

JEITA

Standard of Japan Electronics and Information Technology Industries Association

EIAJ ED - 7500A-1

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

Established in April, 2002

Prepared by
Technical Standardization Committee on Semiconductor Device Package

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EIAJ ED-7500A-1

Standard of Japan Electronics and Information Technology Industries Association

Standards for the dimensions of semiconductor devices (Discrete semiconductor devices)

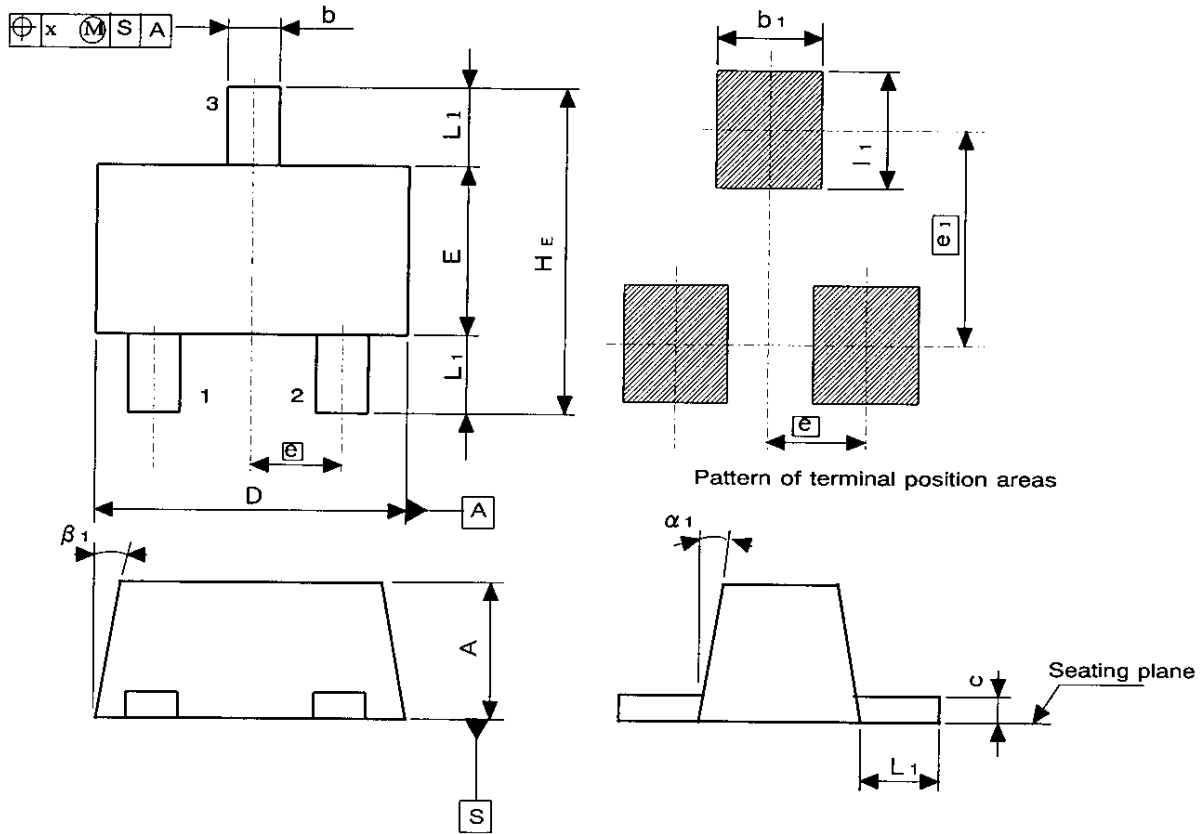
1. SCOPE

This standard stipulates Outline Drawings of discrete semiconductor devices.

2. DEFINITION OF TERMS

Definition in this standard generally follows JEITA STANDARD **EIAJ ED-7300** with some additions for new definitions.

SC-89



UNIT:mm(°)

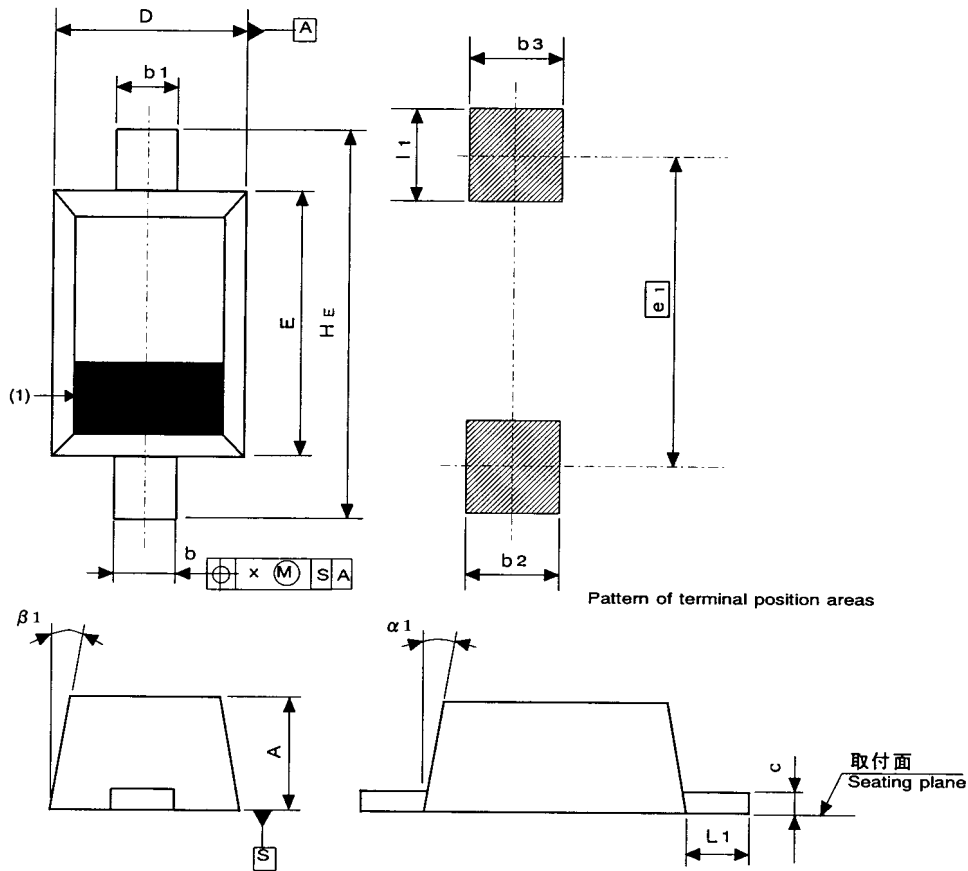
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	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.
Group 1	A	0.60	0.70	0.80
	b	0.23	0.28	0.33
	c	0.10	0.15	0.20
	D	1.50	1.60	1.70
	e	—	0.50	—
	E	0.75	0.85	0.95
	H _E	1.50	1.60	1.70
	x	—	—	0.20
	L ₁	0.30	0.40	0.50

	CODE	SC-89		
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.
Group 2	b ₁	—	0.53	—
	l ₁	—	0.60	—
	e ₁	—	1.10	—
	α ₁	—	—	10°
	β ₁	—	—	10°

注(1) パッケージ裏面に端子の一部が露出している。

Note(1) Terminals are partially uncovered on the bottom of package body.

SC-90/A



UNIT:mm(°)

	CODE	SC-90			SC-90A		
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.	最小値 min.	標準値 nom.	最大値 max.
Group 1	A	0.65	0.75	0.85	0.65	0.75	0.85
	b	0.25	—	0.40	0.40	—	0.60
	b ₁	0.25	—	0.40	0.25	—	0.40
	c	0.05	—	0.26	0.05	—	0.26
	D	1.15	1.25	1.35	1.15	1.25	1.35
	E	1.60	1.70	1.80	1.60	1.70	1.80
	H _E	2.30	2.50	2.70	2.30	2.50	2.70
	x	—	—	0.10	—	—	0.10
Group 2	L ₁	0.30	0.40	0.50	0.30	0.40	0.50
	b ₂	—	0.50	—	—	0.70	—
	b ₃	—	0.50	—	—	0.70	—
	l ₁	—	0.70	—	—	0.70	—
	e ₁	—	2.00	—	—	2.00	—
	α ₁	—	—	10°	—	—	10°
β ₁	—	—	10°	—	—	10°	

注(1) 指標の位置を示す。

Note (1) The position of an index

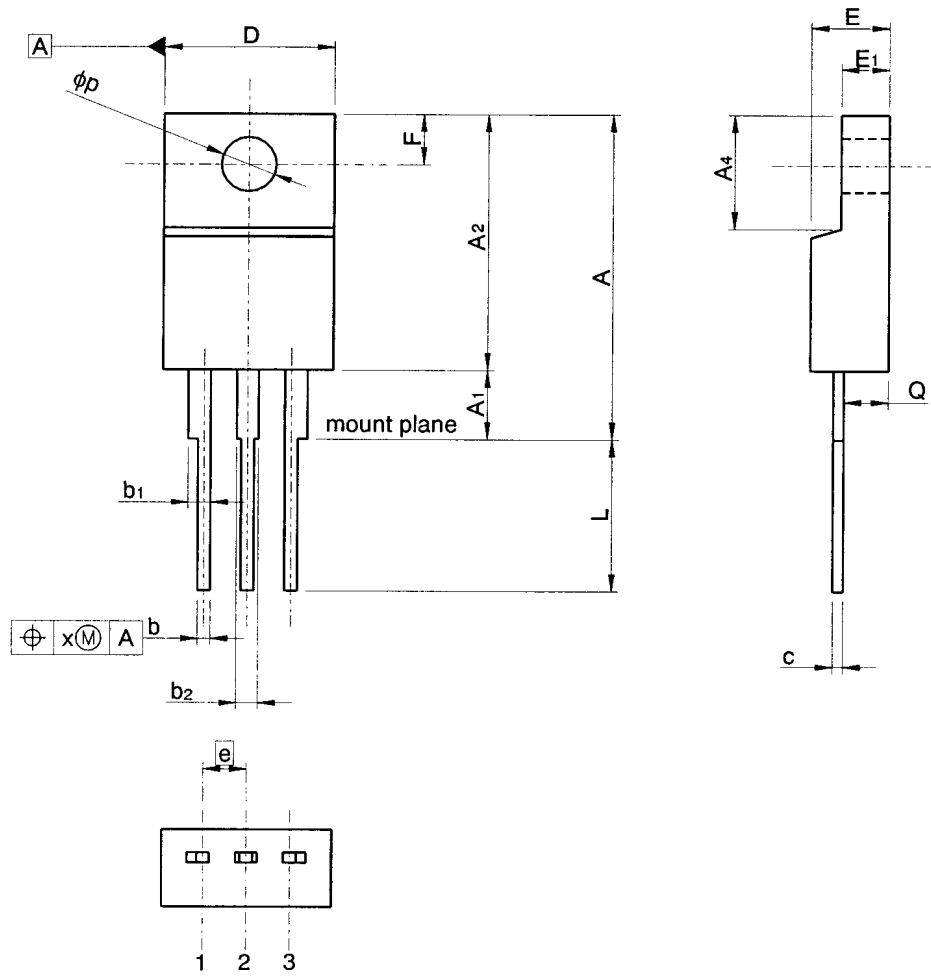
注(2) パッケージ裏面に端子の一部が露出している。

Note (2) Terminals are partially uncovered on the bottom of package body.

SC-91/A

樹脂全面被覆型

full mold type



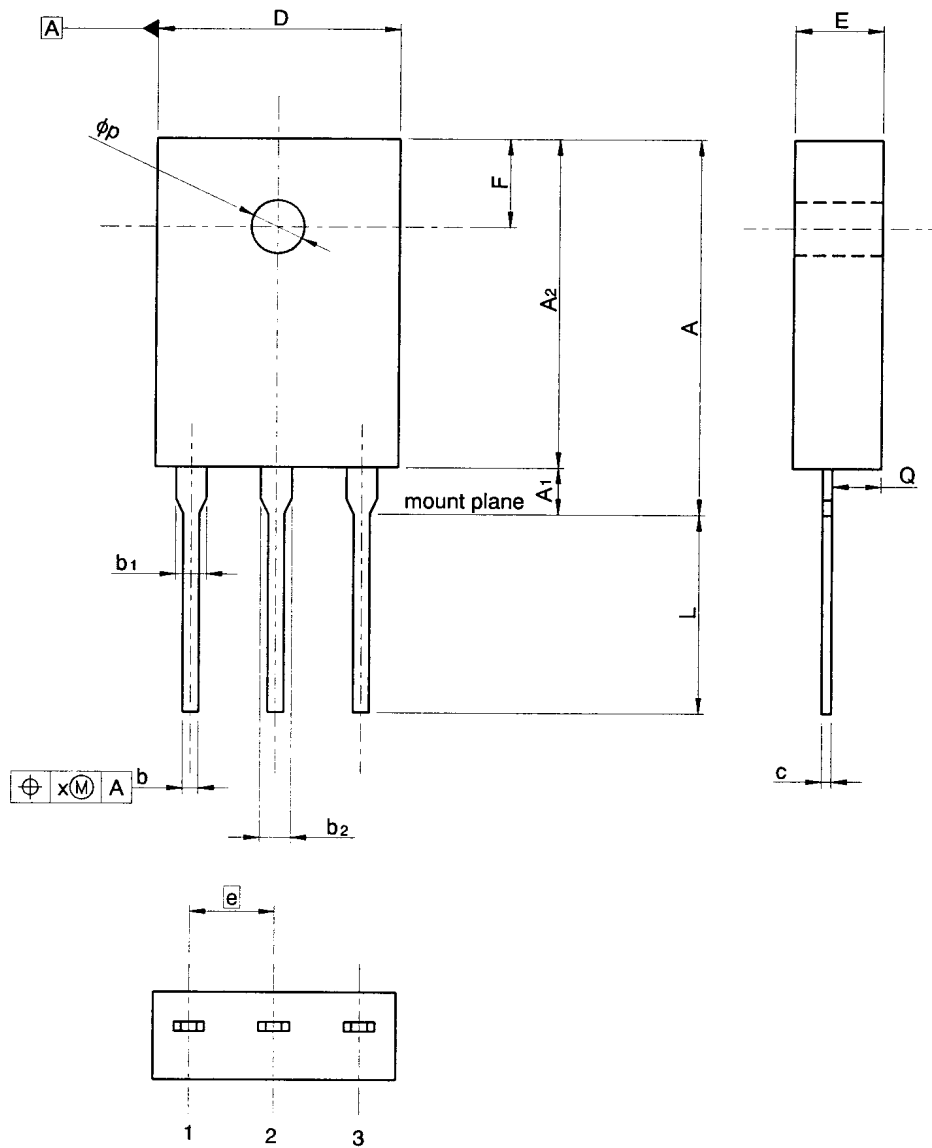
UNIT : mm

	CODE	SC-91			SC-91A		
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.	最小値 min.	標準値 nom.	最大値 max.
Group1	D	9.6	-	10.3	9.6	-	10.3
	E	4.3	-	4.8	4.3	-	4.8
	E ₁	2.5	-	3.1	2.5	-	3.1
	A	17.9	-	20.2	18.3	-	21.1
	A ₁	3.4	-	4.7	3.8	-	5.6
	A ₂	14.5	-	15.5	14.5	-	15.5
	A ₄	6.2	-	7.2	6.2	-	7.2
	b	0.5	-	1.0	0.5	-	1.0
	b ₁	0.95	-	1.7	0.74	-	1.7
	b ₂	0.95	-	1.6	0.74	-	1.6
	c	0.4	-	0.8	0.6	-	0.9
	e		2.54			2.54	
	p	3.0	-	3.4	3.0	-	3.4
	Q	2.3	-	2.9	2.1	-	3.1
	F	2.4	-	3.5	2.4	-	3.5
x	-	-	0.5	-	-	0.5	
L	8.3	-	-	7.4	-	-	

SC-92

樹脂全面被覆型

full mold type



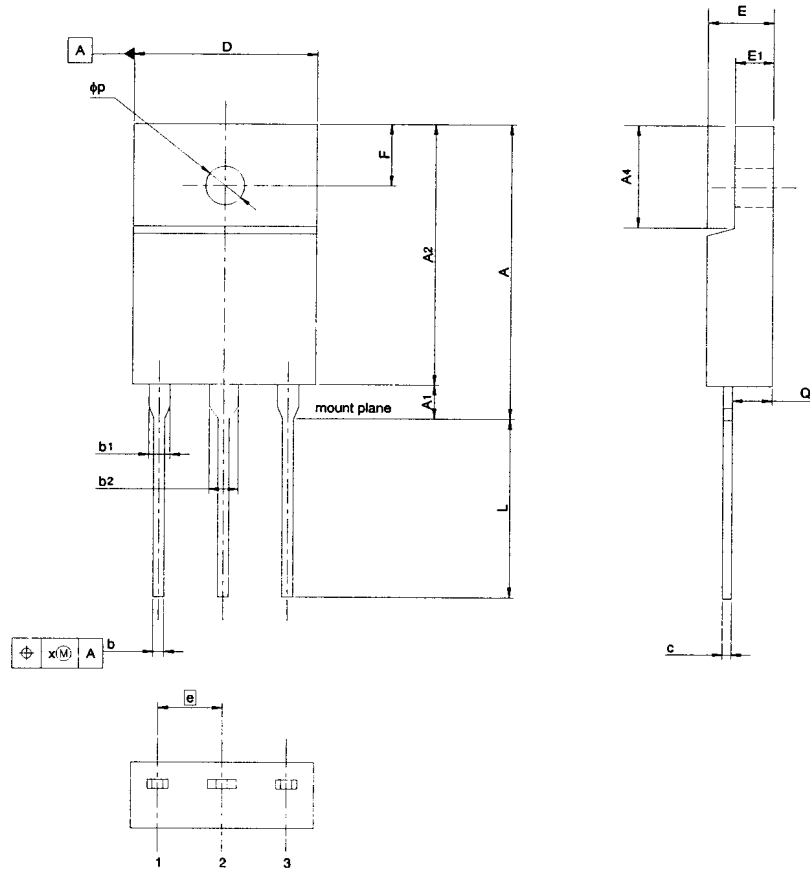
UNIT : mm

	CODE	SC-92		
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.
Group1	D	14.7	-	16.3
	E	4.7	-	6.5
	A	22.9	-	25.1
	A ₁	2.4	-	3.6
	A ₂	20.5	21.0	21.5
	b	0.8	-	1.25
	b ₁	1.5	-	2.4
	b ₂	1.75	2.0	2.4
	c	0.4	0.6	0.85
	e		5.45	
	p	3.0	-	3.8
	Q	1.9	-	4.3
	F	5.0	-	6.3
	x	-	-	0.5
L	12.1	-	-	

SC-93

樹脂全面被覆型

full mold type



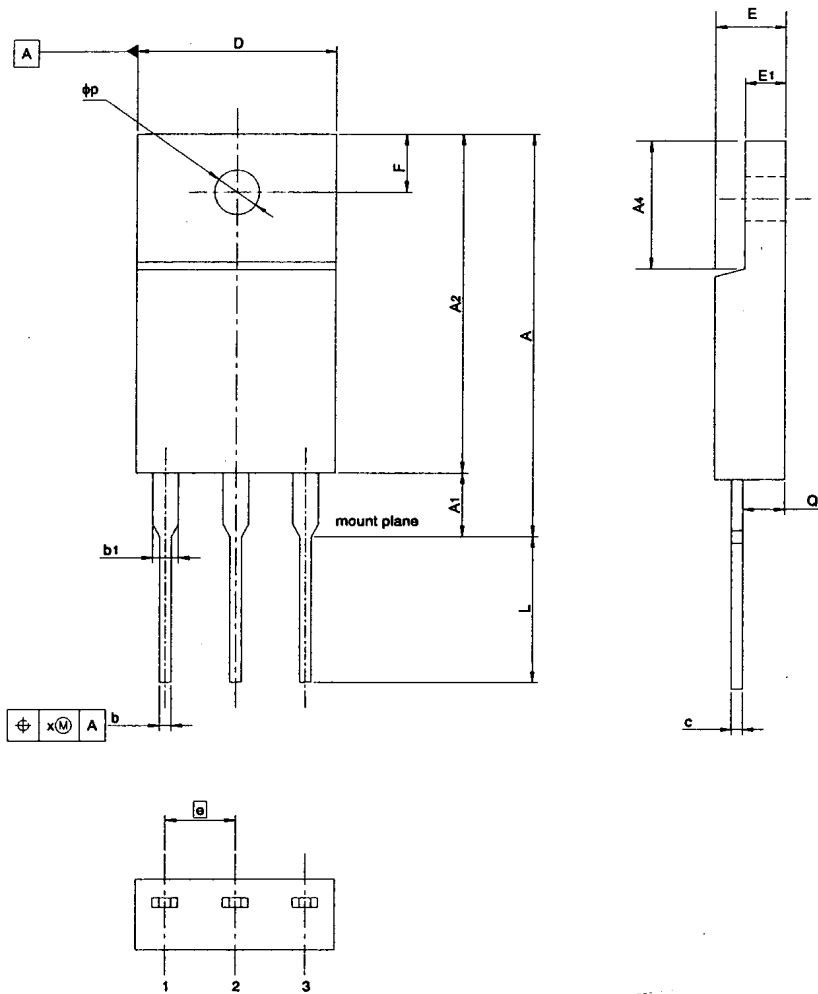
UNIT:mm

	CODE	SC-93		
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.
Group1	A	22.3	—	27.1
	A ₁	1.1	—	4.6
	A ₂	21.2	—	22.5
	A ₄	7.7	—	9.6
	b	0.56	—	1.3
	b ₁	1.3	—	2.3
	b ₂	1.8	—	3.1
	c	0.4	—	1.1
	D	14.7	—	16.3
	E	5.2	—	5.9
	e	—	5.45	—
	E ₁	2.8	—	3.7
	F	4.7	—	5.7
	L	12.4	—	—
	p	3.0	—	3.6
Q	2.9	—	3.8	
x	—	—	0.5	

SC-94

樹脂全面被覆型

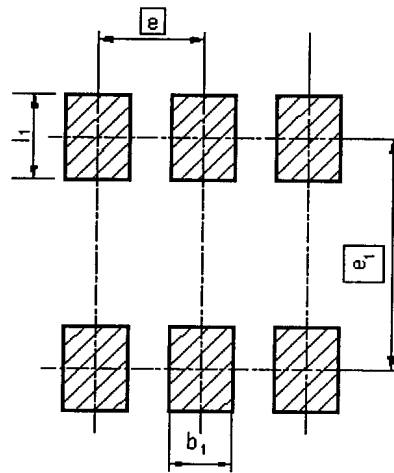
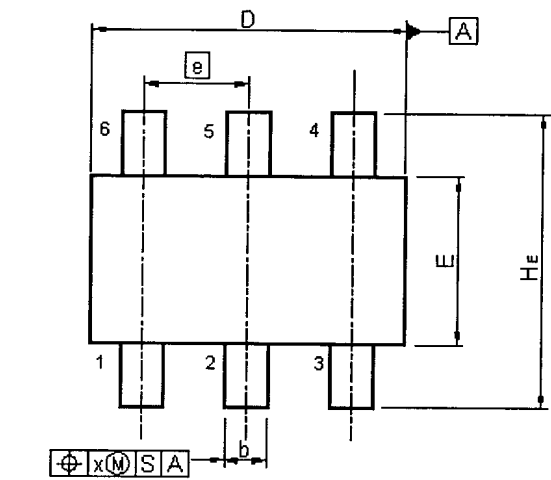
full mold type



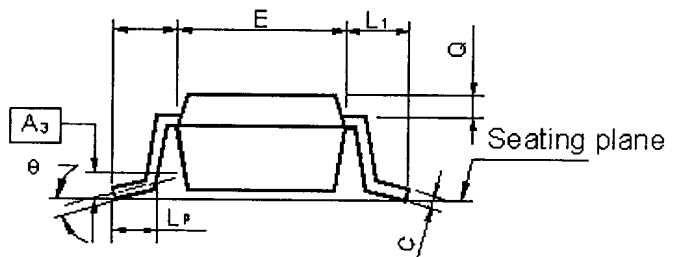
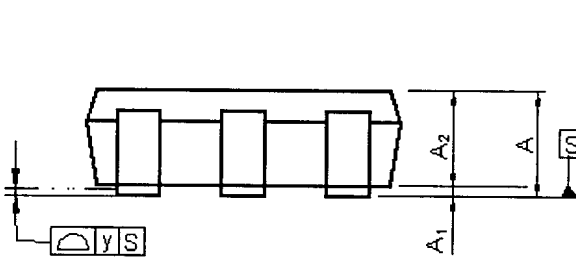
UNIT:mm

	CODE	SC-94		
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.
Group1	A	26.0	—	32.7
	A ₁	—	—	5.7
	A ₂	26.0	—	27.0
	A ₄	—	10.0	—
	b	0.6	—	1.2
	b ₁	1.75	—	2.3
	c	0.6	—	1.15
	D	15.0	15.5	16.0
	E	5.2	5.5	5.8
	⓪	—	5.45	—
	E ₁	2.7	—	3.3
	F	4.4	4.5	4.6
	L	10.7	—	—
	p	3.1	—	3.9
	Q	—	3.3	—
x	—	—	0.5	

SC-95



Pattern of terminal
Position areas

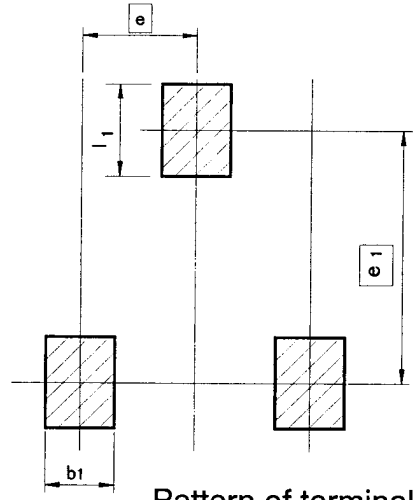
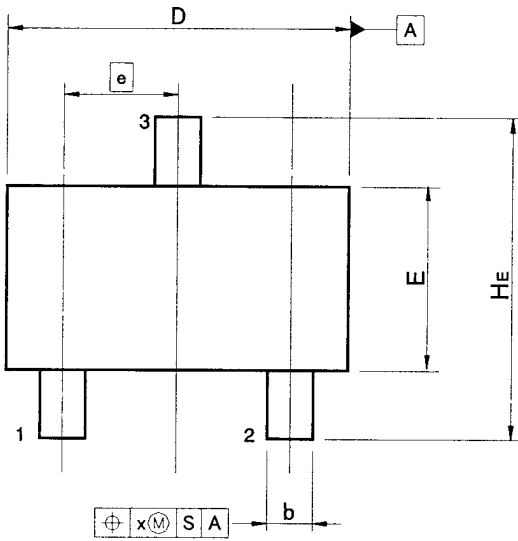


UNIT:mm(°)

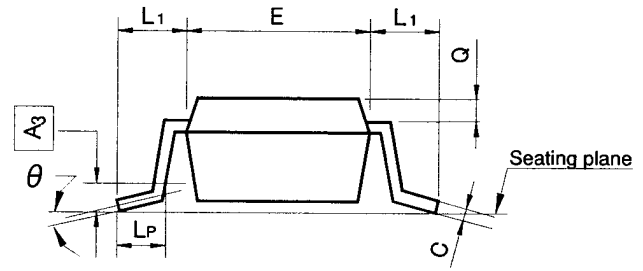
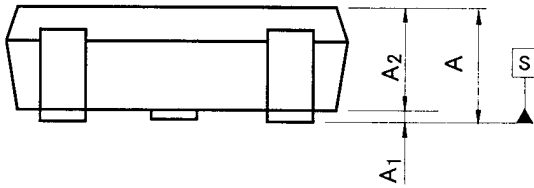
	CODE	SC-95		
	照合文字 Ref.	最小值 min.	標準値 nom.	最大値 max.
Group 1	A	0.80	-	1.10
	A ₁	0.00	-	0.15
	A ₂	0.80	0.90	1.00
	A ₃	-	0.25	-
	b	0.25	-	0.50
	c	0.10	-	0.26
	D	2.70	2.90	3.10
	e	-	0.95	-
	E	1.35	-	1.75
	H _E	2.60	2.80	3.00
	x	-	-	0.20
	y	-	-	0.10
	θ	0°	-	8°
	L _p	0.20	-	0.60
L ₁	0.50	-	0.75	

	CODE	SC-95		
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.
Group 2	Q	-	0.20	-
	b ₁	-	0.70	-
	e ₁	-	2.25	-
	l ₁	-	0.80	-

SC-96



Pattern of terminal Position areas

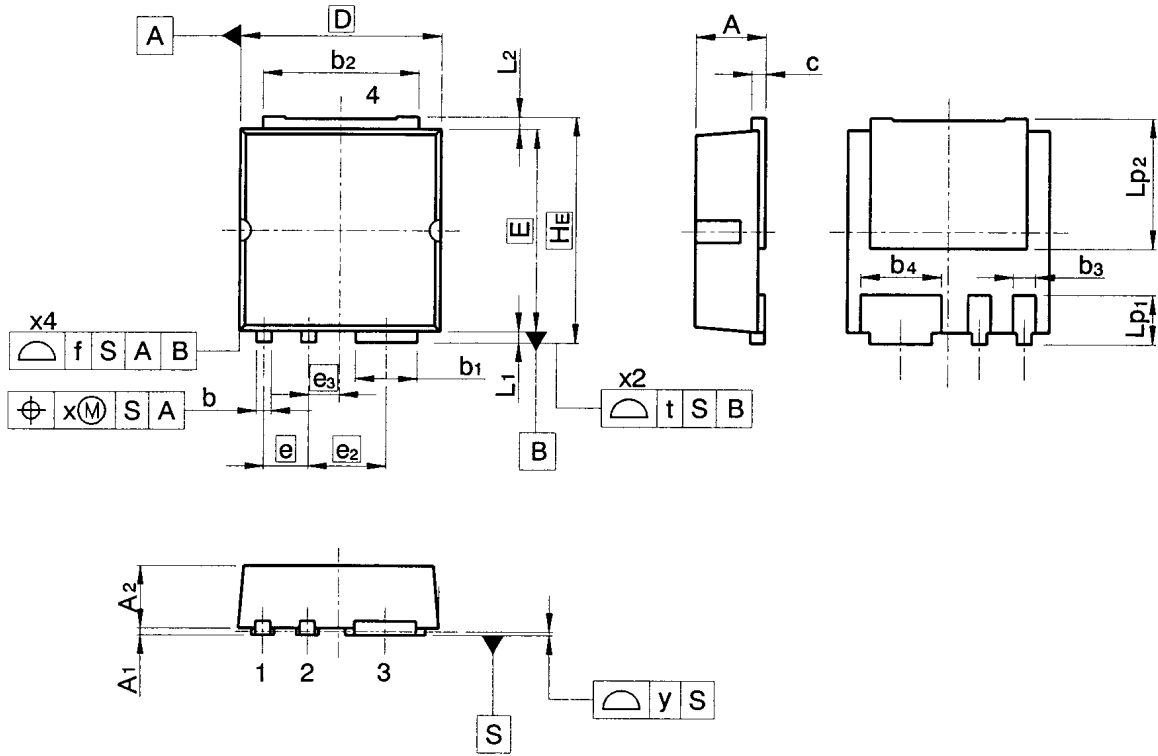


UNIT:mm(°)

	CODE	SC-96		
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.
Group 1	A	0.80	-	1.10
	A ₁	0.00	-	0.15
	A ₂	0.80	0.90	1.00
	A ₃	-	0.25	-
	b	0.25	-	0.50
	c	0.10	-	0.26
	D	2.70	2.90	3.10
	e	-	0.95	-
	E	1.35	-	1.75
	H _E	2.60	2.80	3.00
	x	-	-	0.20
	θ	0°	-	8°
	L _p	0.20	-	0.60
L ₁	0.50	-	0.75	

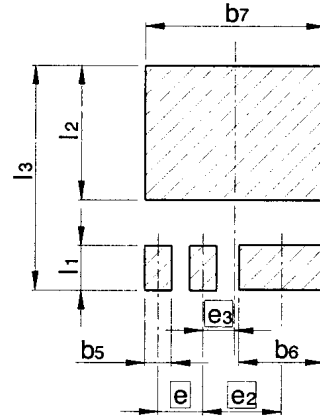
	CODE	SC-96		
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.
Group 2	Q	-	0.20	-
	b ₁	-	0.70	-
	e ₁	-	2.25	-
	l ₁	-	0.80	-

SC-97



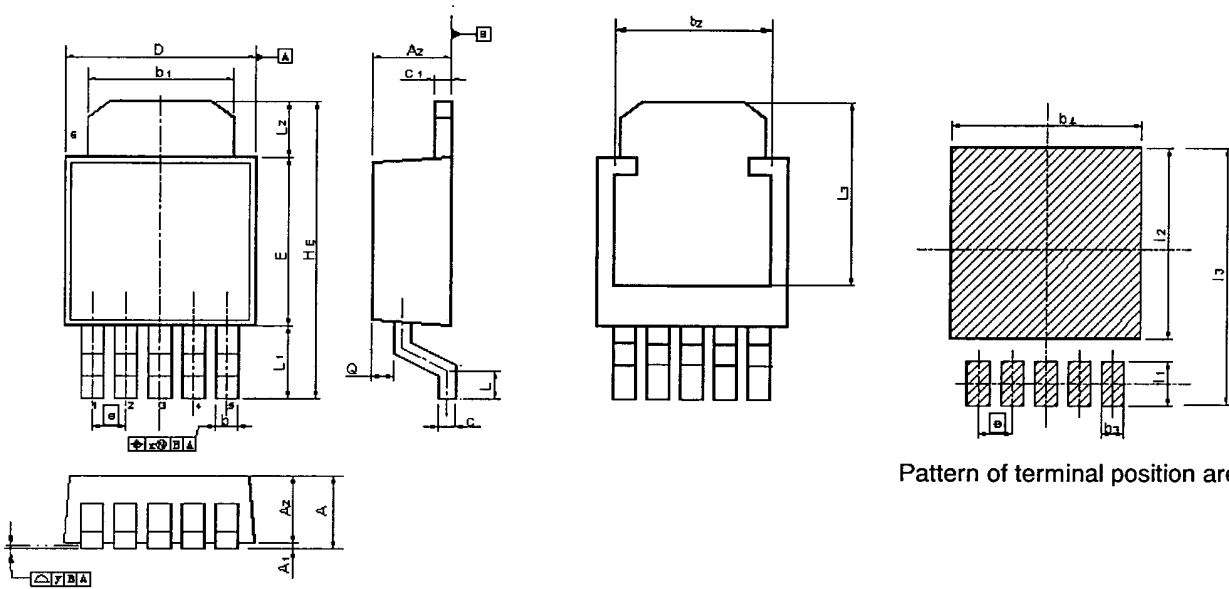
UNIT:mm

	CODE	SC-97		
	照合文字 Ref.	最小值 min.	標準値 nom.	最大値 max.
Group1	D	---	9.0	---
	E	---	9.0	---
	f	---	---	0.2
	H _E	---	10.0	---
	A	---	---	3.0
	A ₁	0	0.05	0.1
	A ₂	2.6	2.8	3.0
	b	0.8	1.0	1.2
	b ₁	3.4	3.6	3.8
	b ₂	6.8	7.0	7.2
	b ₃	0.8	1.1	1.4
	b ₄	3.4	3.8	4.2
	c	0.3	0.4	0.5
	e	---	2.0	---
	e ₂	---	3.5	---
	e ₃	---	1.5	---
	L ₁	0.3	---	0.7
	L ₂	0.3	---	0.8
	L _{p1}	2.0	2.2	2.4
	L _{p2}	5.65	5.85	6.05
x	---	---	0.1	
y	---	---	0.1	
t	---	---	0.4	
Group2	b ₅	---	1.5	---
	b ₆	---	4.3	---
	b ₇	---	7.2	---
	l ₁	---	3.2	---
	l ₂	---	6.05	---
	l ₃	---	10.4	---



Pattern of terminal position areas

SC-98

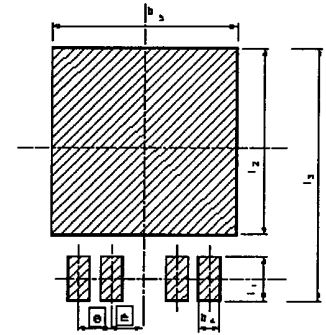
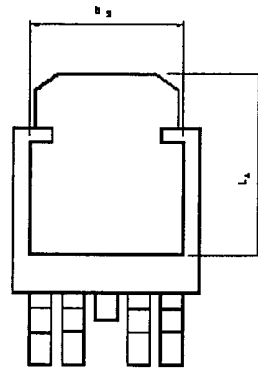
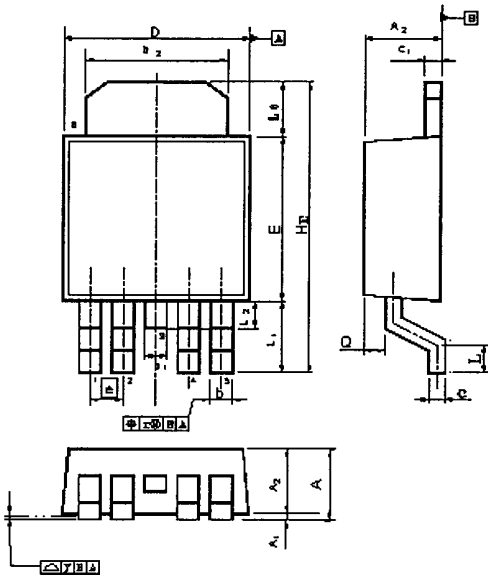


Pattern of terminal position areas

UNIT:mm

	CODE	SC-98		
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.
Group 1	A	1.80	-	3.25
	A ₁	0.00	-	0.45
	A ₂	1.80	-	2.80
	b	0.30	-	0.80
	b ₁	4.70	-	5.70
	b ₂	-	-	6.70
	C	0.35	-	0.65
	C ₁	0.30	-	0.70
	D	6.30	-	6.70
	e	-	1.27	-
	E	5.00	-	6.00
	H _E	8.90	-	10.3
	L	0.30	-	1.50
	L ₁	2.00	-	3.00
	L ₂	1.30	-	2.20
L ₃	-	-	8.20	
x	-	-	0.35	
y	-	-	0.10	
Group 2	Q	0.30	-	1.45
	b ₃	-	1.15	-
	b ₄	-	6.70	-
	l ₁	-	2.90	-
	l ₂	-	8.20	-
	l ₃	-	10.3	-

SC-98A

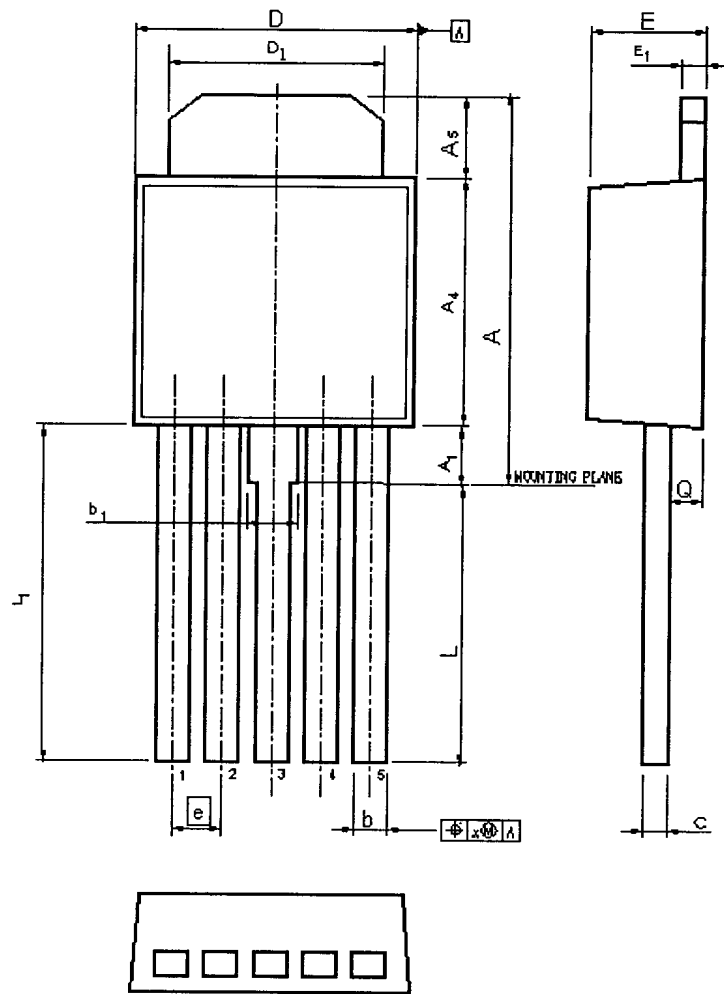


Pattern of terminal Position areas

UNIT:mm

	CODE	SC-98AA			SC-98AB		
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.	最小値 min.	標準値 nom.	最大値 max.
Group 1	A	1.80	-	3.25	1.80	-	3.25
	A ₁	0.00	-	0.45	0.00	-	0.45
	A ₂	1.80	-	2.80	1.80	-	2.80
	b	0.30	-	0.80	0.30	-	0.80
	b ₁	0.40	-	0.80	0.40	-	0.80
	b ₂	4.70	-	5.70	4.70	-	5.70
	b ₃	-	-	6.70	-	-	6.70
	C	0.35	-	0.65	0.35	-	0.65
	C ₁	0.30	-	0.70	0.30	-	0.70
	D	6.30	-	6.70	6.30	-	6.70
	e	-	1.27	-	-	1.30	-
	E	5.00	-	6.00	5.00	-	6.00
	H _E	8.90	-	10.3	8.90	-	10.3
	L	0.30	-	1.50	0.30	-	1.50
	L ₁	2.00	-	3.00	2.00	-	3.00
	L ₂	0.50	-	1.10	0.50	-	1.10
	L ₃	1.30	-	2.20	1.30	-	2.20
L ₄	-	-	8.20	-	-	8.20	
x	-	-	0.35	-	-	0.35	
y	-	-	0.10	-	-	0.10	
Group 2	Q	0.30	-	1.45	0.30	-	1.45
	b ₄	-	1.15	-	-	1.15	-
	b ₅	-	6.70	-	-	6.70	-
	l ₁	-	2.90	-	-	2.90	-
	l ₂	-	8.20	-	-	8.20	-
l ₃	-	10.3	-	-	10.3	-	

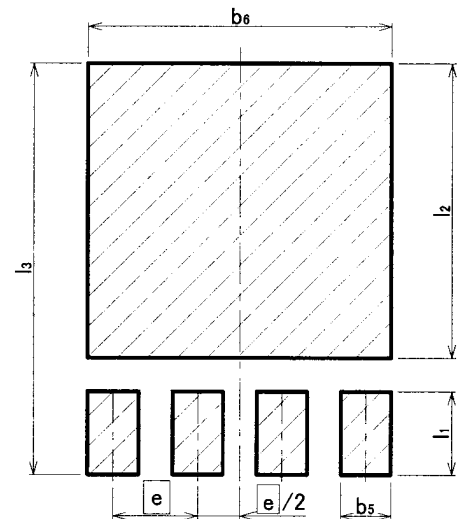
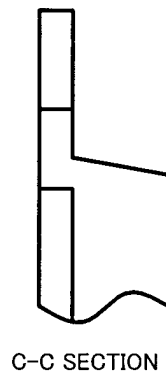
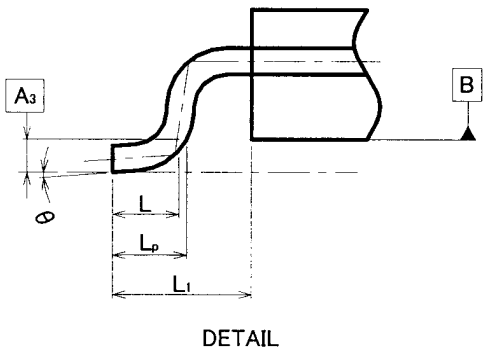
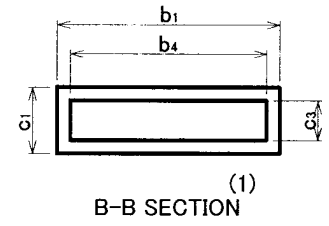
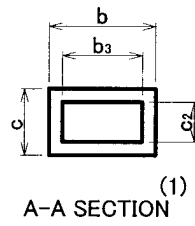
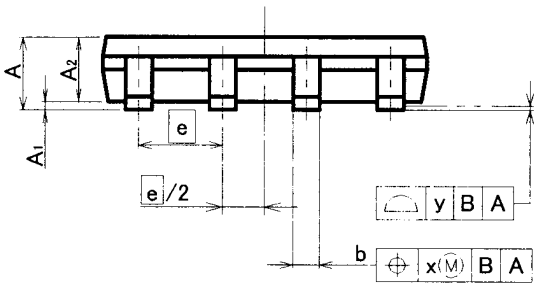
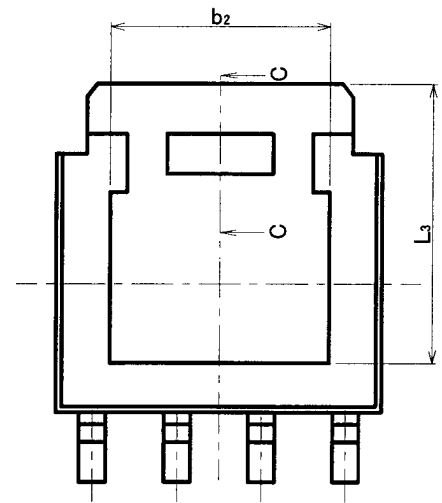
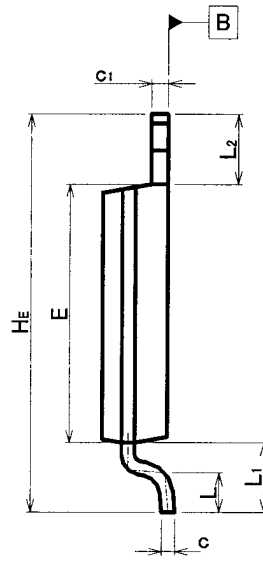
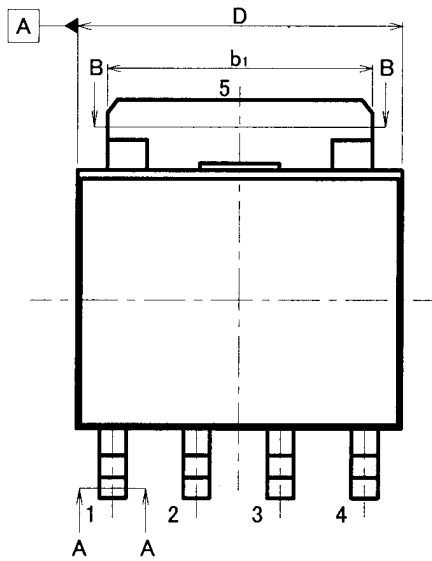
SC-99



UNIT:mm

CODE	SC-99			SC-99A			
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.	最小値 min.	標準値 nom.	最大値 max.
A		7.70	-	9.50	7.70	-	9.50
A ₁		1.40	-	1.80	1.40	-	1.80
A ₄		5.00	-	6.00	5.00	-	6.00
A ₅		1.30	-	1.70	1.30	-	1.70
b		0.30	-	0.80	0.30	-	0.80
b ₁		0.40	-	1.10	0.40	-	1.10
c		0.40	-	0.60	0.40	-	0.60
D		6.30	-	6.70	6.30	-	6.70
D ₁		4.80	-	5.20	4.80	-	5.20
E		2.10	-	2.50	2.10	-	2.50
E ₁		0.30	-	0.70	0.30	-	0.70
e		-	1.27	-	-	1.30	-
L		5.20	-	7.60	5.20	-	7.60
L ₁		7.00	-	9.00	7.00	-	9.00
Q		0.67	-	1.30	0.67	-	1.30
x		-	-	0.35	-	-	0.35

SC-100



Pattern of terminal position areas.

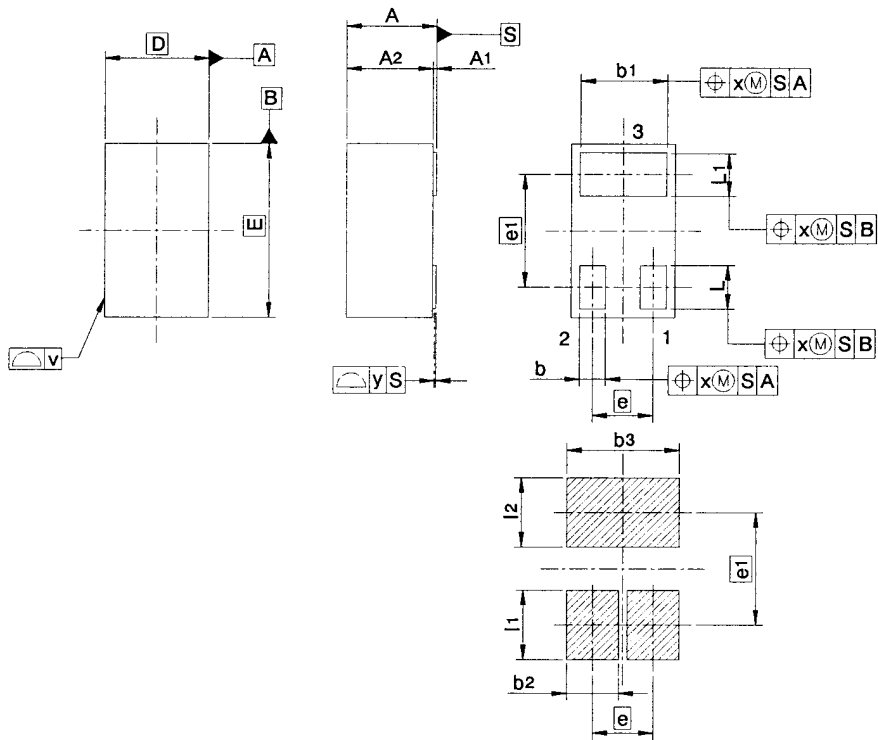
UNIT: mm (°)

CODE	SC-100			SC-100A			SC-100B			
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.	最小値 min.	標準値 nom.	最大値 max.	最小値 min.	標準値 nom.	最大値 max.
Group 1	A	1.01	1.05	1.20	0.81	0.90	1.00	0.66	0.70	0.80
	A ₁	0.00	-	0.25	0.00	-	0.25	0.00	-	0.25
	A ₂	0.95	1.00	1.10	0.75	0.85	0.90	0.60	0.65	0.70
	A ₃	-	0.25	-	-	0.25	-	-	0.25	-
	b	0.35	0.42	0.50	0.35	0.42	0.50	0.35	0.42	0.50
	b ₁	-	-	4.41	-	-	4.41	-	-	4.41
	b ₂	-	3.30	-	-	3.30	-	-	3.30	-
	b ₃	0.32	0.40	0.46	0.32	0.40	0.46	0.32	0.40	0.46
	b ₄	-	4.00	4.21	-	4.00	4.21	-	4.00	4.21
	c	0.19	0.22	0.30	0.17	0.20	0.25	0.16	0.19	0.22
	c ₁	0.22	0.27	0.30	0.17	0.22	0.25	0.16	0.19	0.22
	c ₂	0.17	0.20	0.23	0.15	0.18	0.21	0.14	0.17	0.20
	c ₃	0.19	0.25	0.28	0.17	0.20	0.23	0.14	0.17	0.20
	D	4.80	-	5.00	4.80	-	5.00	4.80	-	5.00
	E	3.80	-	4.10	3.80	-	4.10	3.80	-	4.10
	e	-	1.27	-	-	1.27	-	-	1.27	-
	HE	5.80	-	6.20	5.80	-	6.20	5.80	-	6.20
	L	-	0.60	0.85	-	0.60	0.85	-	0.60	0.85
	L ₁	0.80	-	1.30	0.80	-	1.30	0.80	-	1.30
	L ₂	0.80	-	1.30	0.80	-	1.30	0.80	-	1.30
L ₃	-	-	4.20	-	-	4.20	-	-	4.20	
L _p	0.40	-	1.00	0.40	-	1.00	0.40	-	1.00	
x	-	-	0.25	-	-	0.25	-	-	0.25	
y	-	-	0.10	-	-	0.10	-	-	0.10	
θ	0°	-	8°	0°	-	8°	0°	-	8°	
Group 2	l ₁	-	1.25	-	-	1.25	-	-	1.25	-
	l ₂	-	4.20	-	-	4.20	-	-	4.20	-
	l ₃	-	6.20	-	-	6.20	-	-	6.20	-
	b ₅	-	0.75	-	-	0.75	-	-	0.75	-
	b ₆	-	4.41	-	-	4.41	-	-	4.41	-

注(1) 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。

Note(1) The dimensions of the terminal section apply to the ranges of 0.1mm and 0.25mm from the end of a terminal.

SC-101



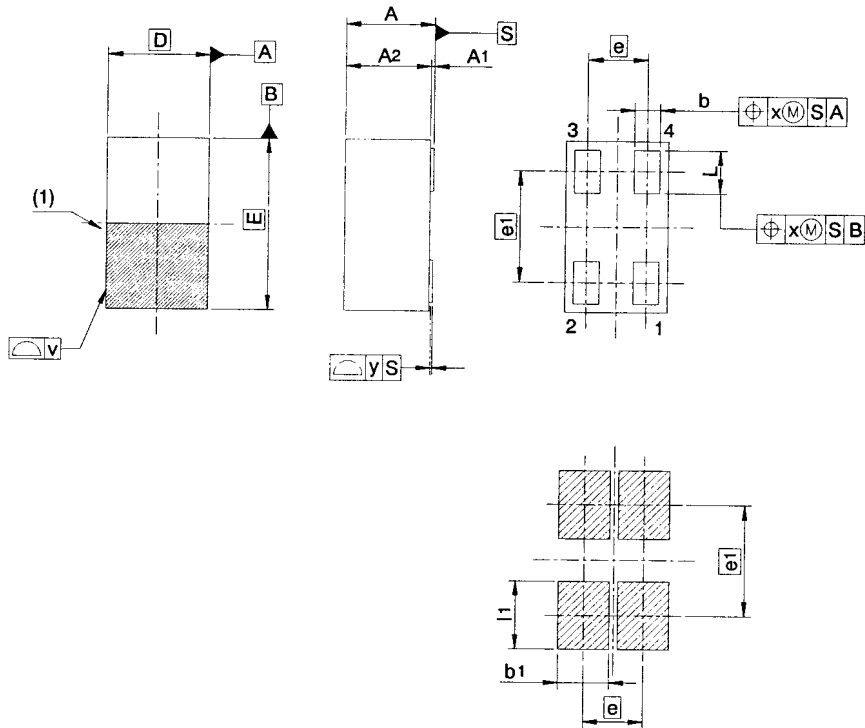
Pattern of terminal position areas

UNIT:mm

	CODE	SC-101		
	照合文字	最小値	標準値	最大値
	Ref.	min.	nom.	max.
Group 1	A	0.45	—	0.60
	A ₁	0.00	—	0.05
	A ₂	0.40	—	0.60
	b	0.10	0.15	0.20
	b ₁	0.45	0.50	0.55
	D	—	0.60	—
	E	—	1.00	—
	e	—	0.35	—
	e ₁	—	0.65	—
	L	0.20	0.25	0.30
	L ₁	0.20	0.25	0.30
	v	—	—	0.05
	x	—	—	0.10
y	—	—	0.03	

	CODE	SC-101		
	照合文字	最小値	標準値	最大値
	Ref.	min.	nom.	max.
Group 2	b ₂	—	0.30	—
	b ₃	—	0.65	—
	l ₁	—	0.40	—
	l ₂	—	0.40	—

SC-102



Pattern of terminal position areas

UNIT:mm

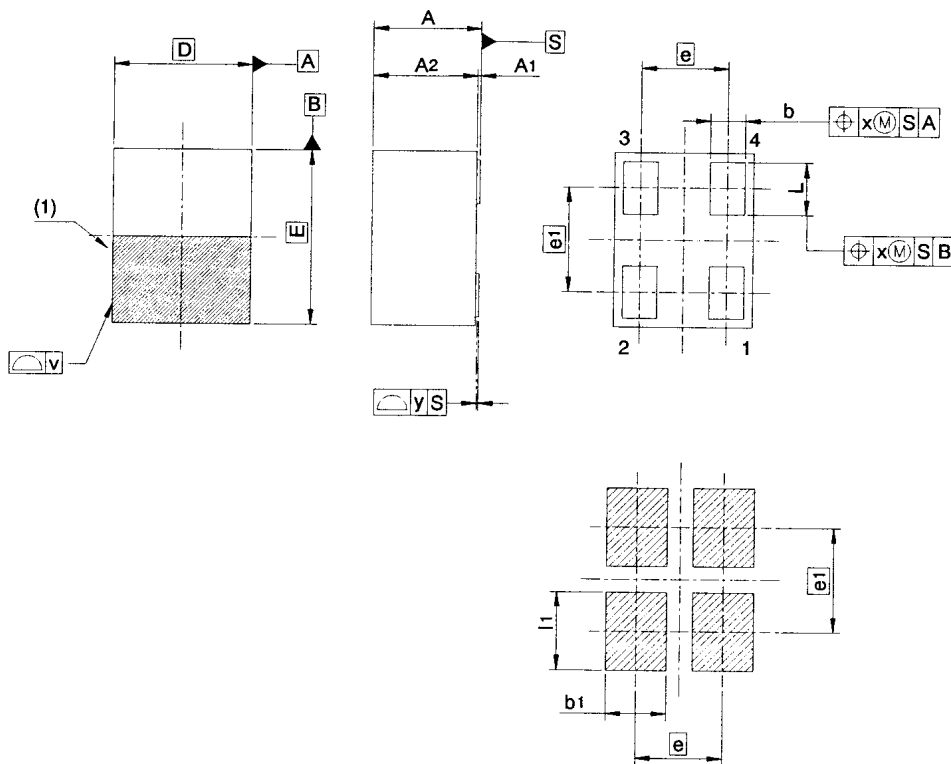
	CODE	SC-102		
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.
Group 1	A	0.45	—	0.60
	A ₁	0.00	—	0.05
	A ₂	0.40	—	0.60
	b	0.10	0.15	0.20
	D	—	0.60	—
	E	—	1.00	—
	e	—	0.35	—
	e ₁	—	0.65	—
	L	0.20	0.25	0.30
	v	—	—	0.05
	x	—	—	0.10
	y	—	—	0.03

	CODE	SC-102		
	照合文字 Ref.	最小値 min.	標準値 nom.	最大値 max.
Group 2	b ₁	—	0.30	—
	l ₁	—	0.40	—

注(1) 指標の位置を示す。

Note(1) The position of an index.

SC-103



Pattern of terminal position areas

UNIT:mm

	CODE	SC-103		
	照合文字	最小値	標準値	最大値
	Ref.	min.	nom.	max.
Group 1	A	0.55	—	0.65
	A ₁	0.00	—	0.05
	A ₂	0.50	—	0.65
	b	0.15	0.20	0.25
	D	—	0.80	—
	E	—	1.00	—
	e	—	0.50	—
	e ₁	—	0.60	—
	L	0.25	0.30	0.35
	v	—	—	0.05
	x	—	—	0.10
	y	—	—	0.03

	CODE	SC-103		
	照合文字	最小値	標準値	最大値
	Ref.	min.	nom.	max.
Group	b ₁	—	0.35	—
	l ₁	—	0.45	—

注(1) 指標の位置を示す。

Note(1) The position of an index.

Explanatory Notes

1. Purpose of establishment

In 1996, **EIAJ ED-7500A** was established to combine the standards which were published before. This JEITA STANDARD **EIAJ ED-7500A-1** establishes as additional edition for standards (SC-89 ~ SC-103) established after **EIAJ ED-7500A**.

- | | |
|---------------------------|---|
| (1) EIAJ ED-7500 | Established in May, 1990.
Abolished by EIAJ ED-7500A establishment.
(SC-1 ~ SC-70, TB-1 ~ TB-30, TC-1 ~ TC-19) |
| (2) EIAJ ED-7500-1 | Established in February, 1992.
(SC-71 ~ SC-74A) Abolished by EIAJ ED-7500A establishment. |
| (3) EIAJ ED-7500-2 | Established in May, 1995.
(SC-75 ~ SC-84) Abolished by EIAJ ED-7500A establishment. |
| (4) EIAJ ED-7500A | Revised in July, 1996.
(SC-1 ~ SC-88A, TB-1 ~ TB-30, TC-1 ~ TC-19) |

2. Progress of discussions

EIAJ ED-7500A had unmatched points with **EIAJ ED-7300** (Recommended Practice on General Rules for the Preparation of Outline Drawings of Semiconductor Packages). The drawings in **EIAJ ED-7500A-1** which was established this time are defined following to **EIAJ ED-7300**.

The contents which were defined newly are established as "Manual for the standard of discrete semiconductor devices" (the tentative name) after coordinated with IEC standard.

3. Examination members

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

<Technical Standardization Committee on Semiconductor Device Package>

Chairperson	Sony Corporation	Kazuo Nishiyama
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<Sub-Committee of Discrete Semiconductor Device Package>

Chair	Hitachi, LTD.	Akio Mikami
Vice-chair	Rohm Co., LTD.	Yoshitaka Horie
Members	Sanyo Electric Co., LTD.	Hirokazu Fukuda
	Shindengen Electric Mfg. Co., LTD.	Takahiro Ohnishi
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	Philips Japan, Ltd.	Masahide Kohno
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	Matsushita Electric Industrial Co., Ltd.	Masafumi Onoue
Mitsubishi Electronic Corp.	Toshihiro Miyazaki	