Ordering number : EN1719D

2SD1620

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

ON Semiconductor®
http://onsemi.com

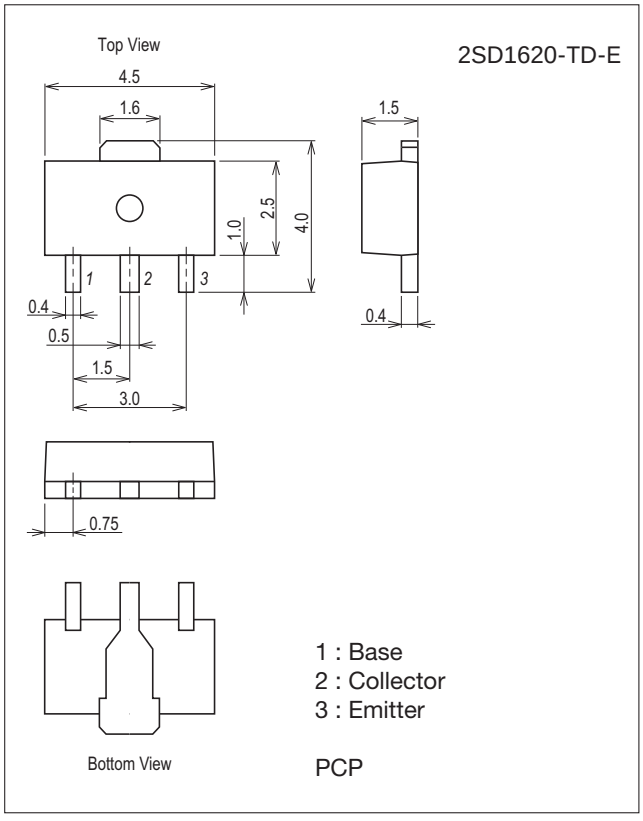
Features
- Less power dissipation because of low V_{CE}(sat), permitting more flashes of light to be emitted
- Large current capacity and highly resistant to breakdown
- Excellent linearity of h_{FE} in the region from low current to high current
- Ultrasmall size supports high-density, ultrasmall-sized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

Specifications
Absolute Maximum Ratings at Ta=25°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

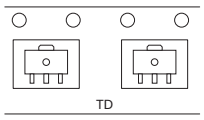
Continued on next page.

Package Dimensions
unit : mm (typ)
7007B-004

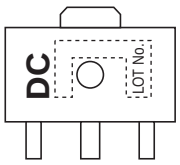


Product & Package Information
- Package : PCP
- JEITA, JEDEC : SC-62, SOT-89, TO-243
- Minimum Packing Quantity : 1,000 pcs./reel

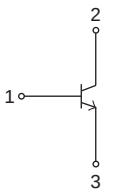
Packing Type: TD



Marking



Electrical Connection



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	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

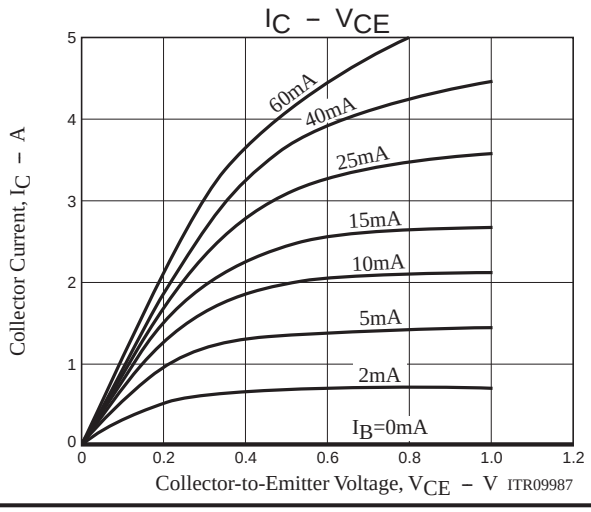
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

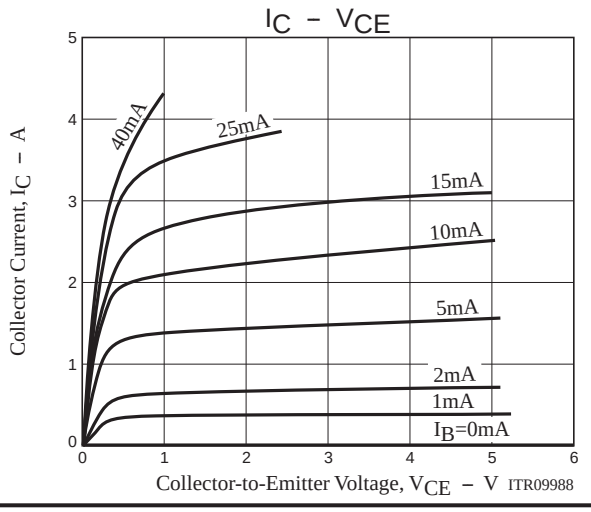
Electrical Characteristics at Ta=25°C

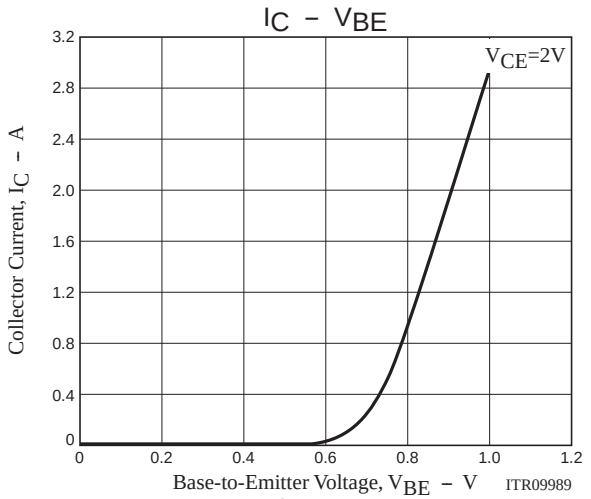
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=20V, I_E=0A			100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0A			100	nA
DC Current Gain	h_{FE}	V_{CE}=2V, I_C=3A	140	210		
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=50mA		200		MHz
Output Capacitance	Cob	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

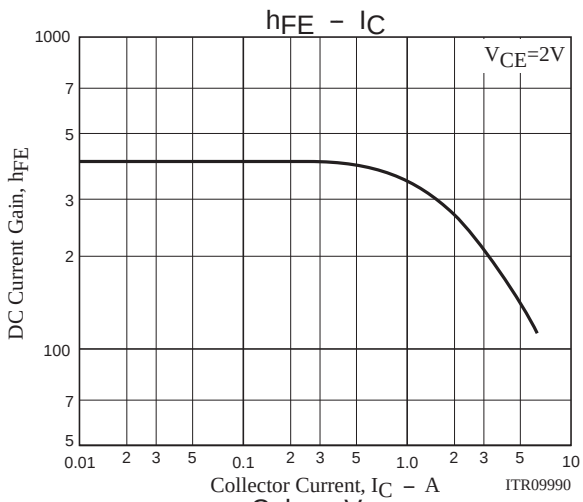
Ordering Information

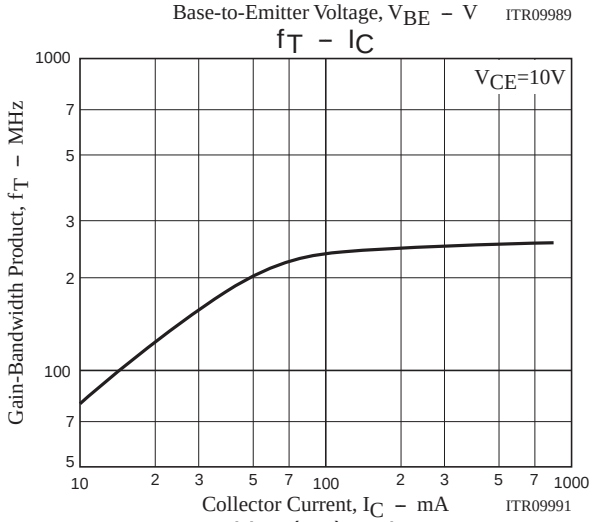
Device	Package	Shipping	memo
2SD1620-TD-E	PCP	1,000pcs./reel	Pb Free

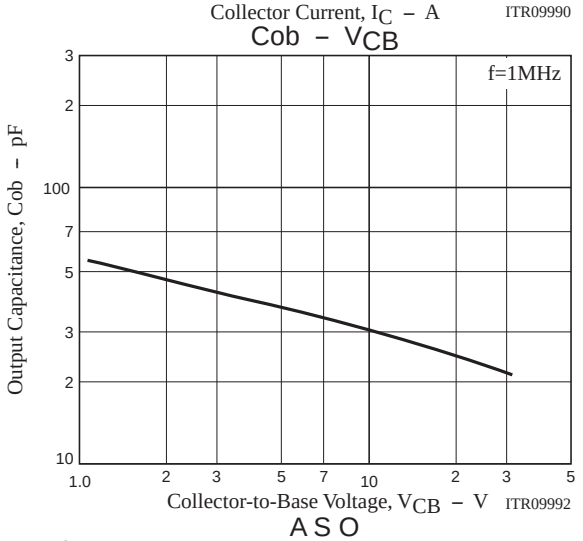


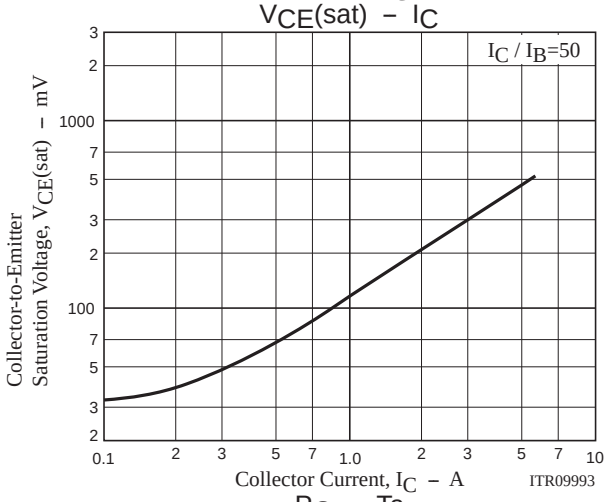


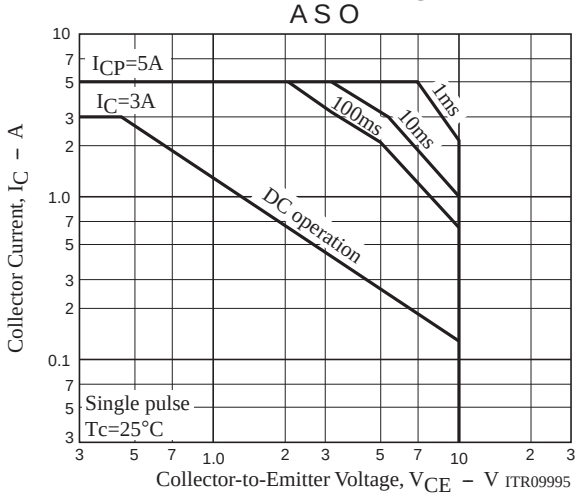

IC – VBE
VCE=2V
Collector Current, IC – A
Base-to-Emitter Voltage, VBE – V
ITR09989

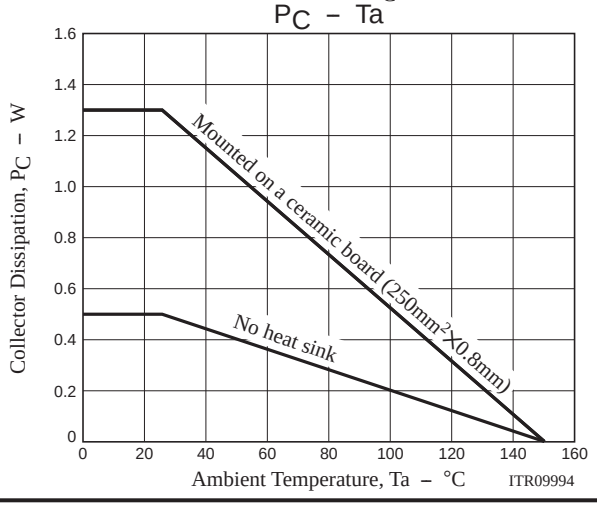

hFE – IC
VCE=2V
DC Current Gain, hFE
Collector Current, IC – A
ITR09990


fT – IC
VCE=10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
ITR09991


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
ITR09992


VCE(sat) – IC
IC / IB=50
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – A
ITR09993


ASO
ICP=5A
IC=3A
1ms
10ms
100ms
DC operation
Single pulse
Tc=25°C
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
ITR09995


PC – Ta
Mounted on a ceramic board (250mm2×0.8mm)
No heat sink
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C
ITR09994

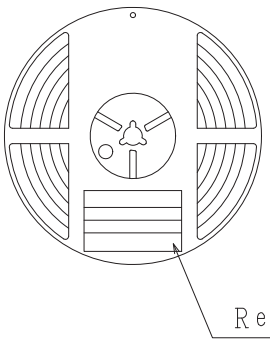
Bag Packing Specification

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

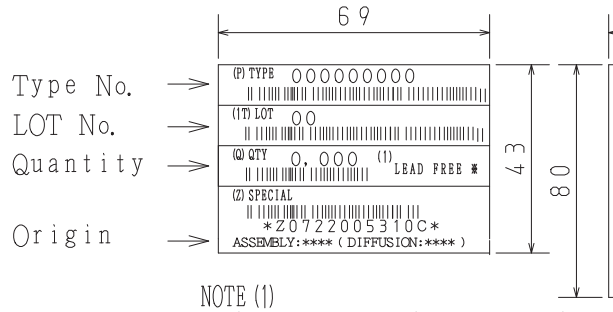
Packing method



Reel label

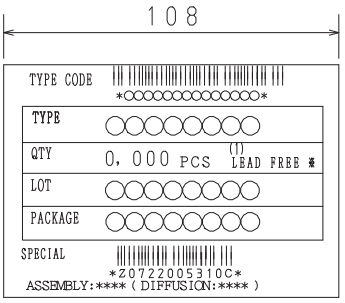
Reel label, Inner box label

(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.

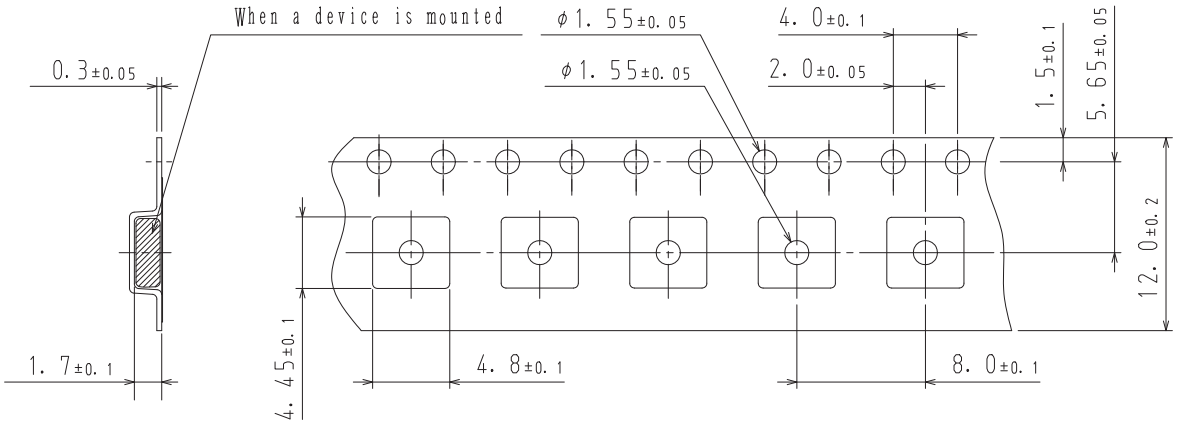


NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

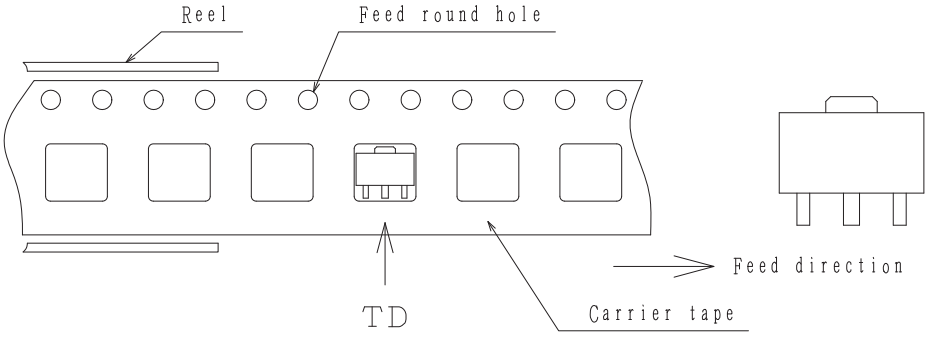
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



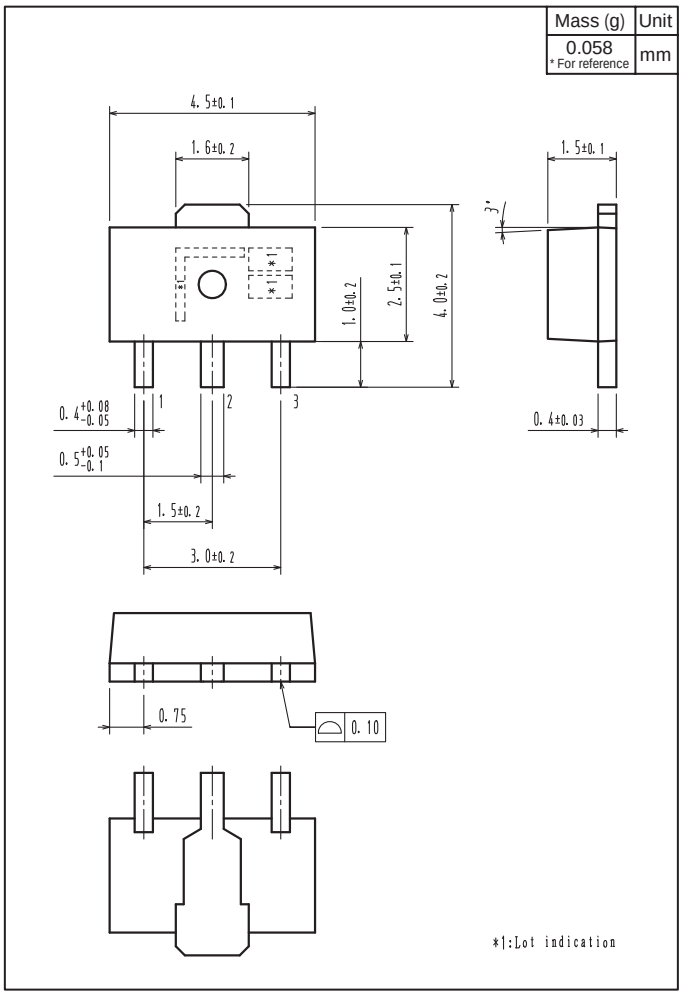
2-2. Device placement direction



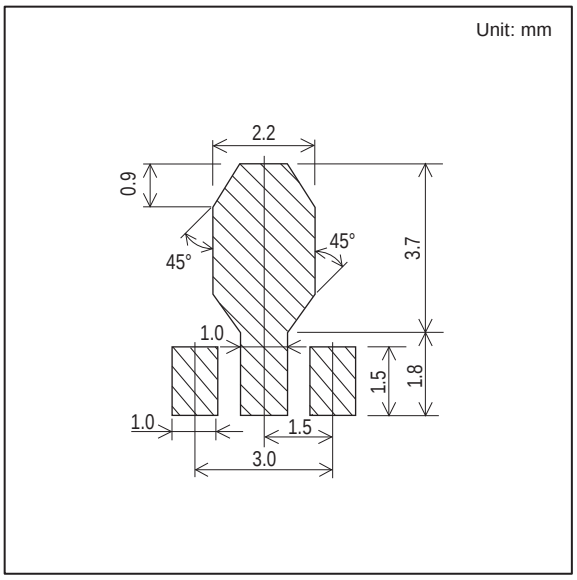
Those with pin 1 index on the feed hole side·····TD

Outline Drawing

2SD1620-TD-E



Land Pattern Example



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