Ordering number : ENA1836B

# PCP1208

## Bipolar Transistor
### 200V, 0.7A Low $V_{CE}$(sat) NPN Single PCP

ON Semiconductor®

http://onsemi.com

## Features

- $V_{CEO}$=200V, $I_C$=0.7A
- High allowable power dissipation
- Halogen free compliance
- Low collector-to-emitter saturation voltage $V_{CE}$(sat)=0.115V(typ.)@$I_C$=0.35A
- High-speed switching $t_f$=70ns(typ.)@$I_C$=0.3A

## Specifications

### Absolute Maximum Ratings at Ta=25°C

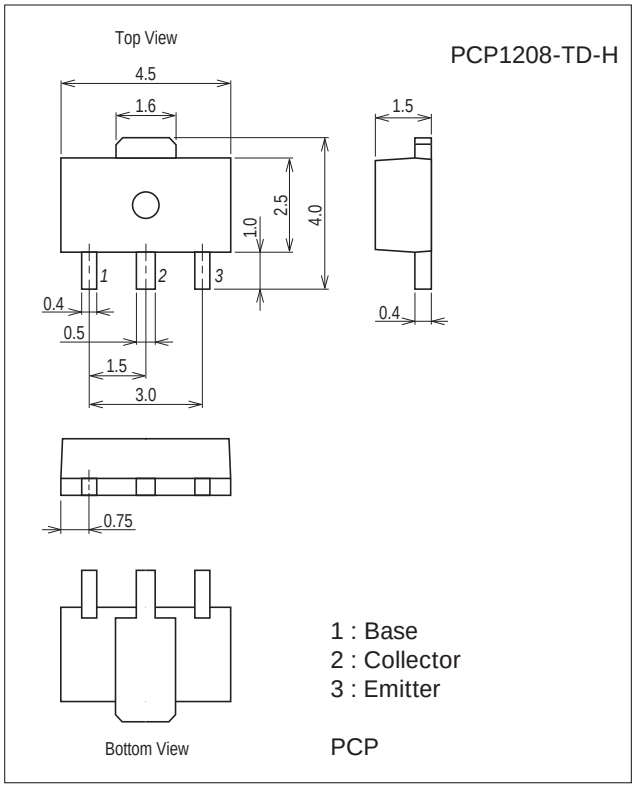
| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Collector-to-Base Voltage | $V_{CBO}$ | | 220 | V |
| Collector-to-Emitter Voltage | $V_{CEO}$ | | 200 | V |
| Emitter-to-Base Voltage | $V_{EBO}$ | | 8 | V |
| Collector Current | $I_C$ | | 0.7 | A |
| Collector Current (Pulse) | $I_{CP}$ | | 2 | A |
| Base Current | $I_B$ | | 140 | mA |
| Collector Dissipation | $P_C$ | When mounted on ceramic substrate (450mm²×0.8mm) | 1.3 | W |
| | | Tc=25°C | 3.5 | 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.

### Package Dimensions

unit : mm (typ)

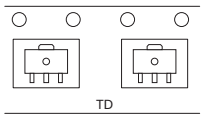
7008B-003



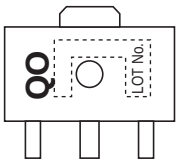

### Ordering & Package Information

| Device | Package | Shipping | note |
|---|---|---|---|
| PCP1208-TD-H | PCP (SC-62, SOT-89, TO-243) | 1,000 pcs./reel | Pb Free and Halogen Free |

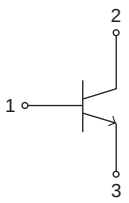
### Packing Type: TD




### Marking



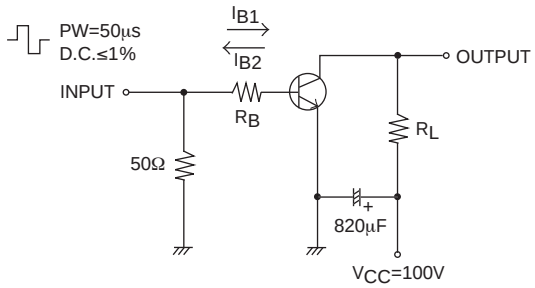

### Electrical Connection



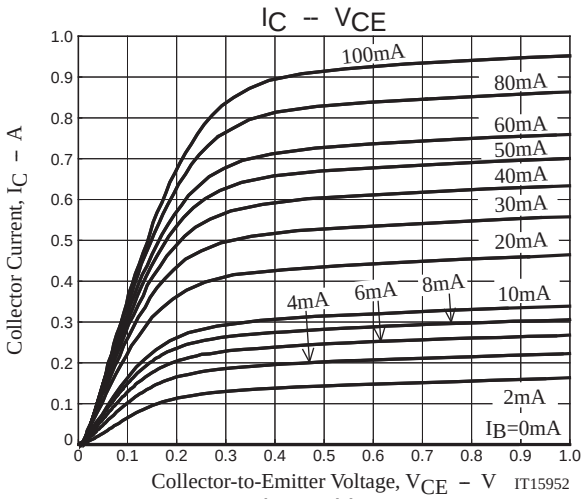
## Electrical Characteristics at Ta=25°C

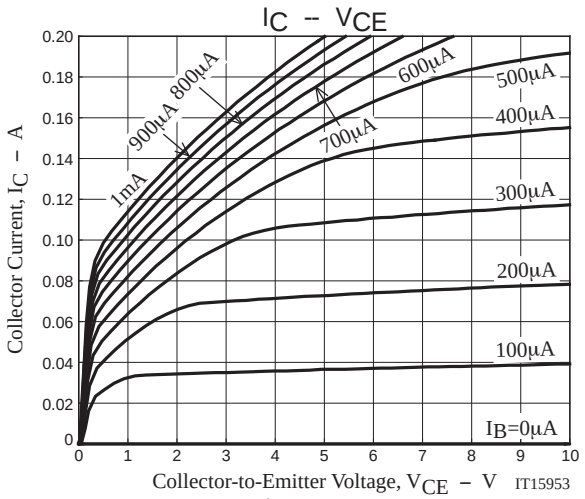
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}$=100V, $I_E$=0A | | | 1 | μA |
| Emitter Cutoff Current | $I_{EBO}$ | $V_{EB}$=4V, $I_C$=0A | | | 1 | μA |
| DC Current Gain | $h_{FE}$ | $V_{CE}$=5V, $I_C$=100mA | 200 | | 560 | |
| Gain-Bandwidth Product | $f_T$ | $V_{CE}$=10V, $I_C$=100mA | | 120 | | MHz |
| Output Capacitance | Cob | $V_{CB}$=10V, f=1MHz | | 9 | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE}$(sat) | $I_C$=0.35A, $I_B$=35mA | | 115 | 200 | mV |
| Base-to-Emitter Saturation Voltage | $V_{BE}$(sat) | $I_C$=0.35A, $I_B$=35mA | | 0.82 | 1.2 | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C$=10μA, $I_E$=0A | 220 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C$=1mA, $R_{BE}$=∞ | 200 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E$=10μA, $I_C$=0A | 8 | | | V |
| Turn-On Time | $t_{on}$ | See specified Test Circuit. | | 50 | | ns |
| Storage Time | $t_{stg}$ | | | 2 | | μs |
| Fall Time | $t_f$ | | | 70 | | ns |

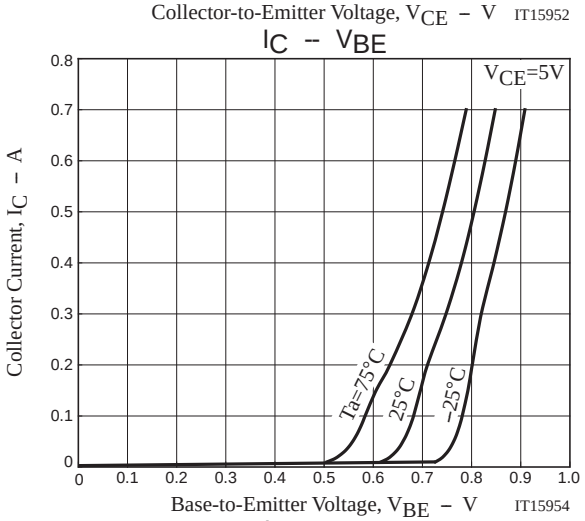
## Switching Time Test Circuit

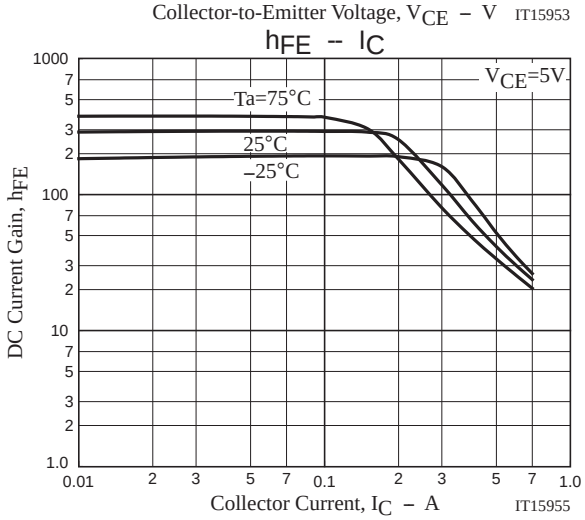


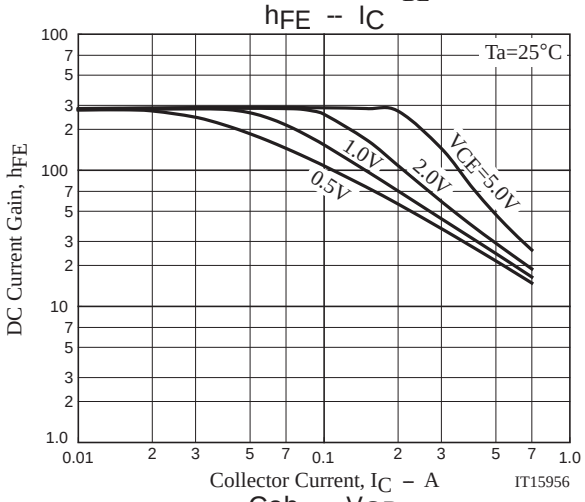

$I_C$=10$I_{B1}$= −10$I_{B2}$=0.3A

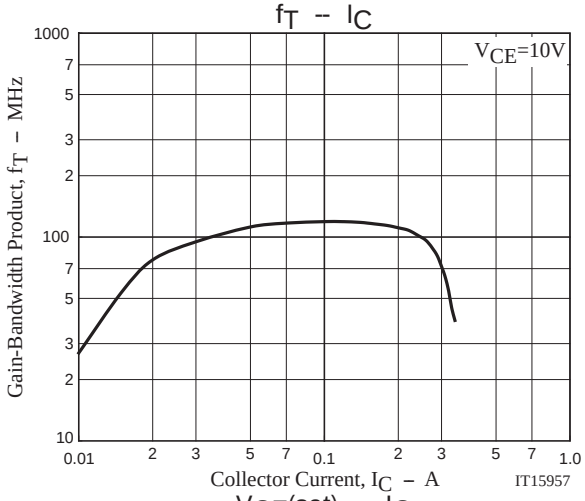

IC – VCE
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT15952
100mA
80mA
60mA
50mA
40mA
30mA
20mA
10mA
8mA
6mA
4mA
2mA
IB=0mA

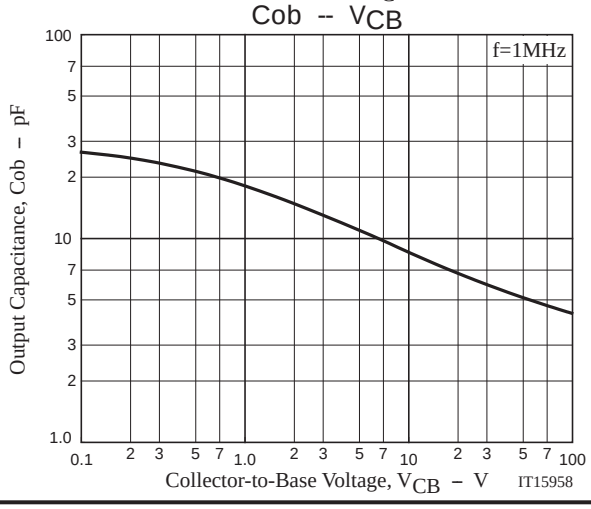

IC – VCE
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT15953
1mA
900µA
800µA
700µA
600µA
500µA
400µA
300µA
200µA
100µA
IB=0µA

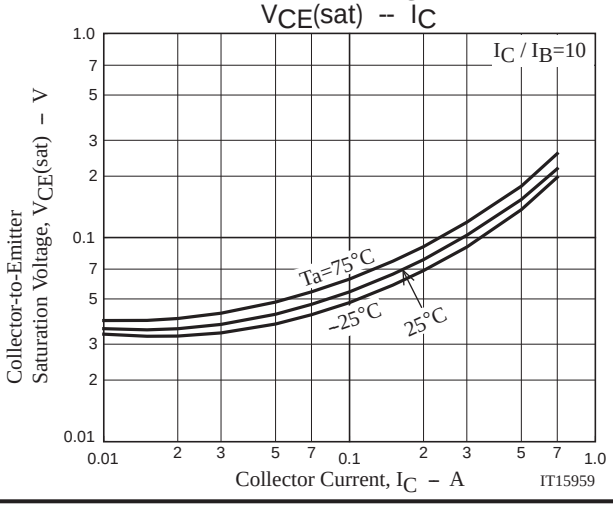

IC – VBE
Collector Current, IC – A
Base-to-Emitter Voltage, VBE – V
IT15954
VCE=5V
Ta=75°C
25°C
–25°C

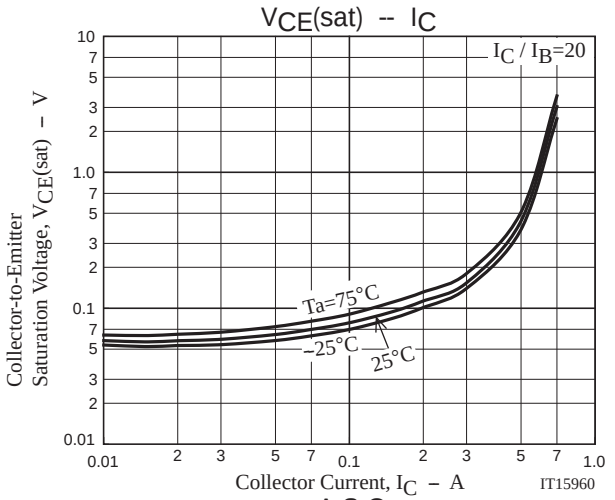

hFE – IC
DC Current Gain, hFE
Collector Current, IC – A
IT15955
VCE=5V
Ta=75°C
25°C
–25°C

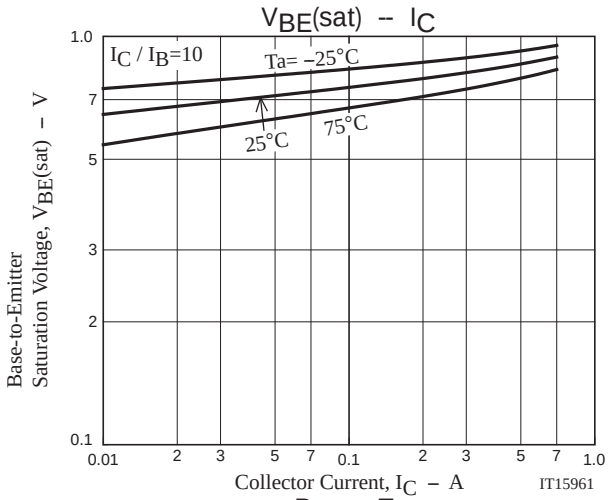

hFE – IC
DC Current Gain, hFE
Collector Current, IC – A
IT15956
Ta=25°C
VCE=5.0V
2.0V
1.0V
0.5V

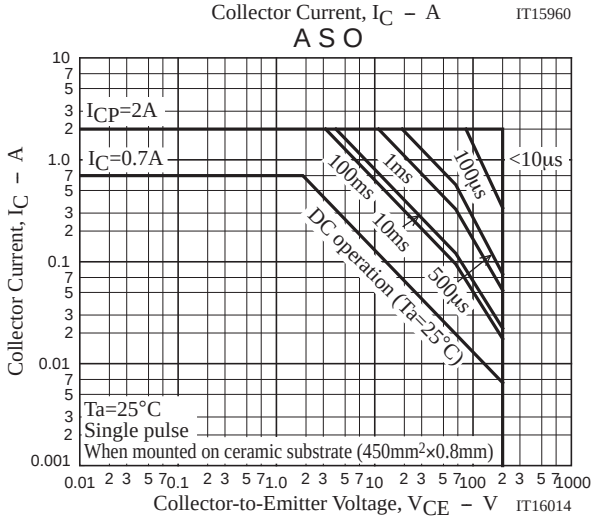

fT – IC
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
IT15957
VCE=10V

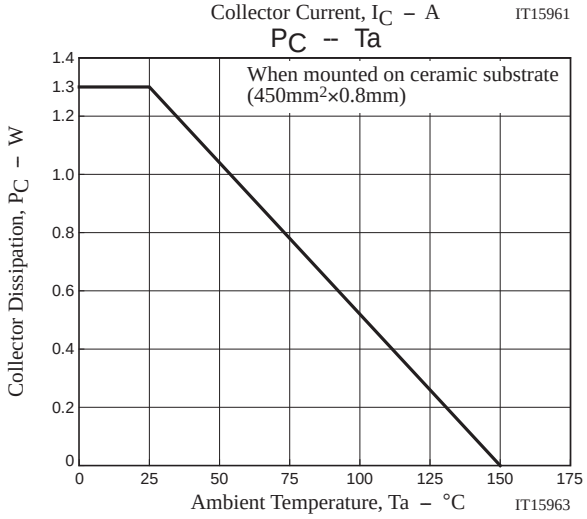

Cob – VCB
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT15958
f=1MHz


VCE(sat) – IC
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT15959
IC / IB=10
Ta=75°C
–25°C
25°C


VCE(sat) -- IC
IC / IB=20
Ta=75°C
–25°C
25°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT15960


VBE(sat) -- IC
IC / IB=10
Ta= –25°C
25°C
75°C
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
IT15961


A S O
ICP=2A
IC=0.7A
100ms
1ms
10ms
100µs
<10µs
500µs
DC operation (Ta=25°C)
Ta=25°C
Single pulse
When mounted on ceramic substrate (450mm2×0.8mm)
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT16014


PC – Ta
When mounted on ceramic substrate (450mm2×0.8mm)
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C
IT15963

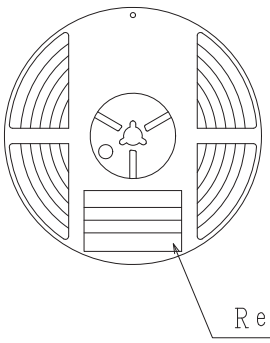
**Bag Packing Specification**

PCP1208-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<br>Dimensions:mm (external)<br>183×72×185 | 6 inner boxes contained<br>Dimensions:mm (external)<br>440×195×210 |

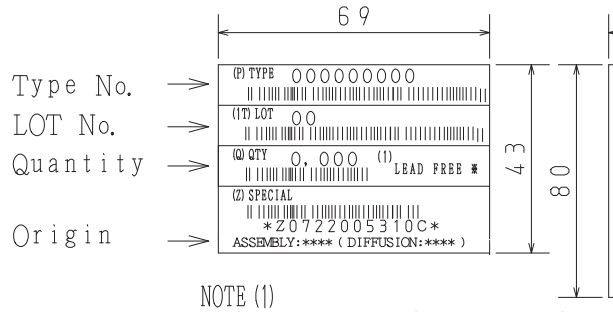
Packing method



Reel label

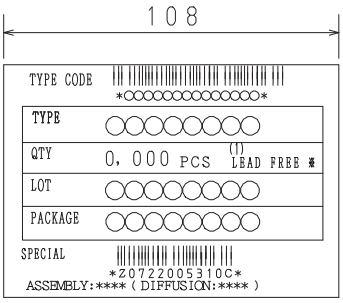
Reel label, Inner box label

(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.

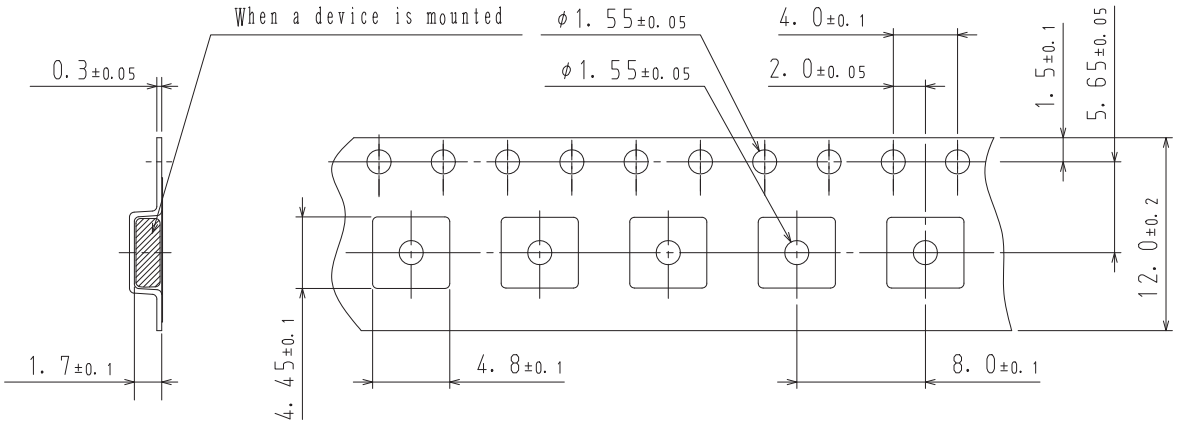



NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

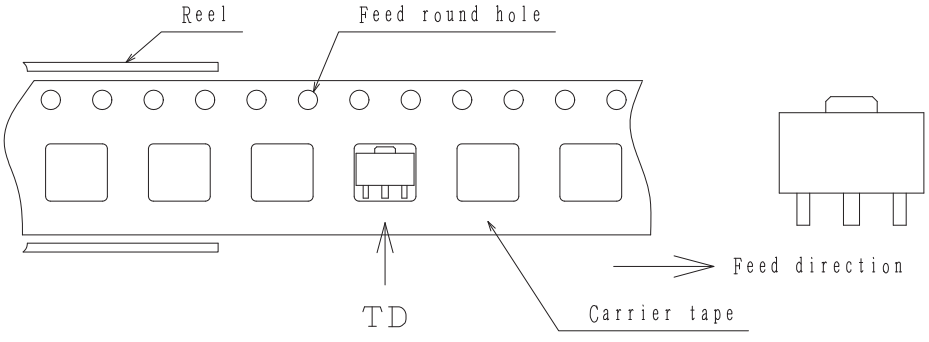
| Label | JEITA Phase |
|---|---|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3 |

## 2. Taping configuration

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



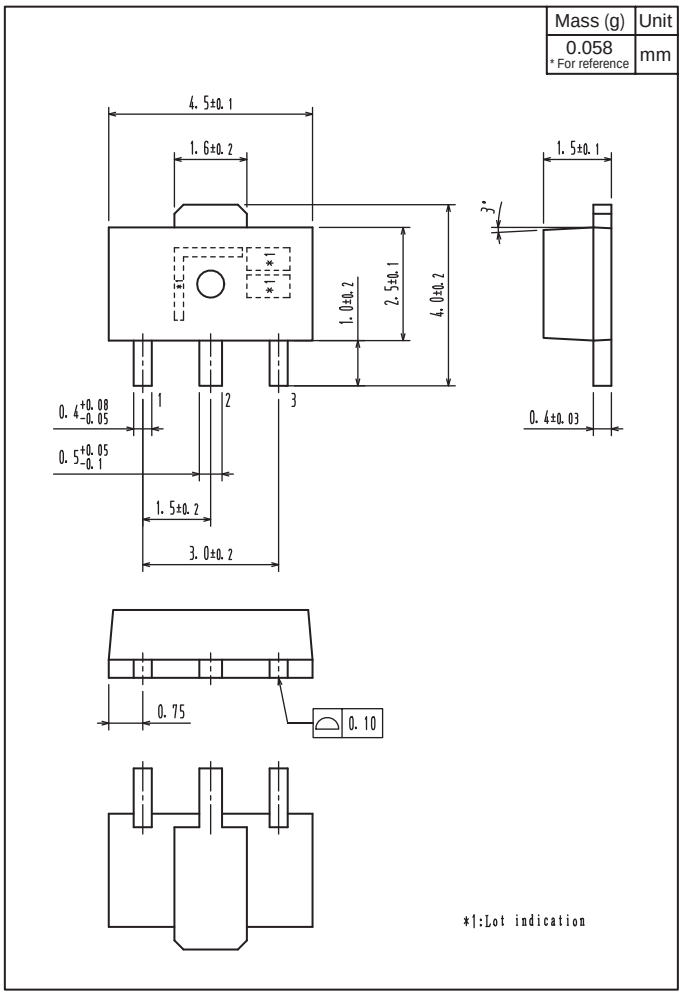

### 2-2. Device placement direction



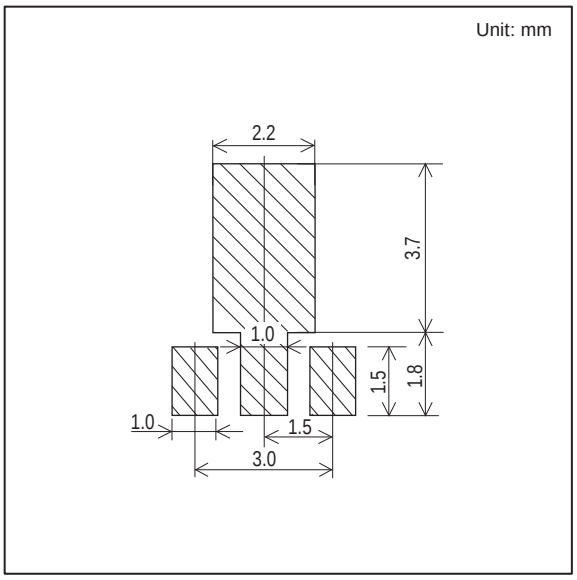

Those with pin 1 index on the feed hole side……TD

## Outline Drawing

PCP1208-TD-H




## Land Pattern Example



# Mouser Electronics

Authorized Distributor

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ON Semiconductor:

PCP1208-TD-H

Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

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- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
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- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

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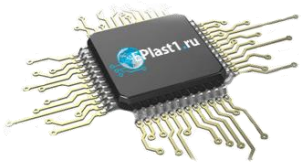
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

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**Факс:** 8 (812) 320-02-42
**Электронная почта:** org@eplast1.ru
**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.