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# 2SA2126

## Bipolar Transistor -50V, -3A, Low VCE(sat), PNP Single TP/TP-FA

ON Semiconductor®

<http://onsemi.com>

### Applications

- DC / DC converter, relay drivers, lamp drivers, motor drivers

### Features

- Adoption of MBIT processes
- Low collector-to-emitter saturation voltage
- High current capacitance
- High-speed switching

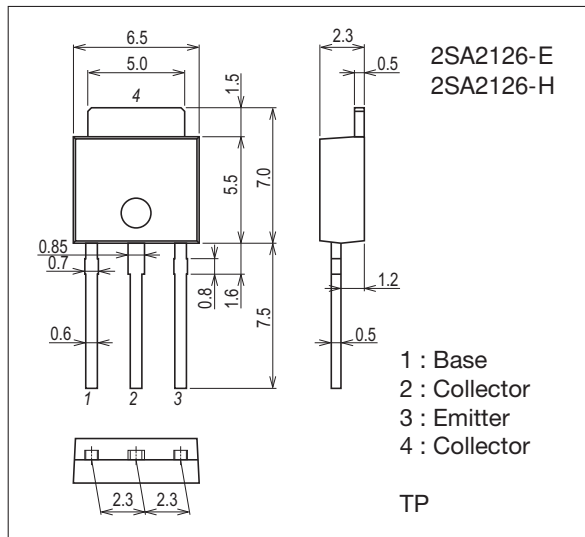
### Specifications

**Absolute Maximum Ratings** at Ta=25°C

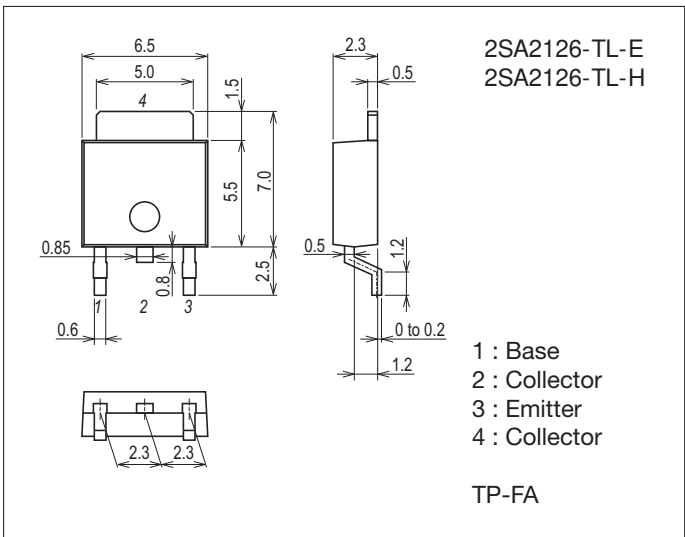
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CBO</sub>		-50	V
Collector-to-Emitter Voltage	V <sub>CES</sub>		-50	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		-50	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		-6	V
Collector Current	I <sub>C</sub>		-3	A
Collector Current (Pulse)	I <sub>CP</sub>		-6	A
Base Current	I <sub>B</sub>		-600	mA

Continued on next page.

### Package Dimensions unit : mm (typ) 7518-003



### Package Dimensions unit : mm (typ) 7003-003

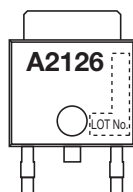


### Product & Package Information

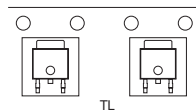
- Package : TP
- JEITA, JEDEC : SC-64, TO-251
- Minimum Packing Quantity : 500 pcs./bag

- Package : TP-FA
- JEITA, JEDEC : SC-63, TO-252
- Minimum Packing Quantity : 700 pcs./reel

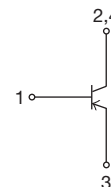
### Marking (TP, TP-FA)



### Packing Type (TP-FA) : TL



### Electrical Connection



## 2SA2126

Continued from preceding page.

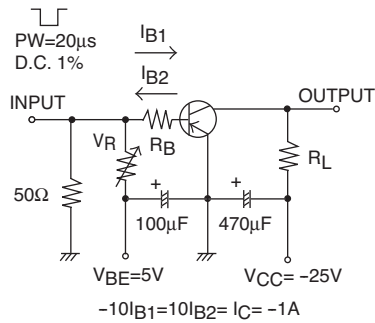
Parameter	Symbol	Conditions	Ratings	Unit
Collector Dissipation	PC		0.8	W
		T <sub>c</sub> =25°C	15	W
Junction Temperature	T <sub>j</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

### Electrical Characteristics at T<sub>a</sub>=25°C

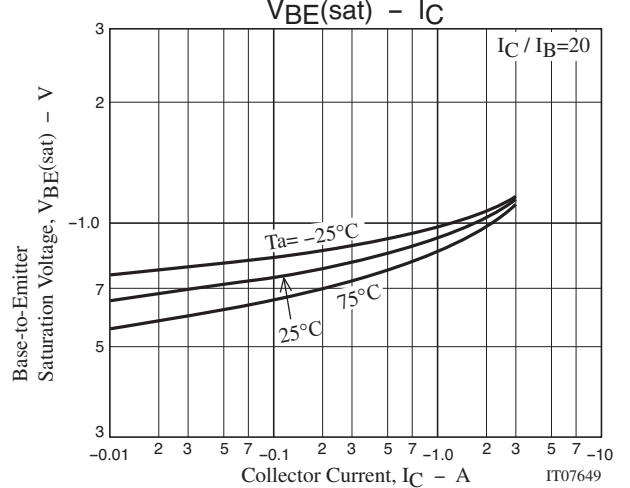
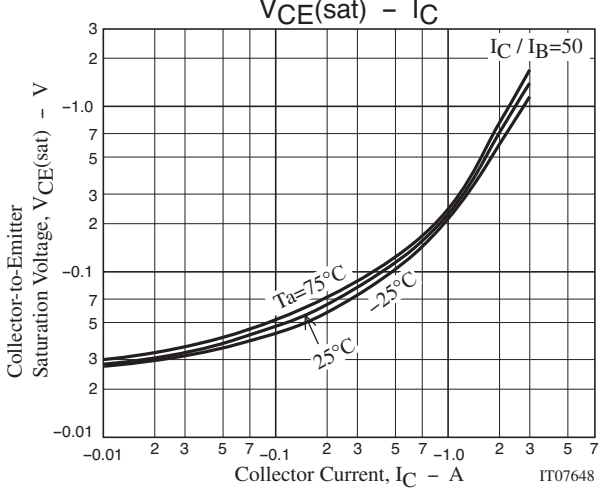
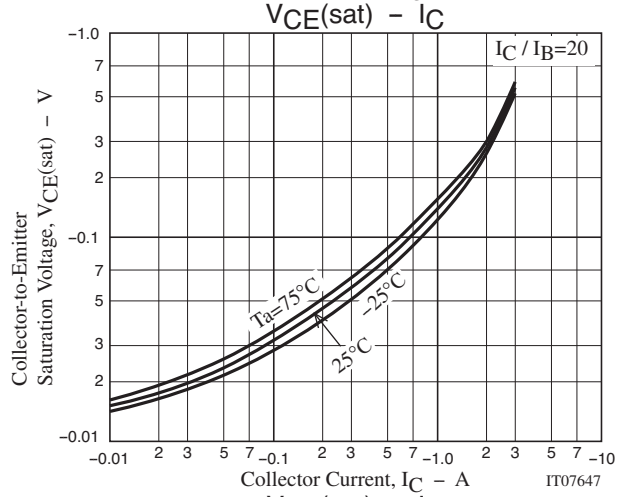
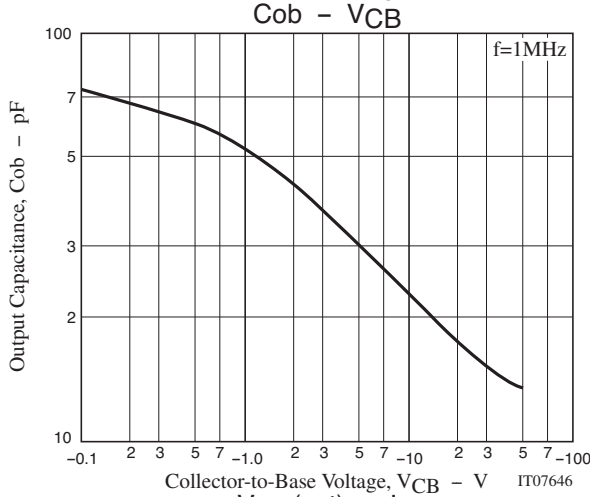
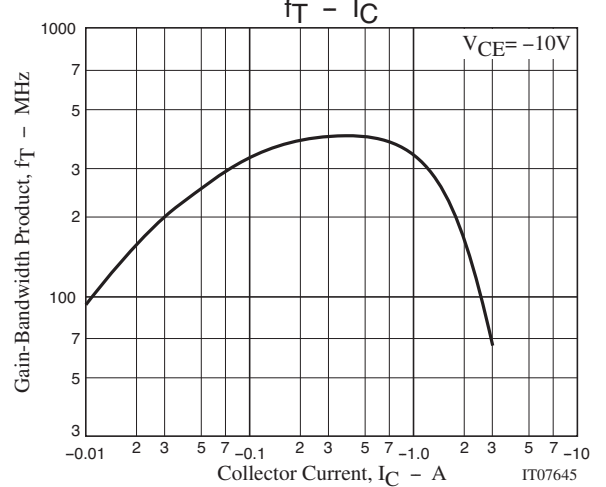
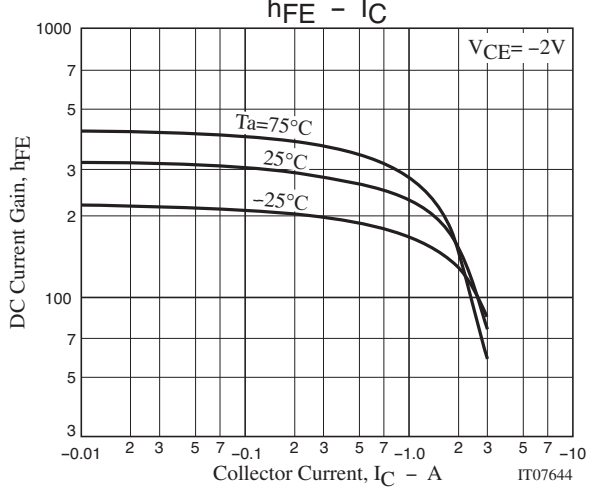
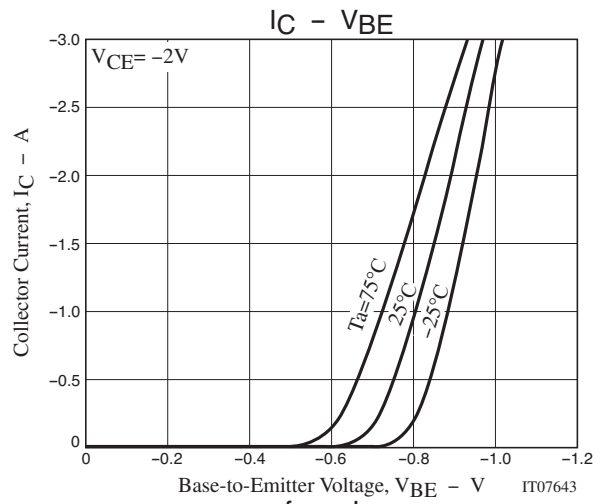
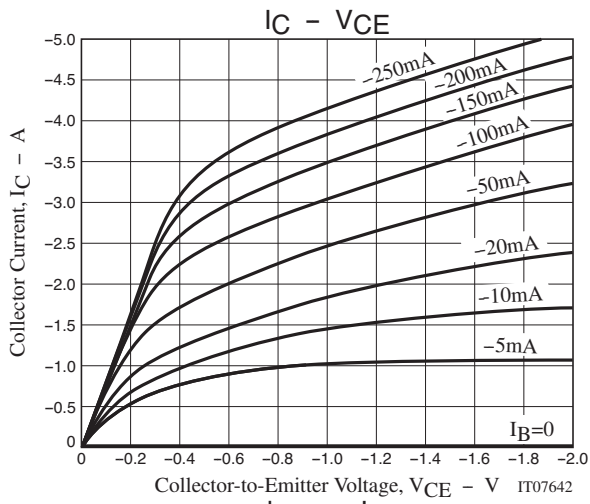
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> = -40V, I <sub>E</sub> =0A			-1	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> = -4V, I <sub>C</sub> =0A			-1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = -2V, I <sub>C</sub> = -100mA	200		560	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -500mA		390		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -10V, f=1MHz		24		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)1</sub>	I <sub>C</sub> = -1A, I <sub>B</sub> = -50mA		-135	-270	mV
	V <sub>CE(sat)2</sub>	I <sub>C</sub> = -2A, I <sub>B</sub> = -100mA		-260	-520	mV
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = -2A, I <sub>B</sub> = -100mA		-0.96	-1.2	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = -10μA, I <sub>E</sub> =0A	-50			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CES</sub>	I <sub>C</sub> = -100μA, R <sub>BE</sub> =0	-50			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = -1mA, R <sub>BE</sub> =∞	-50			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = -10μA, I <sub>C</sub> =0A	-6			V
Turn-On Time	t <sub>on</sub>			30		ns
Storage Time	t <sub>stg</sub>	See specified Test Circuit.		230		ns
Fall Time	t <sub>f</sub>			18		ns

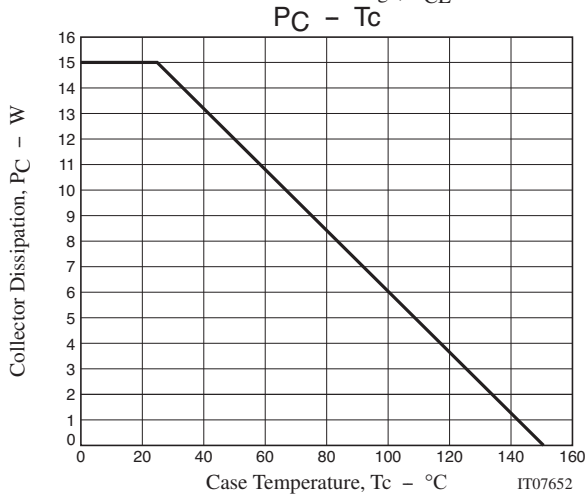
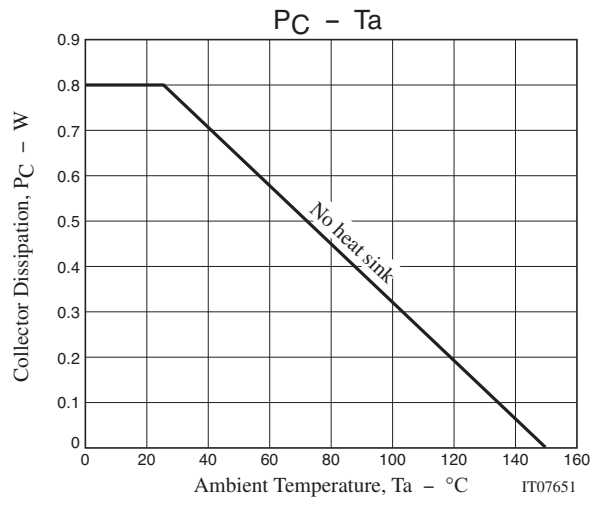
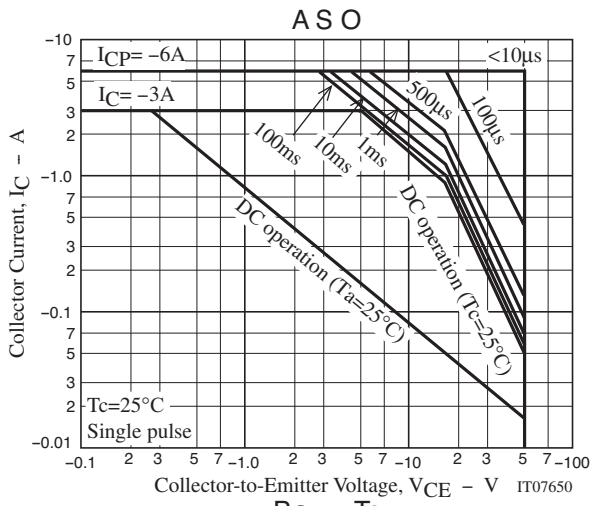
### Switching Time Test Circuit



### Ordering Information

Device	Package	Shipping	memo
2SA2126-E	TP	500pcs./bag	Pb Free
2SA2126-H	TP	500pcs./bag	Pb Free and Halogen Free
2SA2126-TL-E	TP-FA	700pcs./reel	Pb Free
2SA2126-TL-H	TP-FA	700pcs./reel	Pb Free and Halogen Free





Taping Specification

2SA2126-TL-E, 2SA2126-TL-H

Packing Format

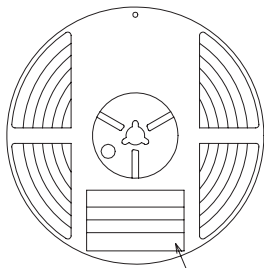
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
TP-FA	TP	700	2,100	12,600	3 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label  
(unit:mm)

Outer box label

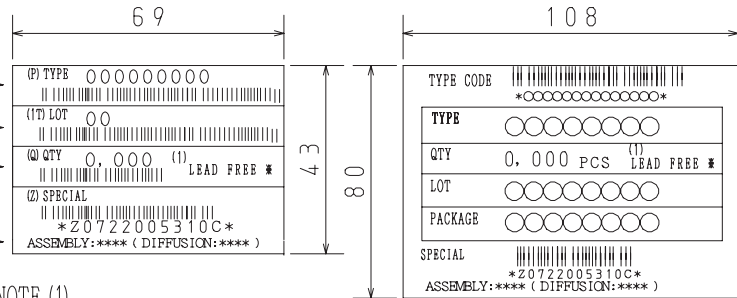
It is a label at the time of factory shipments.  
The form of a label may change in physical distribution process.

Packing method



Type No.  
LOT No.  
Quantity  
Origin

Reel label



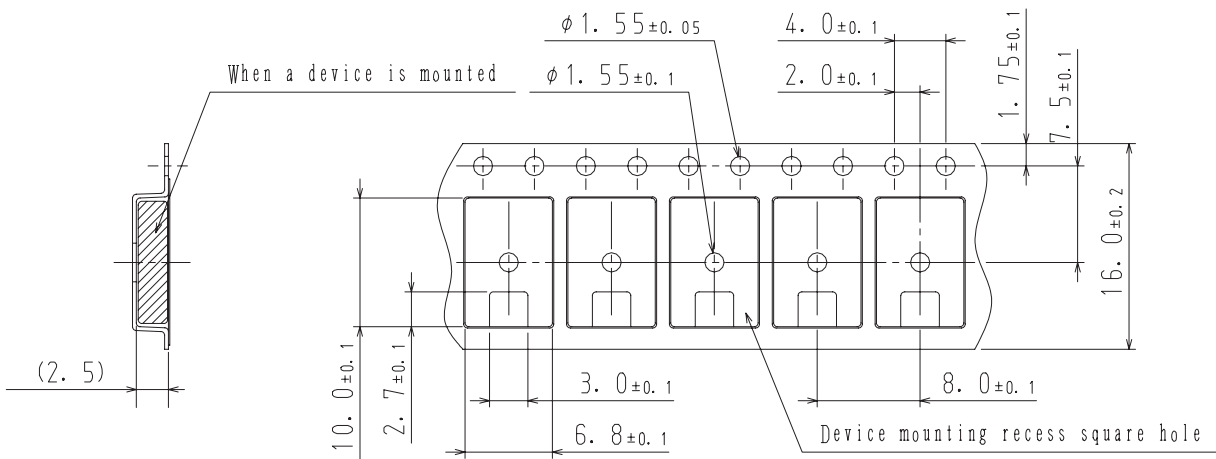
NOTE (1)

The LEAD FREE \* description shows that the surface treatment of the terminal is lead free.

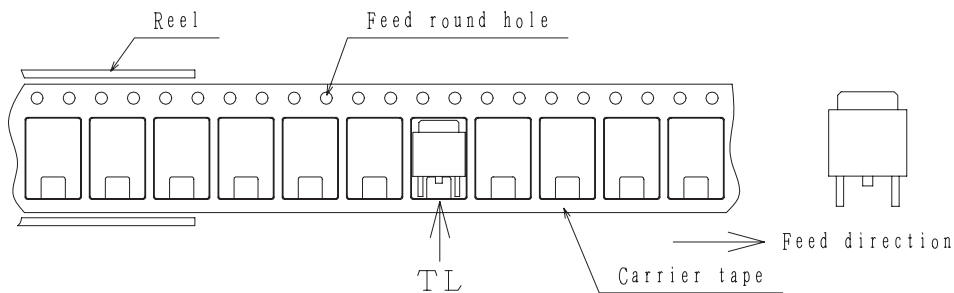
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

Taping configuration

1. Carrier tape size (unit:mm)



2. Device placement direction

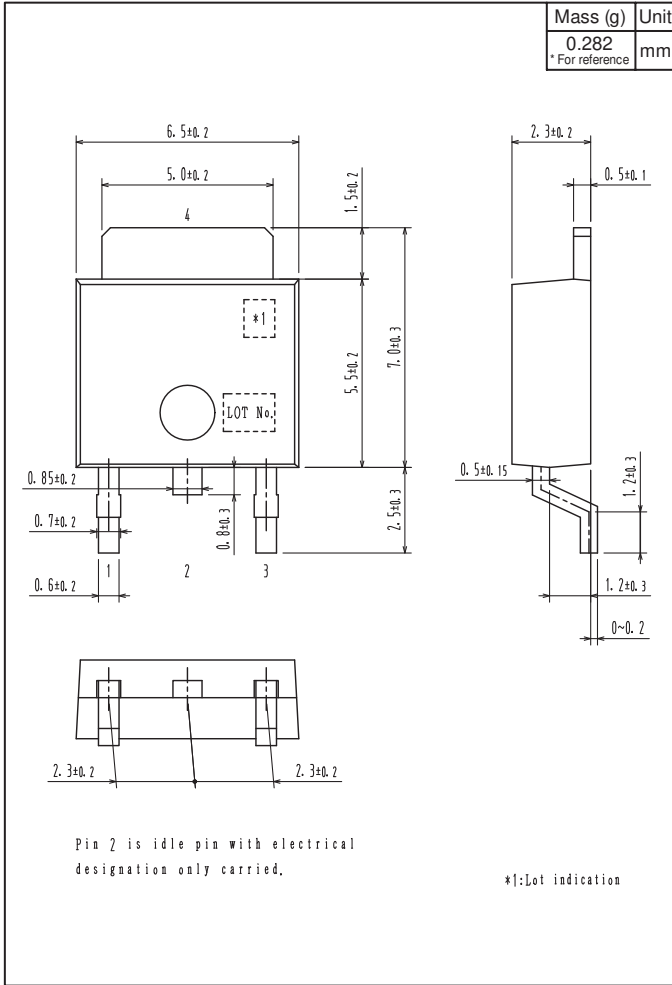


Those with one electrode terminal on the feed hole side.....TL

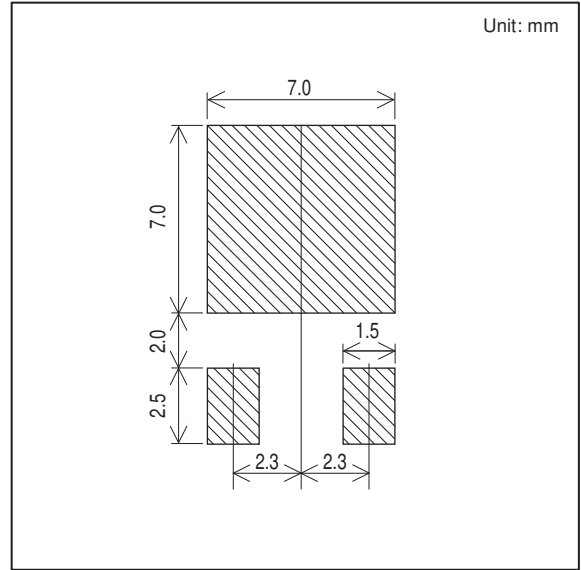
# 2SA2126

## Outline Drawing

2SA2126-TL-E, 2SA2126-TL-H



## Land Pattern Example



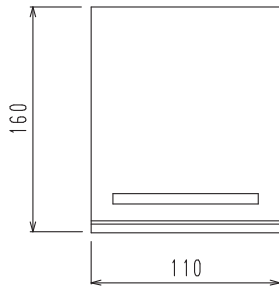
**Bag Packing Specification**

2SA2126-E, 2SA2126-H

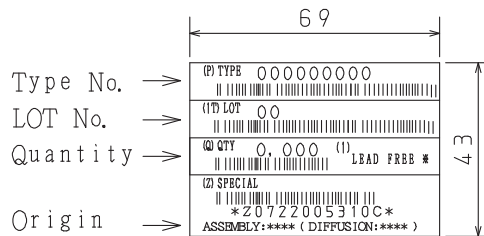
1. Packing Format

Package Name	Maximum Number of devices contained (pcs)			
	Bag	Inner box	Outer box	
TP	500	B-1	A-1	A-2
		10,000	50,000	30,000
	Packing format (Dimensions:mm (external))			
		Inner box	Outer box	
		B-1	A-1	A-2
		445×225×55	470×250×300	470×250×190

2. Bag dimensions  
(unit:mm)



3. Bag label, Inner box label  
(unit:mm)



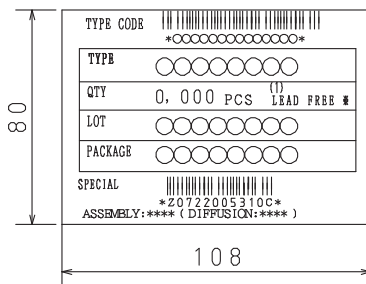
4. Outer box label  
(unit:mm)

It is a label at the time of factory shipments,  
The form of a label may change in physical  
distribution process,

NOTE (1)

The LEAD FREE \* description shows that the  
surface treatment of the terminal is lead free.

Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

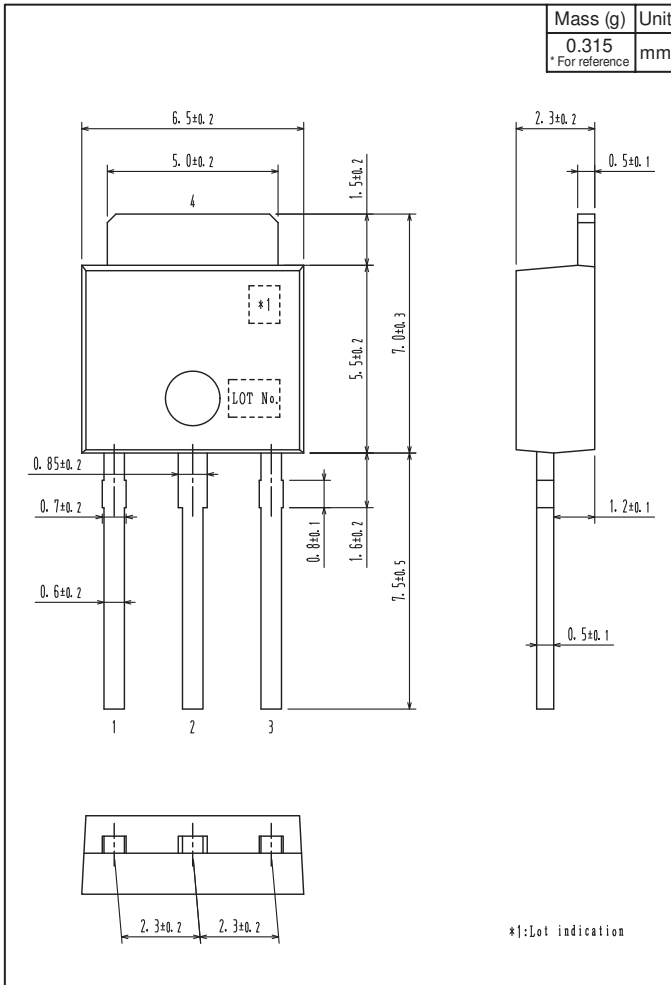




# 2SA2126

## Outline Drawing

2SA2126-E, 2SA2126-H



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