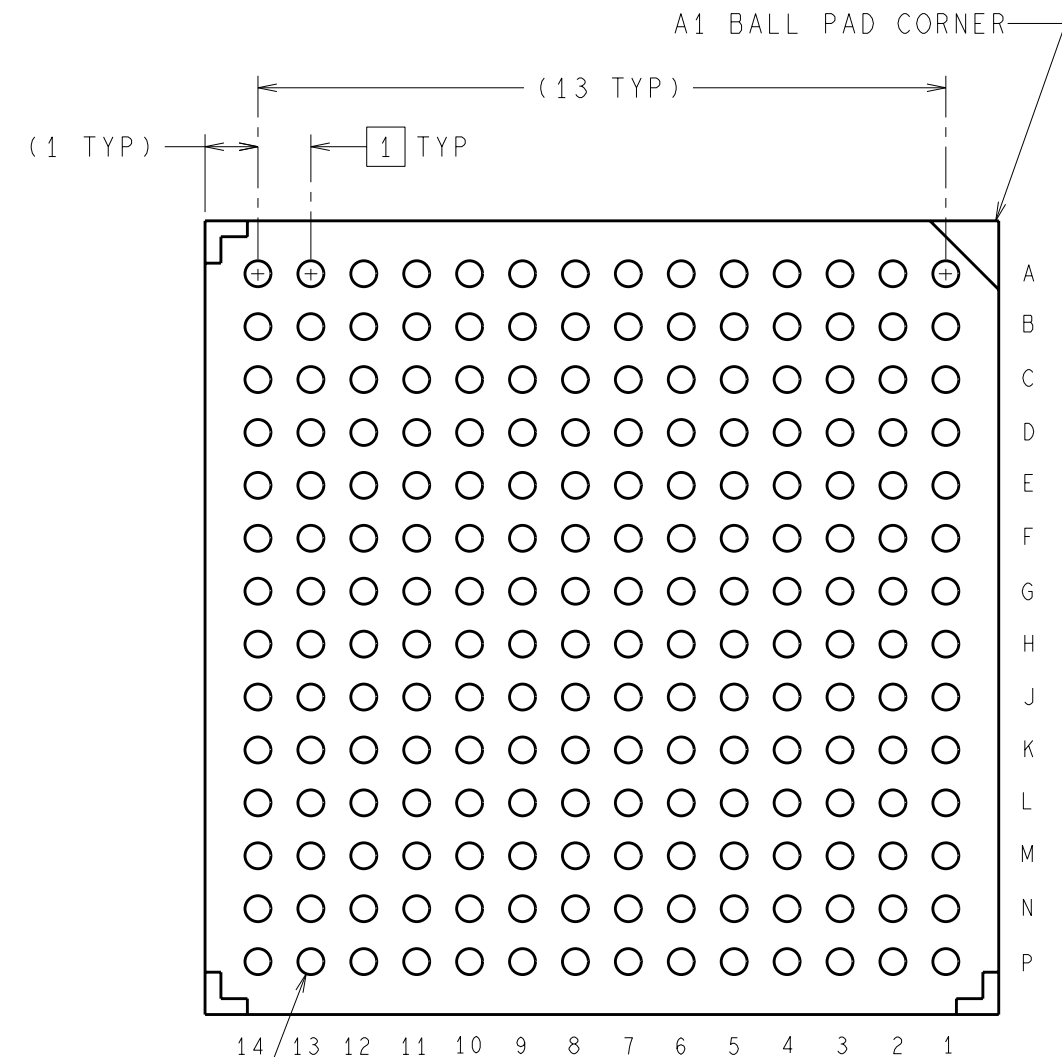
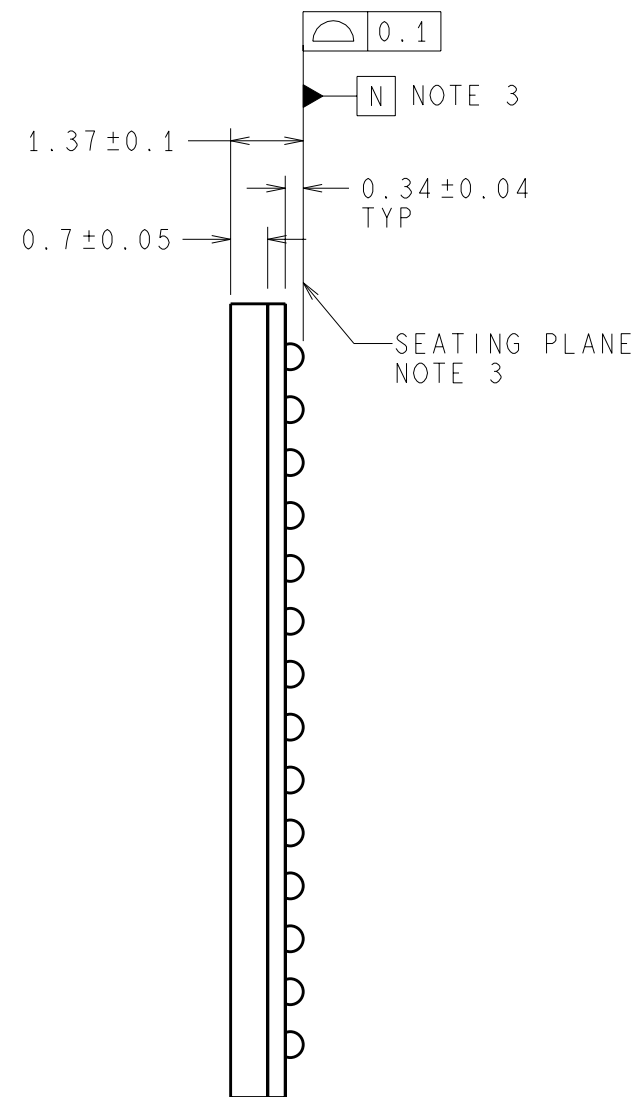
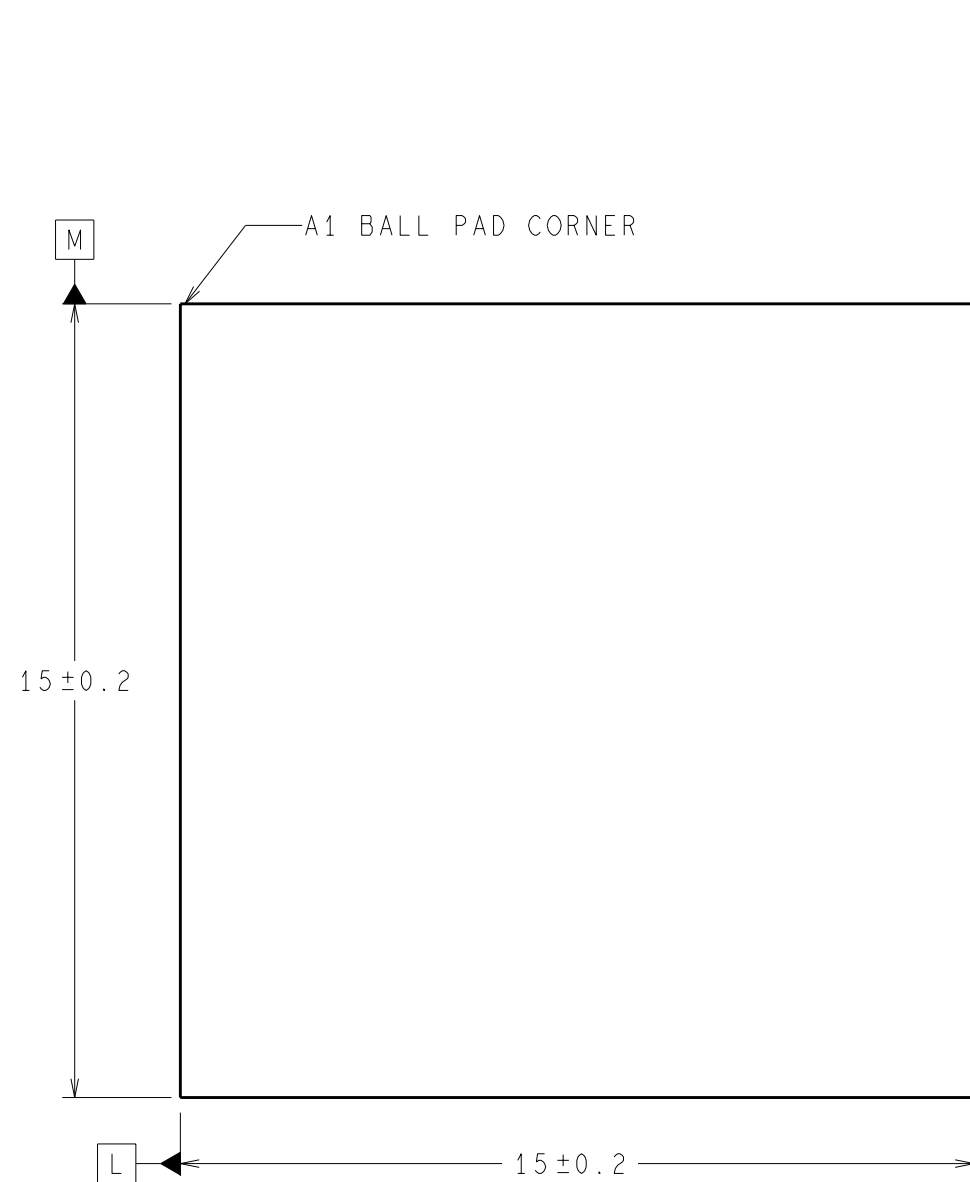


REVISIONS				
REV	DESCRIPTION	E.C.N.	DATE	BY/APP'D
A	RELEASE TO DOCUMENT CONTROL	12452	04/17/2000	MS/MJL
B	DIM'S 1.37±0.1 WAS 1.46±0.19/-0.09, 0.34±0.04 WAS 0.4 MIN, Ø0.49±0.05 WAS Ø0.5; REVISE NOTE 4 & TITLE.	189	12/14/2000	MS/VG
C	REVISE NOTE 1; CHANGE DWG FORMAT TO B SIZE; ADD RECOMMENDED PCB PAD: (Ø0.5)	1860	07/20/2005	TL/RW



196X Ø0.49

⊕	Ø0.15(M)	N	L(S)	M(S)
	Ø0.08(M)	N	NOTE 2	

RECOMMENDED PCB PAD: (Ø0.5)

NOTES: UNLESS OTHERWISE SPECIFIED

- FOR SOLDER BALL COMPOSITION, SEE "SOLDER INFORMATION" IN THE PACKAGING SECTION OF THE NATIONAL SEMICONDUCTOR WEB PAGE (www.national.com).
- DIMENSION MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM N.
- PRIMARY DATUM N AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.
- REFERENCE JEDEC REGISTRATION MO-192, VARIATION AAE-1.

DIMENSIONS ARE IN MILLIMETERS
DIMENSIONS IN () FOR REFERENCE ONLY

APPROVALS		DATE	National Semiconductor	
DRAWN	MARTA SUCHY	04/17/2000	2900 Semiconductor Dr., Santa Clara, CA 95052-8090	
DFTG. CHK.	MARTA SUCHY	07/20/2005	LBGA, 15 X 15 X 1.37mm, 196 BALL, 1.0mm PITCH	
ENGR. CHK.	RANDALL WALBERG	07/20/2005		
PROJECTION	SCALE	SIZE	DRAWING NUMBER	REV
	NTS	B	(SC)MKT-UJB196A	C
FORMERLY: N/A			SHEET 1 of 1	