



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## 2SD1618 — NPN Epitaxial Planar Silicon Transistors — Low-Voltage High-Current Amplifier, Muting Applications

### Features

- Low collector-to-emitter saturation voltage
- Very small size making it easy to provide highdensity, small-sized hybrid IC's

### Specifications

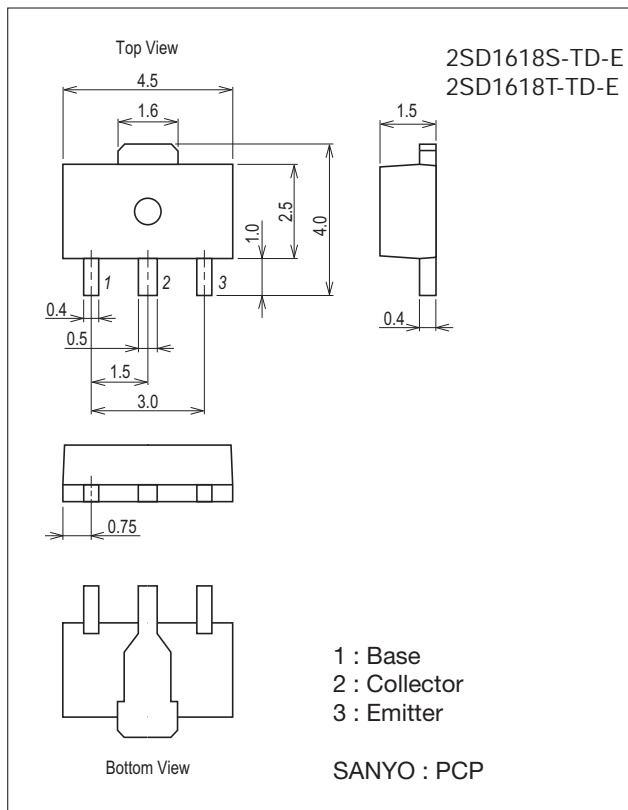
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		20	V
Collector-to-Emitter Voltage	VCEO		15	V
Emitter-to-Base Voltage	VEBO		5	V
Collector Current	IC		0.7	A
Collector Current (Pulse)	ICP		1.5	A
Collector Dissipation	PC		500	mW
		When mounted on ceramic substrate (250mm <sup>2</sup> ×0.8mm)	1.3	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

### Package Dimensions

unit : mm (typ)

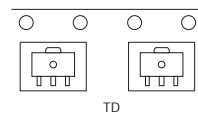
7007B-004



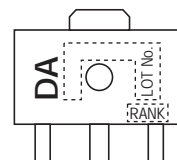
### Product & Package Information

- Package : PCP
- JEITA, JEDEC : SC-62, SOT-89, TO-243
- Minimum Packing Quantity : 1,000 pcs./reel

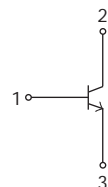
### Packing Type: TD



### Marking



### Electrical Connection



## 2SD1618

### Electrical Characteristics at Ta=25°C

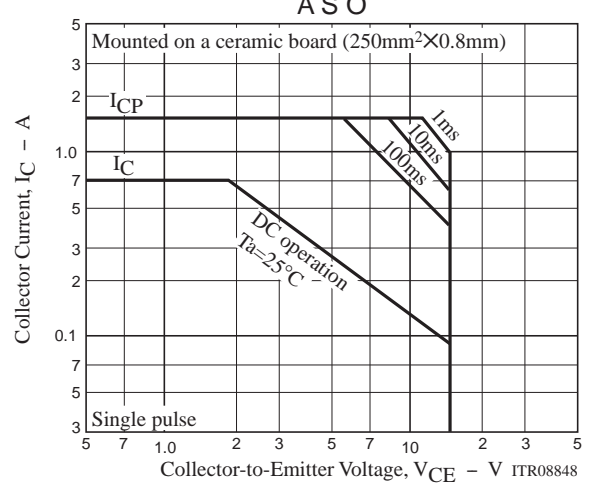
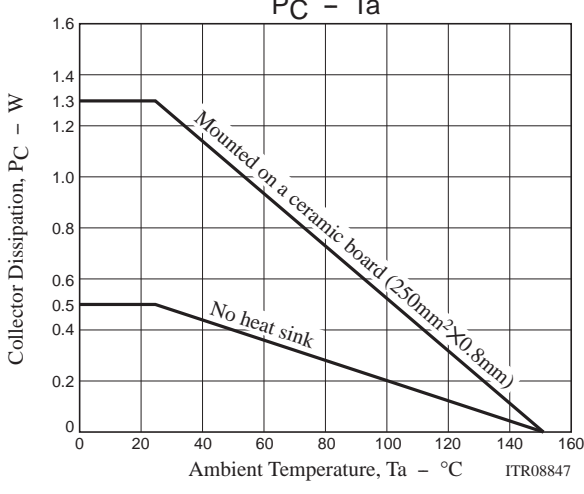
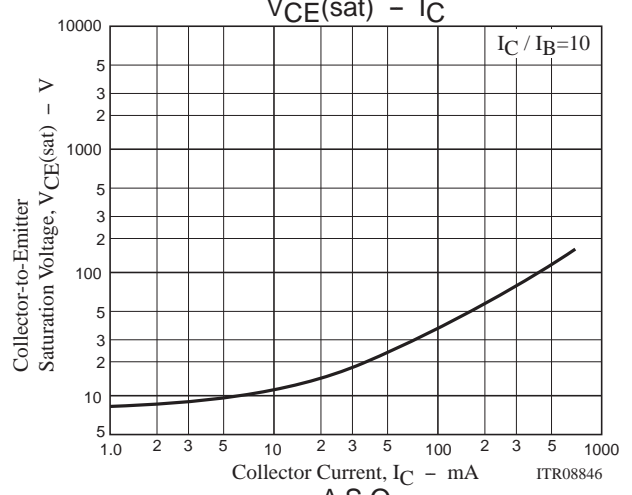
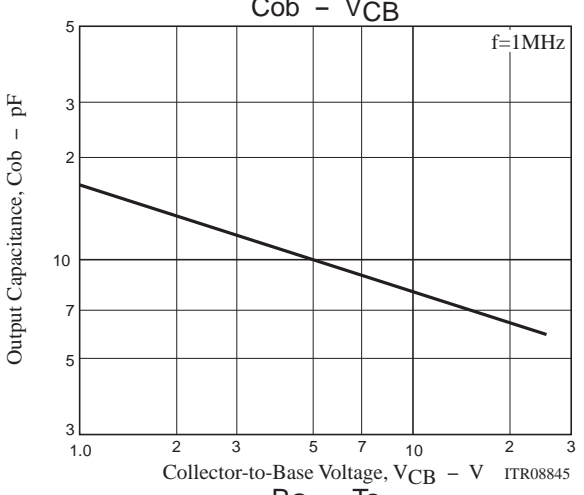
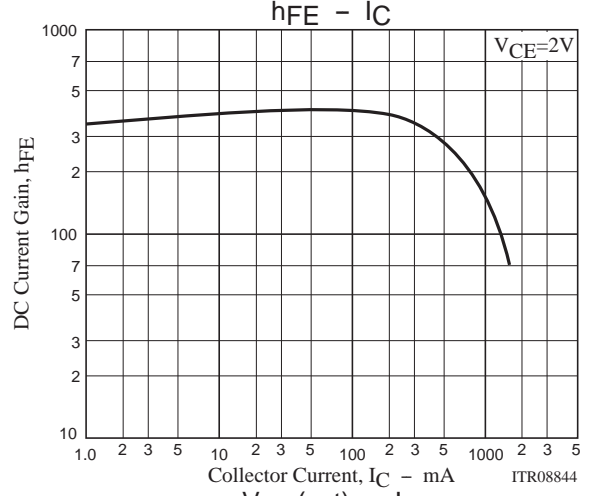
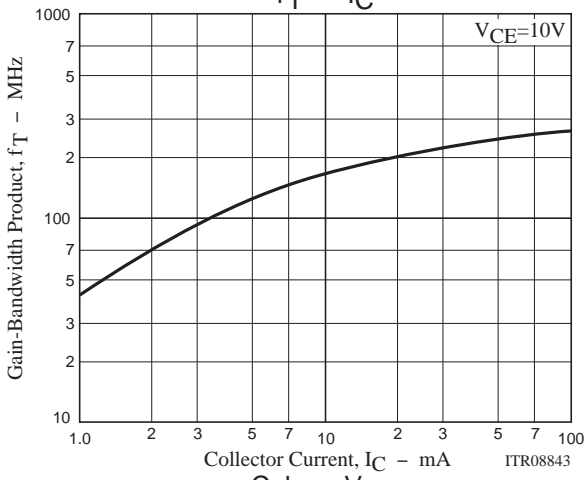
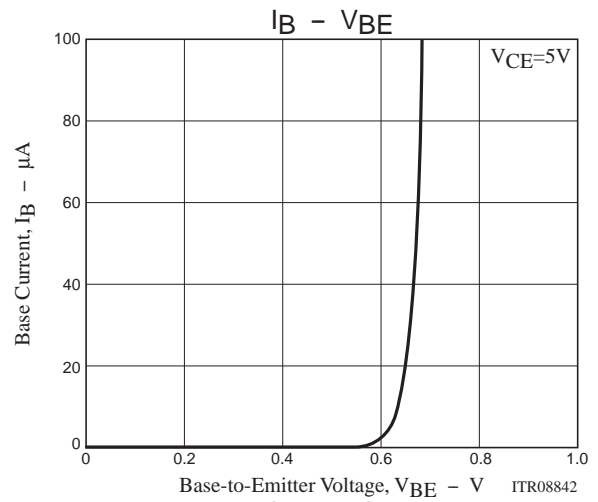
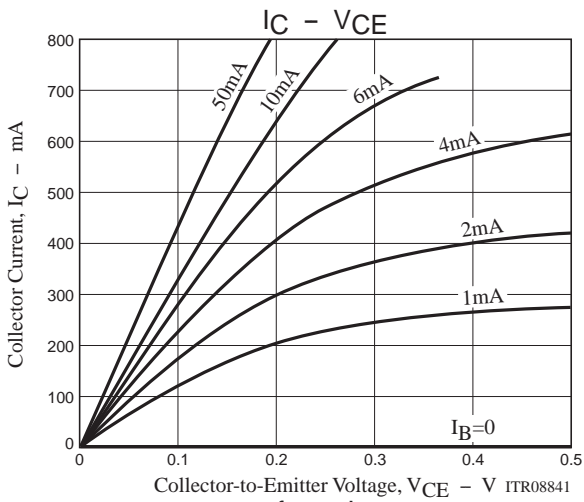
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V <sub>CB</sub> =15V, I <sub>E</sub> =0A			0.1	μA
Emitter Cutoff Current	IEBO	V <sub>EB</sub> =4V, I <sub>C</sub> =0A			0.1	μA
DC Current Gain	hFE1	V <sub>CE</sub> =2V, I <sub>C</sub> =50mA	140*		560*	
	hFE2	V <sub>CE</sub> =2V, I <sub>C</sub> =500mA	60			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =50mA		250		MHz
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)1</sub>	I <sub>C</sub> =5mA, I <sub>B</sub> =0.5mA		10	25	mV
	V <sub>CE(sat)2</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10mA		30	80	mV
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10mA		0.8	1.2	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	I <sub>C</sub> =10μA, I <sub>E</sub> =0A	20			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	I <sub>C</sub> =1mA, R <sub>BE</sub> =∞	15			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	I <sub>E</sub> =10μA, I <sub>C</sub> =0A	5			V
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		8		pF

\* : The 2SD1618 is classified by 50mA hFE as follows :

Rank	S	T	U
hFE	140 to 280	200 to 400	280 to 560

### Ordering Information

Device	Package	Shipping	memo
2SD1618S-TD-E	PCP	1,000pcs./reel	Pb Free
2SD1618T-TD-E	PCP	1,000pcs./reel	



Bag Packing Specification

2SD1618S-TD-E, 2SD1618T-TD-E

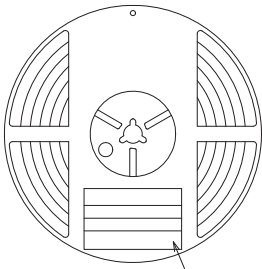
1. Packing Format

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)
PCP	PCP	1,000	4,000	24,000	4 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)

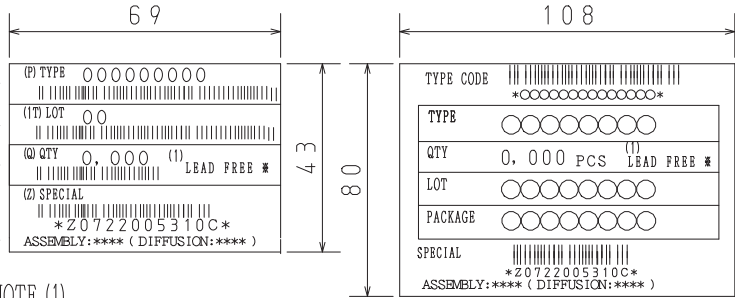
Outer box label  
It is a label at the time of factory shipments.  
The form of a label may change in physical distribution process.

Packing method



Type No.  
LOT No.  
Quantity  
Origin

Reel label



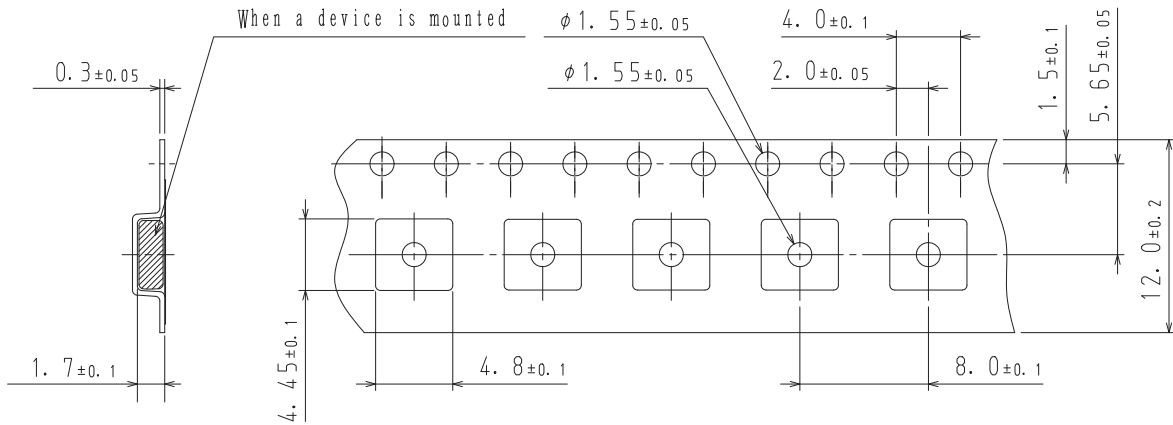
NOTE (1)

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

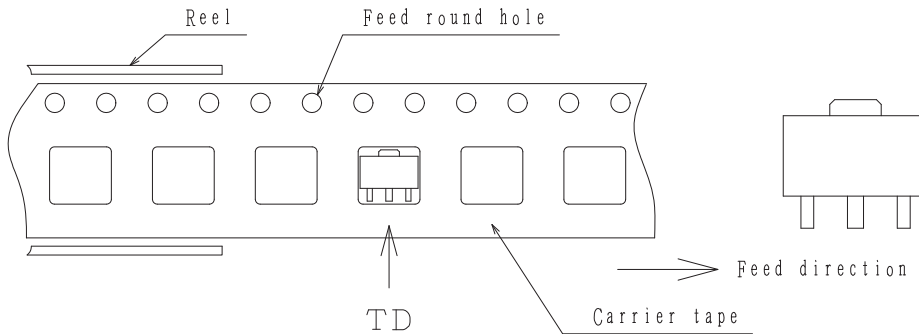
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit:mm)



2-2. Device placement direction

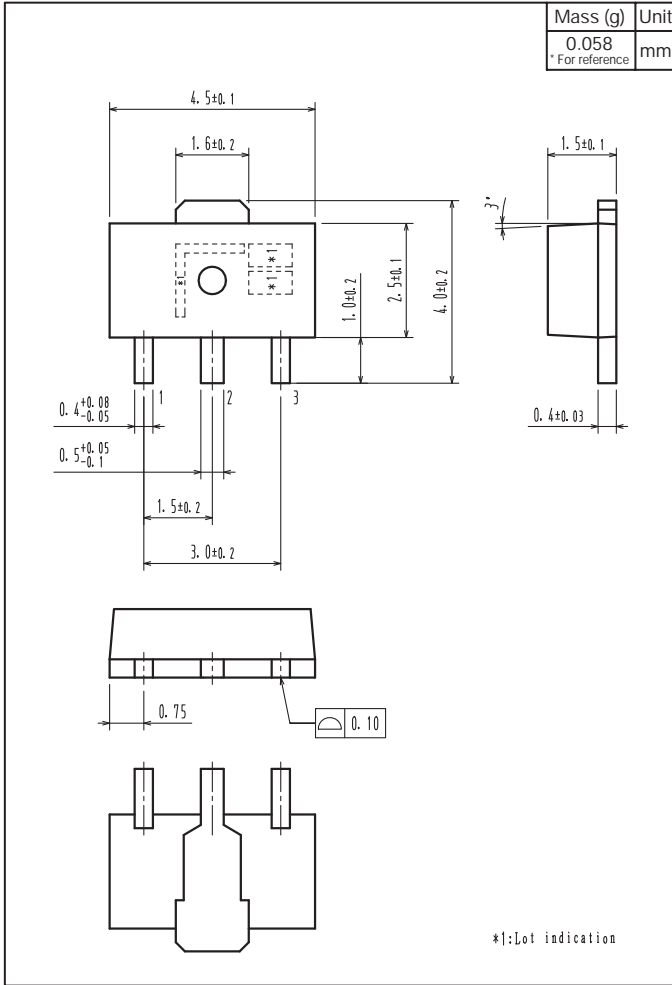


Those with pin 1 index on the feed hole side.....TD

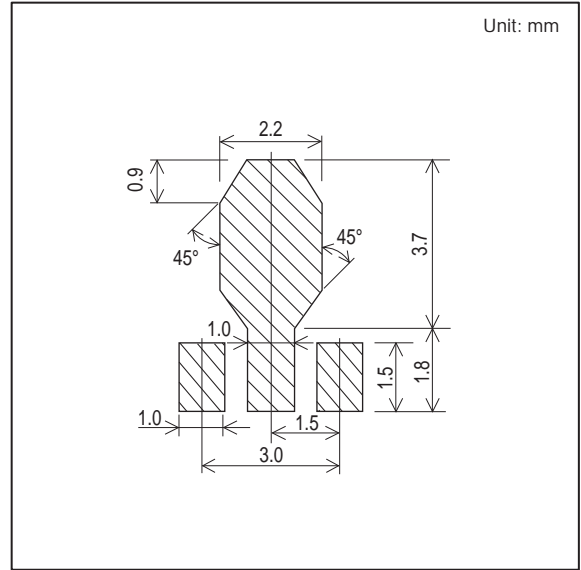
# 2SD1618

## Outline Drawing

2SD1618S-TD-E, 2SD1618T-TD-E



## Land Pattern Example



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