



Standard of Japan Electronics and Information Technology Industries Association

EIAJ ED-7311-21

**Standard of integrated circuits package
(P-HSOP)**

Established in March, 2002

Prepared by

Technical Standardization Committee on Semiconductor Device Package

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Standard of integrated circuits package (P-HSOP)

1. Scope of Application

This standard covers the registered dimensions of the Plastic Small Outline Package with Heat Sink (herein after referred to as P-HSOP), which among the packages classified as form B in the **EIAJ ED-7300** (Recommended practice on Standard for the preparation of outline drawings of semiconductor packages)

Note This standard is created and corresponds to **EIAJ EDR-7326A** (Design guideline of integrated circuits for P-HSOP) established in March 2002. The other relation standards are shown below.

EIAJ EDR-7314A (Design guideline of integrated circuits for P-SSOP) established in January 2002

EIAJ ED-7311-20 (Standard of integrated circuits package P-SSOP) established in January 2002

EIAJ EDR-7320 (Design guideline of integrated circuits for P-SOP) established in December 1998

EIAJ ED-7311-19 (Standard of integrated circuits package P-SOP) established in January 2002

2. Definition of the Technical Terms

The definition of the technical terms used in this standard is in conformity with **EIAJ ED-7300**, and the definition of technical terms appearing a new are given within the text of this standard.

3. BACKGROUND

Recently, Increasingly electronic appliance become smaller and thinner, so It corresponds to smaller and thinner, also has radiation effect which P-HSOP demand is increasing.on such background it is ,P-HSOP was applied terminal straight pitch e is 1.27mm(50mil) which Plastic Small Outline Package (herein after referred to as P-SOP) first. And after that, It is applied Terminal straight pitch e is 1.00mm or less which Plastic Shrink Small Outline Package (herein after referred to as P-SSOP), it also became used of TSSOP, VSSOP. This standard intended to standardize the outer dimensions of P-HSOP and ensure compatibility between products as far as possible for standardization.

4. Definition of P-HSOP

P- HSOP is defined as Form B with L terminal in the item 6, "Outline classification of shapes of semiconductor package " at the **EIAJ ED-7300**, and a package with formed terminals led out of longer side of itself in two directions, whose terminal pitch e is 1.27mm or less, are flat toward the outside of the package body for mounting on print circuits board surface (gull wing shape lead), and the structure

that the part of the lead line becomes a radiation fin shape, and the structure that a heat sink was exposed in the part in the surface of the package mold body.

5. Numbering of Terminals

Numbering of terminals complies with the **EIAJ ED-7300**.

6. Nominal Dimensions

Package width X Package length(Symbol : $\boxed{E} \times \boxed{D}$) is applied to Nominal Dimensions.

However as the exception, old nominal dimensions is possible to use places (side by side) and it writes which Package width (Symbol : E).

7. 照合文字と図面

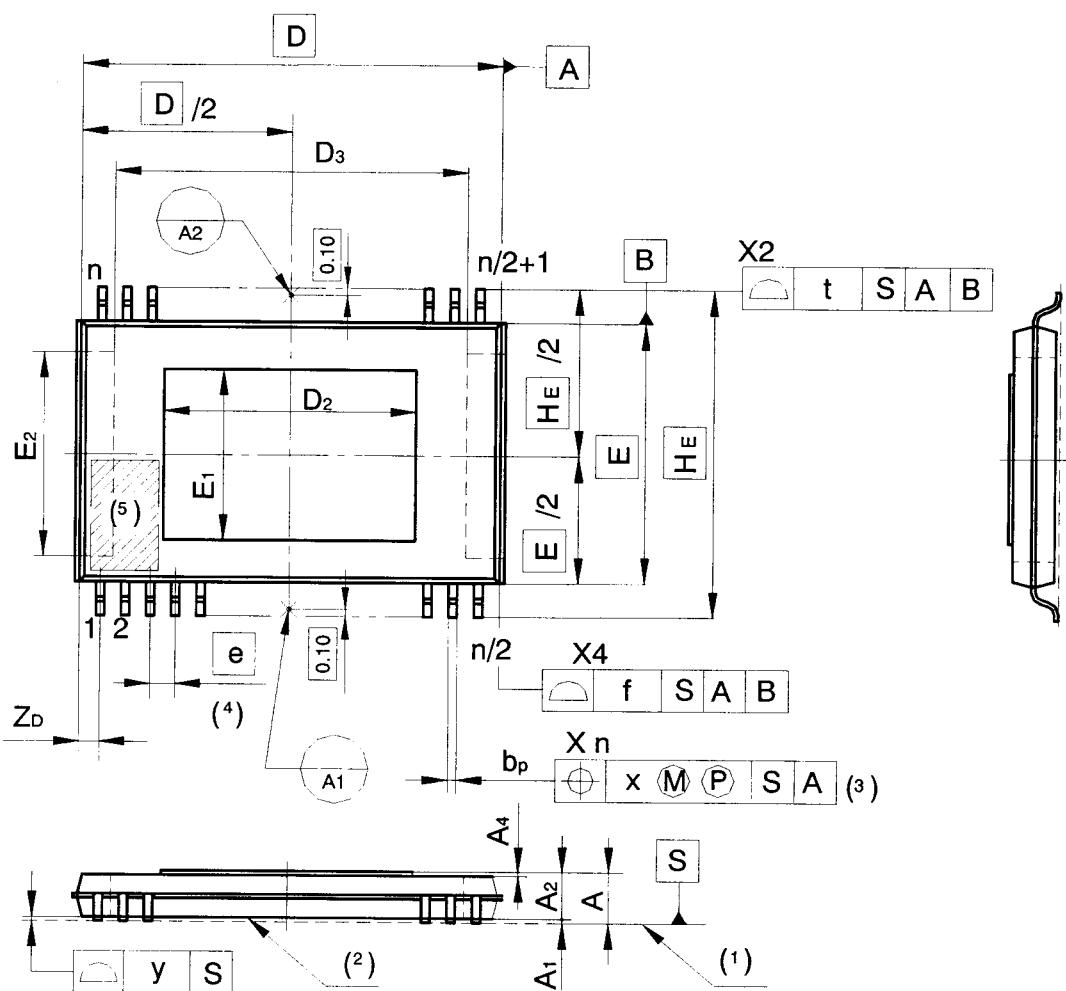
7. REFERENCE CHARACTERS AND DRAWING

7.1 外形図

7.1 Outline Drawing

図1 (Type A, 表面放熱板タイプ)

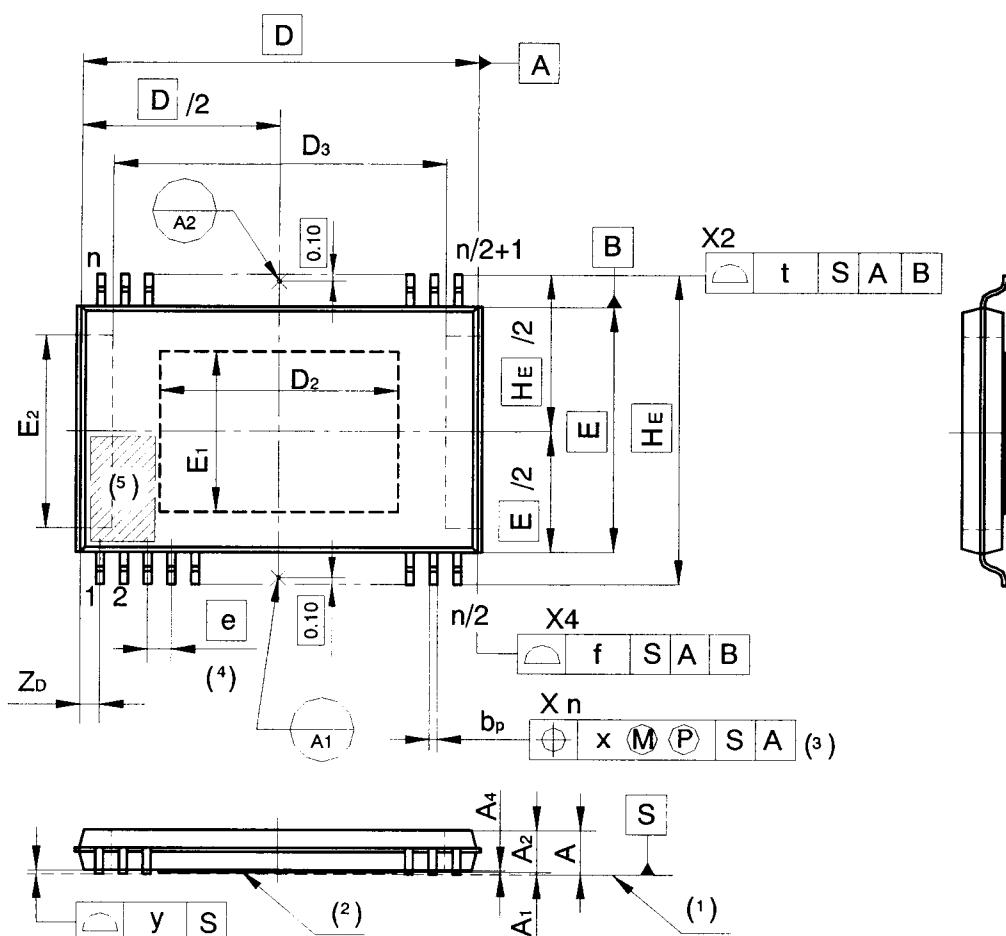
Figure 1 (Type A, Topside heatsink)



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図1 (Type A, 裏面放熱板タイプ)

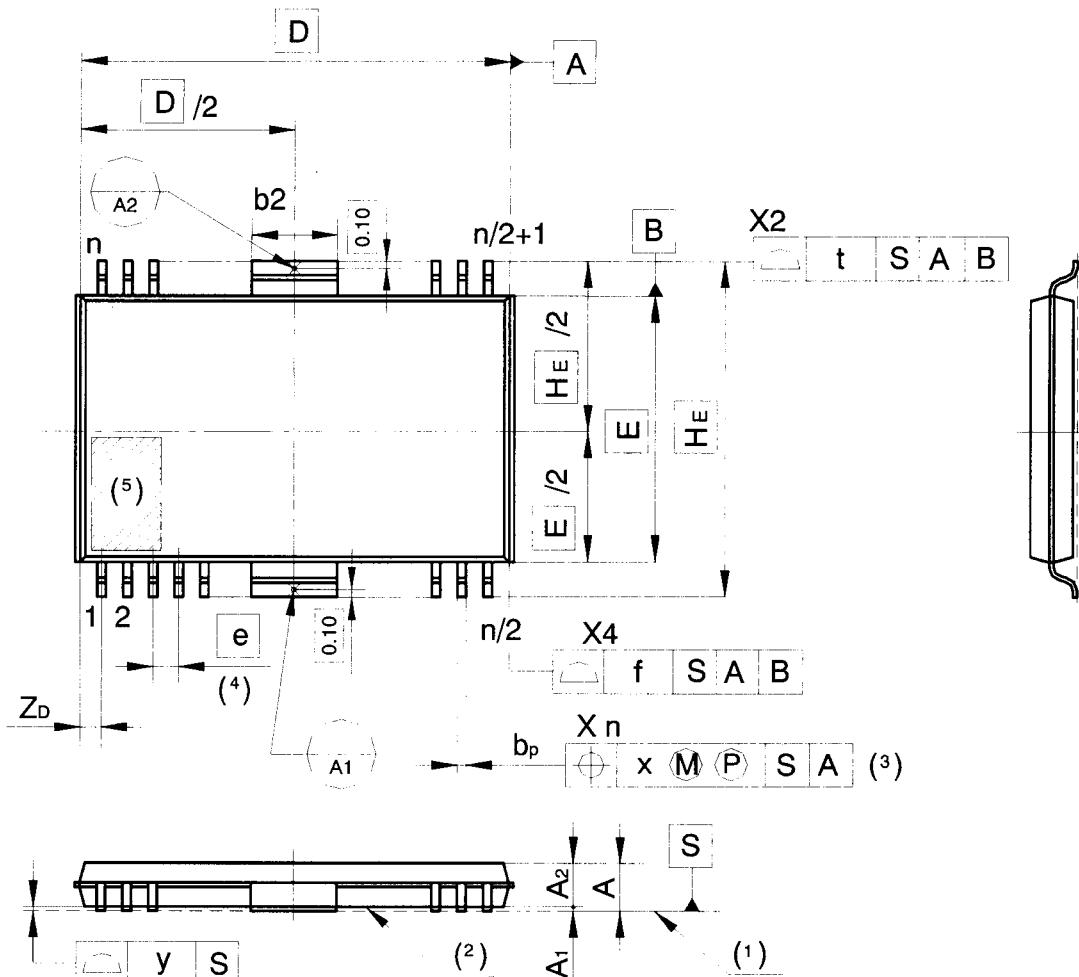
Figure 1 (Type A, Bottomside heatsink)



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図 2 (Type B)

Figure 2 (Type B)



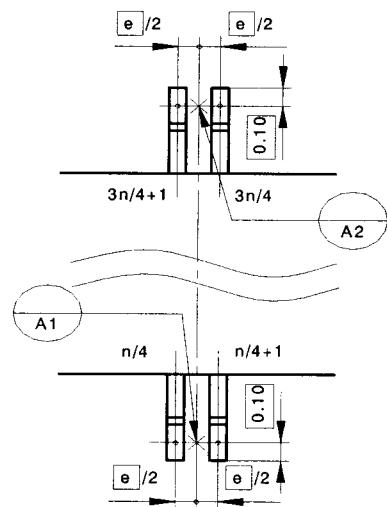
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図3 データムA 詳細図⁽⁹⁾
Figure 3 Detail area of datum A⁽⁹⁾

Type A

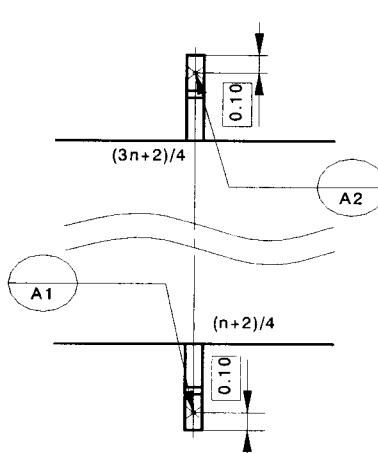
一辺の端子が偶数の場合

For even number of terminals on a package side



一辺の端子が奇数の場合

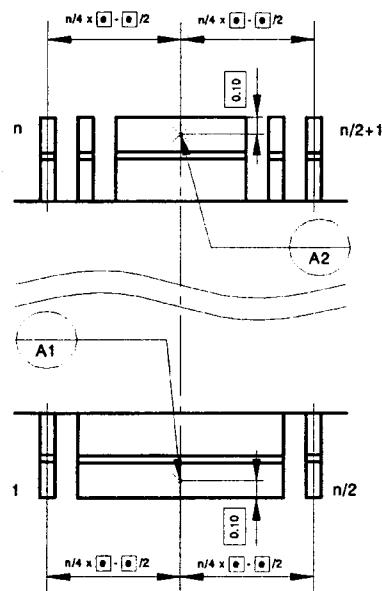
For odd number of terminals on a package side



Type B

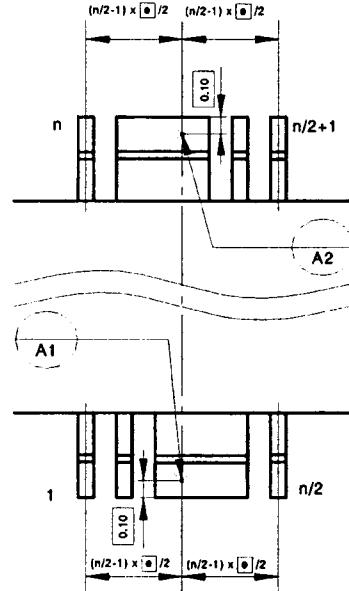
一辺の端子が偶数の場合

For even number of terminals on a package side



一辺の端子が奇数の場合

For odd number of terminals on a package side

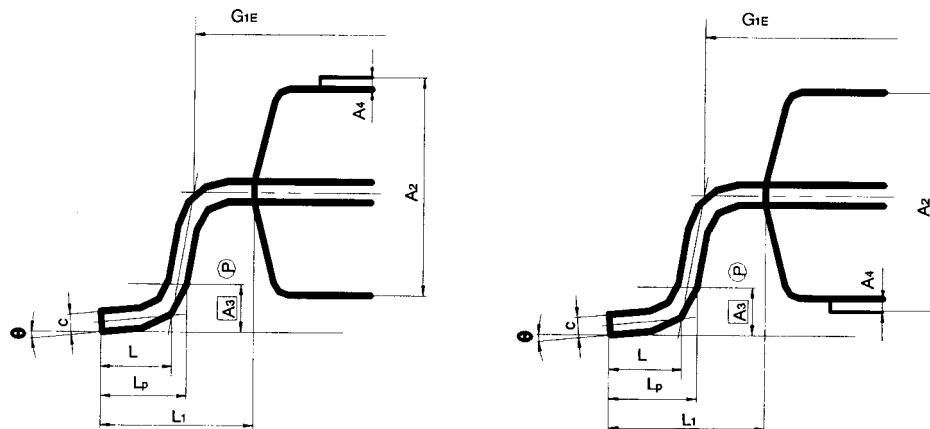


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図4 端子詳細図、断面図

Figure 4 Detail of terminal, terminal cross section

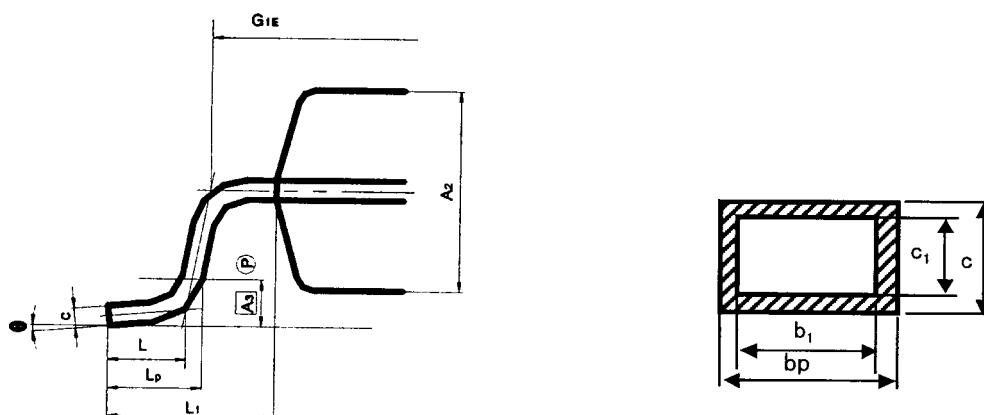
Type A



表面放熱板, TOPSIDE HEATSHIK

裏面放熱板, BOTTOMSIDE HEATSHIK

Type B



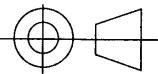
端子断面, Terminal cross section (°)

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- 注(1)** 取付け面を示す。取付け面とは、パッケージを取付ける面に対して、パッケージが接触し合う面である。
- (2)** ベース面を示す。ベース面とは、取付け面に平行な本体の最下点を通る面をいう。
但し、スタンドオフは除く。
- (3)** 最大実体条件(ISO 2692/JIS B 0023参照)は、端子の位置許容値に適用する。
- (4)** 端子の軸の、真の幾何学位置を規定する。
- (5)** 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、IEC規格に準拠し、ボディサイズの1/16を基本とし、ボディサイズが小さい場合でも、パッケージ1/4より少ない面積の斜線領域内にその面積の全てが含まれなければならない。
- (6)** 端子断面の寸法は、端子先端から0.10mm～0.25mmの範囲内に適用する。
- (7)** 樹脂バリ、ゲート残りは、片側 max0.15mmとする。
- (8)** 端子側の樹脂バリは、片側 max0.25mmとする。
- (9)** 向かい合う辺の放熱板が対象でない場合は、データム面がオフセンタとならないように放熱板サイドの対象となる端子を基準端子とする。
- (10)** 放熱板取付け幅(E_2)、放熱板取付け長さ(D_3)は TypeB にのみ適用する。
- (11)** 放熱板の定義
TypeA:放熱板は、封止後にモールド表面又は裏面に露出したもの。
TypeB:放熱板は、ダイパッド部の延長であり、両側リード列部に配置されたもの。

Notes :

- (1)** The mounting surface, with which a package is in contact.
- (2)** The base surface, which is in parallel with the mounting surface and links the lowest point, except the stand-off.
- (3)** The maximum mounting conditions apply to the positional tolerance of the terminals.
(Refer to ISO 2692/JIS B 0023.)
- (4)** Specifies the true geometric position of the terminal axis.
- (5)** Shows the allowable position of the Index mark area, which is based on the IEC standard and basically 1/16 with package body size, however in case of small package body size, it is less than 1/4 with package body size, It must be included in the shaded area entirely.
- (6)** The dimensions of the terminal section apply to the terminal region ranges of 0.10mm and 0.25mm from the end of a terminal.
- (7)** Resin burrs and gate remains of the package sides with no terminals are max.0.15mm per side.
- (8)** Resin burrs of the terminal sides are max.0.25mm per side.
- (9)** In case of the opposite heatsink terminal unbalance position, an object terminal of heatsink side is base terminal, which must not datum side offcenter.
- (10)** The Heat sink mounting width (E_2) and The Heat sink mounting length (D_3) are applicable exclusively to the TypeB outline drawing.
- (11)** Definition of Heat sink
TypeA: Heatsink is exposed at the top or bottom side of the package after molded.
TypeB:Heatsink is an extension of the die pad section, and it is arranged at the lead rows at both sides.

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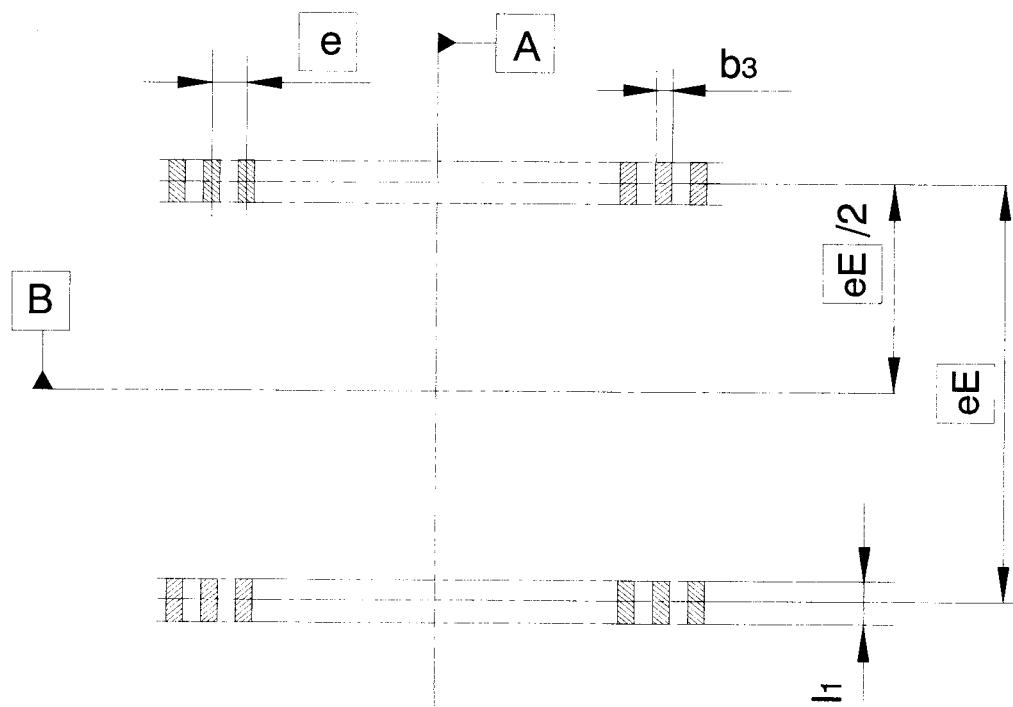
7.2 端子存在範囲 フットパターン設計の参考資料となるよう、端子の存在範囲を図5に示す。

7.2 PATTERN OF TERMINAL AREAS

Pattern of terminal areas can exist is shown **Figure 5** as reference for the foot print design.

図5

Figure 5



$$l_{1\max} = L_{pmax} + t$$

$$b_{3\max} = b_{pmax} + X$$

$$eE = H_E - L_{pnom}$$

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8. 登録一覧表, Registration table

パッケージ名称 (Package name): P-SSOP

8.1 登録番号 (Registration number): IC-7326-001

注 表中の数値は、「(端子数 n) - 001 - (整理番号 4 桁)」を示す。

Note The Numbers in the table indicate, (Terminal number n)-001-(serial number, 4cords)

整理番号表, serial number table

注 表中の数値は、(整理番号)の1桁目、2桁目及び3桁目を示す。4桁目は3桁まで同一のパッケージをアルファベット順に附番。

Note The Numbers in the table indicate, (serial number) of 1st cord , 2nd cord and 3rdcord. The 4th cord is an alphabetical order, which the same until 3rd cord of package.

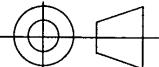
1st,2nd cord

Package width \square			Body height A_2 nom							
Group 1	Group 2	Group 3	2.70	1.70	1.50	1.40	1.20	1.00	0.80	0.60
2.00										
3.00			AA	AB	AC	AD	AE	AF	AG	AF
4.40			BA	BB	BC	BD	BE	BF	BG	BF
5.60			CA	CB	CC	CD	CE	CF	CG	CF
6.10			DA	DB	DC	DD	DE	DF	DG	DF
	7.62		EA	EB	EC	ED	EE	TSOP2	VSOP2	
(8.00)			FA	FB	FC	FD	FE	FF	FG	FF
	8.89		GA	GB	GC	GD	GE	TSOP2	VSOP2	
(9.90)			HA	HB	HC	HD	HE	HF	HG	HF
	10.16		JA	JB	JC	JD	JE	TSOP2	VSOP2	
	11.50		KA	KB	KC	KD	KE			
	13.00		LA	LB	LC	LD	LE			
	14.50		MA	MB	MC	MD	ME			
	16.00		NA	NB	NC	ND	NE			

3rd cord

(terminal pitch e = 1.27 -0.30)

e	3rd
1.27	A
1.00	B
0.80	C
0.65	D
0.50	E
0.40	F
0.30	G

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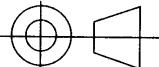
8.2 登録一覧表リスト (List of Registration table)

注 表中の数値は、「(端子数 n) -001-(整理番号 4 桁)」を示す。

Note The Numbers in the table indicate, (Terminal number n)-001-(serial number, 4cords)

Group	E	Terminal pitch E						
		1.27	1.00	0.80	0.65	0.50	0.40	0.30
Group 1	2.00							
	3.00				08-001-AEDA			
	4.40	08-001-BBAA				20-001-BEEA		
	5.60	16-001-CBAA 20-001-CBAA	24-001-CABA 24-001-CABB	30-001-CBCA 30/24-001-CACA 32/25-001-CACA	24-001-CFDA 38-001-CBDA			
	6.10		22/16-001-DABA	34-001-DECA 34-001-DEC B		56-001-DEEA 56-001-DEEB		
	8.00			42/28-001-FACA 42/28-001-FACB 42/36-001-FACA				
	9.90							
	7.62			42/28-001-EACA 42/28-001-EACB 42/36-001-EACA 42/36-001-EACB				
Group 2	8.89	24-001-GAAA 24-001-GAAB	28/20-001-GABA 28-001-GABA 28-001-GABB	40/26-001-GACA	44/36-001-GADA 44/36-001-GADB			
	10.16							
	11.50		44-001-KABA 44-001-KABB	54-001-KACA				
Group 3	13.00		36/24-001-LABA 36/24-001-LABB					
	14.50							
	16.00							

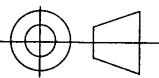
E : Package width

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8. 登録一覧, Registration table

パッケージ名称 (Package name): HTSSOP

旧呼び寸法 (old nominal dimensions): 0030, ピン数 (pin numbers)(n): 08pin

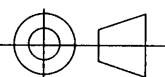
整理番号 Serial Number	08-001-AEDA					
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HTSSOP08-03.00×03.00-0.65 (P-HTSSOP08-0030-0.65)					
照合文字 Symbol	min	nom	max			
D	—	3.00	—			
E	—	3.00	—			
A ₂		0.90				
A ₁	0.00	0.10	0.20			
A	—	—	1.10			
A ₃	—	0.25	—			
b _p	0.20	—	0.40			
b ₁		0.30				
c	0.075	—	0.175			
c ₁		0.125				
θ	0°	—	8°			
H _E	—	4.90	—			
L _p	0.40	0.55	0.70			
e	—	0.65	—			
t	—	—	0.20			
f	—	—	0.10			
x	—	—	0.13			
y	—	—	0.10			
A ₄	—	—	—			
b ₂	—	—	—			
n	—	8	—			
Z _D	—	0.695	—			
L	—	0.50	—			
L ₁	—	0.95	—			
D ₂	—	—	2.00			
D ₃	—	—	—			
E ₁	—	—	1.58			
E ₂	—	—	—			
G _{1E}	—	3.90*	—			
Type	Type A(bottom)					
*:規格外の値(The value out of the standard)						
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PACKAGE NAME P-HSOP				JEITA REGISTRATION NO. IC-7326-001		

パッケージ名称 (Package name):HSOP, HTSSOP

旧呼び寸法 (old nominal dimensions): 0044, ピン数(pin numbers)(n): 08, 20pin

整理番号 Serial Number	08-001-BBAA			20-001-BEEA		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSOP08-05.20×04.40-1.27 (P-HSOP08-0044-1.27)			P-HTSSOP20-05.00×04.40-0.50 (P-HTSSOP20-0044-0.50)		
照合文字 Symbol	min	nom	max	min	nom	max
Group1	D	—	5.20	—	—	5.00
	E	—	4.40	—	—	4.40
	A ₂	—	1.44	—	0.69	0.81
	A ₁	0.00	0.05	0.10	0.01	0.07
	A	—	—	1.70	—	—
	A ₃	—	0.25	—	—	0.25
	b _p	0.35	—	0.50	0.17	0.22
	b ₁	0.35	0.40	0.45	—	—
	c	0.10	—	0.25	0.12	0.145
	c ₁	0.10	0.15	0.20	—	—
	θ	0°	—	8°	0°	—
	H _E	—	6.00	—	—	6.40
	L _p	—	—	—	0.45	—
	e	—	1.27	—	—	0.50
	t	—	—	0.20	—	—
	f	—	—	0.20	—	—
	x	—	—	0.12	—	—
	y	—	—	0.10	—	—
	A ₄	—	—	—	0.00	—
	b ₂	—	—	—	—	—
	n	—	8	—	—	20
Group2	Z _D	—	0.695	—	—	—
	L	—	0.50	—	—	0.50
	L ₁	—	0.80	—	—	1.00
	D ₂	—	—	4.10	—	3.00
	D ₃	—	—	—	—	—
	E ₁	—	—	2.90	—	2.70
	E ₂	—	—	—	—	—
	G _{1E}	—	—	—	—	—
Type	Type A (bottom)			Type A (bottom)		

*:規格外の値(The value out of the standard)

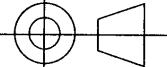
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PACKAGE NAME P-HSOP		JEITA REGISTRATION NO. IC-7326-001	

パッケージ名称 (Package name): HSOP

旧呼び寸法 (old nominal dimensions): 0300, ピン数 (pin numbers)(n): 16, 20pin

整理番号 Serial Number	16-001-CBAA			20-001-CBAA		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSOP16-10.20×05.60-1.27 (P-HSOP16-0300-1.27)			P-HSOP20-12.70×05.60-1.27 (P-HSOP20-0300-1.27)		
照合文字 Symbol	min	nom	max	min	nom	max
D	—	10.20	—	—	12.70	—
E	—	5.60	—	—	5.60	—
A ₂		1.55			1.55	
A ₁	0.00	0.05	0.10	0.00	0.05	0.10
A	—	—	1.80	—	—	1.80
A ₃	—	0.25	—	—	0.25	—
b _p	0.35	—	0.50	0.35	—	0.50
b ₁	0.35	0.40	0.45	0.35	0.40	0.45
c	0.15	—	0.30	0.15	—	0.30
c ₁	0.15	0.20	0.25	0.15	0.20	0.25
θ	0°	—	*10°	0°	—	*10°
H _E	—	7.70	—	—	7.70	—
L _p		—			—	
e	—	1.27	—	—	1.27	—
t	—	—	0.20	—	—	0.20
f	—	—	0.10	—	—	0.10
x	—	—	0.12	—	—	0.12
y	—	—	0.10	—	—	0.10
A ₄	—	—	—	—	—	—
b ₂	—	—	—	—	—	—
n	—	16	—	—	20	—
Z _D	—	0.655	—	—	0.635	—
L	—	0.60	—	—	0.60	—
L ₁	—	1.05	—	—	1.05	—
D ₂	—	—	3.40	—	—	3.50
D ₃	—	—	—	—	—	—
E ₁	—	—	4.00	—	—	6.80
E ₂	—	—	—	—	—	—
G _{1E}	—	—	—	—	—	—
Type	Type A (bottom)			Type A (bottom)		

*:規格外の値(The value out of the standard)

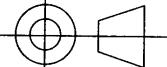
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 12/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0300, ピン数 (pin numbers)(n): 24pin

整理番号 Serial Number	24-001-CABA			24-001-CABB		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP24-13.00×05.50-1.00 (P-HSSOP24-0300-1.00)			P-HSSOP24-13.00×05.50-1.00 (P-HSSOP24-0300-1.00)		
照合文字 Symbol	min	nom	max	min	nom	max
Group1	D	—	13.00	—	13.00	—
	E	—	5.50	—	5.50	—
	A ₂	2.55	2.75	2.95*	2.55	2.75
	A ₁	0.00	0.10	0.20	0.00	0.175
	A	—	—	3.15*	—	3.225*
	A ₃	—	0.25	—	0.25	—
	b _p	0.35	—	0.50	0.35	0.50
	b ₁	0.35	0.40	0.45	0.35	0.40
	c	0.15	—	0.30	0.15	0.30
	c ₁	0.15	0.20	0.25	0.15	0.20
	θ	0°	—	*10°	0°	*10°
	H _E	—	7.60	—	7.60	—
	L _p	0.45	—	0.75	0.45	0.75
	e	—	1.00	—	1.00	—
	t	—	—	0.20	—	0.20
	f	—	—	0.10	—	0.10
	x	—	—	0.20	—	0.20
	y	—	—	0.15	—	0.15
Group2	A ₄	0.05	0.075	0.10	0.05	0.075
	b ₂	—	—	—	—	—
	n	—	24	—	24	—
	Z _D	—	1.00	—	1.00	—
	L	—	0.50	—	0.50	—
	L ₁	—	1.05	—	1.05	—
	D ₂	—	—	6.60	—	6.60
	D ₃	—	—	—	—	—
Type		Type A (up)		Type A (bottom)		

*:規格外の値(The value out of the standard)

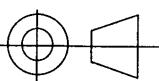
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 13/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HVSSOP

旧呼び寸法 (old nominal dimensions): 0300, ピン数 (pin numbers)(n): 24pin

整理番号 Serial Number	24-001-CFDA					
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HVSSOP24-07.80×05.60-0.65 (P-HVSSOP24-0300-0.65)					
照合文字 Symbol	min	nom	max			
Group1	D	—	7.80	—		
	E	—	5.60	—		
	A ₂	0.80	0.85	0.90		
	A ₁	0.00	—	0.13		
	A	—	—	1.00		
	A ₃	—	0.25	—		
	b _p	0.20	—	0.29		
	b ₁		0.22			
	c	0.14	—	0.22		
	c ₁		0.15			
	θ	0°	—	*10°		
	H _E	—	7.60	—		
	L _p	0.45	—	0.75		
	e	—	0.65	—		
	t	—	—	0.20		
	f	—	—	0.10		
	x	—	—	0.10		
	y	—	—	0.08		
Group2	A ₄	—	—	—		
	b ₂	—	—	—		
	n	—	24	—		
	Z _D	—	0.325	—		
	L	—	0.50	—		
	L ₁	—	1.00	—		
	D ₂	—	—	5.00		
	D ₃	—	—	—		
Type	Type A (bottom)					

*:規格外の値(The value out of the standard)

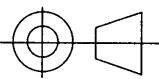
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 14/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0300, ピン数 (pin numbers)(n): 30/24, 32/25pin

整理番号 Serial Number	30/24-001-CACA			32/25-001-CACA		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP30/24-12.63×05.50-0.80 (P-HSSOP30/24-0300-0.80)			P-HSSOP32/25-13.60×05.40-0.80 (P-HSSOP32/25-0300-0.80)		
照合文字 Symbol	min	nom	max	min	nom	max
Group1	D	—	12.63	—	13.60	—
	E	—	5.50	—	5.40	—
	A ₂	1.80	2.00	2.20	1.80	1.90
	A ₁	0.00	0.10	0.20	0.00	0.10
	A	—	—	2.40	—	2.20
	A ₃	—	0.25	—	0.25	—
	b _p	0.25	—	0.40	0.26	—
	b ₁	0.25	0.30	0.35	—	0.36
	c	0.15	—	0.30	0.15	—
	c ₁	0.15	0.20	0.25	—	0.25
	θ	0°	—	*10°	0°	—
	H _E	—	7.60	—	7.80	—
	L _p	0.45	—	0.75	0.45	—
	e	—	0.80	—	0.80	—
	t	—	—	0.20	—	0.20
	f	—	—	0.10	—	0.10
	x	—	—	0.16	—	0.16
	y	—	—	0.15	—	0.15
	A ₄	—	—	—	—	—
	b ₂	—	1.90	—	—	2.75(1.95)
	n	—	30(24)	—	—	32 (25)
Group2	Z _D	—	0.715	—	—	0.80
	L	—	0.50	—	—	0.50
	L ₁	—	1.05	—	—	1.20
	D ₂	—	—	—	—	—
	D ₃	—	—	—	—	—
	E ₁	—	—	—	—	—
	E ₂	—	—	—	—	—
	G _{1E}	—	6.30	—	—	6.40
Type	Type B			Type B		

*:規格外の値(The value out of the standard)

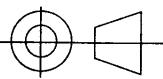
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 15/31
PACKAGE NAME P-HSOP		JEITA REGISTRATION NO. IC-7326-001	

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0300, ピン数 (pin numbers)(n): 30, 38pin

整理番号 Serial Number	30-001-CBCA			38-001-CBDA		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP30-12.70×05.60-0.80 (P-HSSOP30-0300-0.80)			P-HSSOP38-12.70×05.60-0.65 (P-HSSOP38-0300-0.65)		
照合文字 Symbol	min	nom	max	min	nom	max
Group1	D	—	12.70	—	—	12.70
	E	—	5.60	—	—	5.60
	A ₂		1.55			1.55
	A ₁	0.00	0.05	0.10	0.00	0.05
	A	—	—	1.80	—	1.80
	A ₃	—	0.25	—	—	0.25
	b _p	0.30	—	0.45	0.25	—
	b ₁	0.30	0.35	0.40	0.25	0.30
	c	0.15	—	0.30	0.15	—
	c ₁	0.15	0.20	0.25	0.15	0.20
	θ	0°	—	*10°	0°	—
	H _E	—	7.70	—	—	7.70
	L _p		—			—
	e	—	0.80	—	—	0.65
	t	—	—	0.20	—	0.20
	f	—	—	0.10	—	0.10
	x	—	—	0.12	—	0.12
	y	—	—	0.10	—	0.10
Group2	A ₄	—	—	—	—	—
	b ₂	—	—	—	—	—
	n	—	30	—	—	38
	Z _D	—	0.75	—	—	0.50
	L	—	0.60	—	—	0.60
	L ₁	—	1.05	—	—	1.05
	D ₂	—	—	3.50	—	—
	D ₃	—	—	—	—	—
Type		Type A (bottom)			Type A (bottom)	

*:規格外の値(The value out of the standard)

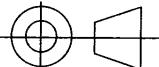
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 16/31
PACKAGE NAME P-HSOP		JEITA REGISTRATION NO. IC-7326-001	

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0610, ピン数 (pin numbers)(n): 22/16pin

整理番号 Serial Number	22/16-001-DABA					
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP22/16-13.60×06.40-1.00 (P-HSSOP22/16-0610-1.00)					
照合文字 Symbol	min	nom	max			
	D	—	13.00	—		
	E	—	6.40	—		
	A ₂	2.10	2.30	2.50		
	A ₁	0.95	0.10	0.11		
	A	—	—	2.85		
	A ₃	—	0.25	—		
	b _p	0.30	0.40	0.50		
	b ₁					
	c	0.20	0.25	0.35		
	c ₁					
Group1	θ	0°	—	*10°		
	H _E	—	9.60	—		
	L _p		—			
	e	—	1.00	—		
	t	—	—	0.20		
	f	—	—	0.10		
	x	—	—	0.20		
	y	—	—	0.10		
	A ₄	—	—	—		
	b ₂	—	3.40	—		
	n	—	22(16)	—		
Group2	Z _D	—	1.00	—		
	L	—	0.92	—		
	L ₁	—	1.60	—		
	D ₂	—	—	—		
	D ₃	—	—	—		
	E ₁	—	—	—		
	E ₂	—	—	—		
	G _{1E}	—	—	—		
Type	Type B					

*:規格外の値(The value out of the standard)

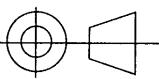
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 17/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HTSSOP

旧呼び寸法 (old nominal dimensions): 0300, ピン数 (pin numbers)(n): 34pin

整理番号 Serial Number	34-001-DECA			34-001-DECB		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HTSSOP34-14.00×06.10-0.80 (P-HTSSOP34-0300-0.80)			P-HTSSOP34-14.00×06.10-0.80 (P-HTSSOP34-0300-0.80)		
照合文字 Symbol	min	nom	max	min	nom	max
Group1	D	—	14.00	—	14.00	—
	E	—	6.10	—	6.10	—
	A ₂	—	1.00	—	1.00	—
	A ₁	0.00	0.10	0.20	0.00	0.10
	A	—	—	1.20	—	1.20
	A ₃	—	0.25	—	0.25	—
	b _p	0.27	—	0.36	0.27	—
	b ₁	0.27	0.30	0.33	0.27	0.30
	c	0.12	—	0.21	0.12	—
	c ₁	0.12	0.15	0.18	0.12	0.15
	θ	0°	—	8°	0°	—
	H _E	—	8.10	—	8.10	—
	L _p	0.45	—	0.75	0.45	—
	e	—	0.80	—	0.80	—
	t	—	—	0.20	—	0.20
	f	—	—	0.20	—	0.20
Group2	x	—	—	0.16	—	0.16
	y	—	—	0.10*	—	0.10*
	A ₄	—	—	0.00	—	0.00
	b ₂	—	—	—	—	—
	n	—	34	—	—	34
	Z _D	—	0.60	—	0.60	—
	L	—	0.50	—	0.50	—
	L ₁	—	1.00	—	1.00	—
D ₂	—	—	6.90	—	—	6.90
D ₃	—	—	—	—	—	—
E ₁	—	—	3.70	—	—	3.70
E ₂	—	—	—	—	—	—
G _{1E}	—	6.90	—	—	6.90	—
Type	Type A (up)			Type A (bottom)		

*:規格外の値(The value out of the standard)

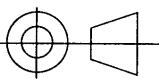
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 18/31
PACKAGE NAME P-HSOP		JEITA REGISTRATION NO. IC-7326-001	

パッケージ名称 (Package name): HTSSOP

旧呼び寸法 (old nominal dimensions): 0300, ピン数 (pin numbers)(n): 56pin

整理番号 Serial Number	56-001-DEEA			56-001-DEEB		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HTSSOP56-14.00×06.10-0.50 (P-HTSSOP56-0300-0.50)			P-HTSSOP56-14.00×06.10-0.50 (P-HTSSOP56-0300-0.50)		
照合文字 Symbol	min	nom	max	min	nom	max
Group1	D	—	14.00	—	—	14.00
	E	—	6.10	—	—	6.10
	A ₂	1.00			1.00	
	A ₁	0.00	0.10	0.20	0.00	0.10
	A	—	—	1.20	—	—
	A ₃	—	0.25	—	—	0.25
	b _p	0.27	—	0.36	0.27	—
	b ₁	0.27	0.30	0.33	0.27	0.30
	c	0.12	—	0.21	0.12	—
	c ₁	0.12	0.15	0.18	0.12	0.15
	θ	0°	—	8°	0°	—
	H _E	—	8.10	—	—	8.10
	L _p	0.45	—	0.75	0.45	—
	e	—	0.80	—	—	0.80
	t	—	—	0.20	—	—
	f	—	—	0.20	—	—
Group2	x	—	—	0.10*	—	—
	y	—	—	0.10*	—	—
	A ₄	0.00			0.00	
	b ₂	—	—	—	—	—
	n	—	34	—	—	34
	Z _D	—	0.60	—	—	0.60
	L	—	0.50	—	—	0.50
	L ₁	—	1.00	—	—	1.00
Type		Type A (up)			Type A (bottom)	

*:規格外の値(The value out of the standard)

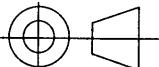
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 19/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0375, ピン数 (pin numbers)(n): 42/28pin

整理番号 Serial Number	42/28-001-EACA			42/28-001-EACB		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP42/28-18.50x07.50-0.80 (P-HSSOP42/28-0375-0.80)			P-HSSOP42/28-18.50x07.50-0.80 (P-HSSOP42/28-0375-0.80)		
照合文字 Symbol	min	nom	max	min	nom	max
Group1	D	—	18.50	—	18.50	—
	E	—	7.50	—	7.50	—
	A ₂	2.10	2.20	2.30	2.10	2.20
	A ₁	0.00	0.10	0.20	0.00	0.10
	A	—	—	2.50	—	2.50
	A ₃	—	0.25	—	0.25	—
	b _p	0.30	—	0.45	0.25	—
	b ₁	0.30	0.35	0.40	—	0.25
	c	0.20	—	0.35	0.15	—
	c ₁	0.20	0.25	0.30	—	0.25
	θ	0°	—	*10°	0°	—
	H _E	—	9.90	—	9.90	—
	L _p	0.45	—	0.75	0.45	—
	e	—	0.80	—	0.80	—
	t	—	—	0.20	—	0.20
	f	—	—	0.20	—	0.20
	x	—	—	0.16	—	0.08
	y	—	—	0.15	—	0.10
Group2	A ₄	—	—	—	—	—
	b ₂	—	5.15	—	5.15	—
	n	—	42(28)	—	42 (28)	—
	Z _D	—	1.25	—	1.25	—
	L	—	0.50	—	0.50	—
	L ₁	—	1.20	—	1.20	—
	D ₂	—	—	—	—	—
	D ₃	—	—	—	—	—
Type		Type B		Type B		

*:規格外の値(The value out of the standard)

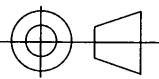
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 20/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0375, ピン数 (pin numbers)(n): 44/36pin

整理番号 Serial Number	42/36-001-EACA			42/36-001-EACB		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP44/36-18.50×07.50-0.80 (P-HSSOP44/36-0375-0.80)			P-HSSOP44/36-18.40×07.13-0.80 (P-HSSOP44/36-0375-0.80)		
照合文字 Symbol	min	nom	max	min	nom	max
	D	—	18.50	—	18.40	—
Group1	E	—	7.50	—	7.13	—
	A ₂	2.15	2.20	2.25	2.10	2.30
	A ₁	0.05	0.10	0.15	0.00	0.10
	A	—	—	2.40	—	2.75
	A ₃	—	0.25	—	0.25	—
	b _p	0.33	—	0.42	0.30	0.37
	b ₁		0.35			0.35
	c	0.18	—	0.33	0.20	0.27
	c ₁		0.25			0.25
	θ	0°	—	*10°	0°	—
	H _E	—	9.90	—	10.33	—
	L _p	0.45	—	0.75	0.73	1.03
	e	—	0.80	—	0.80	—
	t	—	—	0.20	—	0.20
	f	—	—	0.20	—	0.20
	x	—	—	0.08	—	0.16
	y	—	—	0.08	—	0.10
	A ₄	—	—	—	—	—
	b ₂	—	2.77	—	2.77	—
	n	—	44 (36)	—	42(36)	—
Group2	Z _D	—	0.85	—	0.80	—
	L	—	0.50	—	0.80	—
	L ₁	—	1.20	—	1.60	—
	D ₂	—	—	—	—	—
	D ₃	—	—	—	—	—
	E ₁	—	—	—	—	—
	E ₂	—	—	—	—	—
	G _{1E}	—	8.50	—	—	—
	Type	Type B		Type B		

*:規格外の値(The value out of the standard)

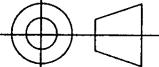
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 21/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0080 (0400), ピン数 (pin numbers)(n): 42/28pin

整理番号 Serial Number	42/28-001-FACA			42/28-001-FACB		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP42/28-18.40×08.30-0.80 (P-HSSOP42/28-0400-0.80)			P-HSSOP42/28-18.40×08.30-0.80 (P-HSSOP42/28-0400-0.80)		
照合文字 Symbol	min	nom	max	min	nom	max
Group1	D	—	18.40	—	18.40	—
	E	—	8.30	—	8.30	—
	A ₂	2.50	2.70	2.90	2.70	2.80
	A ₁	0.00	0.10	0.20	0.10	0.20
	A	—	—	3.10*	—	3.00
	A ₃	—	0.25	—	0.25	—
	b _p	0.30	—	0.45	0.30	0.45
	b ₁	0.30	0.35	0.40	0.35	0.40
	c	0.25	—	0.40	—	0.40
	c ₁	0.25	0.30	0.35	0.30	0.35
	θ	0°	—	*10°	0°	*10°
	H _E	—	10.93	—	10.93	—
	L _p	0.45	—	0.75	0.45	0.75
	e	—	0.80	—	0.80	—
	t	—	—	0.20	—	0.20
	f	—	—	0.20	—	0.20
	x	—	—	0.16	—	0.16
	y	—	—	0.15	—	0.15
Group2	A ₄	0.00			0.00	
	b ₂	—	5.15(4.80)	—	5.15(4.80)	—
	n	—	42(28)	—	42(28)	—
	Z _D	—	1.20	—	1.20	—
	L	—	0.50	—	0.50	—
	L ₁	—	1.315	—	1.315	—
	D ₂	—	—	—	—	5.15
	D ₃	—	—	—	—	—
Type		Type B		Type B + Type A (bottom)		

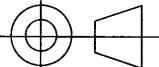
*:規格外の値(The value out of the standard)

	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 22/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0080 (0400), ピン数 (pin numbers)(n): 42/28pin

整理番号 Serial Number	42/36-001-FACA				
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP42/36-18.40×08.30-0.80 (P-HSSOP42/36-0400-0.80)				
照合文字 Symbol	min	nom	max		
Group1	D	—	18.40	—	
	E	—	8.30	—	
	A ₂	2.60	2.70	2.80	
	A ₁	0.00	0.10	0.20	
	A	—	—	3.00	
	A ₃	—	0.25	—	
	b _p	0.30	—	0.45	
	b ₁	0.30	0.35	0.40	
	c	0.25	—	0.40	
	c ₁	0.25	0.30	0.35	
	θ	0°	—	*10°	
	H _E	—	10.93	—	
	L _p	0.45	—	0.75	
	e	—	0.80	—	
	t	—	—	0.20	
	f	—	—	0.20	
	x	—	—	0.16	
	y	—	—	0.15	
	A ₄			0.00	
Group2	b ₂	—	1.95	—	
	n	—	42(36)	—	
	Z _D	—	1.20	—	
	L	—	0.50	—	
	L ₁	—	1.315	—	
	D ₂	—	—	10.00	
	D ₃	—	—	—	
	E ₁	—	—	4.00	
Type	Type B + Type A (bottom)				
	*:規格外の値(The value out of the standard)				

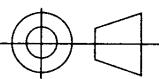
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 23/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HSOP

旧呼び寸法 (old nominal dimensions): 0080 (0450), ピン数 (pin numbers)(n): 24pin

整理番号 Serial Number	24-001-GAAA			24-001-GAAB		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSOP24-16.00×08.40-1.27 (P-HSOP24-0450-1.27)			P-HSOP24-16.00×08.40-1.27 (P-HSOP24-0450-1.27)		
照合文字 Symbol	min	nom	max	min	nom	max
Group1	D	—	16.00	—	—	16.00
	E	—	8.40	—	—	8.40
	A ₂	2.95*	3.15*	3.35*	2.95*	3.15*
	A ₁	0.00	0.10	0.20	0.00	0.175
	A	—	—	3.55*	—	—
	A ₃	—	0.25	—	—	0.25
	b _p	0.35	—	0.50	0.35	—
	b ₁	0.35	0.40	0.45	0.35	0.40
	c	0.15	—	0.30	0.15	—
	c ₁	0.15	0.20	0.25	0.15	0.20
	θ	0°	—	*10°	0°	—
	H _E	—	11.73	—	—	11.73
	L _p	0.45	—	0.75	0.45	—
	e	—	1.27	—	—	1.27
	t	—	—	0.20	—	—
	f	—	—	0.20	—	—
	x	—	—	0.25	—	—
	y	—	—	0.15	—	—
	A ₄	0.05	0.075	0.10	0.05	0.075
	b ₂	—	—	—	—	—
	n	—	24	—	—	24
Group2	Z _D	—	1.015	—	—	1.015
	L	—	0.50	—	—	0.50
	L ₁	—	1.665	—	—	1.665
	D ₂	—	—	9.20	—	—
	D ₃	—	—	—	—	—
	E ₁	—	—	6.00	—	—
	E ₂	—	—	—	—	—
	G _{1E}	—	9.40	—	—	9.40
Type	Type A (up)			Type A (bottom)		

*:規格外の値(The value out of the standard)

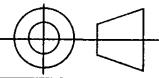
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 24/31
PACKAGE NAME P-HSOP		JEITA REGISTRATION NO. IC-7326-001	

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0080 (0450), ピン数 (pin numbers)(n): 28pin

整理番号 Serial Number	28-001-GABA			28-001-GABB		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP28-16.00×08.40-1.00 (P-HSSOP28-0450-1.00)			P-HSSOP28-16.00×08.40-1.00 (P-HSSOP28-0450-1.00)		
照合文字 Symbol	min	nom	max	min	nom	max
Group1	D	—	16.00	—	16.00	—
	E	—	8.40	—	8.40	—
	A ₂	2.95*	3.15*	3.35*	3.15*	3.35*
	A ₁	0.00	0.10	0.20	0.175	0.275*
	A	—	—	3.55*	—	3.625*
	A ₃	—	0.25	—	0.25	—
	b _p	0.35	—	0.50	0.35	0.50
	b ₁	0.35	0.40	0.45	0.40	0.45
	c	0.15	—	0.30	0.15	0.30
	c ₁	0.15	0.20	0.25	0.20	0.25
	θ	0°	—	*10°	0°	*10°
	H _E	—	11.73	—	11.73	—
	L _p	0.45	—	0.75	0.45	0.75
	e	—	1.00	—	1.00	—
	t	—	—	0.20	—	0.20
	f	—	—	0.20	—	0.20
	x	—	—	0.20	—	0.20
	y	—	—	0.15	—	0.15
Group2	A ₄	0.05	0.075	0.10	0.05	0.075
	b ₂	—	—	—	—	—
	n	—	28	—	28	—
	Z _D	—	1.50	—	1.50	—
	L	—	0.50	—	0.50	—
	L ₁	—	1.665	—	1.665	—
	D ₂	—	—	9.20	—	9.20
Group3	D ₃	—	—	—	—	—
	E ₁	—	—	6.00	—	6.00
	E ₂	—	—	—	—	—
	G _{1E}	—	9.40	—	9.40	—
	Type	Type A (up)		Type A (bottom)		

*:規格外の値(The value out of the standard)

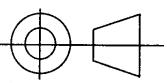
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 25/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0080 (0450), ピン数 (pin numbers)(n): 28/20pin

整理番号 Serial Number	28/20-001-GABA				
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP28/20-16.00×08.80-1.00 (P-HSSOP28/20-0450-1.00)				
照合文字 Symbol	min	nom	max		
D	—	16.00	—		
E	—	8.80	—		
A ₂	2.10	2.30	2.50		
A ₁	0.05	0.10	0.20		
A	—	—	2.70		
A ₃	—	0.25	—		
b _p	0.40	0.50	0.60		
b ₁					
c	0.20	0.25	0.35		
c ₁					
θ	0°	—	*10°		
H _E	—	12.00	—		
L _p	0.73	—	1.03		
e	—	1.00	—		
t	—	—	0.20		
f	—	—	0.20		
x	—	—	0.20		
y	—	—	0.10		
A ₄	—	—	—		
b ₂	—	4.40	—		
n	—	28(20)	—		
Z _D	—	1.00	—		
L	—	0.92	—		
L ₁	—	1.60	—		
D ₂	—	—	—		
D ₃	—	—	—		
E ₁	—	—	—		
E ₂	—	—	—		
G _{1E}	—	—	—		
Type	Type B				

*:規格外の値(The value out of the standard)

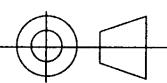
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 26/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0080 (0450), ピン数 (pin numbers)(n): 40/26pin

整理番号 Serial Number	40/26-001-GACA					
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP40/26-18.40×08.30-0.80 (P-HSSOP40/26-0450-0.80)					
照合文字 Symbol	min	nom	max			
	D	—	18.40	—		
	E	—	8.30	—		
Group1	A ₂	2.65	2.70	2.75		
	A ₁	0.00	0.10	0.25		
	A	—	—	3.00		
	A ₃	—	0.25	—		
	b _p	0.29	0.37	0.45		
	b ₁	0.29	0.35	0.41		
	C	0.25	0.32	0.39		
	c ₁	0.25	0.30	0.35		
	θ	0°	—	*10°		
	H _E	—	10.93	—		
	L _p		—			
	e	—	0.80	—		
	t	—	—	0.30*		
	f	—	—	0.20		
	x	—	—	0.16		
	y	—	—	0.10		
	A ₄	—	—	—		
	b ₂	—	6.40	—		
	n	—	40(26)	—		
Group2	Z _D	—	1.20	—		
	L	—	0.70	—		
	L ₁	—	1.315	—		
	D ₂	—	—	—		
	D ₃	—	—	—		
	E ₁	—	—	—		
	E ₂	—	—	—		
	G _{1E}	—	9.33	—		
Type	Type B					

*:規格外の値(The value out of the standard)

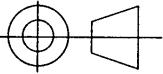
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 27/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0080 (0450), ピン数 (pin numbers)(n): 28pin

整理番号 Serial Number	44/36-001-GADA			44/36-001-GADA		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP44/36-16.00×08.80-0.65 (P-HSSOP44/36-0450-0.65)			P-HSSOP44/36-16.00×08.88-0.65 (P-HSSOP44/36-0450-0.65)		
照合文字 Symbol	min	nom	max	min	nom	max
Group1	D	—	16.00	—	16.00	—
	E	—	8.80	—	8.88	—
	A ₂	2.10	2.30	2.50	2.10	2.30
	A ₁	0.05	0.10	0.20	0.05	0.10
	A	—	—	2.70	—	2.75
	A ₃	—	0.25	—	0.25	—
	b _p	0.25	0.32	0.40	0.25	0.40
	b ₁	—	—	—	—	—
	c	0.20	0.27	0.35	0.20	0.27
	c ₁	—	0.25	—	0.25	—
	θ	0°	—	*10°	0°	—
	H _E	—	12.00	—	12.00	—
	L _p	0.73	—	1.03	0.73	—
	e	—	0.65	—	0.65	—
	t	—	—	0.20	—	0.20
	f	—	—	0.20	—	0.20
	x	—	—	0.13	—	0.13
	y	—	—	0.15	—	0.10
	A ₄	—	—	—	—	—
	b ₂	—	4.40	—	4.40	—
	n	—	44(36)	—	44(36)	—
Group2	Z _D	—	0.85	—	0.525	—
	L	—	0.80	—	0.80	—
	L ₁	—	1.60	—	1.60	—
	D ₂	—	—	—	—	—
	D ₃	—	—	—	—	—
	E ₁	—	—	—	—	—
	E ₂	—	—	—	—	—
	G _{1E}	—	—	—	—	—
Type	Type B			Type B		

*:規格外の値(The value out of the standard)

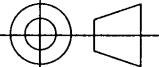
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 28/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0115 (0525), ピン数 (pin numbers)(n): 44pin

整理番号 Serial Number	44-001-KABA			44-001-KABB		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP44-23.00×11.24-1.00 (P-HSSOP44-0525-1.00)			P-HSSOP44-23.00×11.24-1.00 (P-HSSOP44-0525-1.00)		
照合文字 Symbol	min	nom	max	min	nom	max
Group1	D	—	23.00	—	—	23.00
	E	—	11.24	—	—	11.24
	A ₂	2.95*	3.15*	3.35*	2.95*	3.15*
	A ₁	0.00	0.10	0.20	0.00	0.10
	A	—	—	3.55*	—	3.55*
	A ₃	—	0.25	—	—	0.25
	b _p	0.35	—	0.50	0.35	—
	b ₁	0.35	0.40	0.45	0.35	0.40
	c	0.15	—	0.30	0.15	—
	c ₁	0.15	0.20	0.25	0.15	0.20
	θ	0°	—	*10°	0°	—
	H _E	—	13.84	—	—	13.84
	L _p	0.45	—	0.75	0.45	—
	e	—	1.00	—	—	1.00
	t	—	—	0.20	—	—
	f	—	—	0.20	—	—
	x	—	—	0.20	—	—
	y	—	—	0.15	—	—
	A ₄	—	0.05	—	—	0.05
	b ₂	—	—	—	—	—
	n	—	44	—	—	44
Group2	Z _D	—	1.00	—	—	1.00
	L	—	0.50	—	—	0.50
	L ₁	—	1.30	—	—	1.30
	D ₂	—	—	13.40	—	—
	D ₃	—	22.00	—	—	22.00
	E ₁	—	—	8.20	—	—
	E ₂	—	5.00	—	—	5.00
	G _{1E}	—	12.34	—	—	12.34
Type	Type A (up)			Type A (bottom)		

*:規格外の値(The value out of the standard)

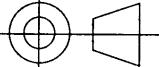
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 29/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0115 (0525), ピン数 (pin numbers)(n): 44pin

整理番号 Serial Number	54-001-KACA					
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP54-22.00×11.40-0.80 (P-HSSOP54-0500-0.80)					
照合文字 Symbol	min	nom	max			
Group1	D	—	22.00	—		
	E	—	11.40	—		
	A ₂	2.10	2.20	2.30		
	A ₁	0.00	0.10	0.20		
	A	—	—	2.50		
	A ₃	—	0.25	—		
	b _p	0.26	—	0.46		
	b ₁		0.36			
	c	0.05	—	0.25		
	c ₁		0.15			
	θ	0°	—	*10°		
	H _E	—	13.40	—		
	L _p	0.45	—	0.75		
	e	—	0.80	—		
	t	—	—	0.20		
	f	—	—	0.20		
	x	—	—	0.16		
	y	—	—	0.10		
Group2	A ₄	—	—	—		
	b ₂	—	—	—		
	n	—	54	—		
	Z _D	—	0.60	—		
	L	—	0.50	—		
	L ₁	—	1.00	—		
	D ₂	—	—	6.20		
	D ₃	—	—	—		
	E ₁	—	—	4.20		
	E ₂	—	—	—		
	G _{1E}	—	12.40	—		
	Type	Type A (up)				

*:規格外の値(The value out of the standard)

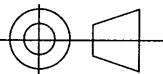
	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 30/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

パッケージ名称 (Package name): HSSOP

旧呼び寸法 (old nominal dimensions): 0130 (0650), ピン数 (pin numbers)(n): 36/24pin

整理番号 Serial Number	36/24-001-LABA			36/24-001-LABB		
外形タイプ External Type (旧表記方法) (old nominal dimensions)	P-HSSOP36/24-21.60×12.60-0.65 (P-HSSOP36/24-0650-0.65)			P-HSSOP36/24-21.60×12.60-0.65 (P-HSSOP36/24-0650-0.65)		
照合文字 Symbol	min	nom	max	min	nom	max
Group1	D	—	21.60	—	21.60	—
	E	—	12.60	—	12.60	—
	A ₂	2.10	2.30	2.50	3.80*	4.00*
	A ₁	0.05	0.10	0.20	0.00	0.10
	A	—	—	2.70	—	4.45*
	A ₃	—	0.25	—	0.25	—
	b _p	0.40	0.50	0.60	0.40	0.50
	b ₁	—	—	—	—	—
	c	0.35	0.40	0.50	0.35	0.40
	c ₁	—	—	—	—	—
	θ	0°	—	*10°	0°	—
	H _E	—	17.00	—	17.00	—
	L _p	1.00	—	1.40	1.00	—
	e	—	1.00	—	1.00	—
	t	—	—	0.20	—	0.20
	f	—	—	0.20	—	0.20
Group2	x	—	—	0.20	—	0.20
	y	—	—	0.10	—	0.10
	A ₄	—	—	—	—	—
	b ₂	—	7.00	—	—	—
	n	—	36(24)	—	36(24)	—
	Z _D	—	1.30	—	1.30	—
	L	—	1.20	—	1.20	—
	L ₁	—	2.20	—	2.20	—
Type	Type B			Type B		

*:規格外の値(The value out of the standard)

	JEITA STANDARD PACKAGE OUTLINE DRAWINGS	DATE 2002-03-01	SHEET 31/31
PACKAGE NAME P-HSOP			JEITA REGISTRATION NO. IC-7326-001

REFERENCE 1 Relation of Package width (E), Body height $A_{2\text{nom}}$ P-HSSOP(terminal pitch $e=1.00 - 0.30$)

Package width E			Body height $A_{2\text{nom}}$								Remark
Group 1	Group 2	Group 3	2.70	1.70	1.50	1.40	1.20	1.00	0.80	0.60	
3.00							*HSSOP				L/L1= 0.30/0.50
4.40								*HSSOP	*HTSSOP	*HVSSOP	
5.00										*HWSSOP	
5.60											
6.10											
	7.62						*HLSSOP	TSOP2	VSOP2		L/L1= 0.50/1.00
(8.00)							*HSSOP	*HTSSOP	*HVSSOP	*HWSSOP	
	8.89						*HLSSOP	TSOP2	VSOP2		L/L1= 0.50/1.00
(9.90)							*HSSOP	*HTSSOP	*HVSSOP	*HWSSOP	
	10.16							TSOP2	VSOP2		L/L1= 0.50/1.00
	11.50										
	13.00							TSOP2	VSOP2		
	14.50							L/L1= 0.50/1.00	L/L1= 0.50/1.00		
	16.00										

*:L/L1=0.50/1.00

**:L/L1=0.80/1.60

	Seated height A_{max}	Remark
HLSSOP	1.70	
HTSSOP	1.20	(TSOP2)
HVSSOP	1.00	(VSOP2)
HWSSOP	0.80	(WSOP2)

P-HSOP(terminal pitch $e=1.27$)

Nominal dimensions	Package width	Body height $A_{2\text{nom}}$					Remark		
		eE	E max	2.70	1.70	1.50	1.40	1.20	
225mil	5.72	4.72							L/L1=0.50/1.00
300mil	7.62	6.62							
375mil	9.53	8.13							
450mil	11.43	10.03							
525mil	13.24	11.94							
600mil	15.24	13.84							

HSOP

REFERENCE 2 Relation of HSOP, HSSOP with Package width (**E**), Package length (**D**)

Package length D	Package width E														
	2.00	3.00	4.00	4.40	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00
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31.00															

COMMITTEE MEMBERS

The IC Package Subcommittee of the Technical Standardization Committee on Semiconductor Device Packages has mainly deliberated this standard.

The subcommittee members are shown below.

<Technical Standardization Committee on Semiconductor Device Package>

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Ichiro Anjo

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