



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SD1628 — NPN Epitaxial Planar Silicon Transistor High-Current Switching Applications

Applications

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

Features

- Low saturation voltage
- Large current capacity
- Very small size making it easy to provide highdensity, small-sized hybrid IC's
- Halogen free compliance
- High hFE

Specifications

Absolute Maximum Ratings at Ta=25°C

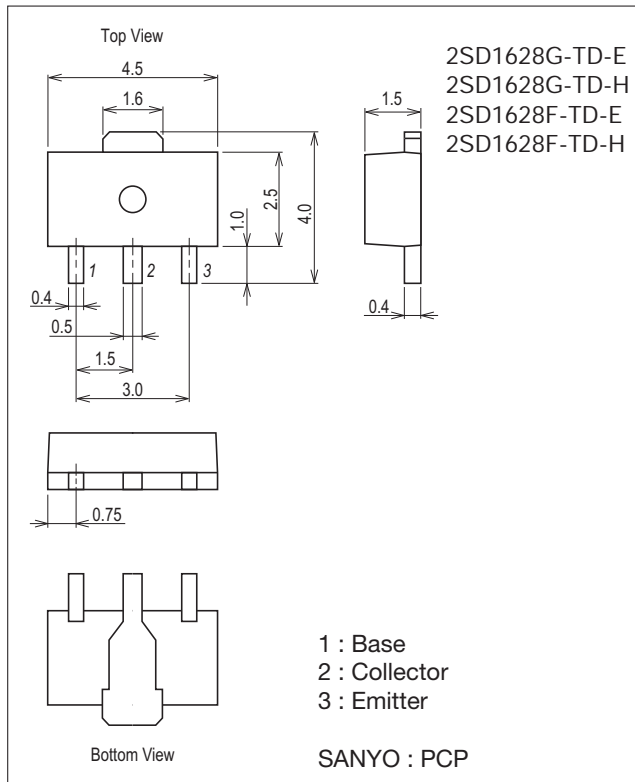
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		60	V
Collector-to-Emitter Voltage	V _{CE0}		20	V
Emitter-to-Base Voltage	V _{EB0}		6	V
Collector Current	I _C		5	A
Collector Current (Pulse)	I _{CP}		8	A

Continued on next page.

Package Dimensions

unit : mm (typ)

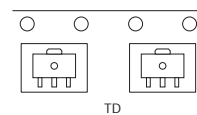
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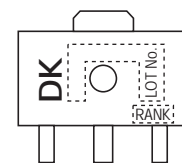
Product & Package Information

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

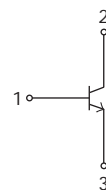
Packing Type: TD



Marking



Electrical Connection



2SD1628

Continued from preceding page.

Parameter	Symbol	Conditions	Ratings	Unit
Collector Dissipation	PC		500	mW
		When mounted on ceramic substrate (250mm ² ×0.8mm)	1.5	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

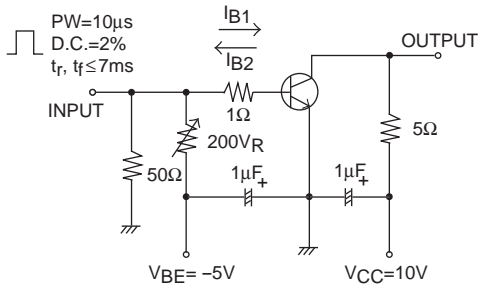
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =50V, I _E =0A			100	nA
Emitter Cutoff Current	IEBO	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	Cob	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

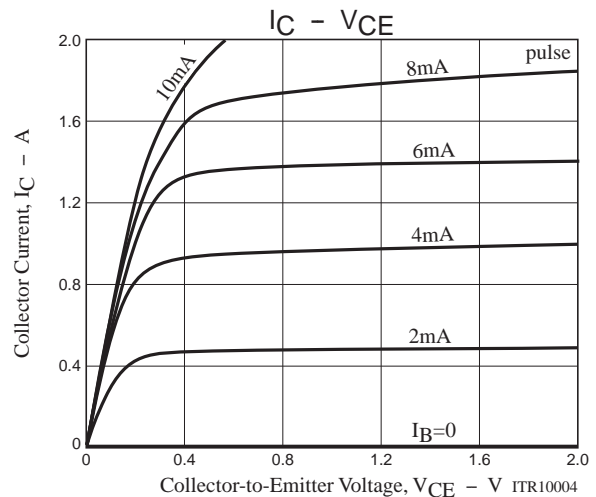
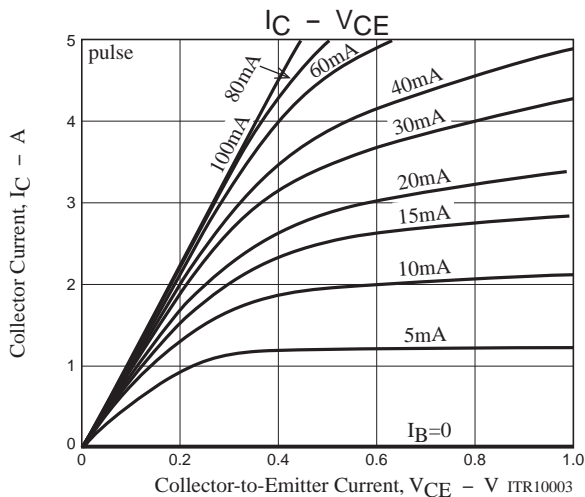
Switching Time Test Circuit

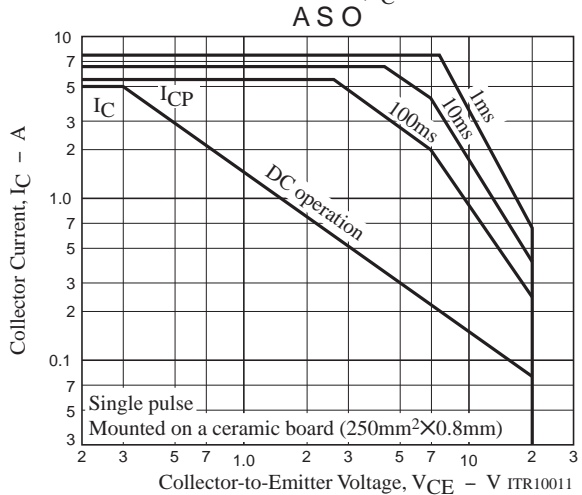
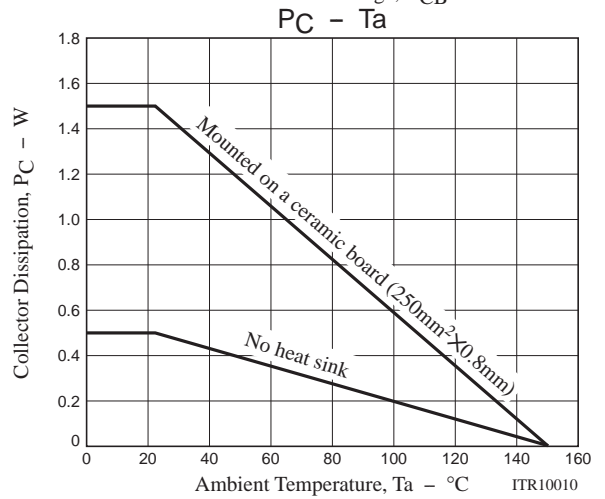
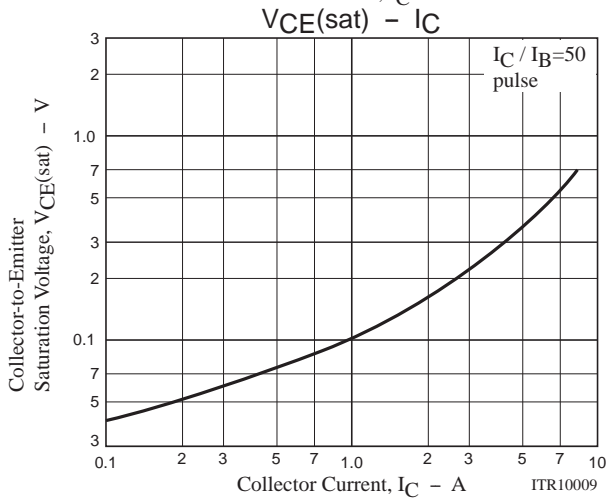
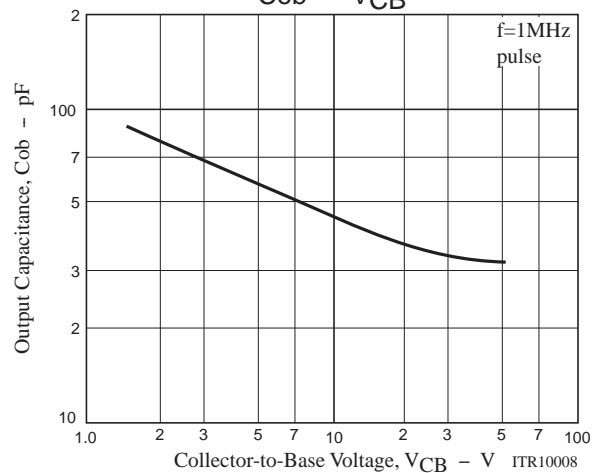
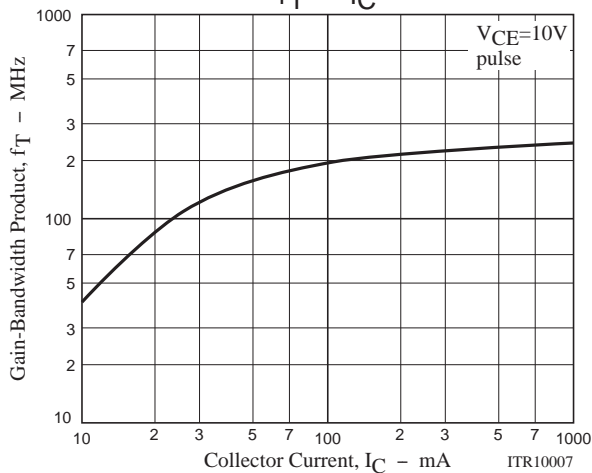
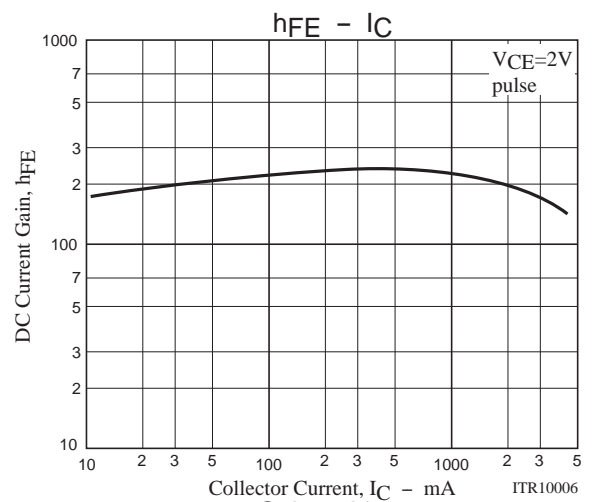
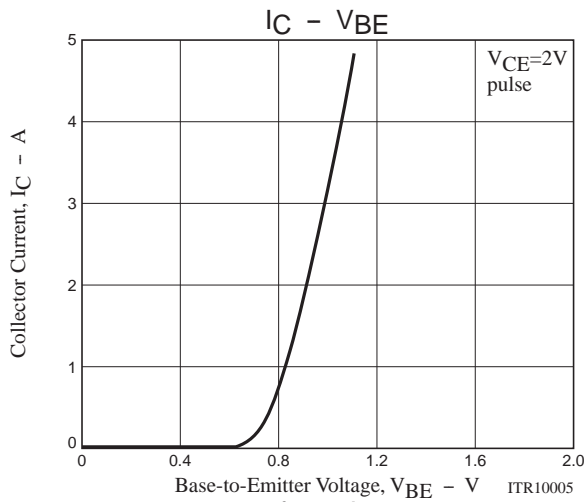


$$I_C = 10I_{B1} = -10I_{B2} = 2A$$

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

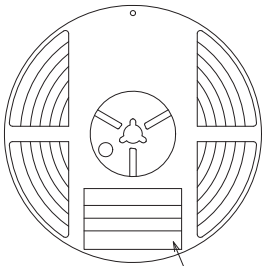
1. Packing Format

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)

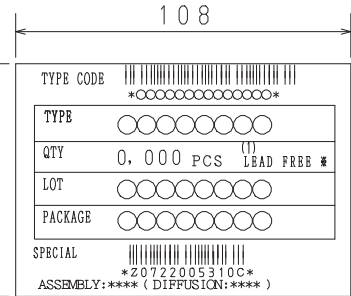
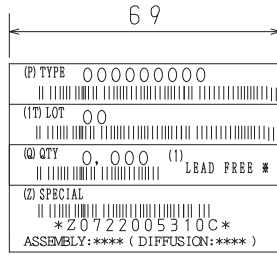
Outer box label
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

Packing method



Reel label

Type No.
LOT No.
Quantity
Origin



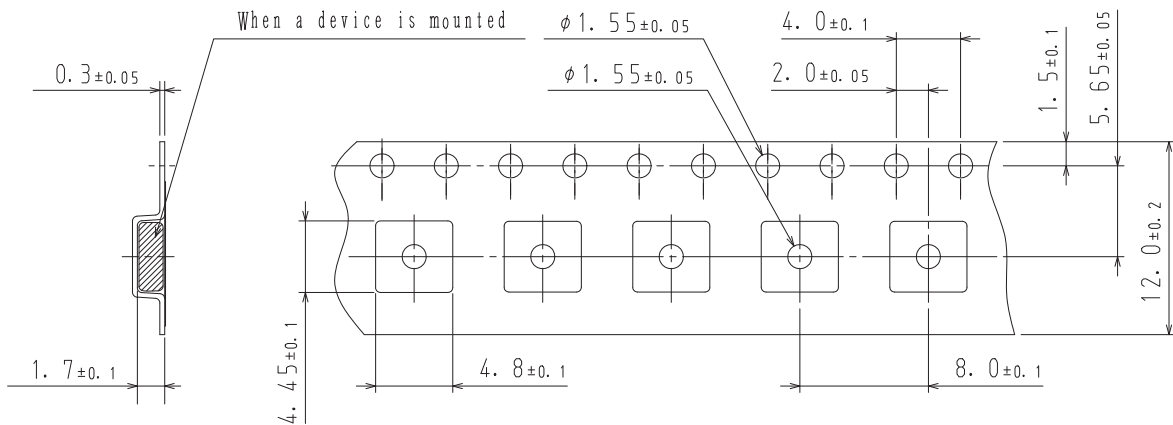
NOTE (1)

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

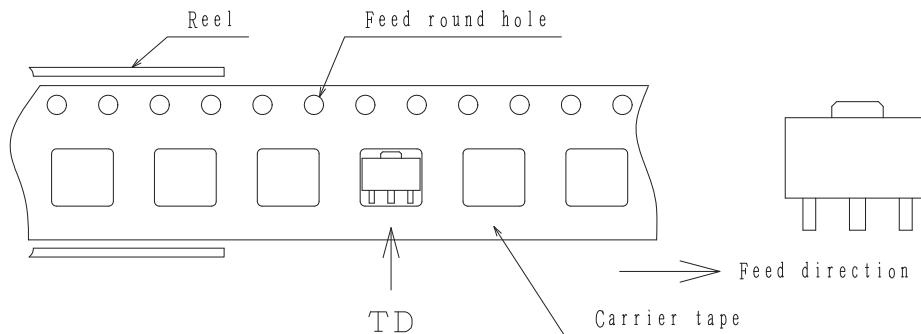
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction



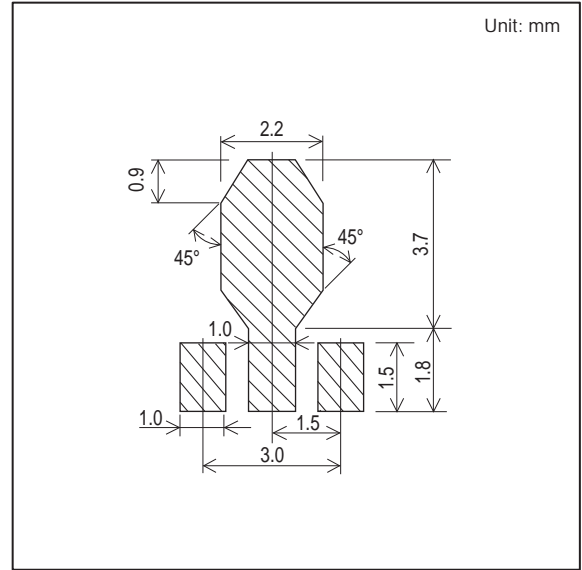
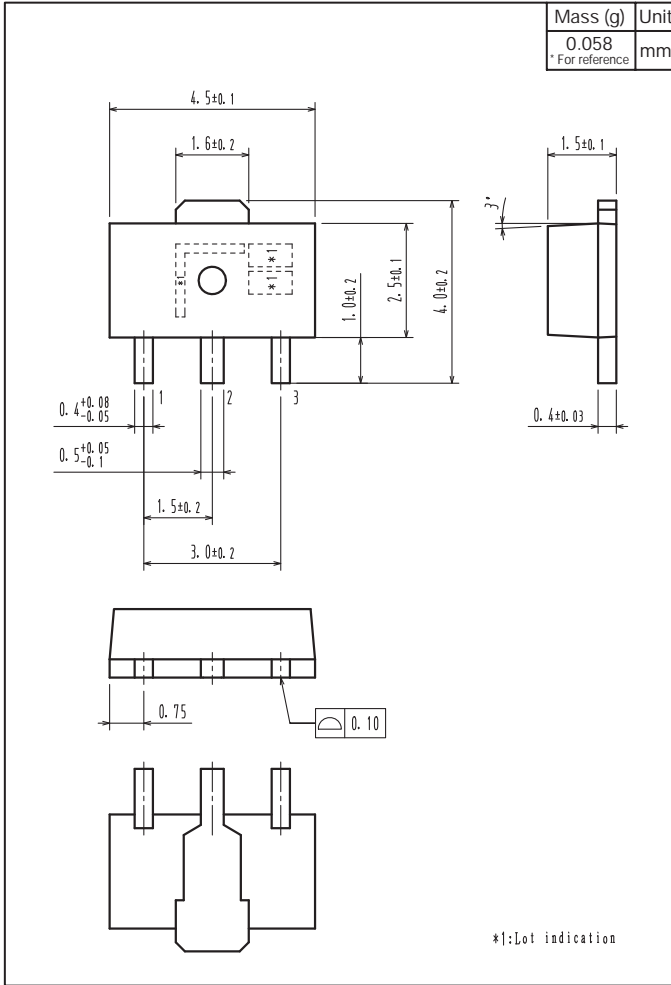
Those with pin 1 index on the feed hole side.....TD

2SD1628

Outline Drawing

Land Pattern Example

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



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