Standard of Electronic Industries Association of Japan

EIAJ ED-7311-12

Standard of integrated circuits package
(52pins 64pins 80pins and 100pins Low-profile Quad Flat Package with Exposed Heatsink)

Established in August, 1998

Prepared by

Technical Standardization Committee on Semiconductor Device Package

Published by

Electronic Industries Association of Japan

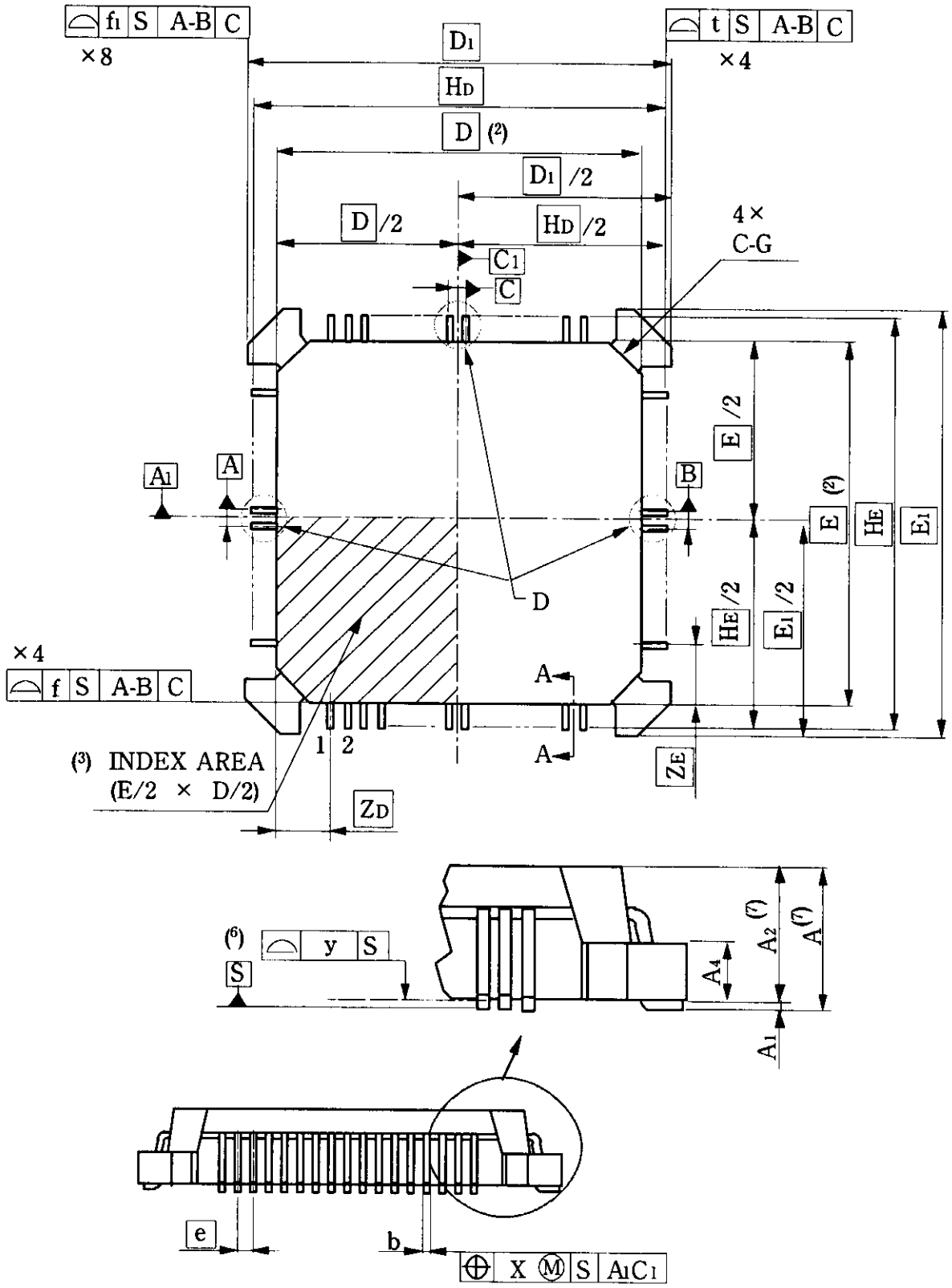
5-13, Nishi-shinbashi 1-chome, Minato-ku, Tokyo 105-0003, Japan

Printed in Japan

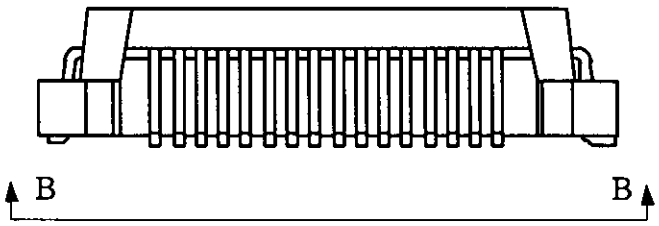
登録一覧表　REGISTRATION TABLE
パッケージ名称：　HLQFP
Package Name
登録番号：　IC - 0000- xxx
Registration No.

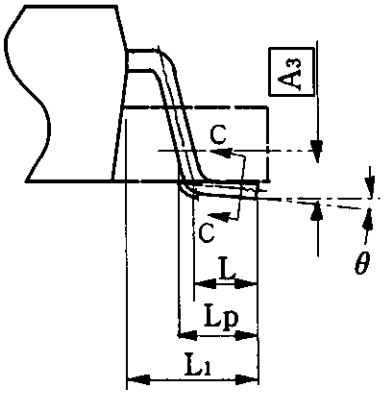
呼び寸法 Nominal dimensions E × D		端子直線間隔 e Terminal Pitch e	
		0.65	0.5
	14×14	52 - 001 - AD	80 - 001 - AB
		64 - 001 - AC	100 - 001 - AA

	EIAJ STANDARD PACKAGE OUTLINE DRAWINGS	DATE 98-4-23	SHEET 1 / 10
PACKAGE NAME HLQFP		EIAJ REGISTRATION NO. IC-0000-001	

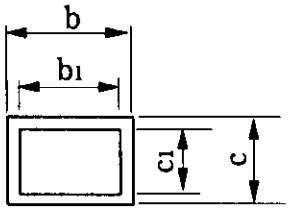


	EIAJ STANDARD PACKAGE OUTLINE DRAWINGS	DATE 98-4-23	SHEET 2/10
PACKAGE NAME HLQFP		EIAJ REGISTRATION NO. IC-0000-001	

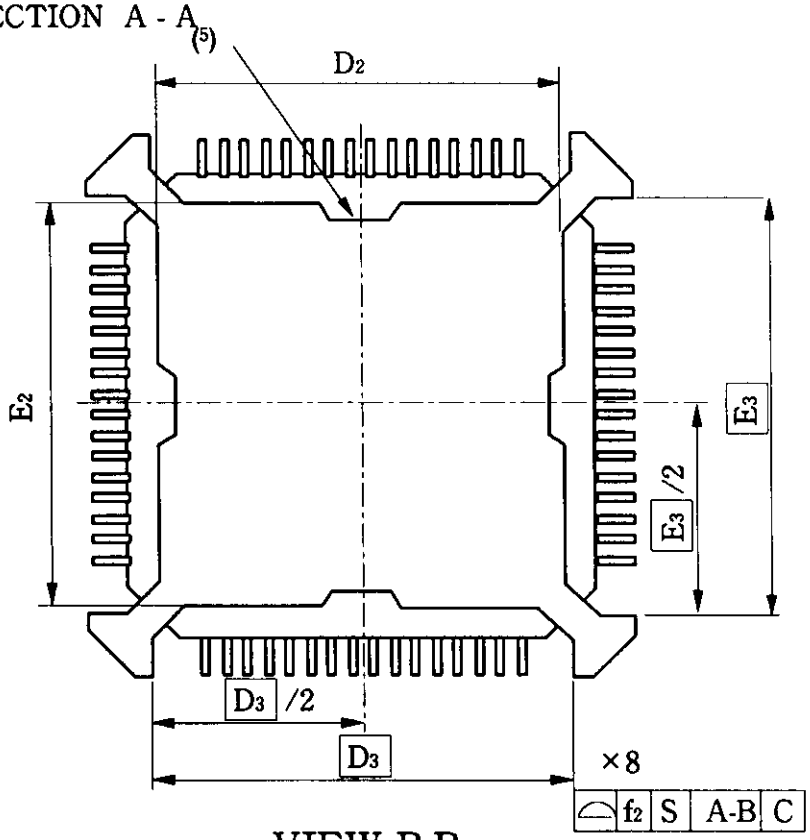




断面 A - A
SECTION A - A

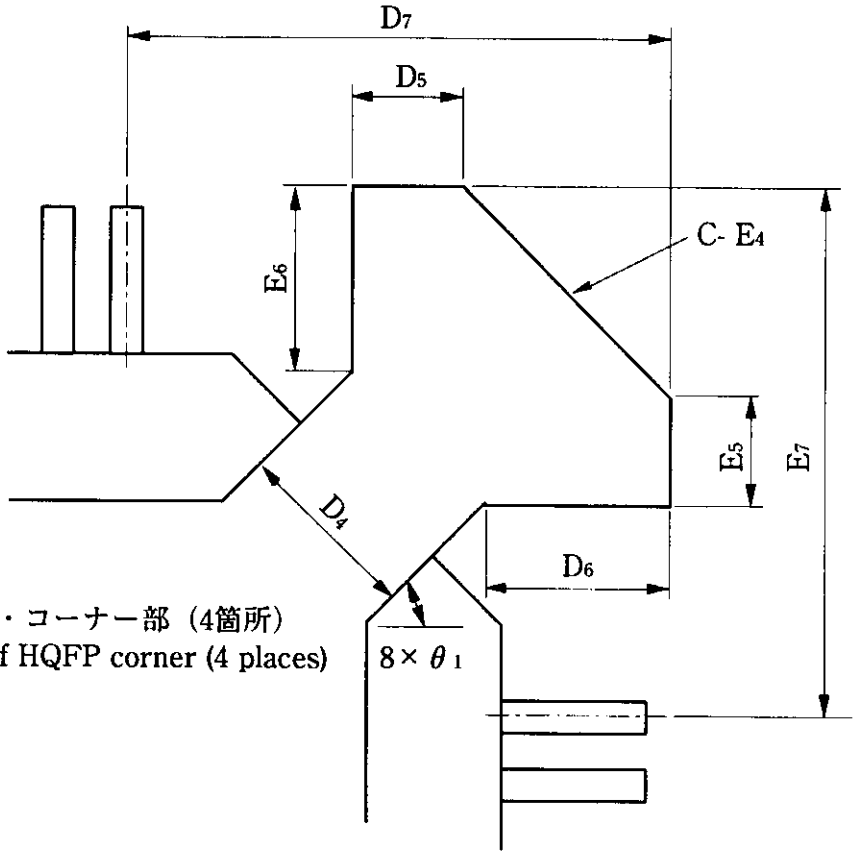


断面 C - C (4)
SECTION C - C



VIEW B-B

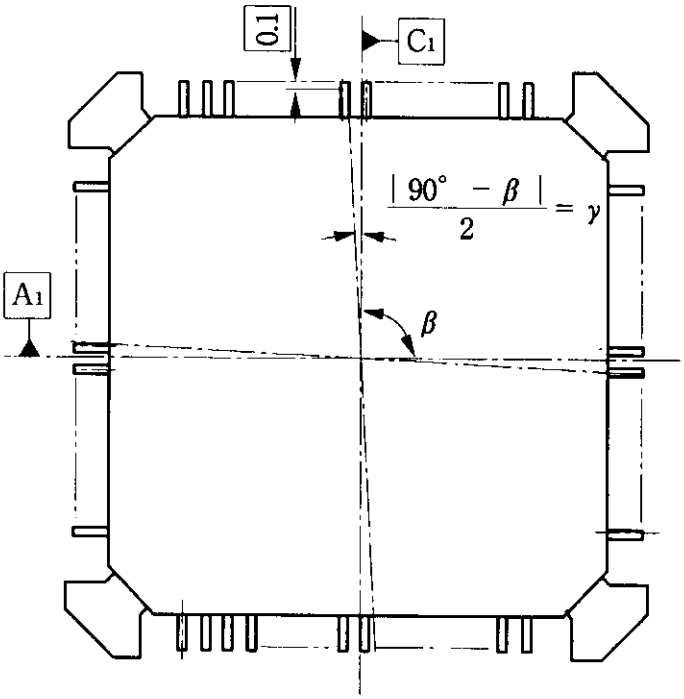
	EIAJ STANDARD PACKAGE OUTLINE DRAWINGS	DATE 98-4-23	SHEET 3 / 10
PACKAGE NAME HLQFP		EIAJ REGISTRATION NO. IC-0000-001	



パッケージ・コーナー部（4箇所）
The parts of HQFP corner (4 places)

端子位置に係わるデータム
Datum of lead option

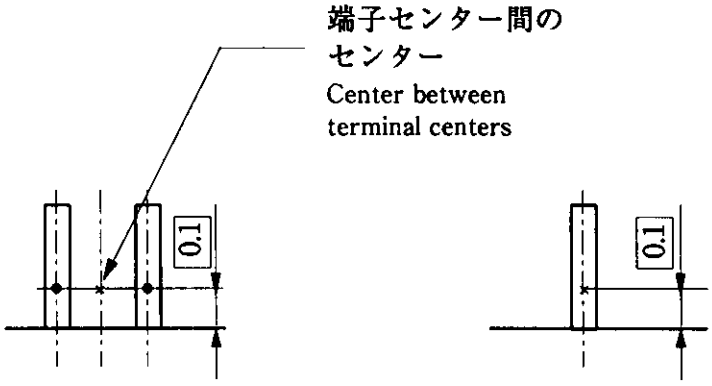
端子位置に係わるデータムについては、下記の定義とする。
The datum of lead position accuracy shall be defined as follow.



各辺の対向するセンタ（定義は下記に記載）をそれぞれ結び、その交錯してなす角度βを求める。そのβと90°の差 |90°－β| を各辺に均等に振り分ける様な直交軸を求める。それをパッケージのデータムラインA1、C1とする。

Centers of opposite side of a package, which are defined below, shall be connected together. An angle β subtended by the two crossing lines, shall be obtain a orthogonal axis.
The revtangular axis are depicted as datum lines A1 and C1 of the packages.

	EIAJ STANDARD PACKAGE OUTLINE DRAWINGS	DATE 98-4-23	SHEET 4 / 10
PACKAGE NAME HLQFP		EIAJ REGISTRATION NO. IC-0000-001	



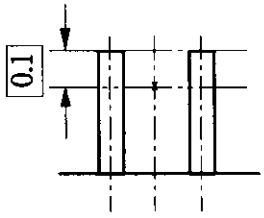
一辺当り偶数の場合
In the case of even number for one side

一辺当り奇数の場合
In the case of odd number for one side

詳細図　D（データムターゲット）
Detailed Drawing D

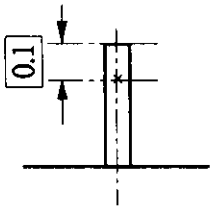
各辺のセンタの定義
Definition of the center of each side

一辺のピン数が偶数の場合
When the number of pins on one side is even:



端子先端より0.1mm入った
端子中心間のセンタ
Center between terminal centers
0.1 mm inside from the termina tip

一辺のピン数が奇数の場合
When the number of pins on one side is odd:



端子先端より0.1mm入った場合の
端子のセンタ
Center of the terminal 0.1 mm inside from the terminal tip

	EIAJ STANDARD PACKAGE OUTLINE DRAWINGS	DATE 98-4-23	SHEET 5/10
PACKAGE NAME HLQFP		EIAJ REGISTRATION NO. IC-0000-001	

整理番号 Serial Number		AA			AB		
外形タイプ External Type		H-LQFP-0100-1414-0.50			H-LQFP-0080-1414-0.50		
照合文字 Reference Symbol		min	nom	max	min	nom	max
グループ1 Group1	D		14.0			14.0	
	E		14.0			14.0	
	A_2	1.35	1.40	1.45	1.35	1.40	1.45
	f			0.20			0.20
	H_D		16.0			16.0	
	H_E		16.0			16.0	
	A			1.70			1.70
	A_1	0	0.05	0.10	0	0.05	0.10
	A_3		0.25			0.25	
	Lp	0.45		0.75	0.45		0.75
	b	0.17		0.27	0.17		0.27
	b_1	0.16	0.20	0.24	0.16	0.20	0.24
	c	0.12		0.22	0.12		0.22
	c_1	0.11		0.19	0.11		0.19
	θ	0	3	8	0	3	8
	e		0.50			0.50	
	x			0.08			0.08
	y			0.08			0.08
	t			0.20			0.20
	nD		25			20	
	nE		25			20	
	n		100			80	
	D_1		16.4			16.4	
	E_1		16.4			16.4	
	A_4		0.60			0.60	
	f_1			0.20			0.20
	f_2			0.20			0.20

整理番号 Serial Number		AA			AB		
外形タイプ External Type		H-LQFP-0100-1414-0.50			H-LQFP-0080-1414-0.50		
照合文字 Reference Symbol		min	nom	max	min	nom	max
グループ1 Group1 (8)	D_2	11.0		13.0	11.0		13.0
	E_2	11.0		13.0	11.0		13.0
	$\boxed{D_3}$		13.0			12.2	
	$\boxed{E_3}$		13.0			12.2	
	D_6	1.0		1.2	1.0		1.2
	E_6	1.0		1.2	1.0		1.2
	G		0.60			1.35	
グループ2 Group2	D_4		(0.85)			(1.4)	
	E_4		(1.45)			(1.45)	
	D_5		(0.25)			(0.75)	
	E_5		(0.25)			(0.75)	
	D_7		(2.20)			(3.45)	
	E_7		(2.20)			(3.45)	
	θ_1		(45)			(45)	
	$\boxed{Z_D}$		1.00			2.25	
	$\boxed{Z_E}$		1.00			2.25	
	L		0.5			0.5	
	L_1		1.0			1.0	

整理番号 Serial Number		AC			AD		
外形タイプ External Type		H-LQFP-0064-1414-0.65			H-LQFP-0052-1414-0.65		
照合文字 Reference Symbol		min	nom	max	min	nom	max
グループ1 Group1	D		14.0			14.0	
	E		14.0			14.0	
	A_2	1.35	1.40	1.45	1.35	1.40	1.45
	f			0.20			0.20
	H_D		16.0			16.0	
	H_E		16.0			16.0	
	A			1.70			1.70
	A_1	0	0.05	0.10	0	0.50	1.00
	A_3		0.25			0.25	
	Lp	0.45		0.75	0.45		0.75
	b	0.24		0.40	0.24		0.40
	b_1	0.24	0.30	0.36	0.24	0.30	0.36
	c	0.12		0.22	0.12		0.22
	c_1	0.11		0.19	0.11		0.19
	θ	0	3	8	0	3	8
	e		0.65			0.65	
	x			0.13			0.13
	y			0.10			0.10
	t			0.20			0.20
	nD		16			13	
	nE		16			13	
	n		64			52	
	D_1		16.4			16.4	
	E_1		16.4			16.4	
	A_4		0.60			0.60	
	f_1			0.20			0.20
	f_2			0.20			0.20

整理番号 Serial Number		AC			AD		
外形タイプ External Type		H-LQFP-0064-1414-0.65			H-LQFP-0052-1414-0.65		
照合文字 Reference Symbol		min	nom	max	min	nom	max
グループ1 Group1 (8)	D_2	11.0		13.0	11.0		13.0
	E_2	11.0		13.0	11.0		13.0
	$\boxed{D_3}$		13.0			12.2	
	$\boxed{E_3}$		13.0			12.2	
	D_6	1.0		1.2	1.0		1.2
	E_6	1.0		1.2	1.0		1.2
	G		0.60			1.35	
グループ2 Group2	D_4		(0.85)			(1.4)	
	E_4		(1.45)			(1.45)	
	D_5		(0.25)			(0.75)	
	E_5		(0.25)			(0.75)	
	D_7		(3.30)			(4.30)	
	E_7		(3.30)			(4.30)	
	θ_1		(45)			(45)	
	$\boxed{Z_D}$		2.125			3.1	
	$\boxed{Z_E}$		2.125			3.1	
	L		0.5			0.5	
	L_1		1.0			1.0	

注：

(1) 単位：mm（角度：°）

(2) D,E寸法は上下型ずれ、樹脂バリは含まない。

(3) インデックスマークの許容位置を示す。インデックスマークは、斜線の領域内にその面積の全てが包含されなければならない。

(4) 端子断面の寸法は、端子先端から0.1mmと0.25mmの範囲内に適用する。

(5) ヒートシンク部のはんだ付け部基準面を示し、その形状と寸法は、任意とする。

(6) 各端子平坦部の取り付け面に対する鉛直方向のずれを規定する。

(7) A,A_2寸法は、パッケージの反りを含む。

(8) （ ）内寸法は、参考値とする。

工業所有権について

この個別規格には（株）日立製作所が出願中の特許（特開平8-130273）を含んでいる。

Notes：

(1) All dimensions are in millimeters(angles Iin degrees).

(2) Mismatch of the upper and lower dies and resin burrs are not included.

(3) Indicates the allowable position for the index mark. The index mark must have its entire area included in the hatched area.

(4) The dimensions of the terminal section apply within the area 0.1 mm and 0.25 mm from the terminal tip position.

(5) Stand for standard area of soldered portion of heat sink and exact shape and size of this feature is optional.

(6) Specifies the vertical deviation with respect to the installation surface of the terminal flat portion.

(7) Dimension A and A_2 is included bend of package.

(8) Dimension ( ) is reference value.

Industrial copyright

HITACHI pending patent(Laid open patent8-130273)the general rules for the preparation of standard outline drawings.

COMMITTEE MEMBERS This standard of package was mainly deliberated by the Plastic Package Subcommittee of the Technical Standardization Committee on Semiconductor Device Packages.
The following lists their members.

<Technical Standardization Committee on Semiconductor Device Packages.>

Chairman	Shozo Minamide	SHARP CORPORATION

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