

PATENT CLAIMS  18

 12 TERMINAL A1 CORNER INDEX AREA

 15 (4X)

TOP VIEW

 9 A

SIDE VIEW

DETAIL A

 13 SD

DETAIL B

BOTTOM VIEW

 3  7

JEDEC SOLID STATE
PRODUCT OUTLINE
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THIS **REGISTERED OUTLINE** HAS BEEN PREPARED BY THE JEDEC JC-11 COMMITTEE AND REFLECTS A PRODUCT WITH ANTICIPATED USAGE IN THE ELECTRONICS INDUSTRY; CHANGES ARE LIKELY TO OCCUR.

TITLE BALL GRID ARRAY
FAMILY, RECTANGULAR,
1.00 MM PITCH

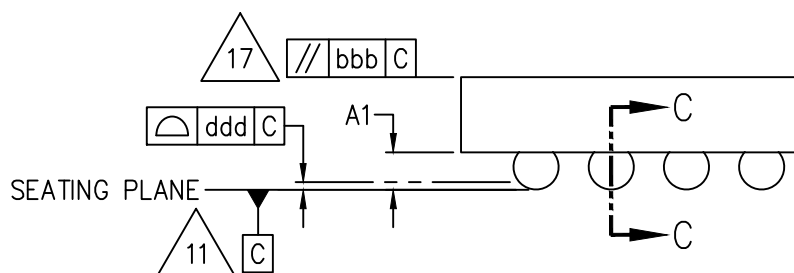
PACKAGE DESIGNATOR
PBGA

NUMBER
MO-234

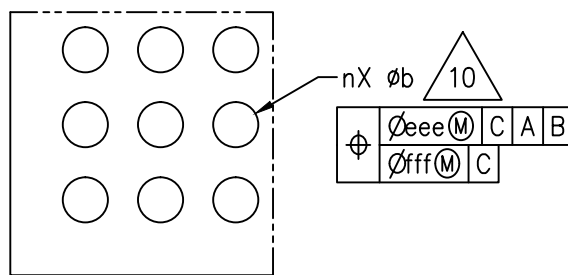
ISSUE


DATE
JAN 2017

SHEET
1 OF 17

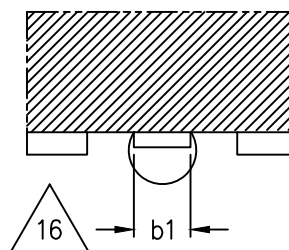
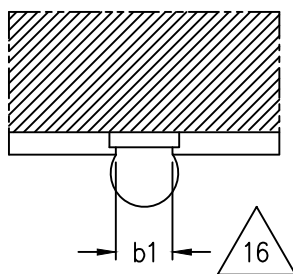
DETAIL A
(ROTATED 90° CW)



DETAIL B

TYPE 1 – SMD
(SOLDER MASK DEFINED)

TYPE 2 – NSMD
(NON SOLDER MASK DEFINED)



SECTION C-C

TABLE 1

COMMON DIMENSIONS							
SYMBOL		P = PACKAGE PROFILE HEIGHT					
		070			080		
		MIN	NOM	MAX	MIN	NOM	MAX
A		> 0.60	---	0.70	> 0.70	---	0.80
A2	b(NOM) = 0.40	---	---	0.49	---	---	0.59
	b(NOM) = 0.45	---	---	0.46	---	---	0.56
	b(NOM) = 0.50	---	---	0.43	---	---	0.53
	b(NOM) = 0.60	---	---	0.40	---	---	0.50
A2(MAX) = A(MAX) - A1		SOLDER BALL SPECIFIC			SOLDER BALL SPECIFIC		
NOTES		1, 2, 9			1, 2, 9		
REF		11-935			11-935		
ISSUE		C			C		

TABLE 1 CONTINUED

COMMON DIMENSIONS							
SYMBOL		P = PACKAGE PROFILE HEIGHT					
		090			100		
		MIN	NOM	MAX	MIN	NOM	MAX
A		> 0.80	---	0.90	> 0.90	---	1.00
A2	b(NOM) = 0.40	---	---	0.69	---	---	0.79
	b(NOM) = 0.45	---	---	0.66	---	---	0.76
	b(NOM) = 0.50	---	---	0.63	---	---	0.73
	b(NOM) = 0.60	---	---	0.60	---	---	0.70
A2(MAX) = A(MAX) - A1		SOLDER BALL SPECIFIC			SOLDER BALL SPECIFIC		
NOTES		1, 2, 9			1, 2, 9		
REF		11-935			11-935		
ISSUE		C			C		

TABLE 1 CONTINUED

COMMON DIMENSIONS							
SYMBOL		P = PACKAGE PROFILE HEIGHT					
		110			120		
		MIN	NOM	MAX	MIN	NOM	MAX
A		> 1.00	---	1.10	> 1.10	---	1.20
A2	b(NOM) = 0.40	---	---	0.89	---	---	0.99
	b(NOM) = 0.45	---	---	0.86	---	---	0.96
	b(NOM) = 0.50	---	---	0.83	---	---	0.93
	b(NOM) = 0.60	---	---	0.80	---	---	0.90
A2(MAX) = A(MAX) – A1		SOLDER BALL SPECIFIC			SOLDER BALL SPECIFIC		
NOTES		1, 2, 9			1, 2, 9		
REF		11–935			11–935		
ISSUE		C			C		

TABLE 1 CONTINUED

COMMON DIMENSIONS							
SYMBOL		P = PACKAGE PROFILE HEIGHT					
		130			140		
		MIN	NOM	MAX	MIN	NOM	MAX
A		> 1.20	---	1.30	> 1.30	---	1.40
A2	b(NOM) = 0.40	---	---	1.09	---	---	1.19
	b(NOM) = 0.45	---	---	1.06	---	---	1.16
	b(NOM) = 0.50	---	---	1.03	---	---	1.13
	b(NOM) = 0.60	---	---	1.00	---	---	1.10
A2(MAX) = A(MAX) – A1		SOLDER BALL SPECIFIC			SOLDER BALL SPECIFIC		
NOTES		1, 2, 9			1, 2, 9		
REF		11–935			11–935		
ISSUE		C			C		

TABLE 1 CONTINUED

COMMON DIMENSIONS							
SYMBOL		P = PACKAGE PROFILE HEIGHT					
		150			160		
		MIN	NOM	MAX	MIN	NOM	MAX
A		> 1.40	---	1.50	> 1.50	---	1.60
A2	b(NOM) = 0.40	---	---	1.29	---	---	1.39
	b(NOM) = 0.45	---	---	1.26	---	---	1.36
	b(NOM) = 0.50	---	---	1.23	---	---	1.33
	b(NOM) = 0.60	---	---	1.20	---	---	1.30
A2(MAX) = A(MAX) - A1		SOLDER BALL SPECIFIC			SOLDER BALL SPECIFIC		
NOTES		1, 2, 9			1, 2, 9		
REF		11-935			11-935		
ISSUE		C			C		

TABLE 1 CONTINUED

COMMON DIMENSIONS							
SYMBOL		P = PACKAGE PROFILE HEIGHT					
		170			180		
		MIN	NOM	MAX	MIN	NOM	MAX
A		> 1.60	---	1.70	> 1.70	---	1.80
A2	b(NOM) = 0.40	---	---	1.49	---	---	1.59
	b(NOM) = 0.45	---	---	1.46	---	---	1.56
	b(NOM) = 0.50	---	---	1.43	---	---	1.53
	b(NOM) = 0.60	---	---	1.40	---	---	1.50
A2(MAX) = A(MAX) – A1		SOLDER BALL SPECIFIC			SOLDER BALL SPECIFIC		
NOTES		1, 2, 9			1, 2, 9		
REF		11–935			11–935		
ISSUE		C			C		

TABLE 2

COMMON DIMENSIONS							
SYMBOL		(b) SOLDER BALL DIA					
		MIN	NOM	MAX	MIN	NOM	MAX
A1		0.21	----	----	0.24	----	----
b		0.35	0.40	0.45	0.40	0.45	0.50
b1	TYPE1	0.30	----	----	0.35	----	----
	TYPE2	0.25	----	----	0.30	----	----
e		1.00 BASIC					
NOTES		1, 2			1, 2		
REF		11-935			11-935		
ISSUE		C			C		

TABLE 2 CONTINUED

COMMON DIMENSIONS							
SYMBOL		(b) SOLDER BALL DIA					
		MIN	NOM	MAX	MIN	NOM	MAX
A1		0.27	---	---	0.30	---	---
b		0.45	0.50	0.55	0.50	0.60	0.70
b1	TYPE1	0.40	---	---	0.45	---	---
	TYPE2	0.35	---	---	0.50	---	---
e		1.00 BASIC					
NOTES		1, 2			1, 2		
REF		11-935			11-935		
ISSUE		C			C		