

FIGURE 1 14

JEDEC
SOLID STATE PRODUCT
OUTLINES

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
VERY THIN FINE PITCH
PLASTIC QUAD FLAT PACKAGE,
DUAL ROW, 2.00 mm FOOTPRINT,

JESD-30 DESIGNATOR
HVF-PQFP

ISSUE
C

DATE
APRIL 2010

MO-292

PAGE
1
OF
8

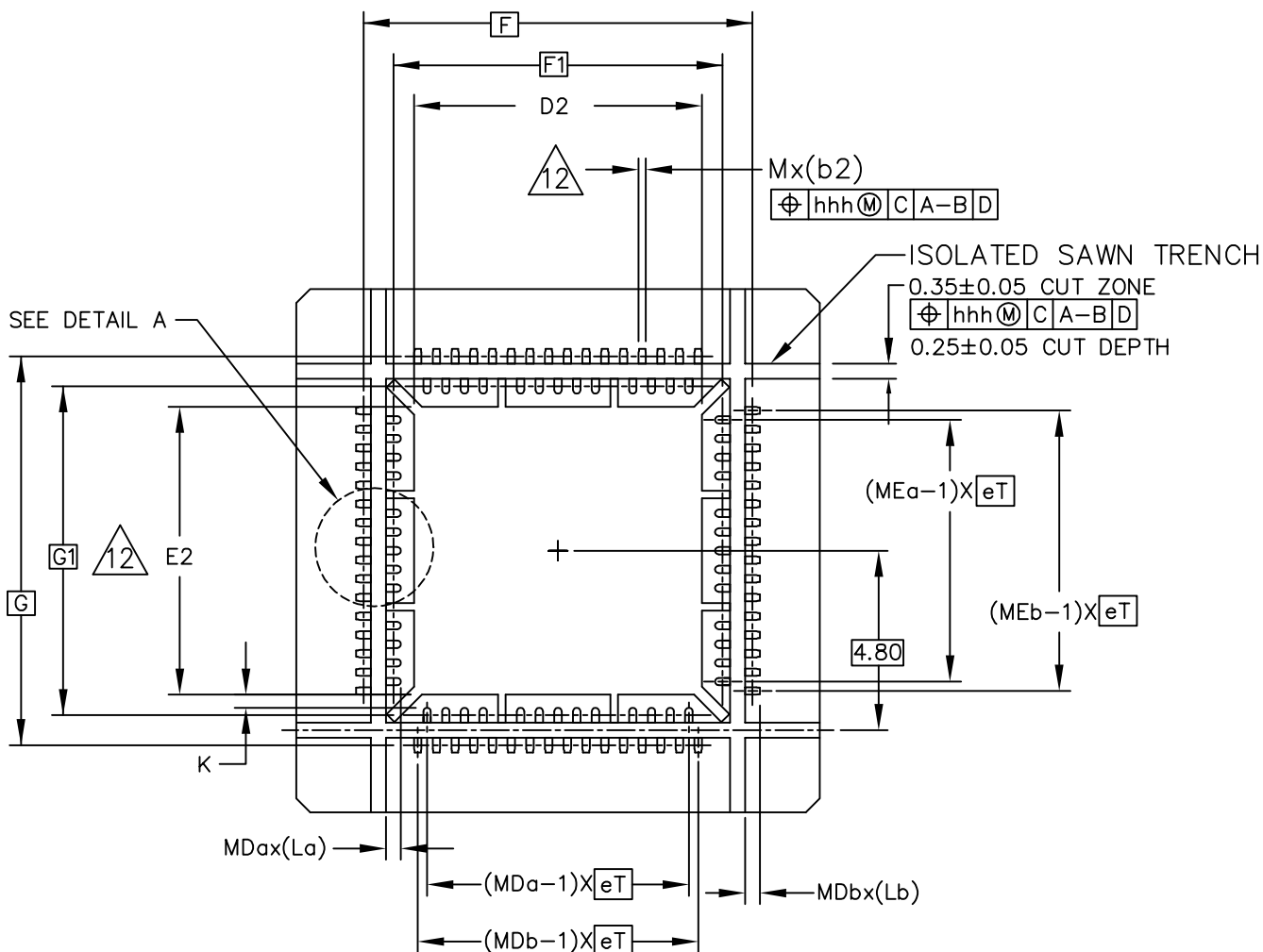
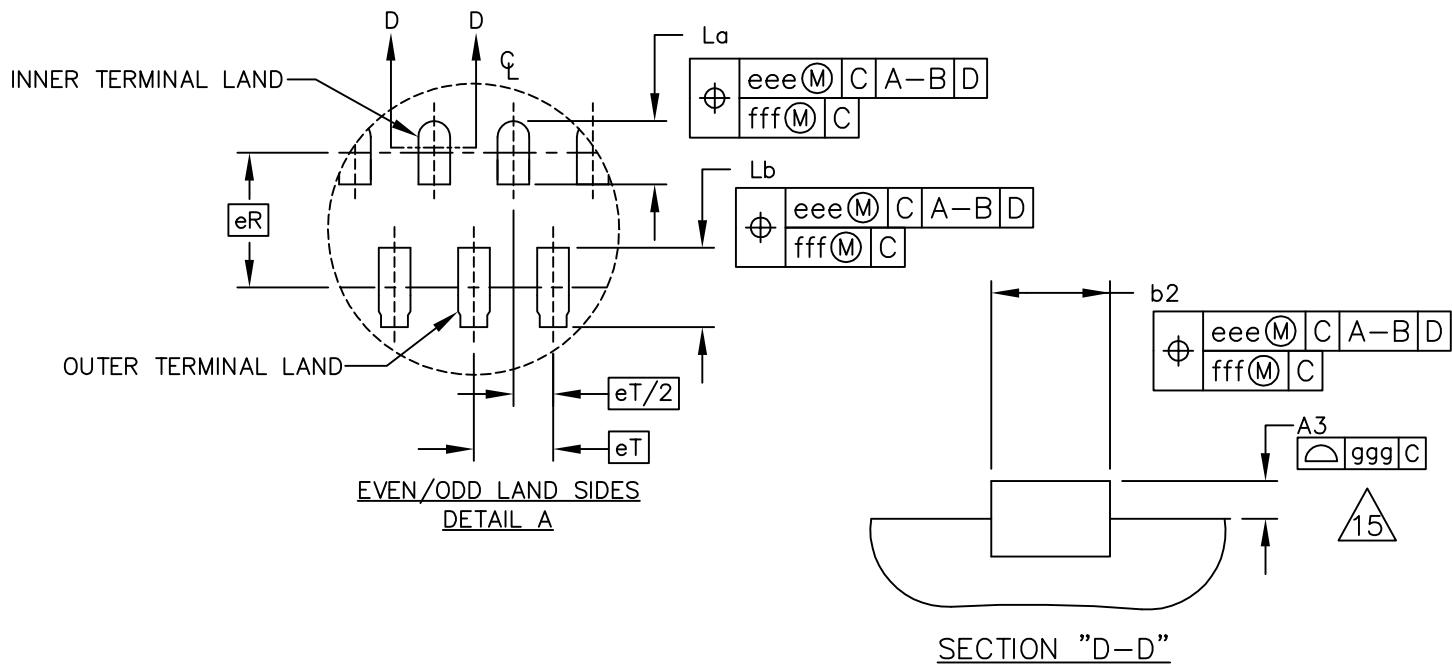
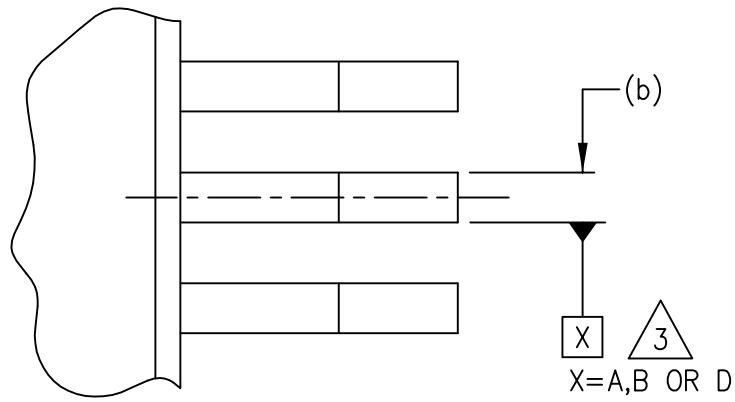
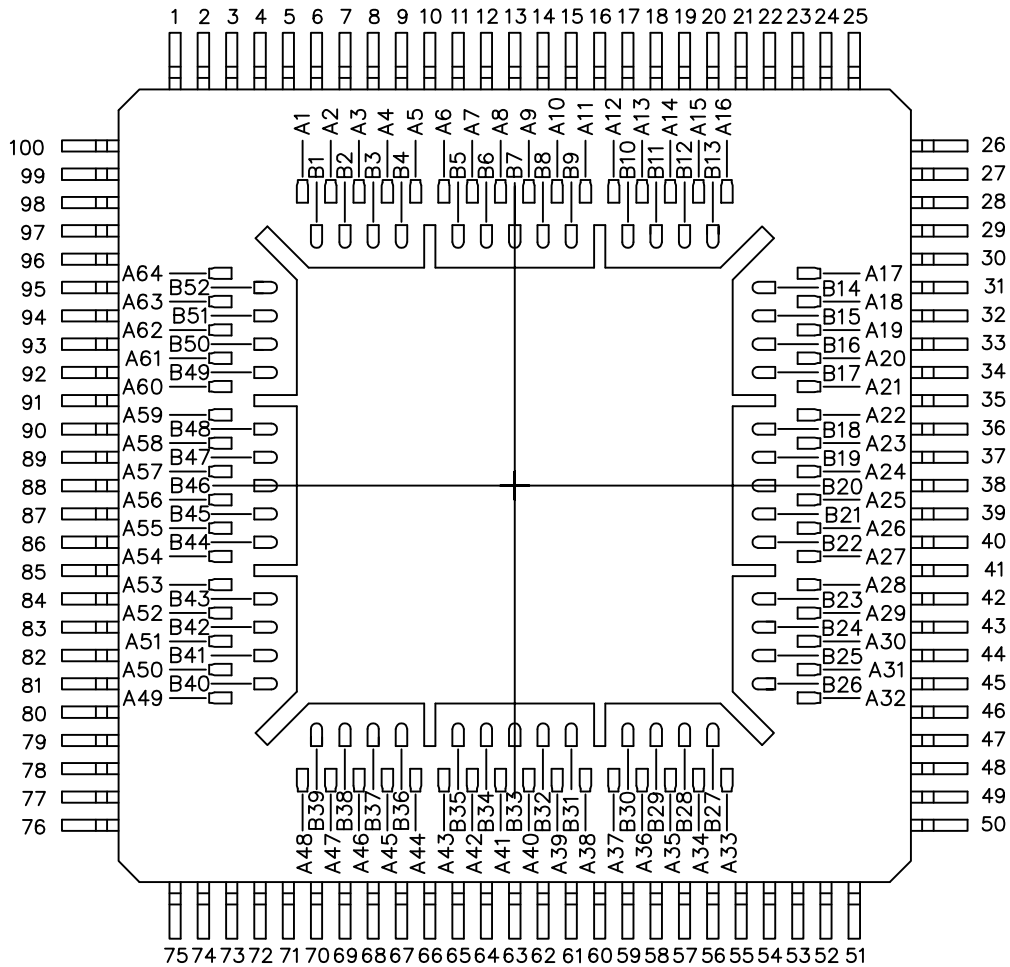


FIGURE 2 (GULLWINGS REMOVED FOR CLARITY)



ODD LEAD SIDES
TOP VIEW
FIGURE 5



LEAD NUMBERING
FIGURE 6

SYMBOL	COMMON DIMENSIONS			NOTE
	MIN.	NOM.	MAX.	
θ	0°	3.5°	7°	
$\theta 1$	0°	—	—	
$\theta 2$	11°	12°	13°	
$\theta 3$	11°	12°	13°	
A	—	—	1.00	
A1	0.00	—	0.10	
A2	0.75	0.80	0.85	
A3	0.00	0.01	0.05	
C	0.09	—	0.20	10
C1	0.09	—	0.16	10
L	0.45	0.60	0.75	
L1	1.00 REF			
K	0.20	—	—	
R1	0.08	—	—	
R2	0.08	—	0.20	
S	0.20	—	—	
TOLERANCES OF FORM AND POSITION				
aaa	0.20			
bbb	0.20			
ccc	0.08			
ddd	0.08			
eee	0.10			
fff	0.05			
ggg	0.08			
hhh	0.10			
NOTE	1,7			
REF	11–789, 11–806			
ISSUE	B			

TABLE 1

SUMMARY TABLE			
BODY SIZE	PITCH	LEAD COUNT	0.80 mm THK BODY HVF-PQFP
14 X 14	0.50	100	AA

TABLE 2

VARIATIONS				
SYMBOL	AA			NOTE
	MIN.	NOM.	MAX.	
b	0.17	0.22	0.27	8,10
b1	0.17	0.20	0.23	10
b2	0.17	0.22	0.27	10
D	16.00 BSC			4
D1	14.00 BSC			5,2
D2	SEE EXPOSED PAD VARIATION			12
e	0.50 BSC			
E	16.00 BSC			4
E1	14.00 BSC			5,2
E2	SEE EXPOSED PAD VARIATION			12
F	10.40 BSC			
F1	8.80 BSC			
G	10.40 BSC			
G1	8.80 BSC			
N	100			
M	116			
eT	0.50 BSC			
eR	0.80 BSC			
MDa	13			
MDb	16			
MEa	13			
MEb	16			
La	0.30	0.40	0.50	
Lb	0.30	0.40	0.50	
NOTE	1,7			
REF	11-789, 11-806			
ISSUE	B			

TABLE 3

JEDEC SOLID STATE PRODUCT OUTLINES	TITLE VERY THIN FINE PITCH PLASTIC QUAD FLAT PACKAGE, DUAL ROW, 2.00 mm FOOTPRINT	ISSUE C	DATE APRIL 2010	MO-292	PAGE
					6 OF 8

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M–1994.

2 THE TOP PACKAGE BODY SIZE MAY BE SMALLER THAN THE BOTTOM PACKAGE SIZE BY AS MUCH AS 0.15 mm.

3 DATUMS A,B AND D TO BE DETERMINED AT DATUM PLANE H.

4 TO BE DETERMINED AT SEATING PLANE C.

5 DIMENSIONS D1 AND E1 DO NOT INCLUDE MOLD PROTRUSIONS. ALLOWABLE PROTRUSION IS 0.25 mm PER SIDE. D1 AND E1 ARE MAXIMUM PLASTIC BODY SIZE DIMENSIONS INCLUDING MOLD MISMATCH. D1 AND E1 SHALL BE DETERMINED AT DATUM PLANE H.

6 DETAILS OF PIN 1 IDENTIFIER ARE OPTIONAL BUT MUST BE LOCATED WITHIN THE ZONE INDICATED.

7. ALL DIMENSIONS ARE IN MILLIMETERS.

8 DIMENSION b DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL NOT CAUSE THE LEAD WIDTH TO EXCEED THE MAXIMUM b DIMENSION BY MORE THAN 0.08 mm. DAMBAR CANNOT BE LOCATED ON THE LOWER RADIUS OR THE FOOT. MINIMUM SPACE BETWEEN PROTRUSION AND AN ADJACENT LEAD IS 0.07 mm FOR 0.4 mm AND 0.5 mm PITCH PACKAGES.

9 EXACT SHAPE OF EACH CORNER IS OPTIONAL.

10 THESE DIMENSIONS APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN 0.10 mm AND 0.25 mm FROM THE LEAD TIP.

11 A1 IS DEFINED AS THE DISTANCE FROM THE SEATING PLANE TO THE LOWEST POINT ON THE PACKAGE BODY.

12 DIMENSION D2 AND E2 SHOW THE OPTIONAL EXPOSED HEAT FEATURE. THE SIZE OF THE EXPOSED HEAT SLUG IS VARIABLE, DEPENDING ON DEVICE FUNCTION (DIE SIZE). END USERS SHOULD VERIFY THE ACTUAL SIZE OF THE THERMAL PAD FOR SPECIFIC DEVICE APPLICATION.

13 THIS FEATURE'S LENGTH WILL BE DETERMINED AT MANUFACTURING

14 VARIOUS COMPANIES HAVE ISSUED PATENTS AND RELATED PATENT APPLICATIONS THAT MAY APPLY TO THIS REGISTRATION. IF THE CURRENT ISSUE PATENTS OR LATER PATENTS RESULTING FROM RELATED APPLICATIONS DO APPLY, THESE COMPANIES INTEND TO COMPLY WITH THE JEDEC PATENT POLICY AND LICENSE UNDER REASONABLE TERMS AND CONDITIONS THAT ARE DEMONSTRABLY FREE OF ANY UNFAIR DISCRIMINATION. REFERENCED PATENTS AS FOLLOWS:

AMKOR TECHNOLOGY	US 6818973
	US 7211471

15 UNILATERAL COPLANARITY ZONE APPLIES TO THE EXPOSED HEAT SINK SLUG AS WELL AS THE TERMINALS.

JEDEC SOLID STATE PRODUCT OUTLINES	TITLE VERY THIN FINE PITCH PLASTIC QUAD FLAT PACKAGE, DUAL ROW, 2.00 mm FOOTPRINT	ISSUE C	DATE APRIL 2010	MO–292	PAGE 7 OF 8
--	--	----------------	------------------------	--------	----------------------

Change Record

If the changes involves any words added or deleted (excluding deletion of accidentally repeated words), the change is included. Punctuation changes may or may not be included.

Initial Issue:	Date:	Item: ISSUE
A	APRIL 2008	11-789

Revision History:

Issue: B	Date: OCTOBER 2008	Item: 11-806
----------	--------------------	--------------

Location	Change from:	Change to:
Page 1	No numbering for lands	Added numbering for lands
Page 2	No dimension for lands	Added dimensions for lands
Page 6	No call out for F, F1 and G, G1	Added call out for F, F1 and G, G1 to table
Page 2	Reference dimension on b2	Removed reference on b2
Page 2	No composite positional on b2	Add composite positional on b2
Page 2	No positional tolerance to width dimension on sawn trench	Add positional tolerance to width dimension on sawn trench
Page 2	Reference dimension on La Lb	Removed reference on La Lb
Page 4	Pin 1 numbering lower right	Pin 1 numbering upper left
Page 7	Period on note 15	Removed period on note 15

Issue: C	Date: APRIL 2010	Item: 11-824
----------	------------------	--------------

Location	Change from:	Change to:
Page 2	TRENCH DIMENSION: 3.50	TRENCH DIMENSION: 4.80

Issue:	Date:	Item:
--------	-------	-------