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2SD1620

Bipolar Transistor 10V, 3A, Low $V_{CE(sat)}$, NPN Single PCP

Features

- Less power dissipation because of low $V_{CE(sat)}$, permitting more flashes of light to be emitted
- Large current capacity and highly resistant to breakdown
- Excellent linearity of h_{FE} in the region from low current to high current
- Ultrasmall size supports high-density, ultrasmall-sized hybrid IC designs

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

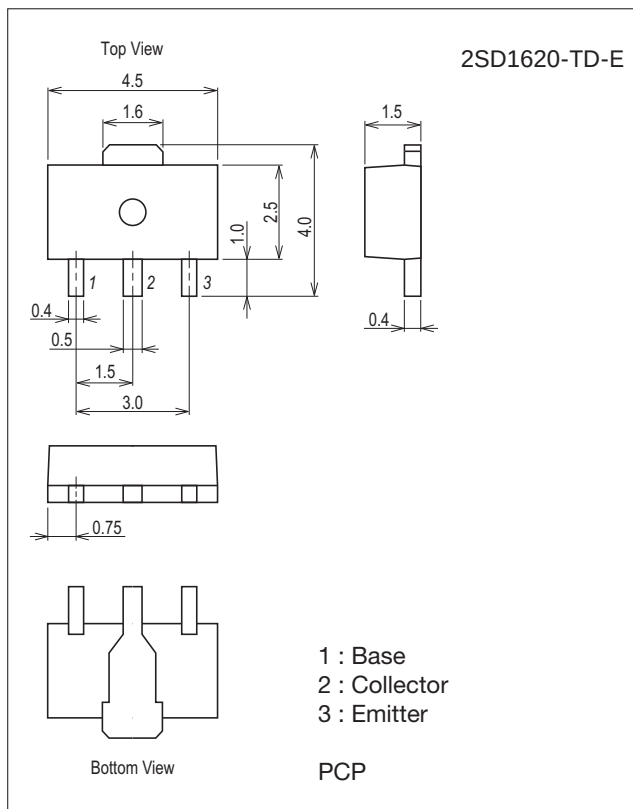
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		30	V
Collector-to-Emitter Voltage	V_{CEX}		20	V
Collector-to-Emitter Voltage	V_{CEO}		10	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		3	A
Collector Current (Pulse)	I_{CP}		5	A

Continued on next page.

Package Dimensions

unit : mm (typ)

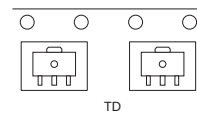
7007B-004



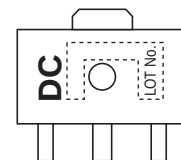
Product & Package Information

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

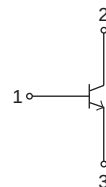
Packing Type: TD



Marking



Electrical Connection



2SD1620

Continued from preceding page.

Parameter	Symbol	Conditions	Ratings	Unit
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

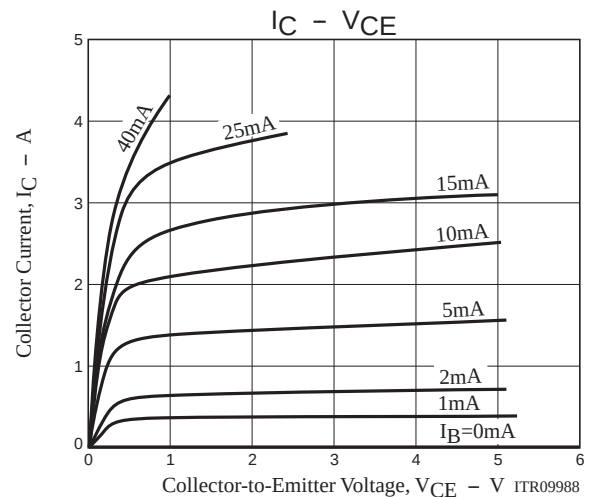
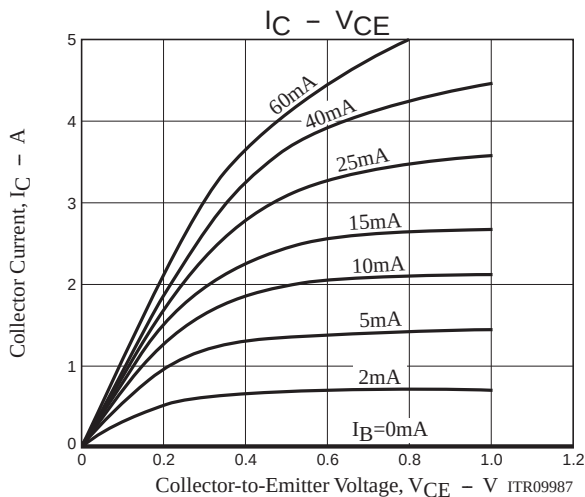
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

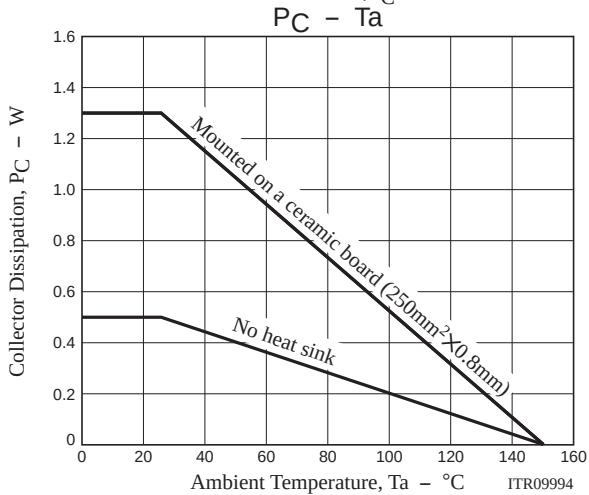
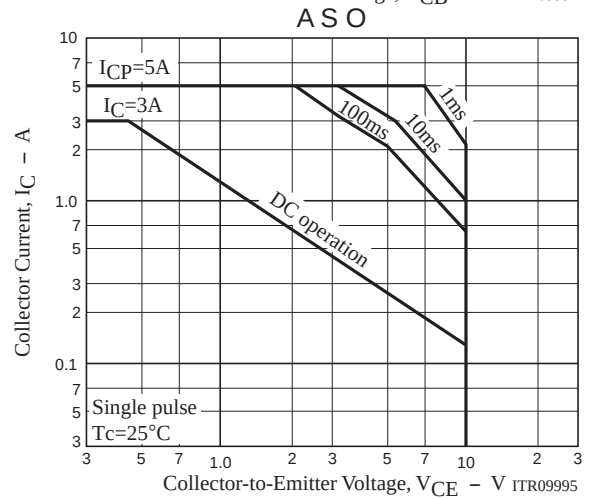
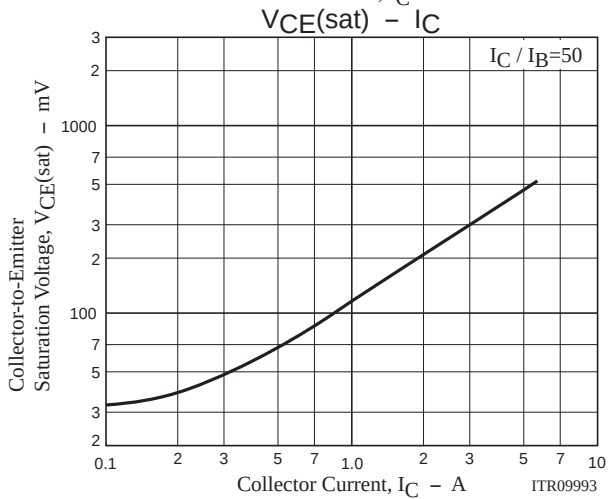
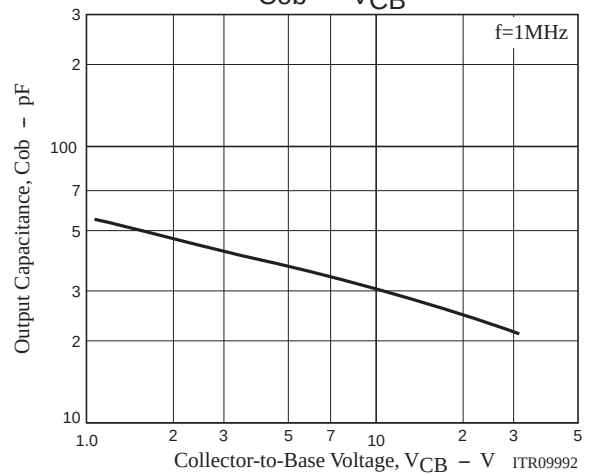
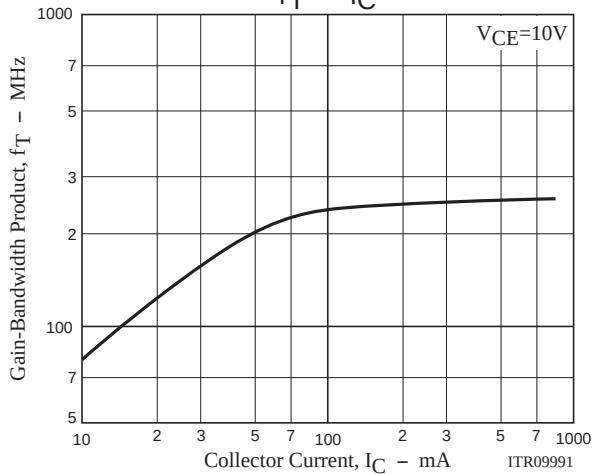
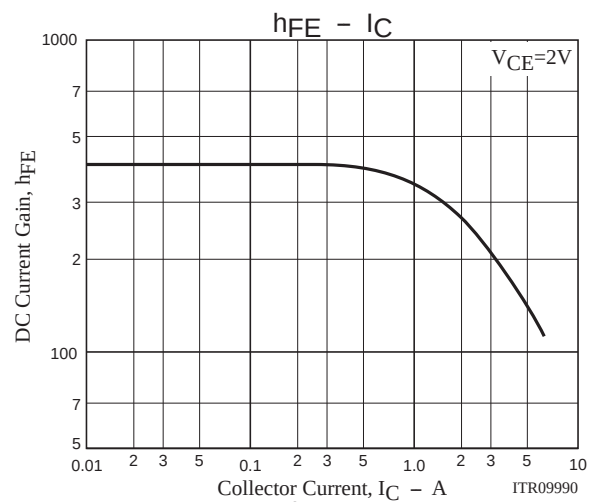
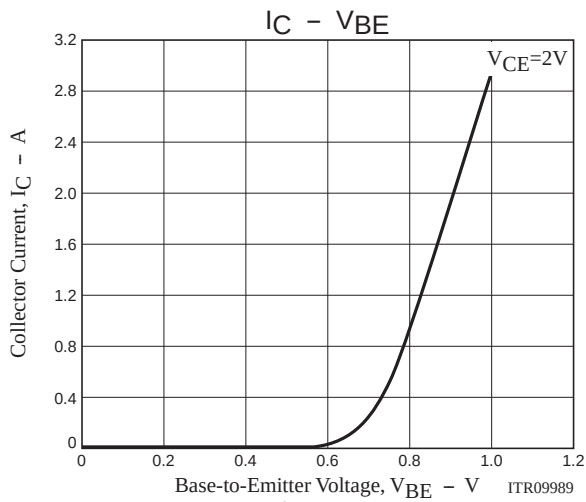
Electrical Characteristics at T_a=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I _{CBO}	V _{CB} =20V, I _E =0A			100	nA
Emitter Cutoff Current	I _{EBO}	V _{EB} =4V, I _C =0A			100	nA
DC Current Gain	h _{FE}	V _{CE} =2V, I _C =3A	140	210		
Gain-Bandwidth Product	f _T	V _{CE} =10V, I _C =50mA		200		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		30		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =3A, I _B =60mA		0.3	0.4	V
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C =10μA, I _E =0A	30			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CEX}	I _C =1mA, V _{BE} =3V	20			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =1mA, R _{BE} =∞	10			V
Emitter-to-Base Breakdown Voltage	V _{(BR)EBO}	I _E =10μA, I _C =0A	6			V

Ordering Information

Device	Package	Shipping	memo
2SD1620-TD-E	PCP	1,000pcs./reel	Pb Free





Bag Packing Specification

2SD1620-TD-E

1. Packing Format

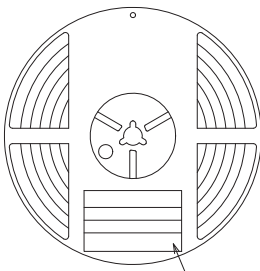
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
PCP	PCP	1,000	4,000	24,000	4 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

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

69	
(P) TYPE 000000000	
(1) LOT 00	
(Q) QTY 0,000 (1) LEAD FREE #	
(Z) SPECIAL	
Z0722005310C	
ASSEMBLY:**** (DIFFUSION:****)	

108	
TYPE CODE	
C000000000000	
TYPE	
QTY 0,000 PCS (1) LEAD FREE #	
LOT	
PACKAGE	
SPECIAL	
Z0722005310C	
ASSEMBLY:**** (DIFFUSION:****)	

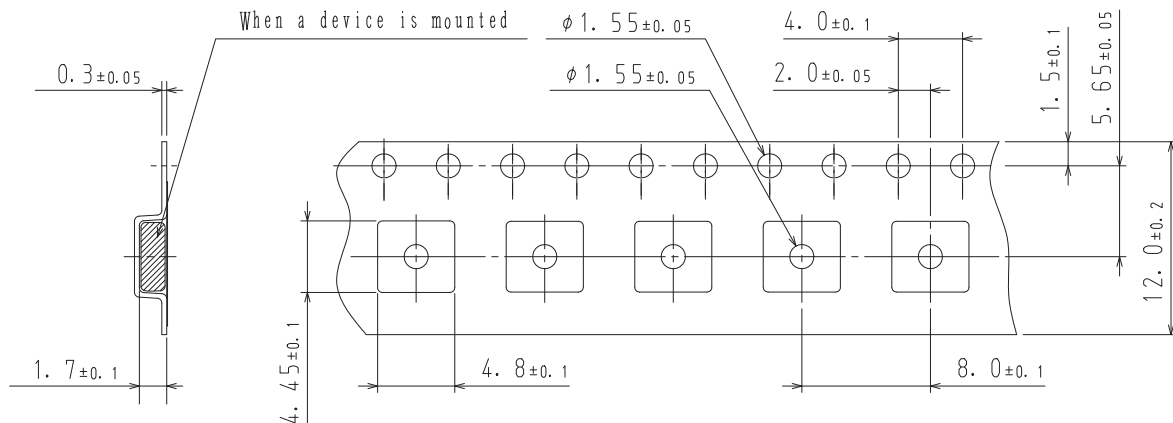
NOTE (1)

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

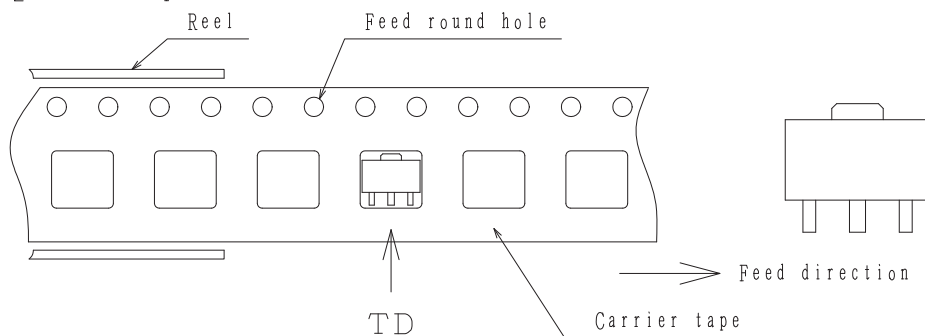
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



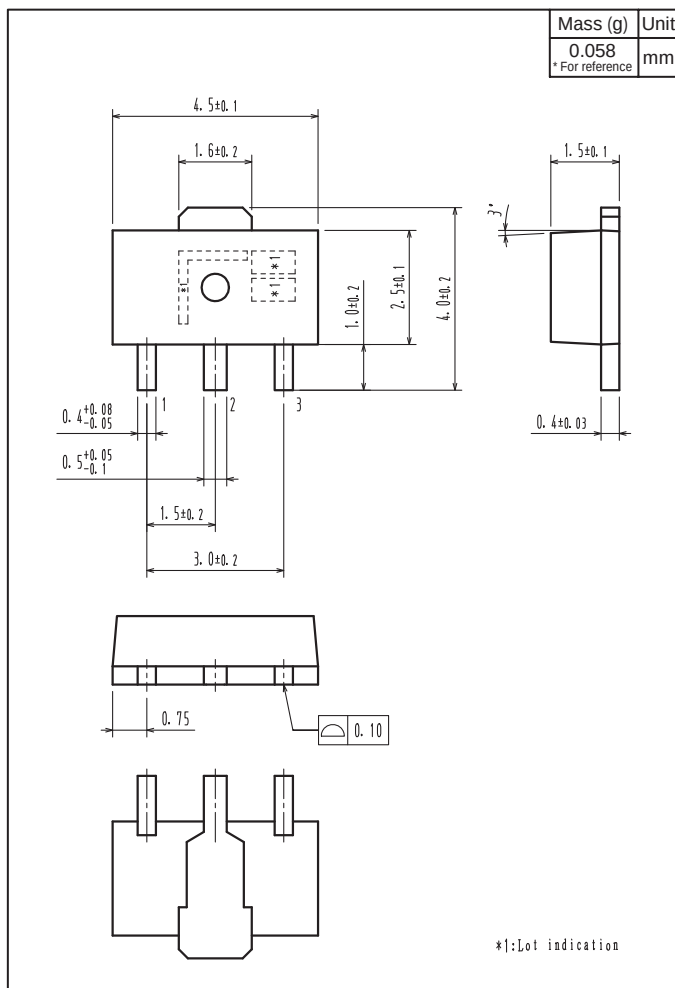
2-2. Device placement direction



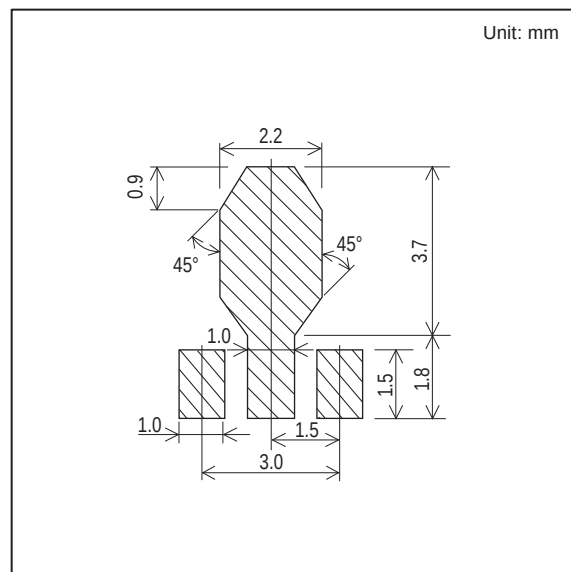
Those with pin 1 index on the feed hole side.....TD

Outline Drawing

2SD1620-TD-E



Land Pattern Example



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