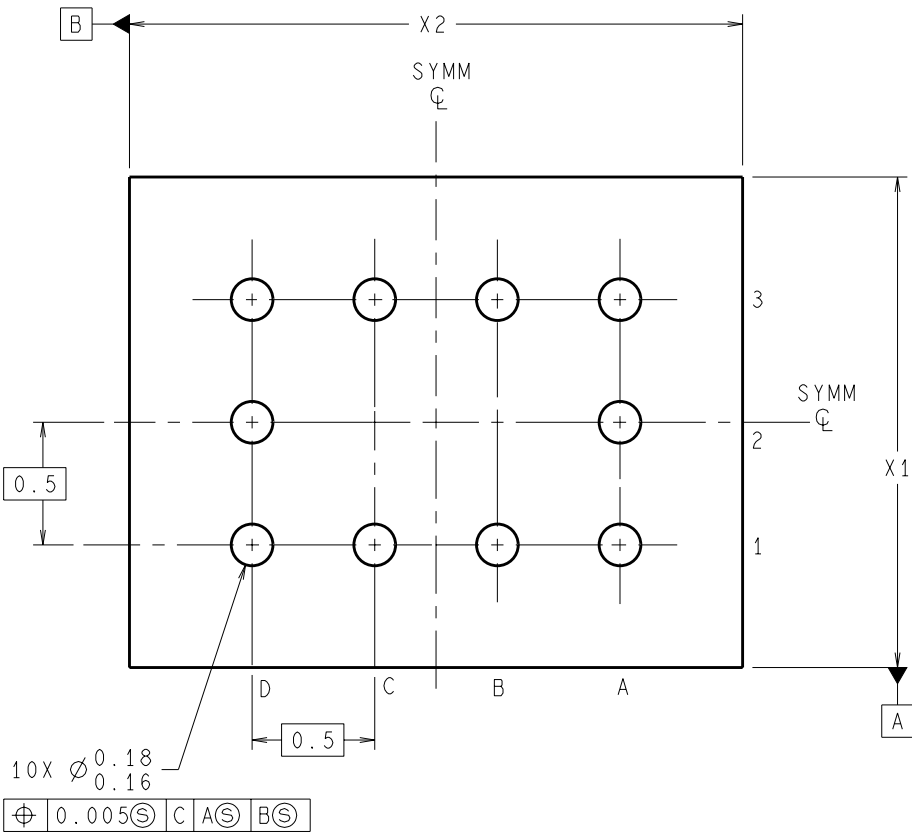
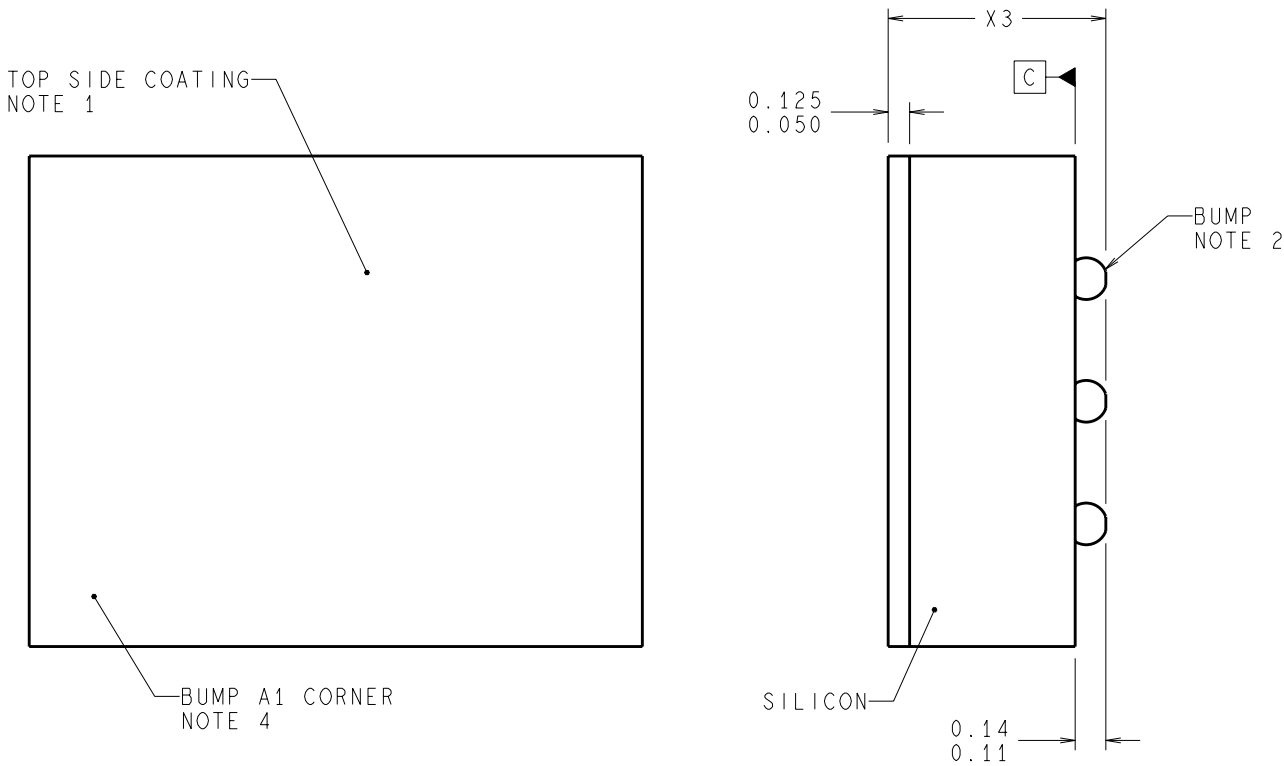


REVISIONS				
LTR	DESCRIPTION	E.C.N.	DATE	BY/APP'D
A	RELEASE TO DOCUMENT CONTROL	12283	08/25/1999	MS/ECH
B	UPDATE PACKAGE DIM. TABLE.	12313	10/13/1999	MS/NK
C	BALL Ø0.18-0.16 WAS Ø0.29-0.31; BALL HEIGHT 0.14/0.11 WAS 0.235/0.205; LAND PAD Ø0.17/0.15 WAS 0.275/0.250; UPDATE NOTE 6.	135	07/17/2000	MS/VA
D	FLATTEN BALL HEIGHT BY 0.005mm; DIM 0.125/0.050 WAS 0.06/0.04; X3 DIM A 700 WAS 795, DIM B 850 WAS 945, DIM C 900 WAS 995; X3 TOL 100 WAS 50; UPDATE NOTE 5 & 6.	177	09/27/2000	MS/VA
E	CHANGE BUMPS NUMBERING ORDER PER JEDEC; NOTE 6 WAS "NO JEDEC REGISTRATION AS OF SEPTEMBER, 2000."; UPDATE NOTE 4.	526	02/11/2002	MS/VP

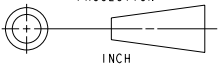


LAND PATTERN RECOMMENDATION

DIMENSIONS ARE IN MILLIMETERS



- NOTES: UNLESS OTHERWISE SPECIFIED
- EPOXY COATING.
 - 63 Sn / 37 Pb EUTECTIC BUMP.
 - 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).
EXAMPLE: BPA10EFB HAS WIDTH=1615, LENGTH=2123, HEIGHT=850
 - REFERENCE JEDEC REGISTRATION MO-211, VARIATION BD.

APPROVALS		DATE		 <i>National Semiconductor</i> 2900 Semiconductor Dr., Santa Clara, CA 95052-8090	
DRAWN	MARTA SUCHY		08/25/1999		
DFTG. CHK.	THANH LEQUANG		02/11/2002	MICRO SMD, 10 BUMP, 0.5mm PITCH	
ENGR. CHK.	VIRAJ PATWARDHAN		02/11/2002		
		SCALE	SIZE	DRAWING NUMBER	REV
		N/A	C	(SC)MKT-BPA10XXX	E
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 ±30μm	X2 DESIGNATOR	X2 PACKAGE LENGTH ±30μm	X3 DESIGNATOR	X3 PACKAGE HEIGHT ±100μm
A	1514	A	1996	A	700
B	1539	B	2022	B	850
C	1565	C	2047	C	900
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		 <i>National Semiconductor</i> 2900 Semiconductor Dr., Santa Clara, CA 95052-8090			
DRAWN	MARTA SUCHY	08/25/1999					
DFTG. CHK.	THANH LEQUANG	02/11/2002					
ENGR. CHK.	VIRAJ PATWARDHAN	02/11/2002					
				MICRO SMD, 10 BUMP, 0.5mm PITCH			
PROJECTION  INCH [MM]				SCALE	SIZE	DRAWING NUMBER	REV
				N/A	C	(SC)MKT-BPA10XXX	E
				DO NOT SCALE DRAWING			SHEET 2 of 2