

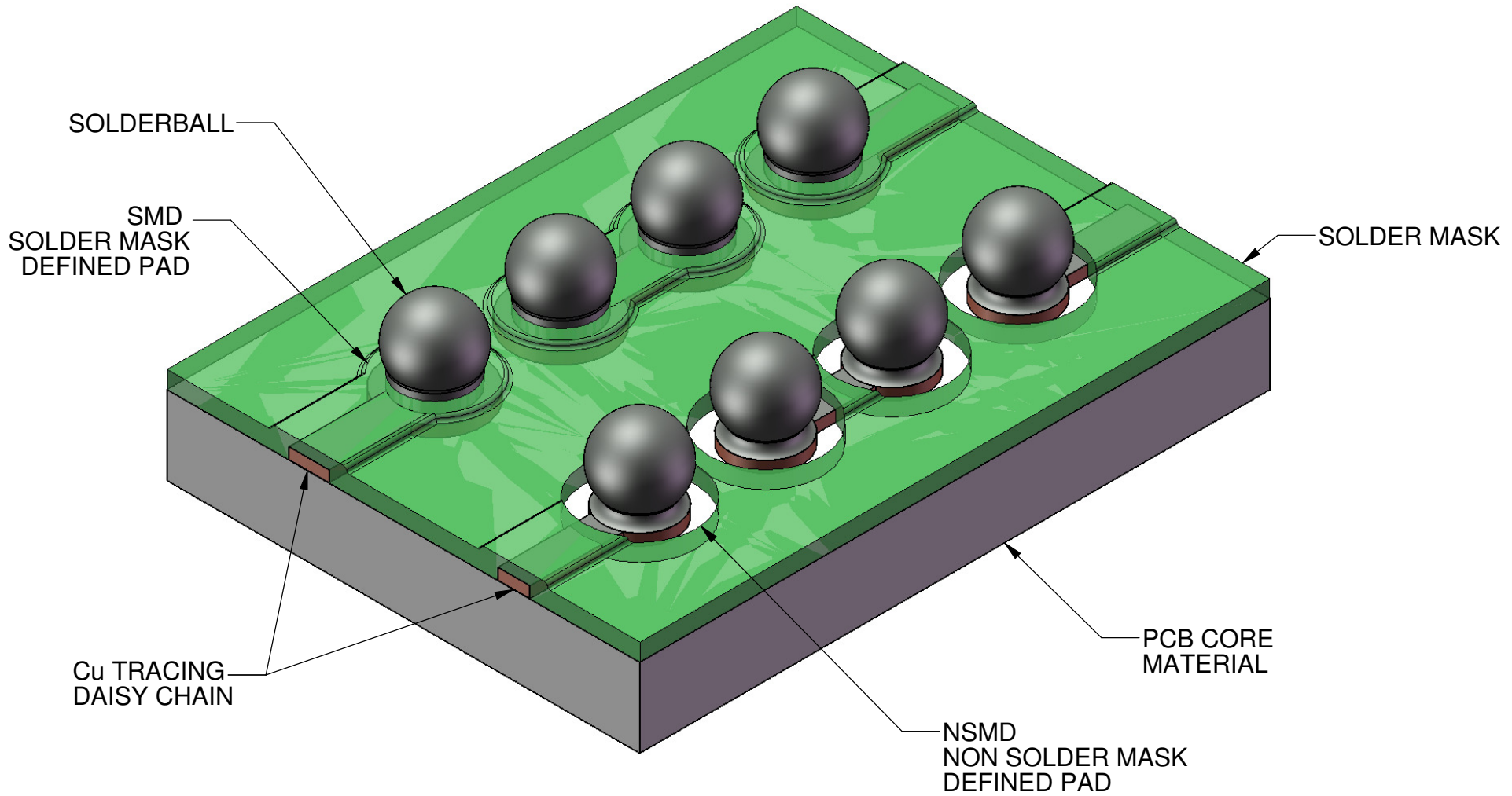
DIMENSION TABLE			SMD PADS			NSMD PADS		
			S1	D1	T1	S2	D2	T2
PITCH	BALL DIAMETER BEFORE REFLOW		MASK OPENING	Cu PAD DIA	Cu TRACE MAX	MASK OPENING	Cu PAD DIA	Cu TRACE MAX
1.5mm	0.76mm	30mil	24mil	32mil	10mil	30mil	25mil	8mil
1.27mm	0.76mm	30mil	24mil	32mil	10mil	30mil	25mil	8mil
1.00mm	0.635mm	25mil	20mil	25mil	8mil	25mil	20mil	6mil
1.00mm	0.50mm	19.7mil	16mil	22mil	8mil	23mil	18mil	6mil
0.80mm	0.50mm	19.7mil	16mil	22mil	6mil	23mil	18mil	5mil
0.80mm	0.45mm	17.7mil	14mil	20mil	6mil	21mil	16mil	5mil
0.80mm	0.40mm	15.7mil	13mil	16mil	6mil	20mil	14mil	5mil
0.75mm	0.35mm	13.8mil	11mil	16mil	5mil	18mil	12mil	4mil
0.65mm	0.35mm	13.8mil	11mil	16mil	5mil	18mil	12mil	4mil
0.50mm	0.30mm	11.8mil	10mil	14mil	5mil	16mil	10mil	4mil
0.40mm	0.25mm	9.8mil	8mil	12mil	5mil	12mil	8mil	4mil
0.30mm	0.20mm	7.9mil	6mil	9mil	4mil	10mil	6mil	3mil

Notes: (Unless Otherwise Specified).

- 1) PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE. DESIGNERS SHOULD USE THEIR OWN EXPERIENCE.
- 2) CHOICE OF SMD AND NSMD IS DETERMINED BY CUSTOMER.

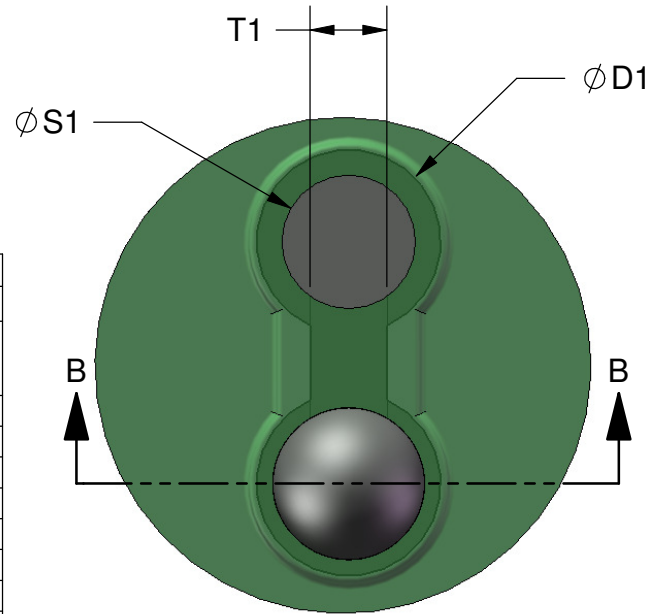
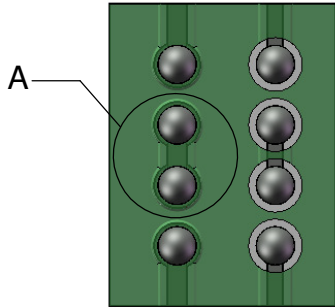
NSMD = NON SOLDER MASK DEFINED PAD.  
SMD = SOLDER MASK DEFINED PAD.

APPROVALS	DATE				
DRAWN J. Hines	10/22/10				
ENG		TITLE BGA SMD AND NSMD LAND PATTERN			
MFG					
QA		SCALE 50:1	SIZE A	DRAWING NO. 504000	REV A
CUST					
REVISED		DO NOT SCALE DRAWING			SHEET 1 OF 4

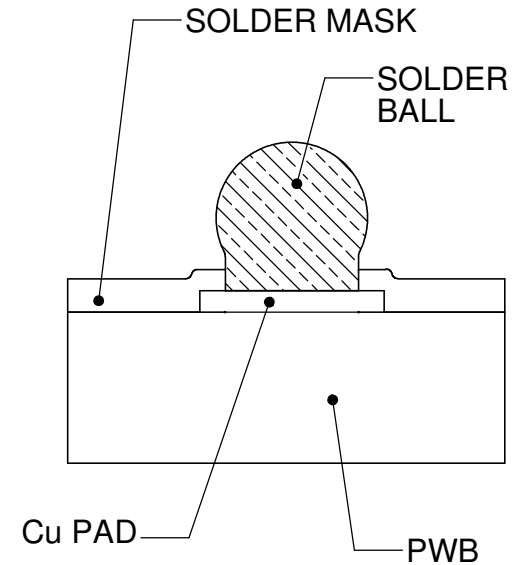


<b>TopLine</b> <sup>®</sup>			
TITLE    BGA SMD AND NSMD LAND PATTERN			
SCALE	SIZE	DRAWING NO.	REV
75:1	A	504000	A
DO NOT SCALE DRAWING			SHEET 2 OF 4

## SMD PCB LAND PATTERN (SOLDER MASK DEFINED PADS)



DETAIL A  
SCALE 80 : 1



SECTION B-B  
SCALE 80 : 1

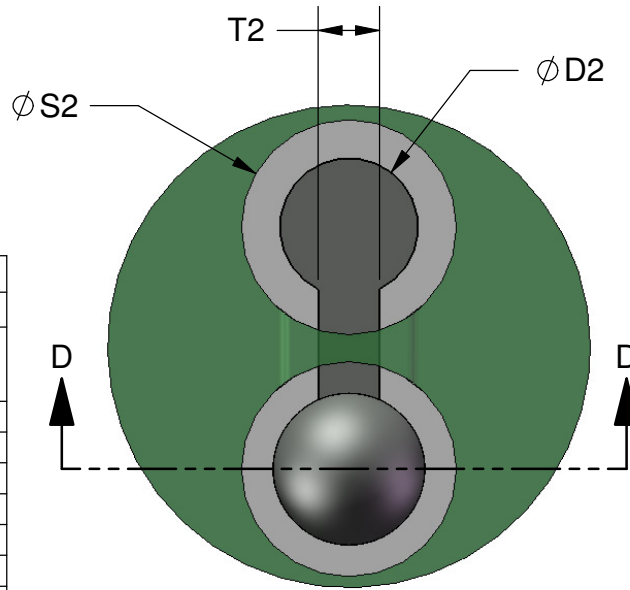
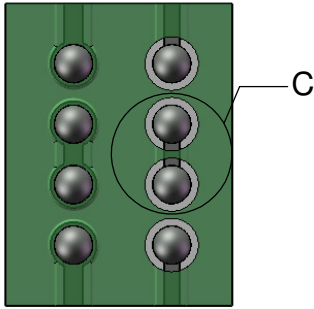
DIMENSION TABLE			SMD PADS					
			S1		D1		T1	
PITCH	BALL DIAMETER		MASK OPENING		Cu PAD DIA		Cu TRACE MAX	
1.5mm	0.76mm	30mil	0.61mm	24mil	0.80mm	32mil	0.25mm	10mil
1.27mm	0.76mm	30mil	0.61mm	24mil	0.80mm	32mil	0.25mm	10mil
1.00mm	0.635mm	25mil	0.51mm	20mil	0.63mm	25mil	0.20mm	8mil
1.00mm	0.50mm	19.7mil	0.40mm	16mil	0.56mm	22mil	0.20mm	8mil
0.80mm	0.50mm	19.7mil	0.40mm	16mil	0.56mm	22mil	0.15mm	6mil
0.80mm	0.45mm	17.7mil	0.36mm	14mil	0.50mm	20mil	0.15mm	6mil
0.80mm	0.40mm	15.7mil	0.32mm	13mil	0.40mm	16mil	0.15mm	6mil
0.75mm	0.35mm	13.8mil	0.28mm	11mil	0.40mm	16mil	0.12mm	5mil
0.65mm	0.35mm	13.8mil	0.28mm	11mil	0.40mm	16mil	0.12mm	5mil
0.50mm	0.30mm	11.8mil	0.24mm	10mil	0.36mm	14mil	0.12mm	5mil
0.40mm	0.25mm	9.8mil	0.20mm	8mil	0.30mm	12mil	0.12mm	5mil
0.30mm	0.20mm	7.9mil	0.15mm	6mil	0.23mm	9mil	0.10mm	4mil

Notes: (Unless Otherwise Specified).

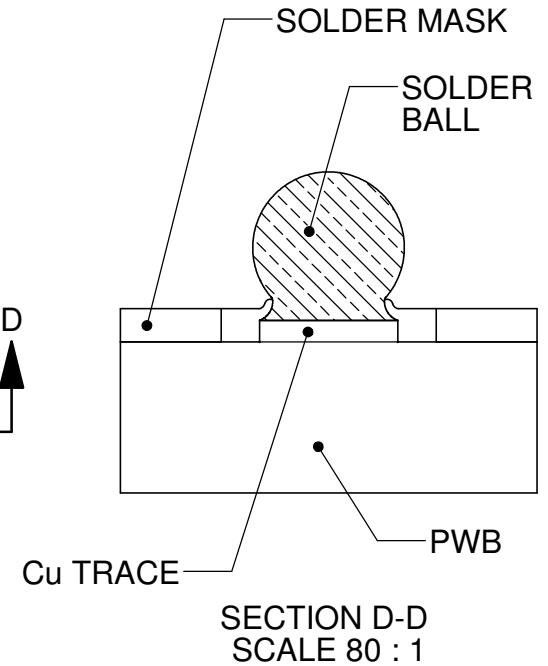
- 1) PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE. DESIGNERS SHOULD USE THEIR OWN EXPERIENCE.

<b>TopLine</b> ®			
TITLE		BGA SMD AND NSMD LAND PATTERN	
SCALE	SIZE	DRAWING NO.	REV
20:1	A	504000	A
DO NOT SCALE DRAWING			SHEET 3 OF 4

## NSMD PCB LAND PATTERN (NON SOLDER MASK DEFINED PADS)



DETAIL C  
SCALE 80 : 1



SECTION D-D  
SCALE 80 : 1

DIMENSION TABLE			NSMD PADS					
			S2		D2		T2	
PITCH	BALL DIAMETER		MASK OPENING		Cu PAD DIA		Cu TRACE MAX	
1.5mm	0.76mm	30mil	0.76mm	30mil	0.63mm	25mil	0.20mm	8mil
1.27mm	0.76mm	30mil	0.76mm	30mil	0.63mm	25mil	0.20mm	8mil
1.00mm	0.635mm	25mil	0.63mm	25mil	0.50mm	20mil	0.15mm	6mil
1.00mm	0.50mm	19.7mil	0.58mm	23mil	0.45mm	18mil	0.15mm	6mil
0.80mm	0.50mm	19.7mil	0.58mm	23mil	0.45mm	18mil	0.12mm	5mil
0.80mm	0.45mm	17.7mil	0.53mm	21mil	0.40mm	16mil	0.12mm	5mil
0.80mm	0.40mm	15.7mil	0.50mm	20mil	0.35mm	14mil	0.12mm	5mil
0.75mm	0.35mm	13.8mil	0.45mm	18mil	0.30mm	12mil	0.10mm	4mil
0.65mm	0.35mm	13.8mil	0.45mm	18mil	0.30mm	12mil	0.10mm	4mil
0.50mm	0.30mm	11.8mil	0.40mm	16mil	0.25mm	10mil	0.10mm	4mil
0.40mm	0.25mm	9.8mil	0.30mm	12mil	0.20mm	8mil	0.10mm	4mil
0.30mm	0.20mm	7.9mil	0.25mm	10mil	0.15mm	6mil	0.07mm	3mil

Notes: (Unless Otherwise Specified).

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DESIGNERS SHOULD USE THEIR OWN EXPERIENCE.

<b>TopLine</b> ®			
TITLE		BGA SMD AND NSMD LAND PATTERN	
SCALE	SIZE	DRAWING NO.	REV
20:1	A	504000	A
DO NOT SCALE DRAWING			SHEET 4 OF 4