

Standard of Japan Electronics and Information Technology Industries Association

## ***JEITA ED-7500A-2***

### **Standard for the dimensions of semiconductor devices (Discrete semiconductor devices)**

Established in December, 2006

Prepared by

Technical Standardization Committee on Semiconductor Device Package

Published by

Japan Electronics and Information Technology Industries Association

11, Kanda-Surugadai 3-chome, Chiyoda-ku, Tokyo 101-0062, Japan

Printed in Japan

# **Standard for the dimensions of semiconductor devices (Discrete semiconductor devices)**

## **1. Scope**

This standard stipulates outline drawings of discrete semiconductor devices.

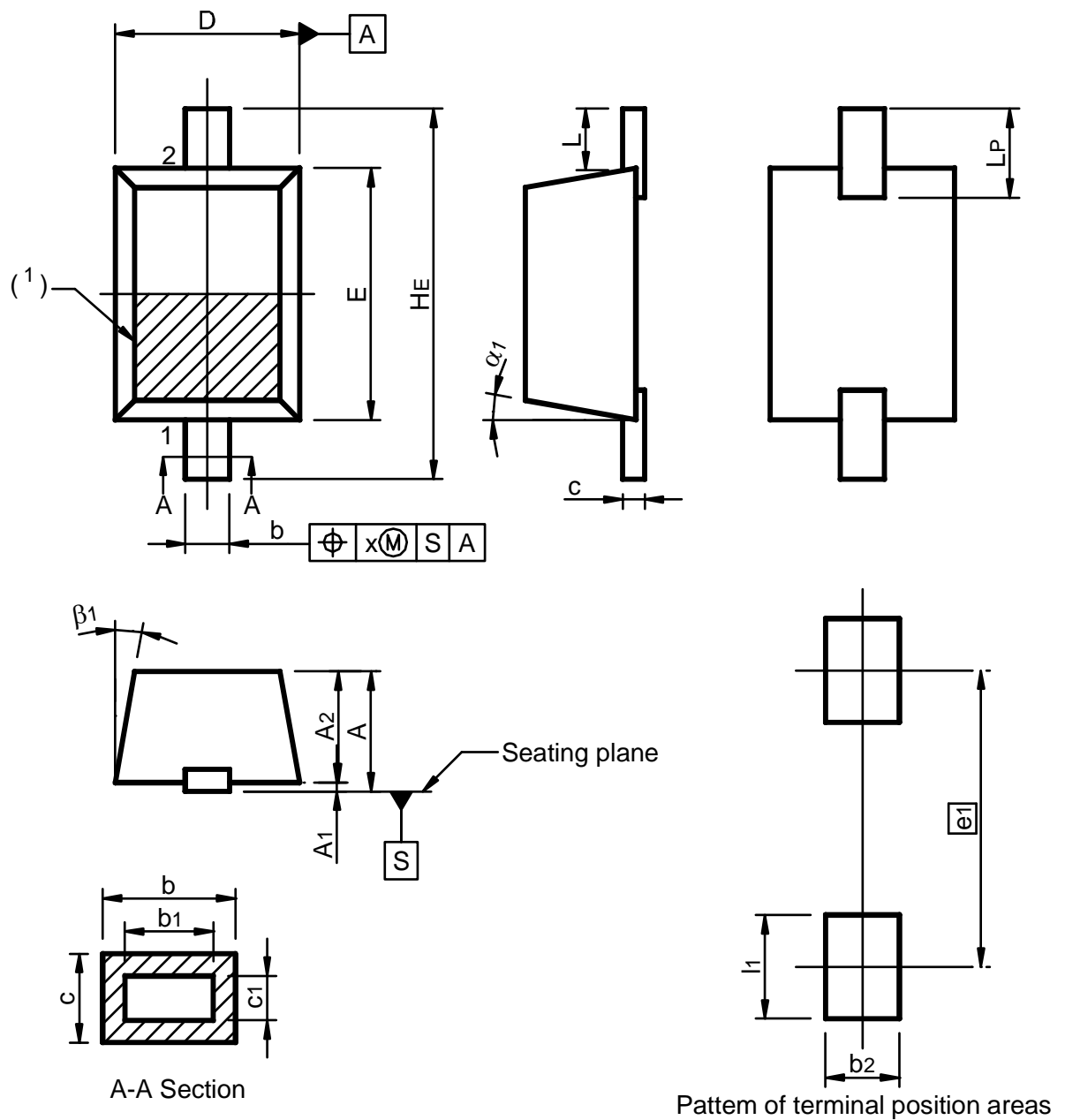
## **2. Normative references**

- Manual for the preparation of outline drawings of discrete semiconductor packages, JEITA ED-7502.

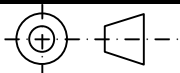
## **3. Definition of the term**

Definition in this standard generally follows JEITA ED-7502.

SC-104



Note (1) Hatched zone indicates the index-making area.



JEITA STANDARD  
PACKAGE OUTLINE DRAWING

REGISTRATION DATE  
2006.

REVISION DATE

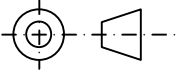
PACKAGE CODE SC-104		SHEET
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UNIT : mm ( ° )

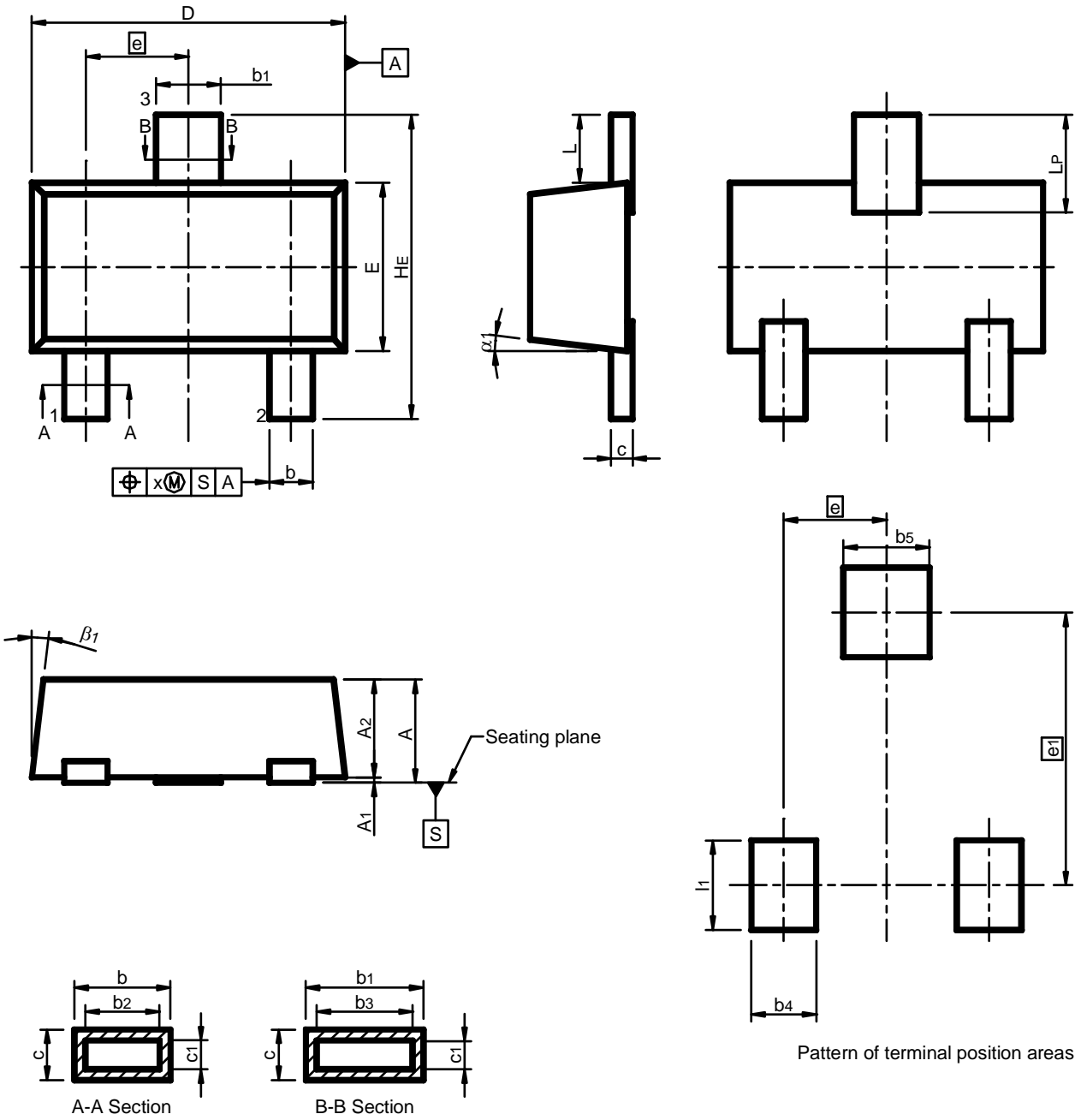
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	Ref.	Min.	Nom.	Max.	Min.	Nom.	Max.	
Group 1	A	0.45	-	0.55	0.45	-	0.55	
	A1	0.00	-	0.05	0.00	-	0.05	
	A2	0.44	-	0.54	0.44	-	0.54	
	b	0.24	-	0.35	0.15	-	0.25	
	b1	0.22	-	0.33	0.13	-	0.23	
	c	0.08	-	0.18	0.08	-	0.18	
	c1	0.06	-	0.16	0.06	-	0.16	
	D	0.50	-	0.70	0.50	-	0.70	
	E	0.90	-	1.10	0.90	-	1.10	
	HE	1.30	-	1.50	1.30	-	1.50	
	L	0.15	-	0.25	0.15	-	0.25	
	Lp	0.18	-	0.38	0.18	-	0.38	
	x	-	-	0.10	-	-	0.10	
Group 2	b2	-	-	0.45	-	-	0.35	
	e1	-	1.02 *	-	-	1.02 *	-	
	l1	-	-	0.48	-	-	0.48	
	$\alpha$ 1	-	-	10 °	-	-	10 °	Note ( <sup>1</sup> )
	$\beta$ 1	-	-	10 °	-	-	10 °	Note ( <sup>1</sup> )

\* indicates true geometrical position

Note ( <sup>1</sup> )  $\alpha$ 1 and  $\beta$ 1 shall be specified when D or E shorter than 0.8mm.

	JEITA STANDARD PACKAGE OUT LINE DRAWING	REGISTRATION DATE 2006.	REVISION DATE
PACKAGE CODE SC-104			SHEET

**SC-105A**

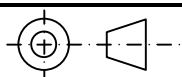


	JEITA STANDARD PACKAGE OUT LINE DRAWING	REGISTRATION DATE 2006.	REVISION DATE
PACKAGE CODE SC-105			SHEET

UNIT : mm ( ° )

	CODE	SC-105AA			SC-105AB			Remarks
	Ref.	Min.	Nom.	Max.	Min.	Nom.	Max.	
Group 1	A	0.45	-	0.55	0.26	-	0.34	
	A1	0.00	-	0.10	0.00	-	0.02	
	A2	0.45	-	0.55	0.26	-	0.32	
	b	0.15	-	0.30	0.15	-	0.30	
	b1	0.25	-	0.40	0.25	-	0.40	
	b2	0.13	-	0.28	0.13	-	0.28	
	b3	0.23	-	0.38	0.23	-	0.38	
	c	0.08	-	0.20	0.08	-	0.20	
	c1	0.06	-	0.18	0.06	-	0.18	
	D	1.10	-	1.30	1.10	-	1.30	
	E	0.70	-	0.90	0.70	-	0.90	
	e	-	0.40 *	-	-	0.40 *	-	
	HE	1.10	-	1.30	1.10	-	1.30	
	L	0.10	-	0.30	0.10	-	0.30	
	Lp	0.20	-	0.42	0.20	-	0.42	
	x	-	-	0.10	-	-	0.10	
Group 2	b4	-	-	0.40	-	-	0.40	
	b5	-	-	0.50	-	-	0.50	
	e1	-	0.78 *	-	-	0.78 *	-	
	l1	-	-	0.52	-	-	0.52	
	$\alpha 1$	-	-	10 °	-	-	10 °	Note ( <sup>1</sup> )
	$\beta 1$	-	-	10 °	-	-	10 °	Note ( <sup>1</sup> )

\* indicates true geometrical position

Note ( <sup>1</sup> )  $\alpha 1$  and  $\beta 1$  shall be specified when D or E shorter than 0.8mm.

JEITA STANDARD  
PACKAGE OUT LINE DRAWING

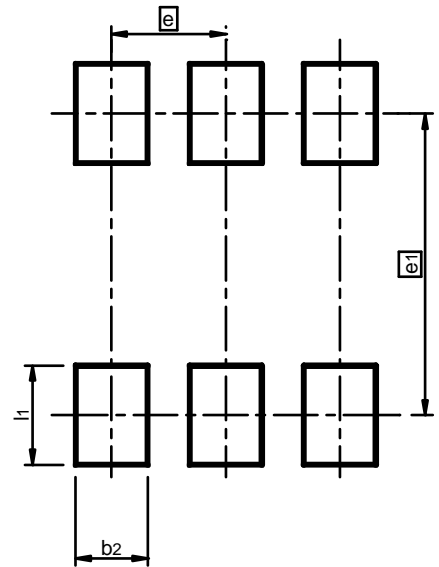
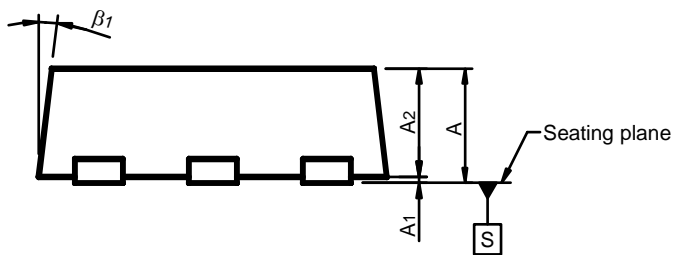
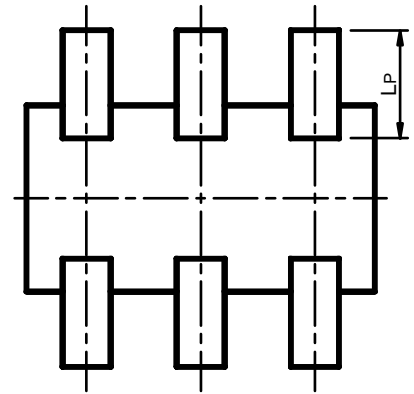
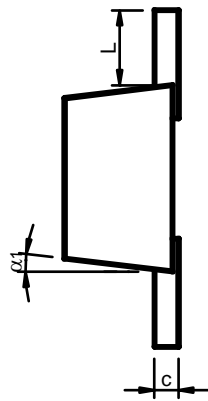
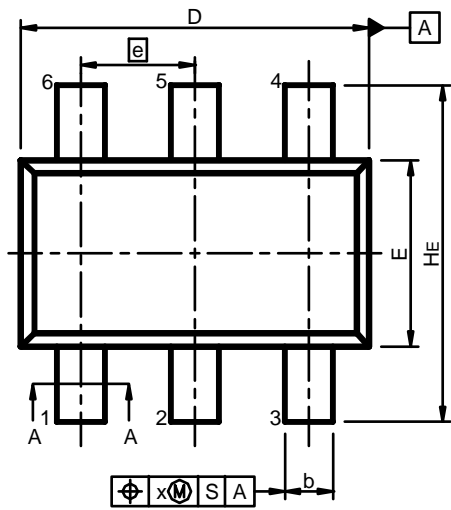
REGISTRATION DATE  
2006.

REVISION DATE

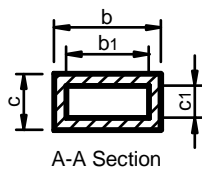
PACKAGE CODE  
SC-105

SHEET

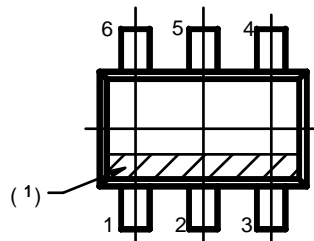
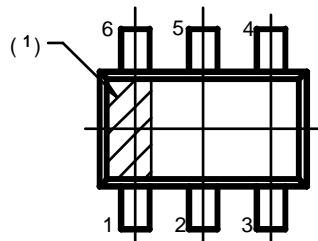
SC-105B



Pattern of terminal position areas

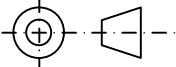


A-A Section



Note(1) Hatched zone indicates the index-making area.



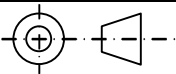
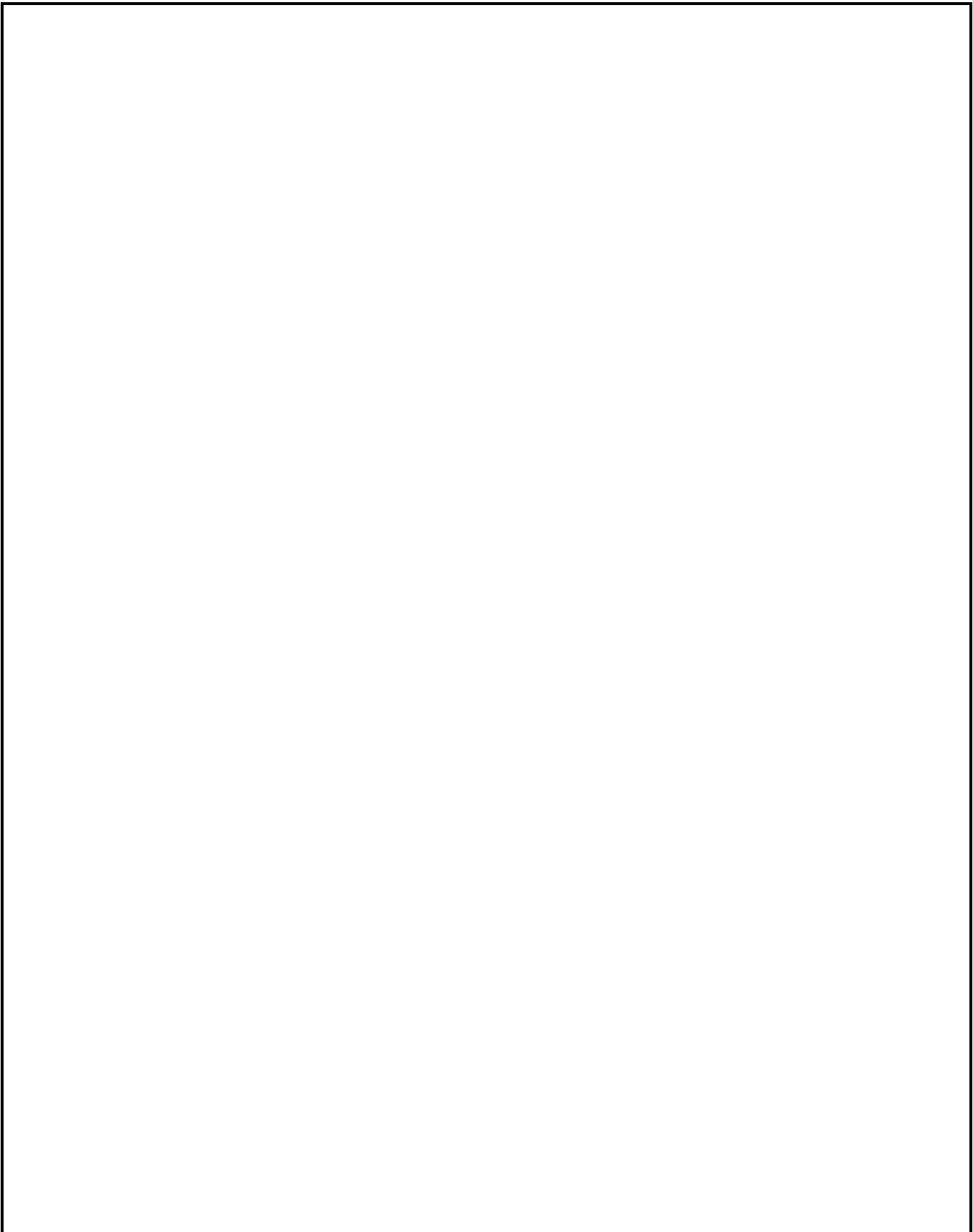
	JEITA STANDARD	REGISTRATION DATE	REVISION DATE
	PACKAGE OUT LINE DRAWING	2006.	
PACKAGE CODE SC-105			SHEET

UNIT : mm ( ° )

	CODE	SC-105B						Remarks
	Ref.	Min.	Nom.	Max.				
Group 1	A	0.45	-	0.55				
	A1	0.00	-	0.03				
	A2	0.45	-	0.52				
	b	0.15	-	0.25				
	b1	0.13	-	0.23				
	c	0.08	-	0.20				
	c1	0.06	-	0.18				
	D	1.10	-	1.30				
	E	0.70	-	0.90				
	e	-	0.40 *	-				
	HE	0.90	-	1.10				
	L	0.05	-	0.15				
	Lp	0.10	-	0.30				
	x	-	-	0.05				
Group 2	b2	-	-	0.30				
	e1	-	0.70 *	-				
	l1	-	-	0.40				
	α1	-	-	10 °				Note ( <sup>1</sup> )
	β1	-	-	10 °				Note ( <sup>1</sup> )

\* indicates true geometrical position

Note ( <sup>1</sup> ) α1 and β1 shall be specified when D or E shorter than 0.8mm.



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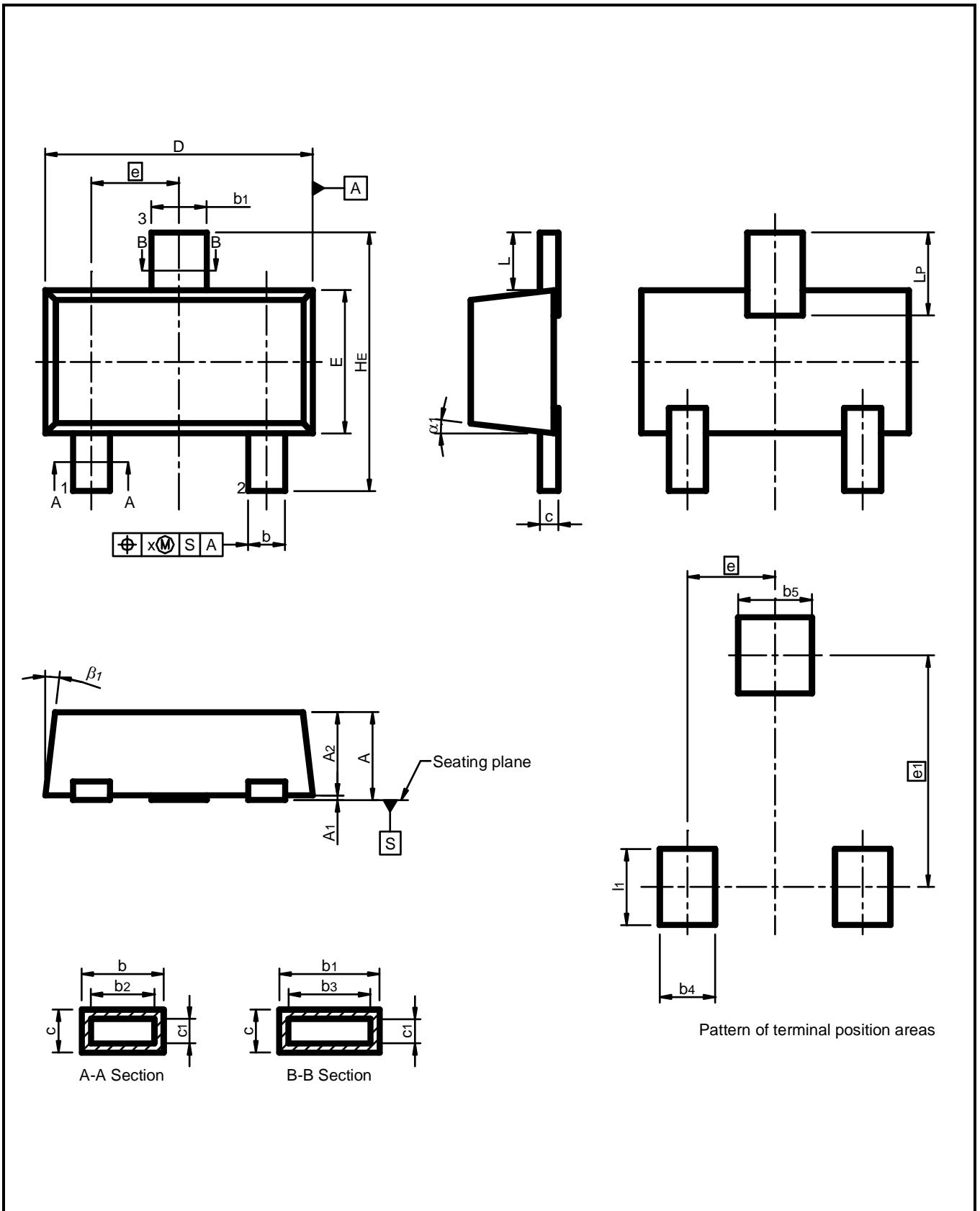
REGISTRATION DATE  
2006.

REVISION DATE

PACKAGE CODE  
SC-105

SHEET

SC-106



	<p>JEITA STANDARD PACKAGE OUT LINE DRAWING</p>	<p>REGISTRATION DATE 2006.</p>	<p>REVISION DATE</p>
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PACKAGE CODE

SC-106

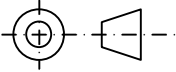
SHEET

UNIT : mm ( ° )

	CODE	SC-106A			SC-106B			Remarks
	Ref.	Min.	Nom.	Max.	Min.	Nom.	Max.	
Group 1	A	0.30	-	0.40	0.40	-	0.50	
	A1	0.00	-	0.05	0.00	-	0.05	
	A2	0.30	-	0.40	0.40	-	0.50	
	b	0.15	-	0.30	0.15	-	0.30	
	b1	0.20	-	0.35	0.20	-	0.35	
	b2	0.13	-	0.28	0.13	-	0.28	
	b3	0.18	-	0.33	0.18	-	0.33	
	c	0.10	-	0.20	0.10	-	0.20	
	c1	0.08	-	0.18	0.08	-	0.18	
	D	1.30	-	1.50	1.30	-	1.50	
	E	0.70	-	0.90	0.70	-	0.90	
	e	-	0.45 *	-	-	0.45 *	-	
	HE	1.10	-	1.30	1.10	-	1.30	
	L	0.10	-	0.30	0.10	-	0.30	
	Lp	0.10	-	0.40	0.10	-	0.40	
x	-	-	0.10	-	-	0.10		
Group 2	b4	-	-	0.40	-	-	0.40	
	b5	-	-	0.45	-	-	0.45	
	e1	-	0.80 *	-	-	0.80 *	-	
	l1	-	-	0.50	-	-	0.50	
	$\alpha$ 1	-	-	10 °	-	-	10 °	Note ( <sup>1</sup> )
	$\beta$ 1	-	-	10 °	-	-	10 °	Note ( <sup>1</sup> )

\* indicates true geometrical position

Note ( <sup>1</sup> )  $\alpha$ 1 and  $\beta$ 1 shall be specified when D or E shorter than 0.8mm.

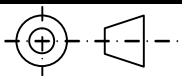
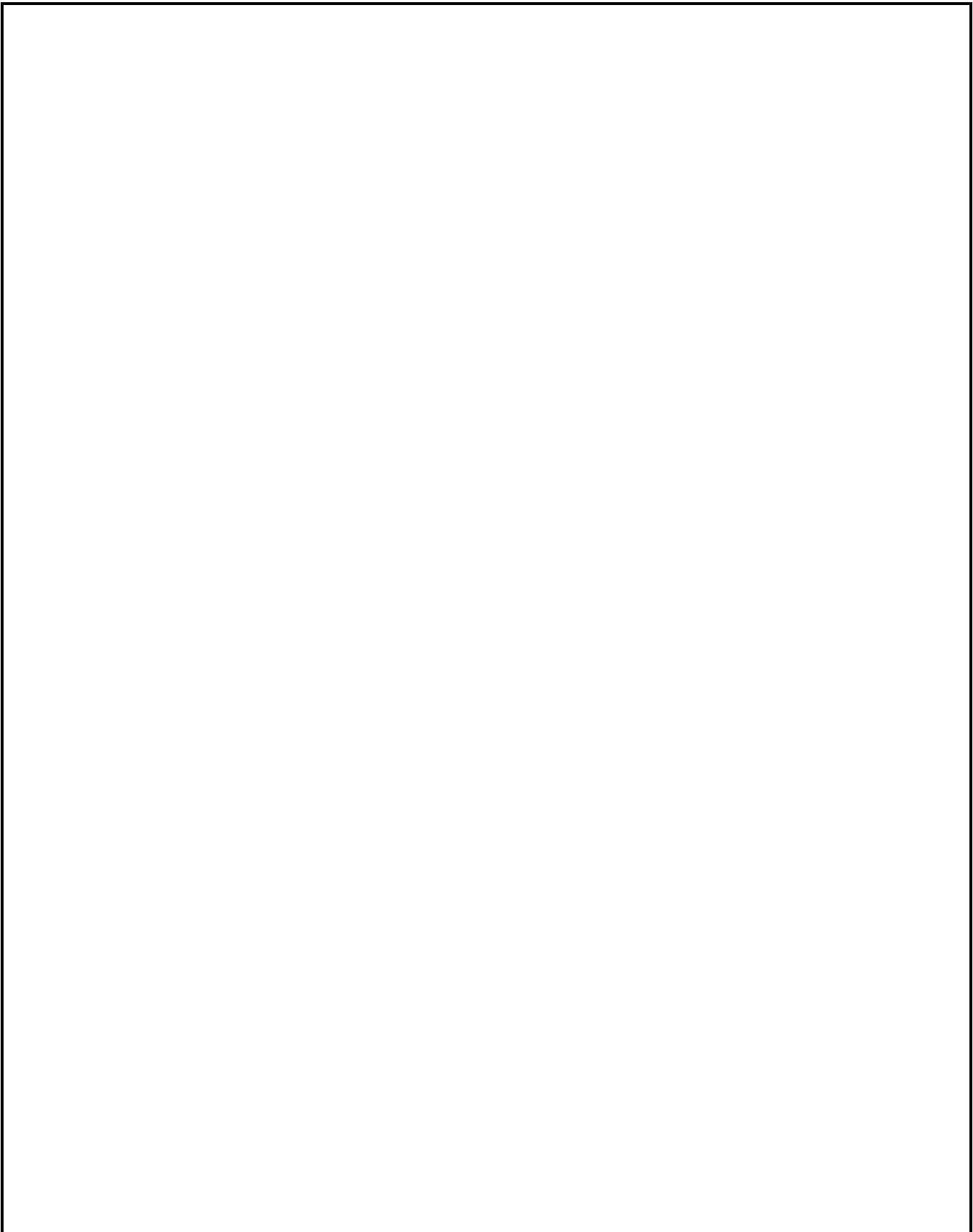
	JEITA STANDARD	REGISTRATION DATE	REVISION DATE
	PACKAGE OUT LINE DRAWING	2006.	
PACKAGE CODE SC-106			SHEET

UNIT : mm ( ° )

	CODE	SC-106C			SC-106D			Remarks
	Ref.	Min.	Nom.	Max.	Min.	Nom.	Max.	
Group 1	A	0.55	-	0.65	0.55	-	0.65	
	A1	0.00	-	0.05	0.00	-	0.05	
	A2	0.55	-	0.65	0.55	-	0.65	
	b	0.15	-	0.30	0.15	-	0.30	
	b1	0.20	-	0.35	0.15	-	0.30	
	b2	0.13	-	0.28	0.13	-	0.28	
	b3	0.18	-	0.33	0.13	-	0.28	
	c	0.10	-	0.20	0.10	-	0.20	
	c1	0.08	-	0.18	0.08	-	0.18	
	D	1.30	-	1.50	1.30	-	1.50	
	E	0.70	-	0.90	0.70	-	0.90	
	e	-	0.45 *	-	-	0.45 *	-	
	HE	1.30	-	1.50	1.10	-	1.30	
	L	0.20	-	0.40	0.10	-	0.30	
Lp	0.20	-	0.50	0.10	-	0.40		
x	-	-	0.10	-	-	0.10		
Group 2	b4	-	-	0.40	-	-	0.40	
	b5	-	-	0.45	-	-	0.40	
	e1	-	0.90 *	-	-	0.80 *	-	
	l1	-	-	0.60	-	-	0.50	
	$\alpha$ 1	-	-	10 °	-	-	10 °	Note ( <sup>1</sup> )
	$\beta$ 1	-	-	10 °	-	-	10 °	Note ( <sup>1</sup> )

\* indicates true geometrical position

Note ( <sup>1</sup> )  $\alpha$ 1 and  $\beta$ 1 shall be specified when D or E shorter than 0.8mm.



JEITA STANDARD  
PACKAGE OUT LINE DRAWING

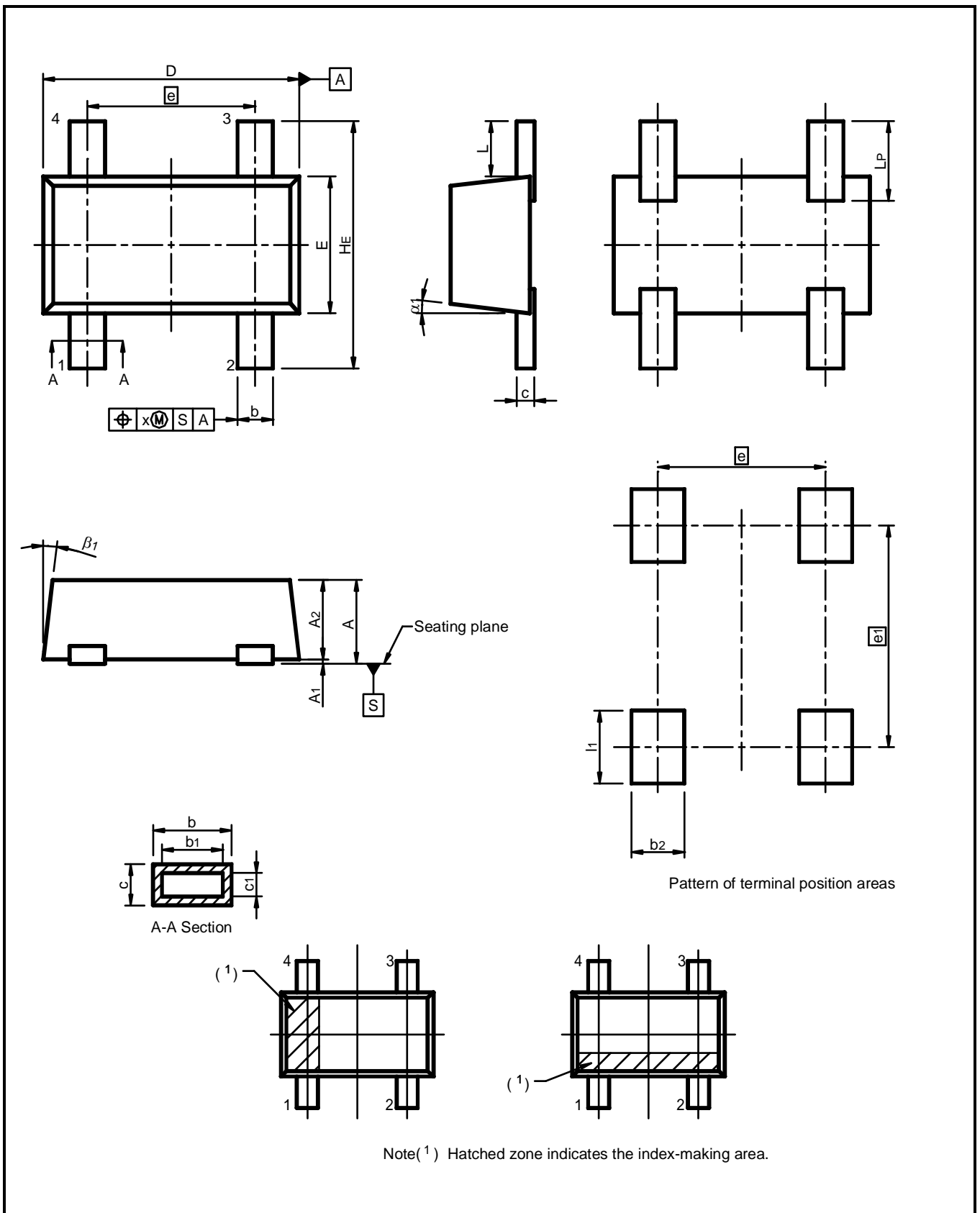
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2006.

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PACKAGE CODE  
SC-106

SHEET

SC-107A



Note(1) Hatched zone indicates the index-making area.

	<p>JEITA STANDARD PACKAGE OUT LINE DRAWING</p>	<p>REGISTRATION DATE 2006.</p>	<p>REVISION DATE</p>
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PACKAGE CODE SC-107		SHEET
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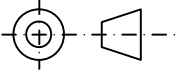
UNIT : mm ( ° )

	CODE	SC-107A						Remarks
	Ref.	Min.	Nom.	Max.				
Group 1	A	0.45	-	0.65				
	A1	0.00	-	0.10				
	A2	0.45	-	0.60				
	b	0.15	-	0.30				
	b1	0.13	-	0.28				
	c	0.07	-	0.20				
	c1	0.05	-	0.18				
	D	1.50	-	1.70				
	E	1.10	-	1.30				
	e	-	1.00 *	-				
	HE	1.50	-	1.70				
	L	0.10	-	0.30				
	Lp	0.16	-	0.40				
Group 2	x	-	-	0.10				
	b2	-	-	0.40				
	e1	-	1.20 *	-				
	l1	-	-	0.50				
	α1	-	-	-				Note ( 1 )
	β1	-	-	-				Note ( 1 )

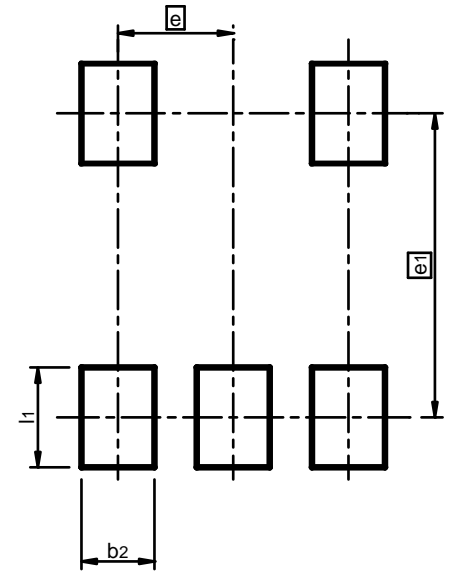
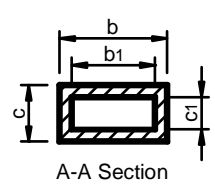
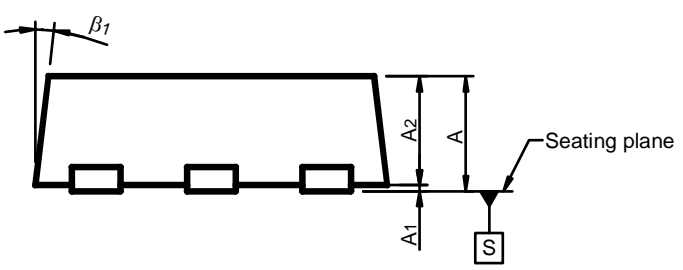
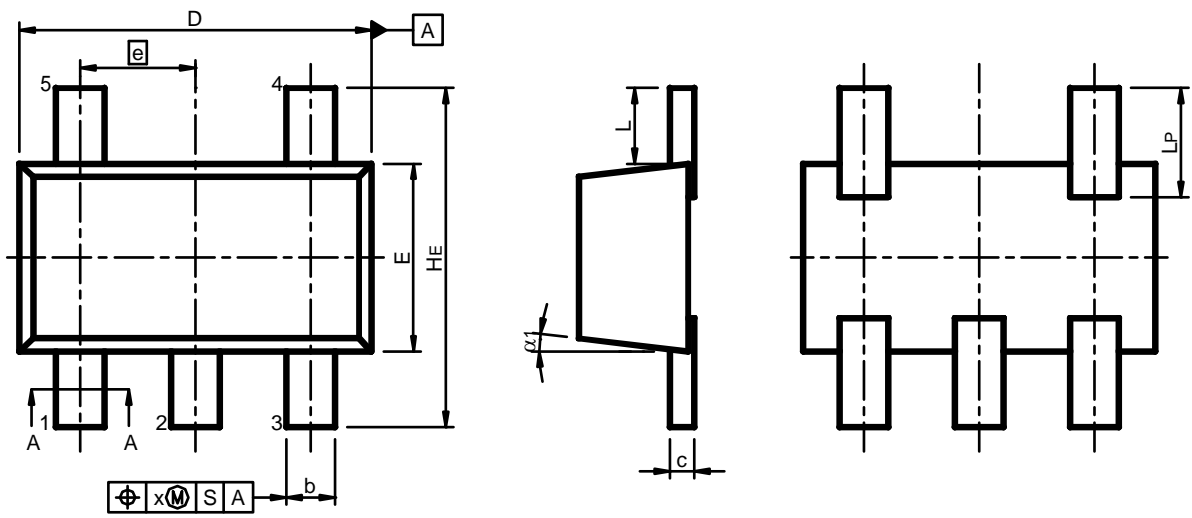
\* indicates true geometrical position

Note ( 1 ) a1 and b1 shall be specified when D or E shorter than 0.8mm.



	JEITA STANDARD PACKAGE OUT LINE DRAWING	REGISTRATION DATE 2006.	REVISION DATE
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**SC-107B**



Pattern of terminal position areas

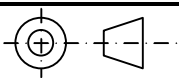
	JEITA STANDARD PACKAGE OUT LINE DRAWING	REGISTRATION DATE 2006.	REVISION DATE
PACKAGE CODE SC-107			SHEET

UNIT : mm ( ° )

	CODE	SC-107BA			SC-107BB			Remarks
	Ref.	Min.	Nom.	Max.	Min.	Nom.	Max.	
Group 1	A	0.35	-	0.50	0.45	-	0.65	
	A1	0.00	-	0.05	0.00	-	0.10	
	A2	0.35	-	0.45	0.45	-	0.60	
	b	0.15	-	0.30	0.15	-	0.30	
	b1	0.13	-	0.28	0.13	-	0.28	
	c	0.07	-	0.20	0.07	-	0.20	
	c1	0.05	-	0.18	0.05	-	0.18	
	D	1.50	-	1.70	1.50	-	1.70	
	E	1.10	-	1.30	1.10	-	1.30	
	e	-	0.50 *	-	-	0.50 *	-	
	HE	1.50	-	1.70	1.50	-	1.70	
	L	0.10	-	0.30	0.10	-	0.30	
	Lp	0.16	-	0.40	0.16	-	0.40	
	x	-	-	0.10	-	-	0.10	
Group 2	b2	-	-	0.40	-	-	0.40	
	e1	-	1.20 *	-	-	1.20 *	-	
	l1	-	-	0.50	-	-	0.50	
	α1	-	-	-	-	-	-	Note ( 1 )
	β1	-	-	-	-	-	-	Note ( 1 )

\* indicates true geometrical position

Note ( 1 ) a1 and b1 shall be specified when D or E shorter than 0.8mm.



JEITA STANDARD  
PACKAGE OUT LINE DRAWING

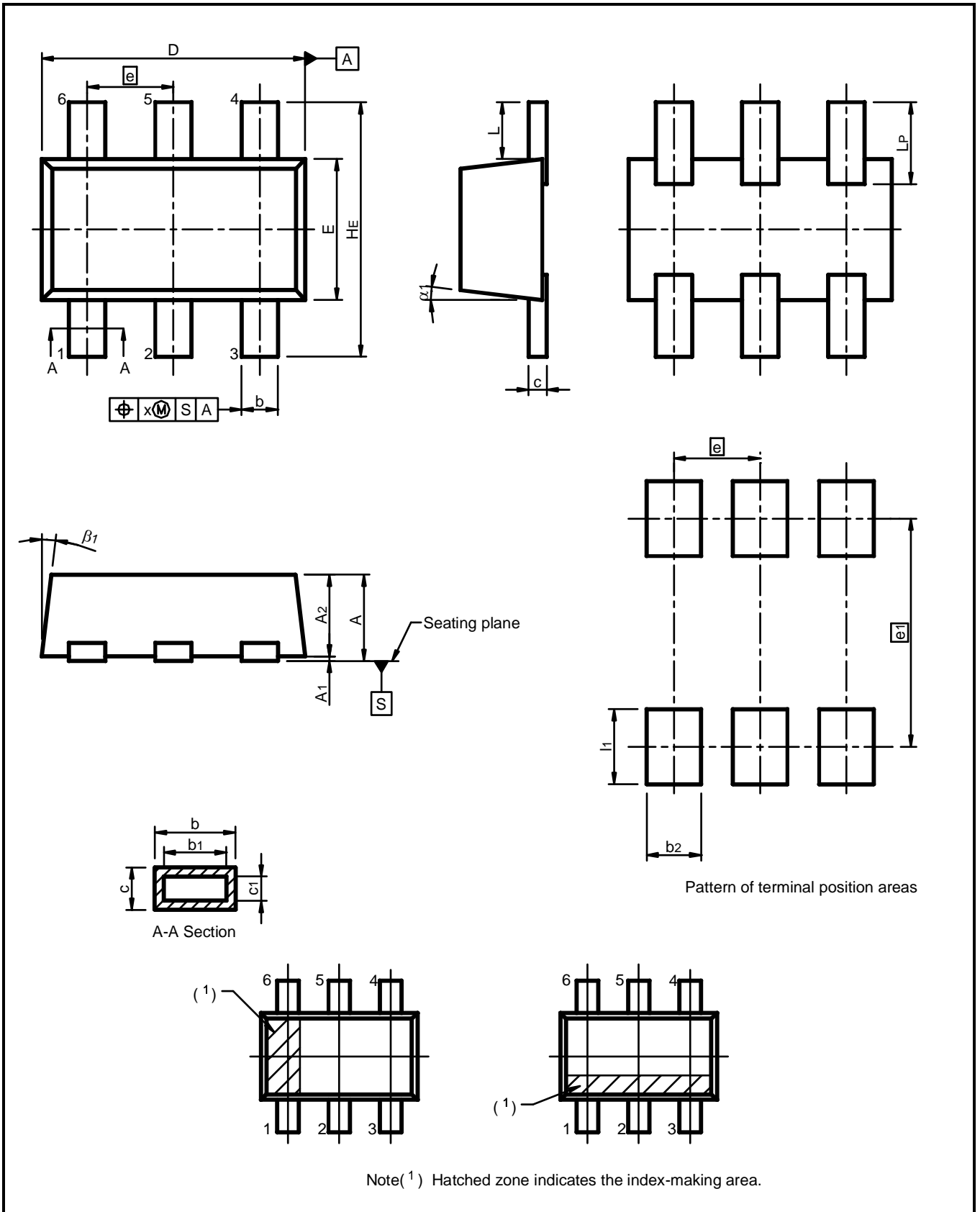
REGISTRATION DATE  
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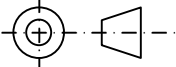
REVISION DATE

PACKAGE CODE  
SC-107

SHEET

SC-107C



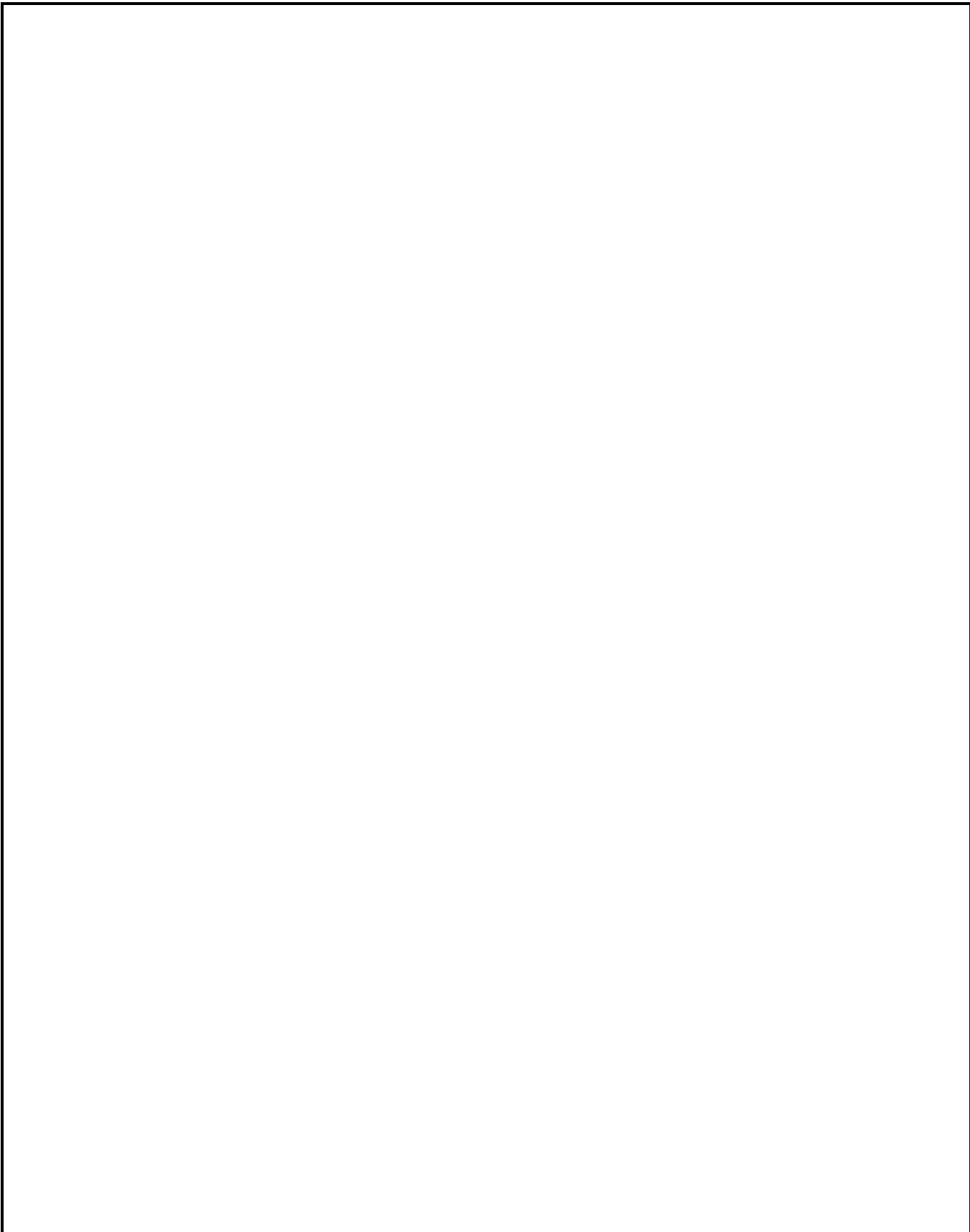
	JEITA STANDARD	REGISTRATION DATE	REVISION DATE
	PACKAGE OUT LINE DRAWING	2006.	
PACKAGE CODE SC-107			SHEET

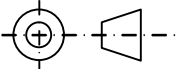
UNIT : mm ( ° )

	CODE	SC-107C						Remarks
	Ref.	Min.	Nom.	Max.				
Group 1	A	0.45	-	0.65				
	A1	0.00	-	0.10				
	A2	0.45	-	0.60				
	b	0.15	-	0.30				
	b1	0.13	-	0.28				
	c	0.07	-	0.20				
	c1	0.05	-	0.18				
	D	1.50	-	1.70				
	E	1.10	-	1.30				
	e	-	0.50 *	-				
	HE	1.50	-	1.70				
	L	0.10	-	0.30				
	Lp	0.16	-	0.40				
	x	-	-	0.10				
Group 2	b2	-	-	0.40				
	e1	-	1.20 *	-				
	l1	-	-	0.50				
	α1	-	-	-				Note ( 1 )
	β1	-	-	-				Note ( 1 )

\* indicates true geometrical position

Note ( 1 ) a1 and b1 shall be specified when D or E shorter than 0.8mm.



	JEITA STANDARD PACKAGE OUT LINE DRAWING	REGISTRATION DATE 2006.	REVISION DATE
PACKAGE CODE SC-107			SHEET

## Explanatory Notes

### 1. Purpose of establishment

This JEITA STANDARD **JEITA ED-7500A-2** is an amendment of EIAJ ED-7500A-1, including newer outline standards thereafter. (SC-104 to SC-107)

- **EIAJ ED-7500**                      Established in May 1990.  
Abolished by **ED-7500A** establishment.  
(SC-1 ~ SC-70, TB-1 ~ TB-30, TC-1 ~ TC-19)
- **EIAJ ED-7500-1**                      Established in February 1992.  
(SC-71 ~ SC-74A)                      Abolished by **ED-7500A** establishment.
- **EIAJ ED-7500-2**                      Established in May 1995.  
(SC-75 ~ SC-84)                      Abolished by **ED-7500A** establishment.
- **EIAJ ED-7500A**                      Revised in July 1996.  
(SC-1 ~ SC-88A, TB-1 ~ TB-30, TC-1 ~ TC-19)
- **EIAJ ED-7500A-1**                      Established in April 2002  
(SC-89 ~ SC-103)

### 2. Progress of discussions

The drawing method of **ED-7500A-2** complies with **ED-7502**.

### 3. Examination members

This standard has mainly been examined by the Sub-committee on Discrete Semiconductor Device Package of the Standardization Committee on Semiconductor Device Package. The following List shows the examination members.

<Technical Standardization Committee on Semiconductor Device Package>  
TSC chairman    Toshiba Corp.    Chiaki Takubo

<Sub-Committee of Discrete Semiconductor Device Package>

Chief	Shindengen Electric Mfg. Co., LTD.	Takahiro Ohnishi
Vice-chief	Renesas Technology Corp.	Akio Mikami
Members	Toshiba Corp.	Shinichi Kouyama
	Sanyo Semiconductor Co., LTD.	Yasuhiro Takano
	Rohm Co., LTD.	Masahide Maeda
	Matsushita Electric Industrial Co., LTD.	Seiji Fujiwara
	NEC Electronics Corp.	Yukinori Tabira
	Dai Nippon Printing Co., LTD.	Masachika Masuda
	Philips Electronics Japan, LTD.	Masahide Kohno
	Fuji Electric Device Technology Co., LTD.	Atsushi Maruyama