



2SD1618

Bipolar Transistor 15V, 0.7A, Low $V_{CE(sat)}$, NPN Single PCP

ON Semiconductor®

<http://onsemi.com>

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 $T_a=25^\circ\text{C}$

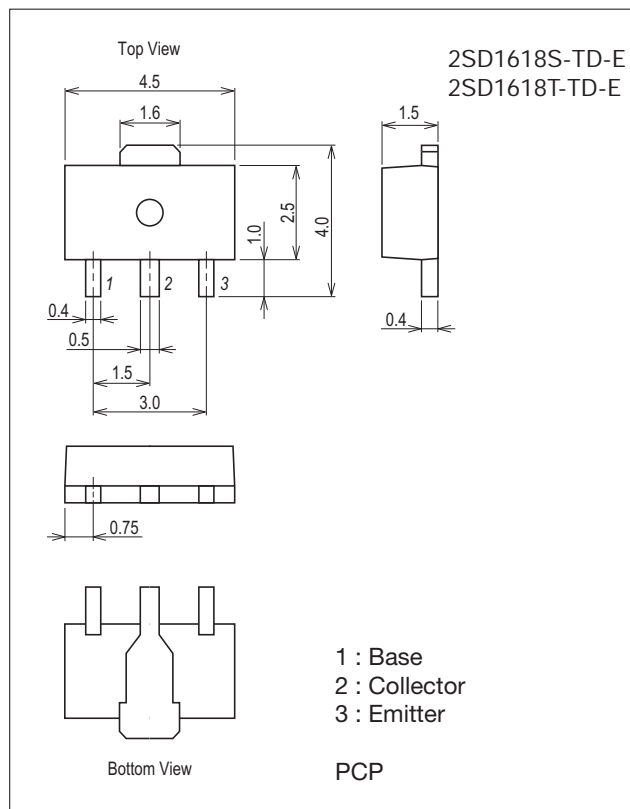
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		20	V
Collector-to-Emitter Voltage	V_{CEO}		15	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		0.7	A
Collector Current (Pulse)	I_{CP}		1.5	A
Collector Dissipation	P_C		500	mW
		When mounted on ceramic substrate (250mm ² ×0.8mm)	1.3	W
Junction Temperature	T_J		150	°C
Storage Temperature	T_{stg}		-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.

Package Dimensions

unit : mm (typ)

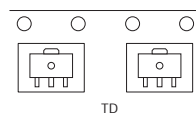
7007B-004



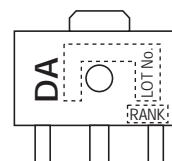
Product & Package Information

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

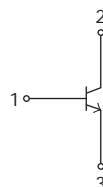
Packing Type: TD



Marking



Electrical Connection



2SD1618

Electrical Characteristics at Ta=25°C

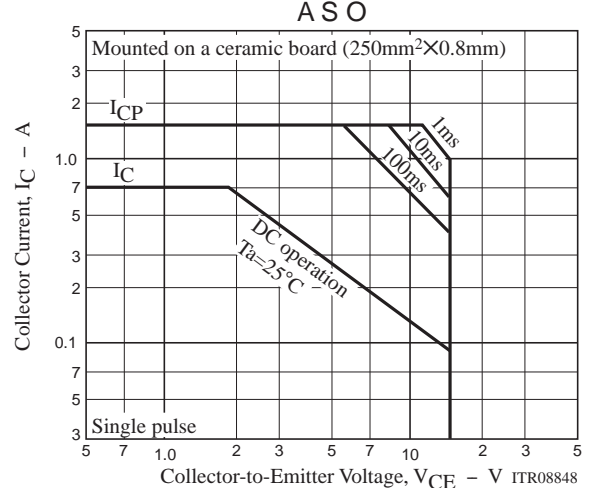
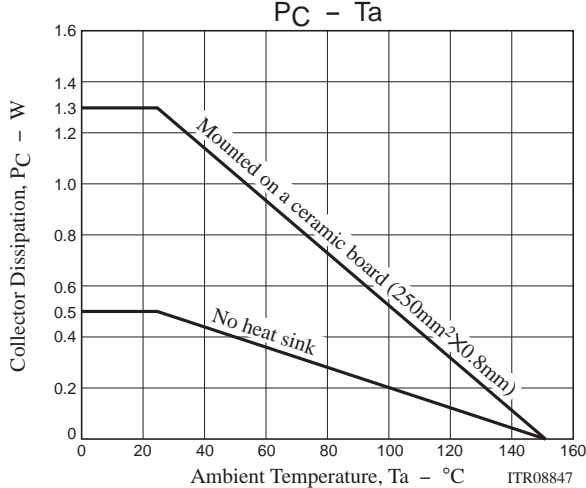
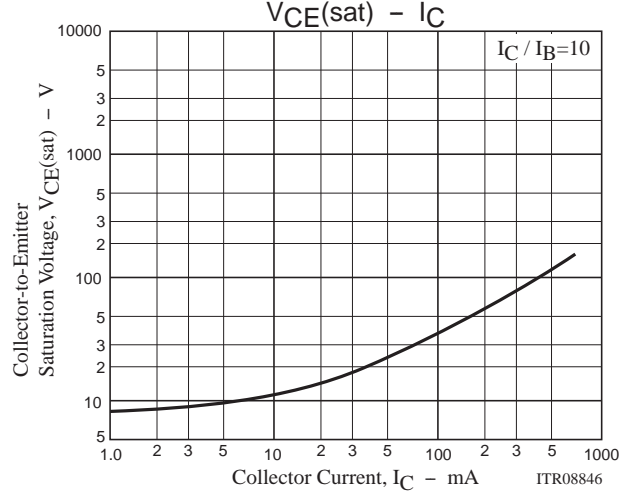
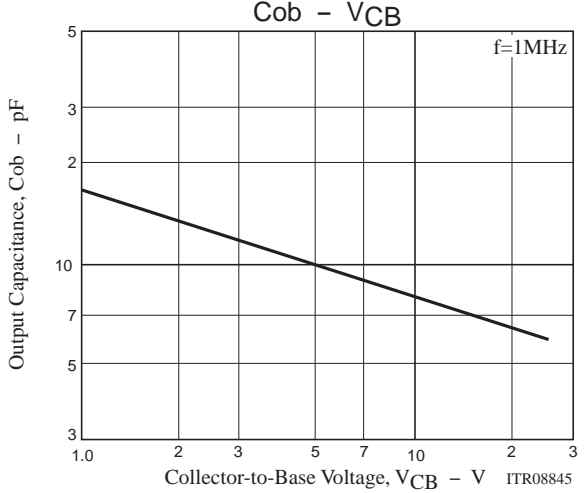
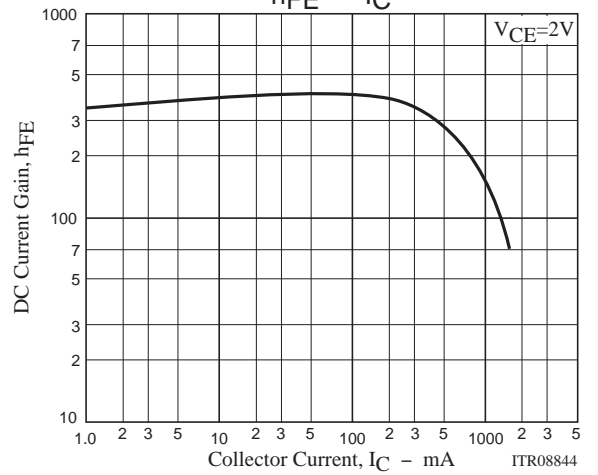
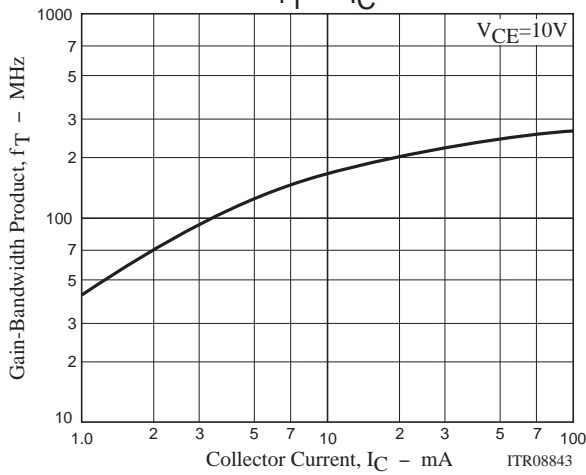
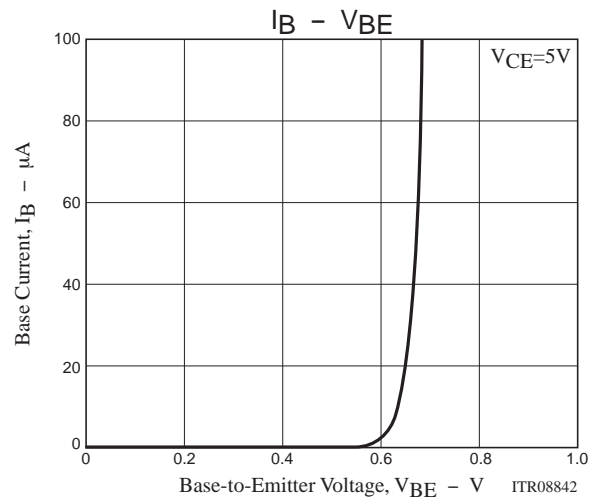
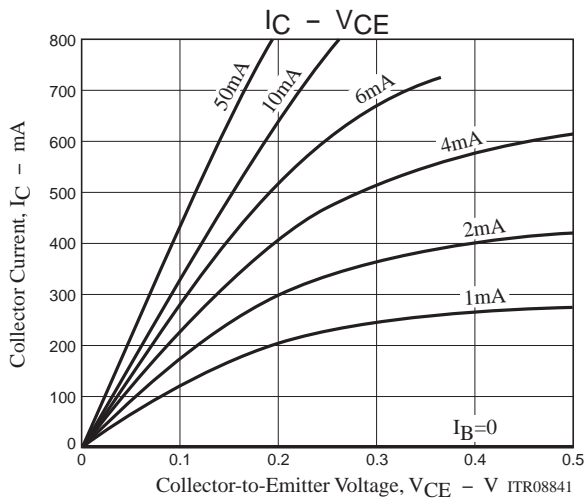
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =15V, I _E =0A			0.1	μA
Emitter Cutoff Current	IEBO	V _{EB} =4V, I _C =0A			0.1	μA
DC Current Gain	h _{FE} 1	V _{CE} =2V, I _C =50mA	140*		560*	
	h _{FE} 2	V _{CE} =2V, I _C =500mA	60			
Gain-Bandwidth Product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

* : The 2SD1618 is classified by 50mA h_{FE} as follows :

Rank	S	T	U
h _{FE}	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

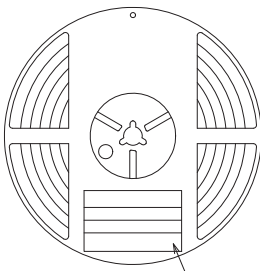
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
PCP	PCP	1,000	4,000	24,000	4 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

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 →

(P) TYPE	000000000
(1) LOT	00
(Q) QTY	0,000 (1) LEAD FREE #
(Z) SPECIAL	*Z0722005310C*
ASSEMBLY:**** (DIFFUSION:****)	

TYPE CODE	*****
TYPE	*****
QTY	0,000 PCS (1) LEAD FREE #
LOT	*****
PACKAGE	*****
SPECIAL	*Z0722005310C*
ASSEMBLY:**** (DIFFUSION:****)	

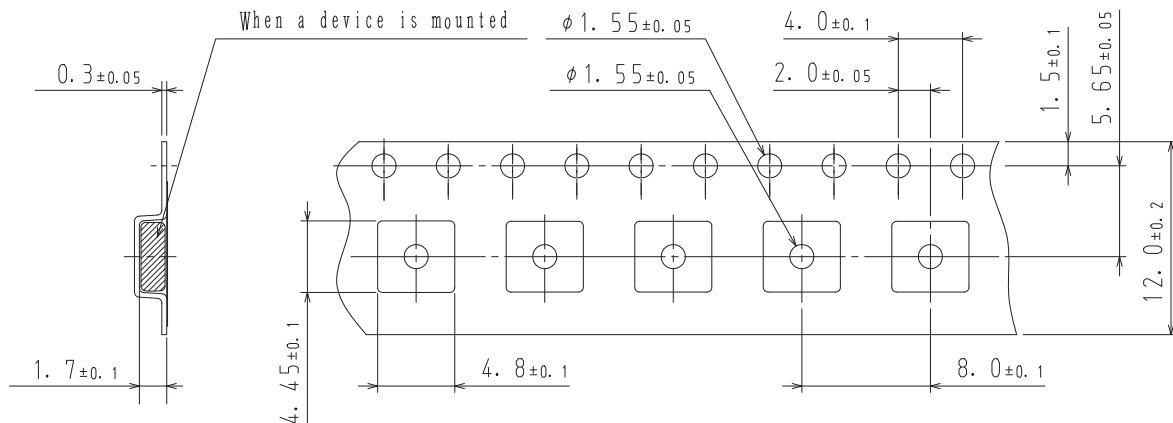
NOTE (1)

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

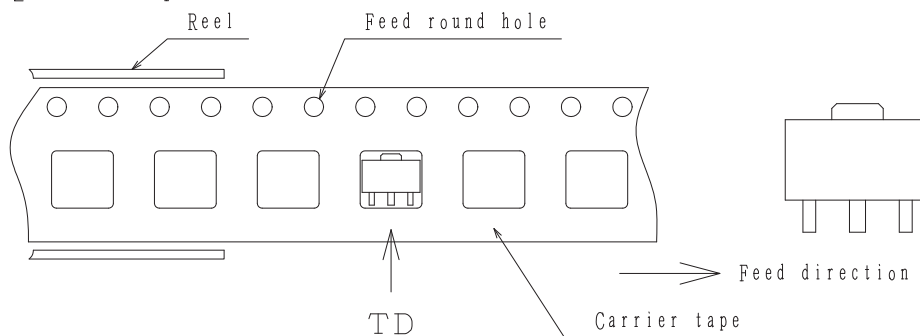
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



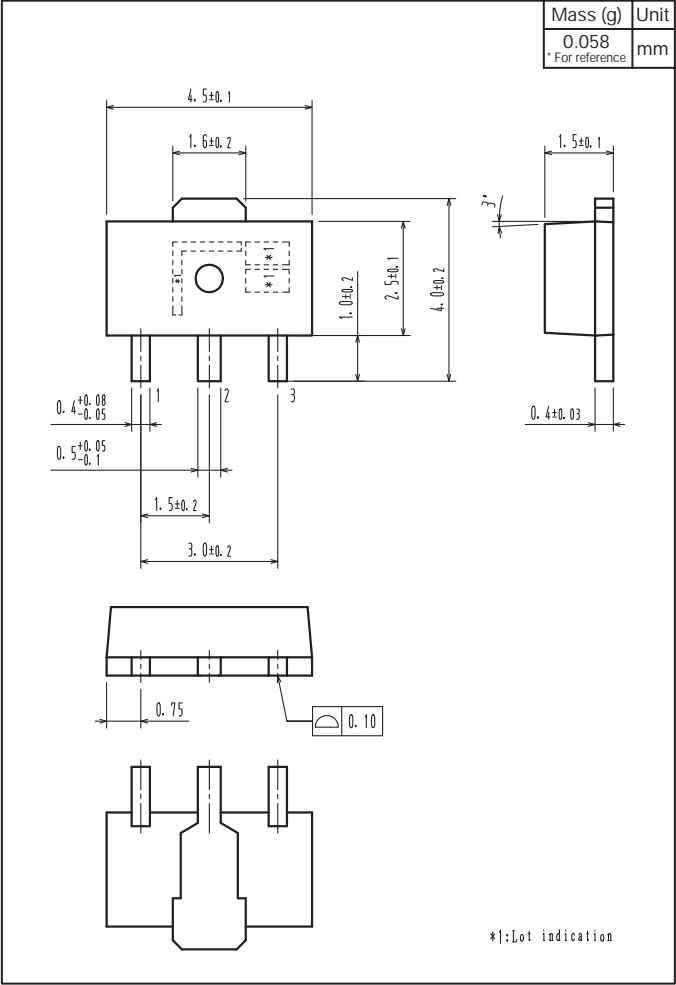
2-2. Device placement direction



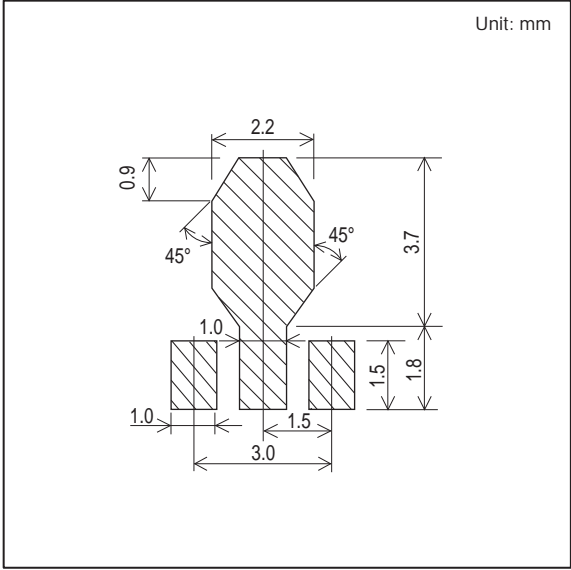
Those with pin 1 index on the feed hole side.....TD

Outline Drawing

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



Land Pattern Example



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