



2SD1628

Bipolar Transistor 20V, 5A, Low $V_{CE(sat)}$, NPN Single PCP

ON Semiconductor®

<http://onsemi.com>

Applications

- Strobe DC-DC converters, relay drivers, hammer drivers, lamp drivers, motor drivers

Features

- Low saturation voltage
- Large current capacity
- Very small size making it easy to provide high density, small-sized hybrid IC's
- Halogen free compliance
- High h_{FE}

Specifications

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

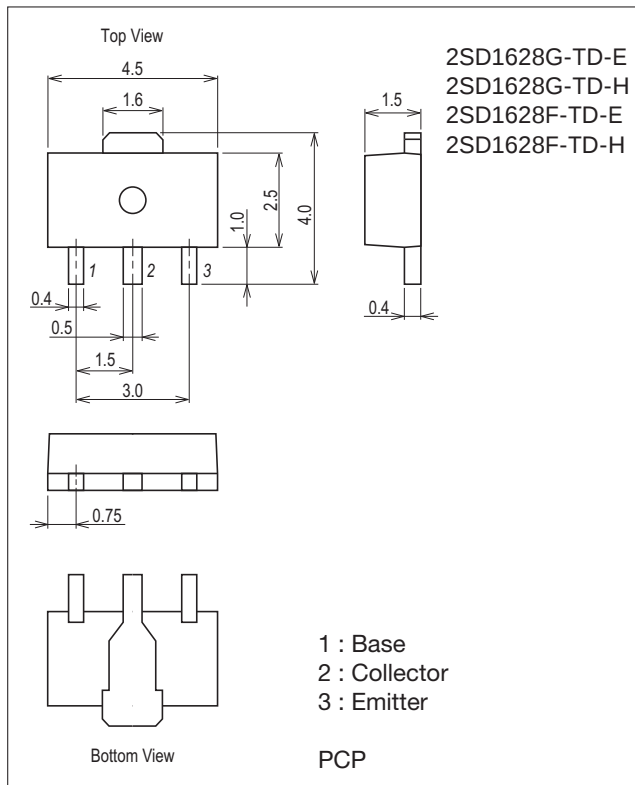
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		60	V
Collector-to-Emitter Voltage	V_{CEO}		20	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		5	A
Collector Current (Pulse)	I_{CP}		8	A

Continued on next page.

Package Dimensions

unit : mm (typ)

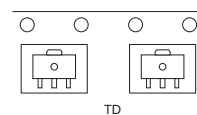
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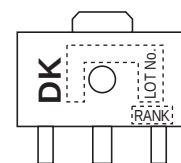
Product & Package Information

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

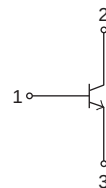
Packing Type: TD



Marking



Electrical Connection



2SD1628

Continued from preceding page.

Parameter	Symbol	Conditions	Ratings	Unit
Collector Dissipation	P _C		500	mW
		When mounted on ceramic substrate (250mm ² ×0.8mm)	1.5	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.

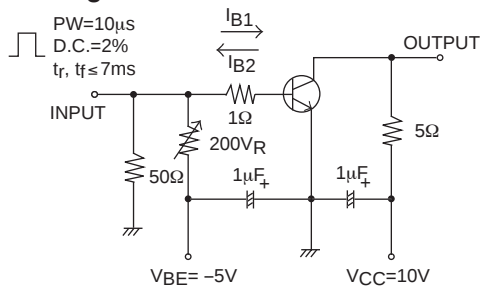
Electrical Characteristics at T_a=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I _{CBO}	V _{CB} =50V, I _E =0A			100	nA
Emitter Cutoff Current	I _{EBO}	V _{EB} =5V, I _C =0A			100	nA
DC Current Gain	h _{FE1}	V _{CE} =2V, I _C =0.5A	120*		560*	
	h _{FE2}	V _{CE} =2V, I _C =3A	95			
Gain-Bandwidth Product	f _T	V _{CE} =10V, I _C =50mA		120		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		45		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =3A, I _B =60mA			500	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =3A, I _B =60mA			1.5	V
Turn-ON Time	t _{on}	See specified Test Circuit.		30		ns
Storage Time	t _{stg}			300		ns
Fall Time	t _f			40		ns

* : The 2SD1628 is classified by 0.5A h_{FE} as follows :

Rank	E	F	G
h _{FE}	120 to 200	160 to 320	280 to 560

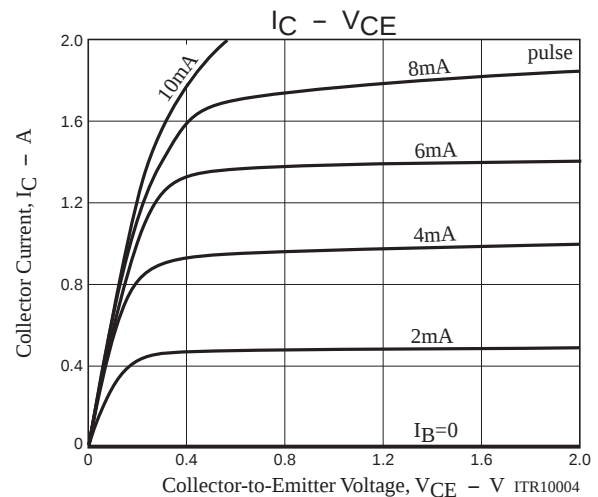
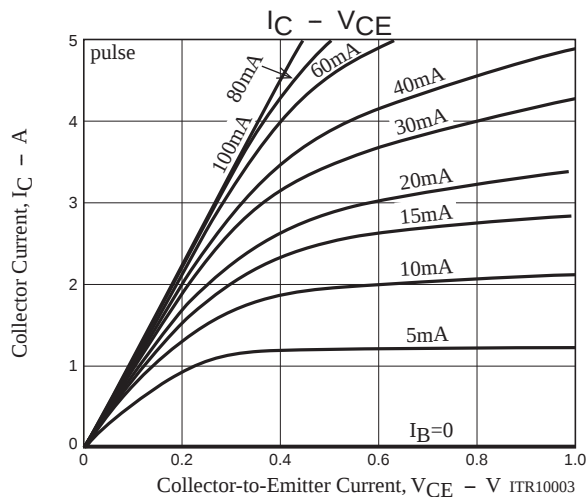
Switching Time Test Circuit

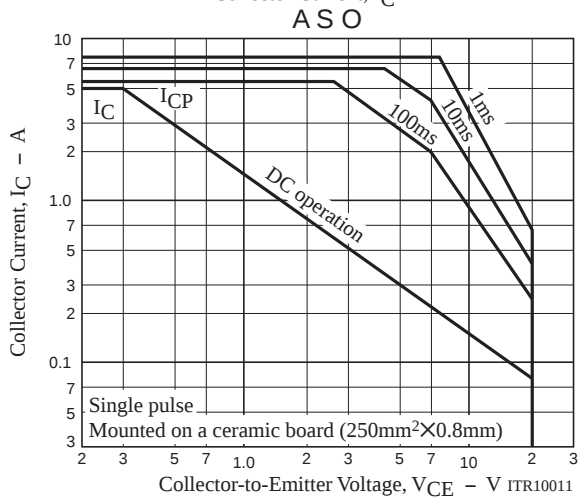
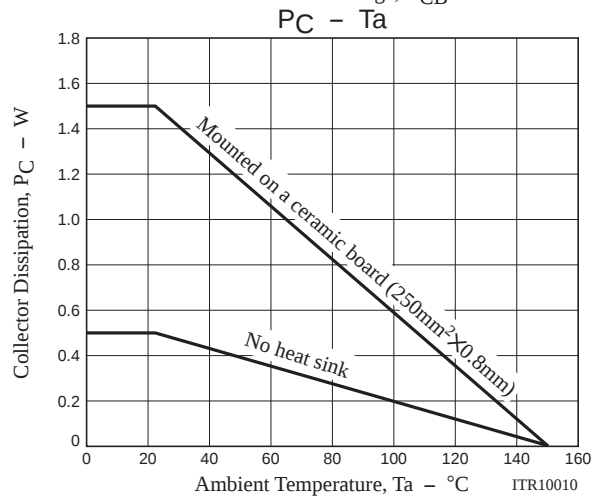
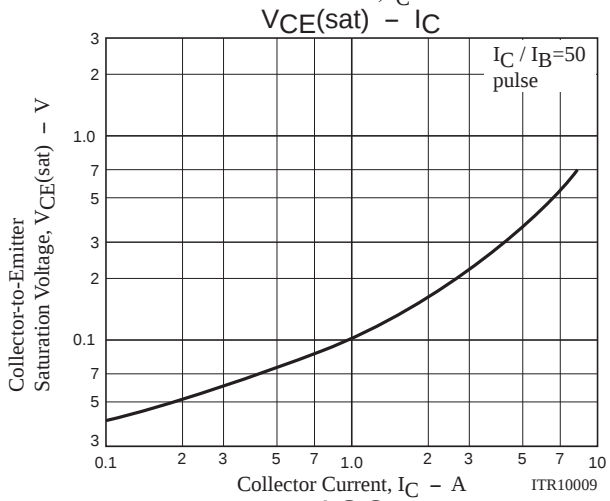
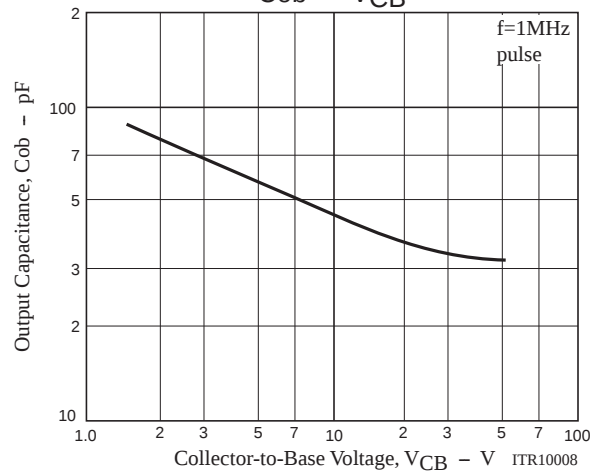
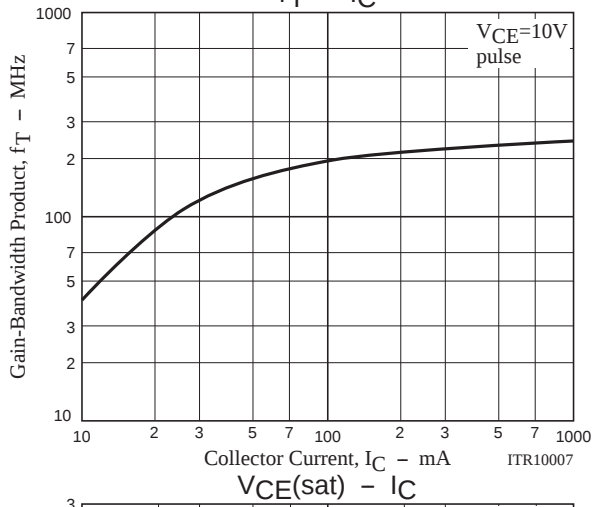
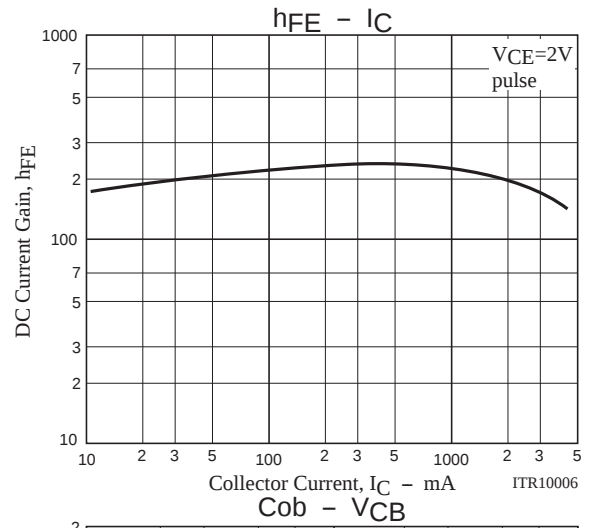
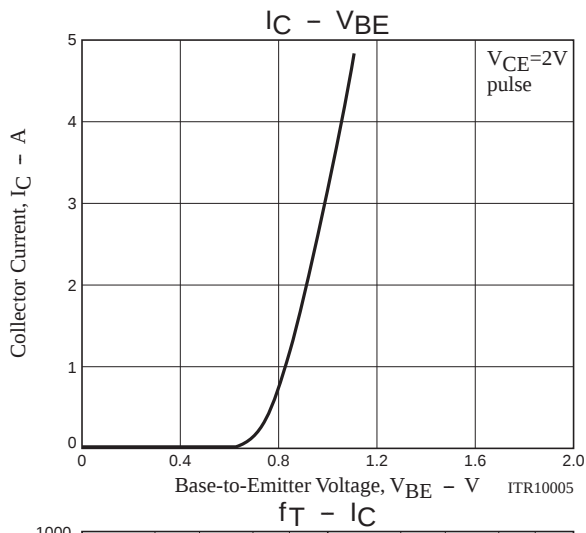


$$I_C = 10I_{B1} = -10I_{B2} = 2A$$

Ordering Information

Device	Package	Shipping	memo
2SD1628G-TD-E	PCP	1,000pcs./reel	Pb Free
2SD1628G-TD-H	PCP	1,000pcs./reel	Pb Free and Halogen Free
2SD1628F-TD-E	PCP	1,000pcs./reel	Pb Free
2SD1628F-TD-H	PCP	1,000pcs./reel	Pb Free and Halogen Free





Bag Packing Specification

2SD1628G-TD-E, 2SD1628G-TD-H, 2SD1628F-TD-E, 2SD1628F-TD-H

1. Packing Format

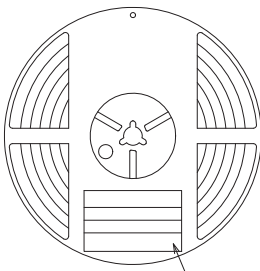
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
PCP	PCP	1,000	4,000	24,000	4 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

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



Reel label

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:****)	

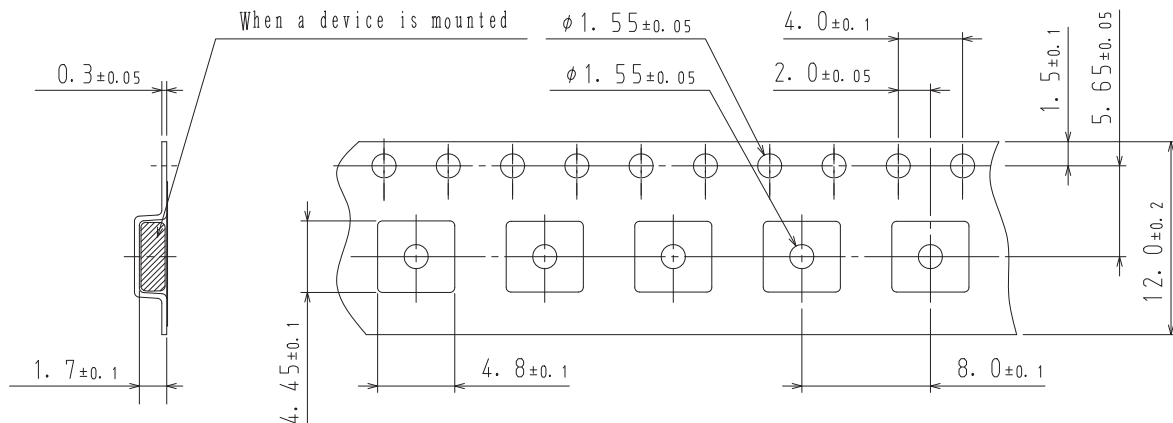
NOTE (1)

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

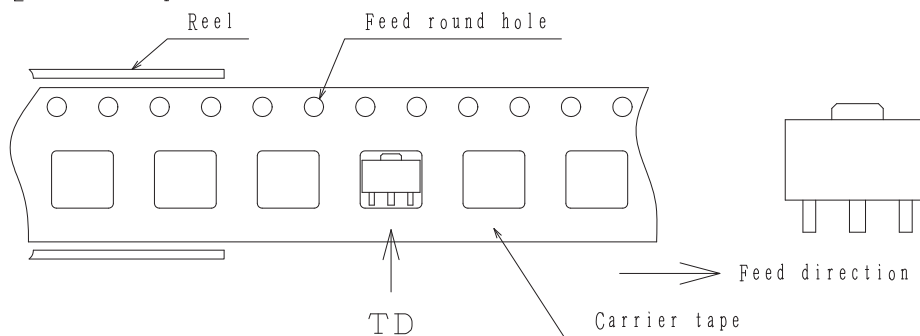
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

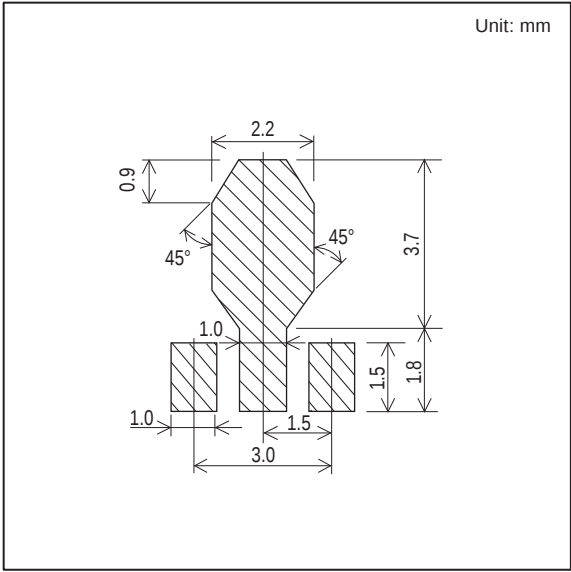
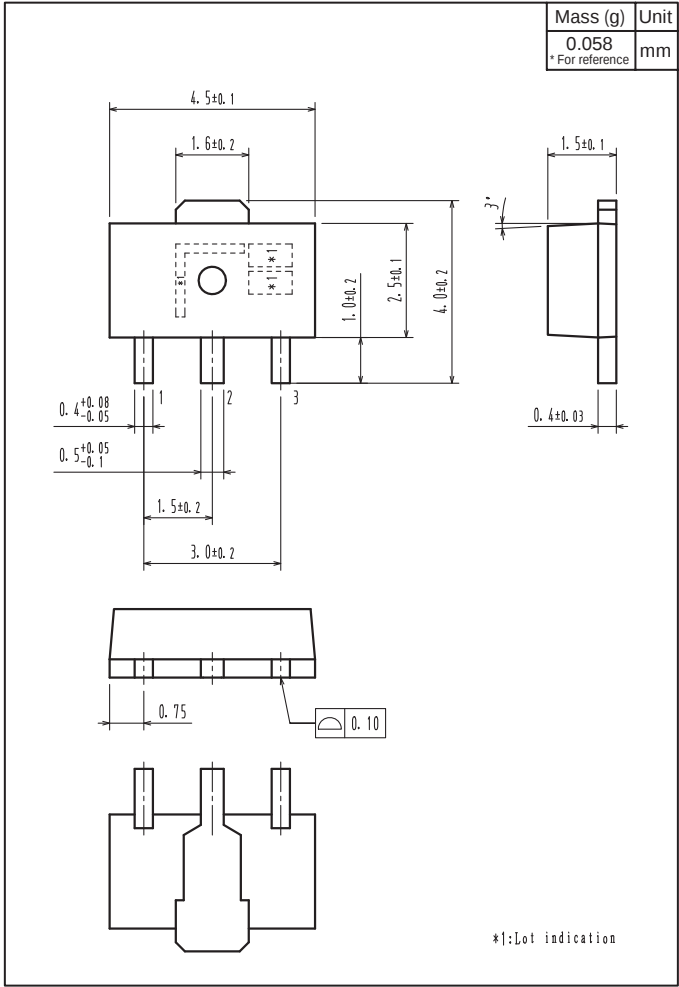


Those with pin 1 index on the feed hole side.....TD

Outline Drawing

2SD1628G-TD-E, 2SD1628G-TD-H, 2SD1628F-TD-E, 2SD1628F-TD-H

Land Pattern Example



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