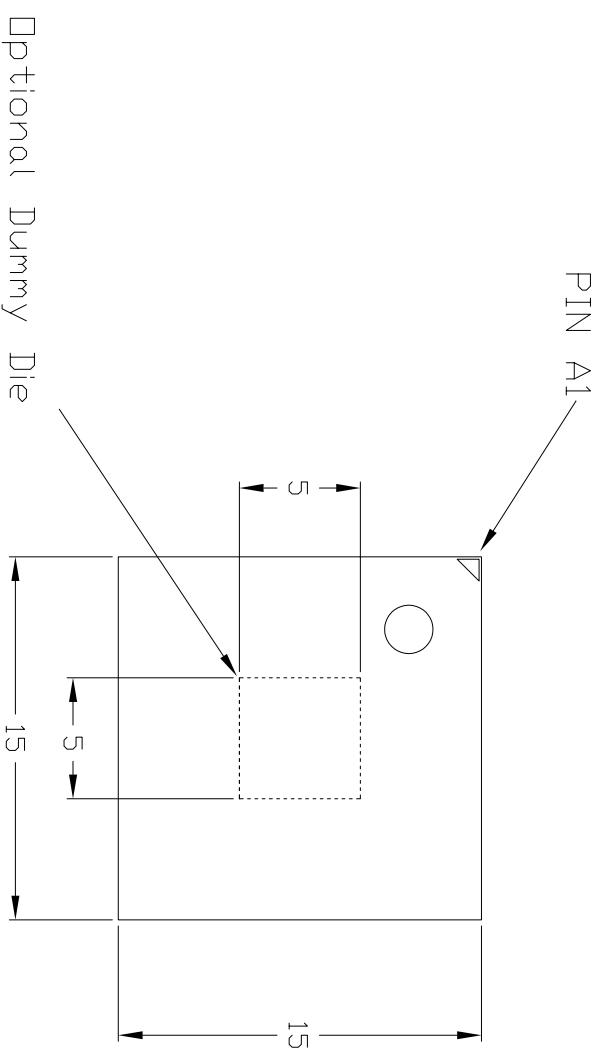
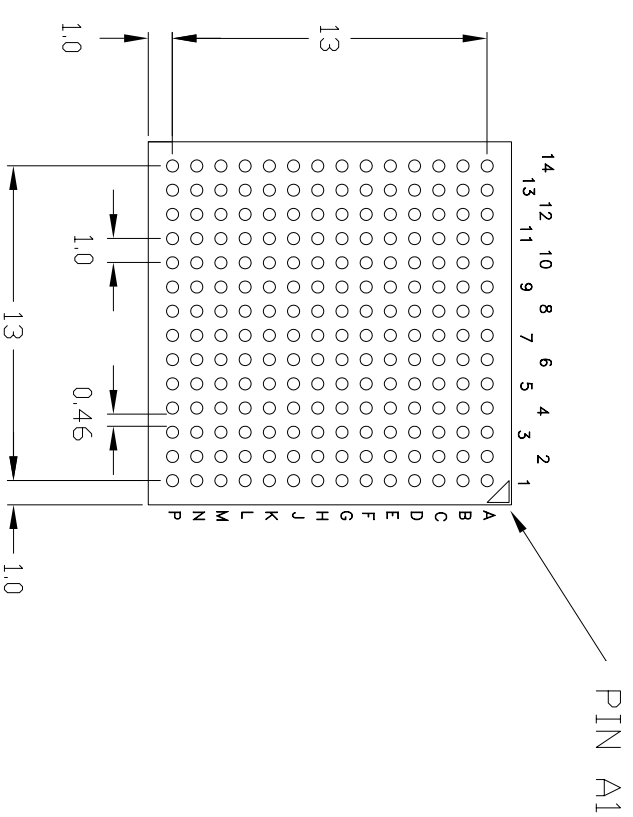


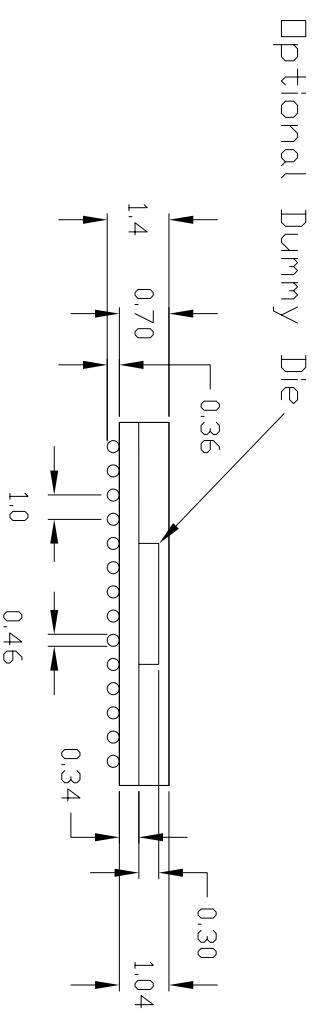
### Top View



### Ball View



### Side View



**NOTE:**

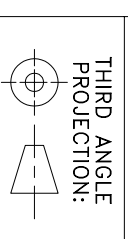
1. All Dimensions MM
2. Solder Ball Alloy:  
Tin Lead: Sn63/Pb37  
RoHS Lead Free: SAC305 (Sn96.5/Ag3.0/Cu0.5)  
Additional Ball Alloy Available
3. Ball Diameter (Before Reflow): 0.46MM
4. Solder Mask Defined Pad Opening: 0.45MM
5. Pad Cu Diameter: \_\_\_\_\_ MM
6. Substrate Material: BT
7. Dummy Die is Optional
8. Daisy Chain Pattern (See Page 2)

Part Number	Ball Alloy	Pb-Free	RoHS	Si Die
BGA196T1.0C-D149A	Sn96.5/Ag3.0/Cu0.5	Yes	Yes	No
BGA196T1.0C-D149AD	Sn96.5/Ag3.0/Cu0.5	Yes	Yes	Yes
BGA196T1.0-D149A	Sn63/Pb37	No	No	No
BGA196T1.0-D149AD	Sn63/Pb37	No	No	Yes

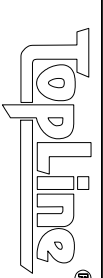
TOLERANCES UNLESS NOTED:

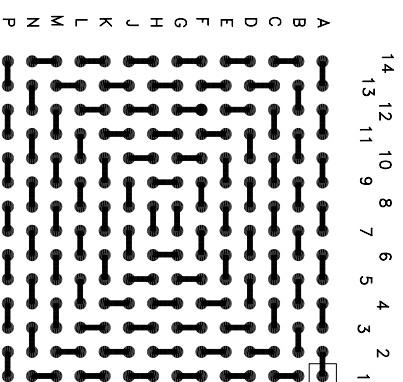
X.XX	±
X.XXX	±
X.XXXX	±
ANGLES	±

ALL DIMENSIONS ARE IN:  
 INCHES     MILLIMETERS

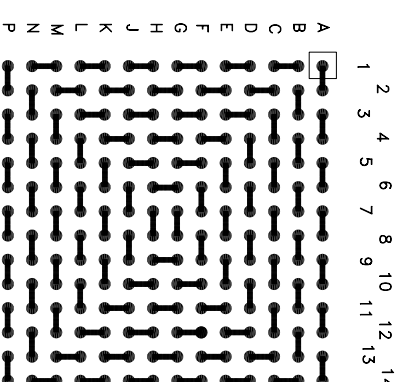


APPROVALS	DATE	TITLE	SCALE	SIZE	DRAWING NO.	REV
DRAWN: MH	11/10/09	M-BGA196T1.0-DC149A	NONE	A	515314	MKT
ENG						
MFG						
QA						
CUST						
REVISED						

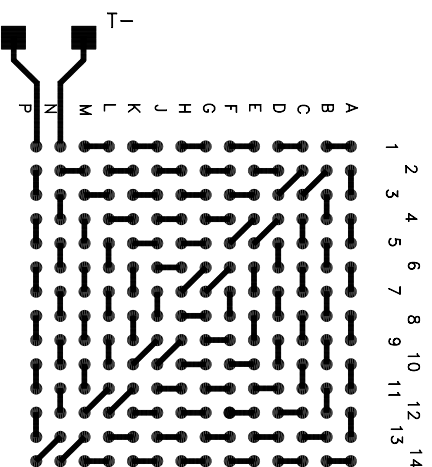




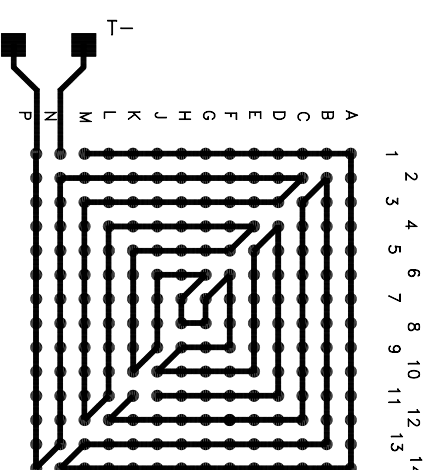
Ball View



Bottom Side (Top X-Ray View)



Test Vehicle Board



After Mounting To Test Board

Part Number	Ball Alloy	Pb-Free	RoHS	Si Die
BGA196T1.0C-D149A	Sn96.5/Ag3.0/Cu0.5	Yes	Yes	No
BGA196T1.0C-D149AD	Sn96.5/Ag3.0/Cu0.5	Yes	Yes	Yes
BGA196T1.0-D149A	Sn63/Pb37	No	No	No
BGA196T1.0-D149AD	Sn63/Pb37	No	No	Yes

TOLERANCES UNLESS NOTED:

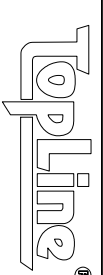
X.XX	±
X.XXX	±
X.XXXX	±
ANGLES	±

ALL DIMENSIONS ARE IN:  
 INCHES  
 MILLIMETERS



APPROVALS	DATE
DRAWN MH	11/10/09
ENG	
MFG	

TITLE  
**M-BGA196T1.0-DC149A**



SCALE	SIZE	DRAWING NO.	REV
NONE	A	515314 MKT	A

DO NOT SCALE DRAWING

SHEET 2 OF 2