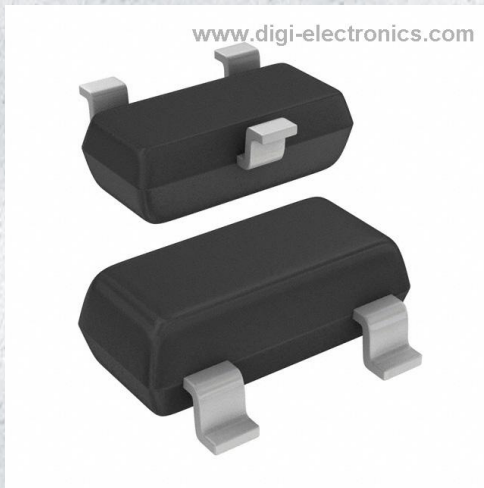


# CPH3145-TL-E Datasheet



[www.digi-electronics.com](http://www.digi-electronics.com)

<https://www.DiGi-Electronics.com>

|                              |   |
|------------------------------|---|
| DiGi Electronics Part Number | CPH3145-TL-E-DG   |
| Manufacturer                 | <a href="#">onsemi</a>  |
| Manufacturer Product Number  | CPH3145-TL-E  |
| Description                  | TRANS PNP 50V 2A 3CPH   |
| Detailed Description         | Bipolar (BJT) Transistor PNP 50 V 2 A 420MHz 900 mW Surface Mount 3-CPH |



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.

## Purchase and inquiry

Manufacturer Product Number:

CPH3145-TL-E

Series:

-

Transistor Type:

PNP

Voltage - Collector Emitter Breakdown (Max):

50 V

Current - Collector Cutoff (Max):

1 $\mu$ A (ICBO)

Power - Max:

900 mW

Operating Temperature:

150°C (TJ)

Package / Case:

SC-96

Base Product Number:

CPH3145

Manufacturer:

onsemi

Product Status:

Obsolete

Current - Collector (Ic) (Max):

2 A

Vce Saturation (Max) @ Ib, Ic:

330mV @ 50mA, 1A

DC Current Gain (hFE) (Min) @ Ic, Vce:

200 @ 100mA, 2V

Frequency - Transition:

420MHz

Mounting Type:

Surface Mount

Supplier Device Package:

3-CPH

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

# CPH3145/CPH3245

## Low VCE (sat) Bipolar Transistor (PNP)NPN, (-)50V, (-)2A



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### Features

- Adoption of MBIT Process
- Large Current Capacity
- Low Collector to Emitter Saturation Voltage
- High Speed Switching
- Ultrasmall Package Facilitates Miniaturization in End Products (mounting height : 0.9mm)
- High Allowable Power Dissipation

### Typical Applications

- Relay Drivers
- Lamp Drivers
- Motor Drivers
- Flash

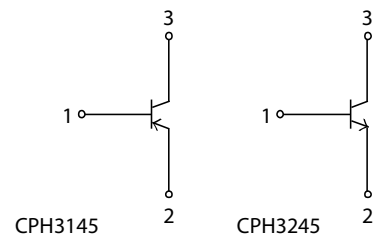
### SPECIFICATIONS ( ) : CPH3145

**ABSOLUTE MAXIMUM RATING** at Ta = 25°C (Note 1)

| Parameter  | Symbol | Value       | Unit |
|--|--------|-------------|------|
| Collector to Base Voltage  | VCBO   | (-50)80     | V    |
| Collector to Emitter Voltage   | VCES   | (-50)80     | V    |
| Collector to Emitter Voltage   | VCEO   | (-)50       | V    |
| Emitter to Base Voltage  | VEBO   | (-)6        | V    |
| Collector Current  | IC     | (-)2        | A    |
| Collector Current (Pulse)  | ICP    | (-)4        | A    |
| Base Current   | IB     | (-)400      | mA   |
| Collector Dissipation<br>When mounted on ceramic substrate<br>(600mm <sup>2</sup> × 0.8mm) | PC     | 0.9         | W    |
| Junction Temperature   | Tj     | 150         | °C   |
| Storage Temperature  | Tstg   | -55 to +150 | °C   |

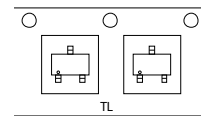
Note 1 : Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### ELECTRICAL CONNECTION

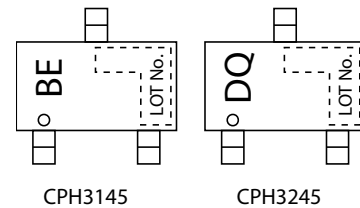


1 : Base  
2 : Emitter  
3 : Collector

### PACKING TYPE : TL



### MARKING



CPH3145

CPH3245

### ORDERING INFORMATION

See detailed ordering and shipping information on page 5 of this data sheet.

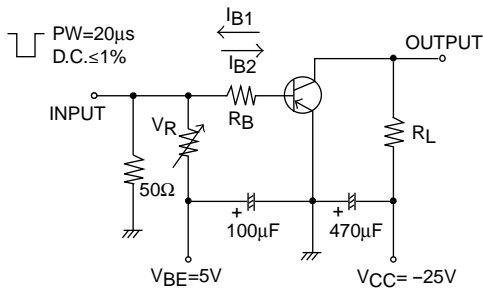
### CPH3145/CPH3245

**ELECTRICAL CHARACTERISTICS** at Ta = 25°C (Note 2)

| Parameter                               | Symbol               | Conditions  | Value   |           |           | Unit |
|---|----------------------|---|---------|-----------|-----------|------|
|   |                      |   | min     | typ       | max       |      |
| Collector Cutoff Current                | ICBO                 | V <sub>CB</sub> =(-)40V, I <sub>E</sub> =0A       |         |           | (-1)      | μA   |
| Emitter Cutoff Current                  | IEBO                 | V <sub>EB</sub> =(-)4V, I <sub>C</sub> =0A        |         |           | (-1)      | μA   |
| DC Current Gain                         | h <sub>FE</sub>      | V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)100mA  | 200     |           | 560       |      |
| Gain-Bandwidth Product                  | f <sub>T</sub>       | V <sub>CE</sub> =(-)10V, I <sub>C</sub> =(-)300mA |         | 420       |           | MHz  |
| Output Capacitance                      | C <sub>ob</sub>      | V <sub>CB</sub> =(-)10V, f=1MHz                   |         | (16)8     |           | pF   |
| Collector to Emitter Saturation Voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> =(-)1A, I <sub>B</sub> =(-)50mA    |         | (-165)130 | (-330)260 | mV   |
| Base to Emitter Saturation Voltage      | V <sub>BE(sat)</sub> |   |         | (-0.9)    | (-1.2)    | V    |
| Collector to Base Breakdown Voltage     | V <sub>(BR)CBO</sub> | I <sub>C</sub> =(-)10μA, I <sub>E</sub> =0A       | (-50)80 |           |           | V    |
| Collector to Emitter Breakdown Voltage  | V <sub>(BR)CES</sub> | I <sub>C</sub> =(-)100μA, R <sub>BE</sub> =0Ω     | (-50)80 |           |           | V    |
| Collector to Emitter Breakdown Voltage  | V <sub>(BR)CEO</sub> | I <sub>C</sub> =(-)1mA, R <sub>BE</sub> =∞        | (-50)   |           |           | V    |
| Emitter to Base Breakdown Voltage       | V <sub>(BR)EBO</sub> | I <sub>E</sub> =(-)10μA, I <sub>C</sub> =0A       | (-6)    |           |           | V    |
| Turn-ON Time                            | t <sub>on</sub>      | See specified Test Circuit                        |         | (35)35    |           | ns   |
| Storage Time                            | t <sub>stg</sub>     |   |         | (200)330  |           | ns   |
| Fall Time                               | t <sub>f</sub>       |   |         | (24)40    |           | ns   |

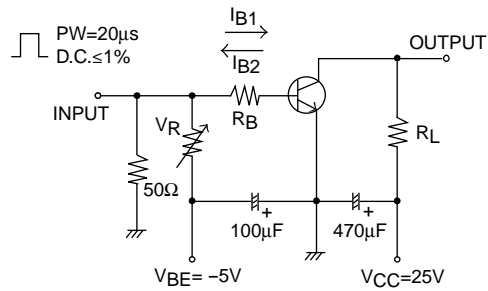
Note 2 : Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

**Switching Time Test Circuit**



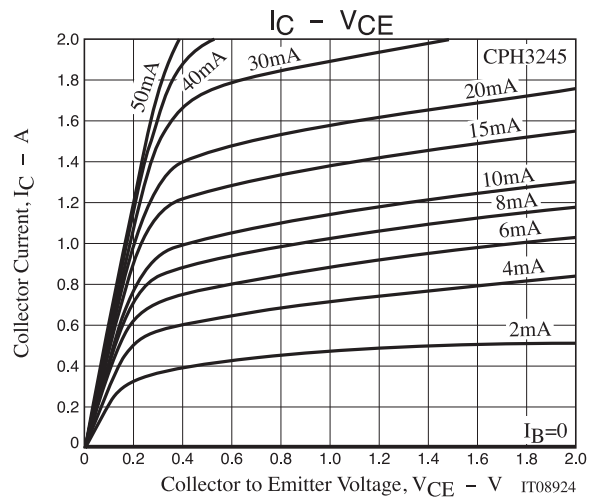
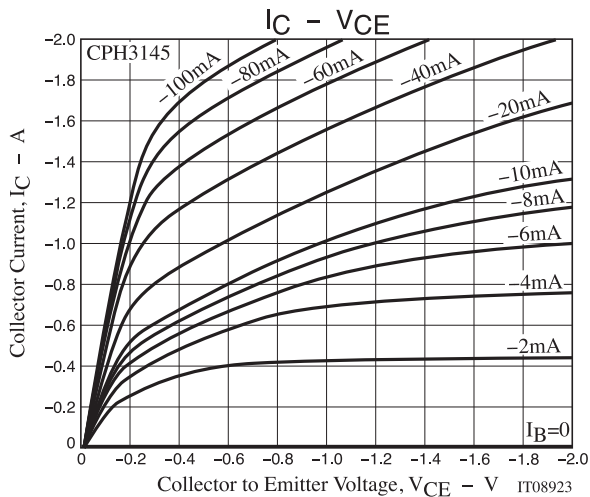
$I_C = -10I_{B1} = 10I_{B2} = -0.7A$

CPH3145

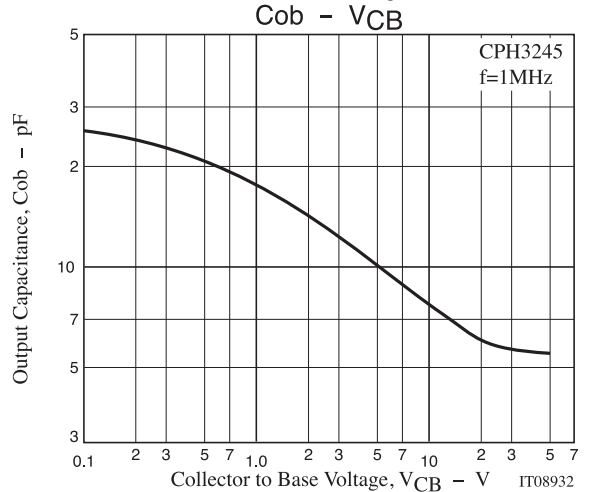
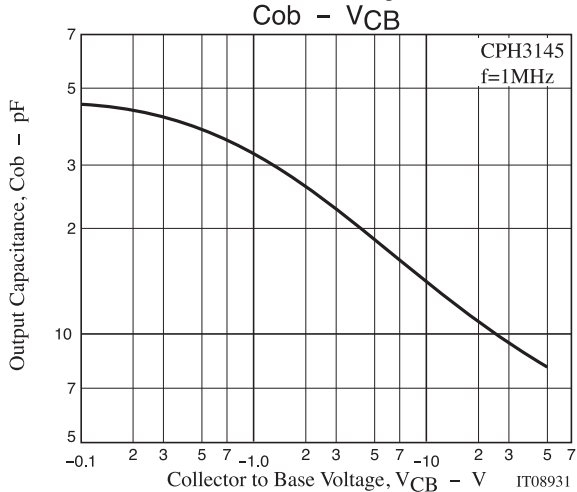
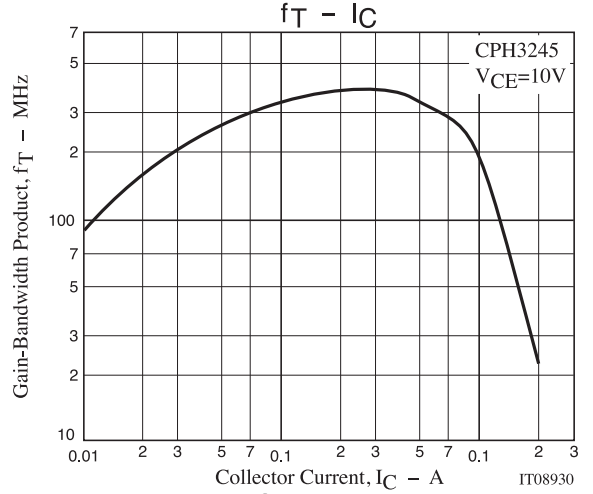
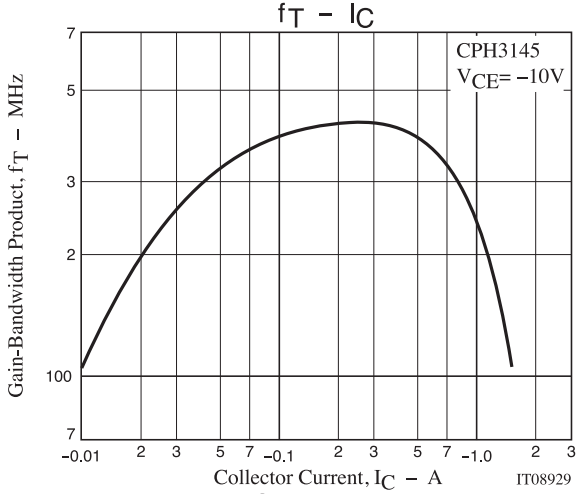
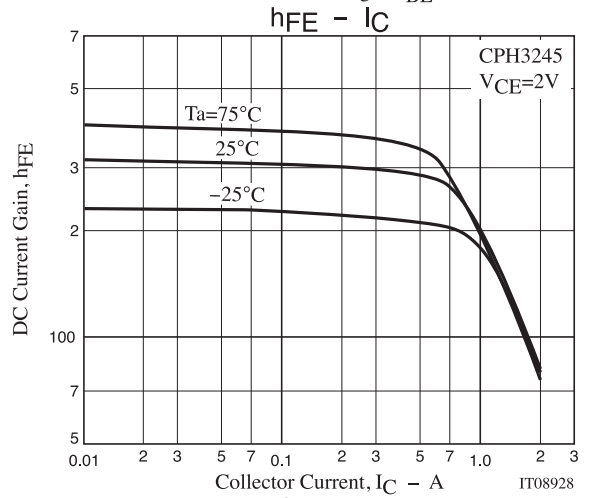
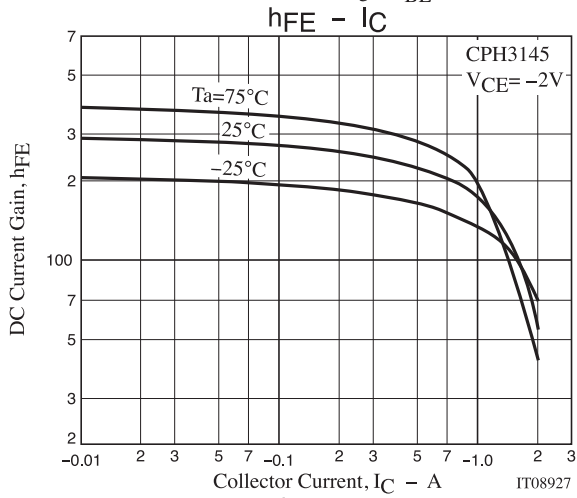
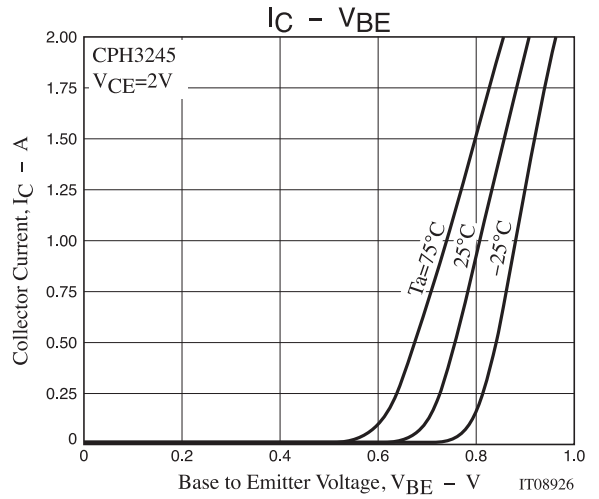
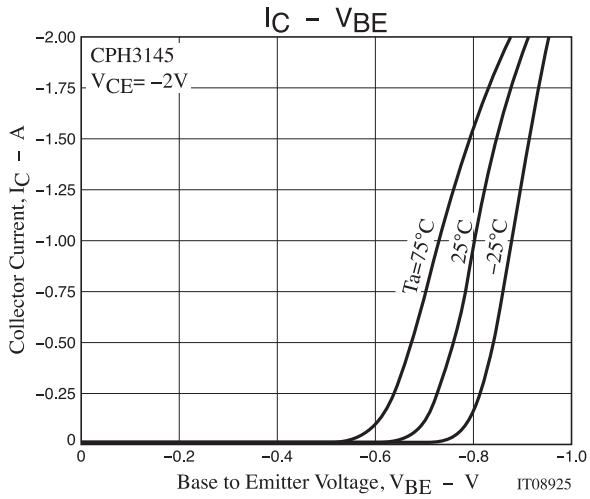


$I_C = 10I_{B1} = -10I_{B2} = 0.7A$

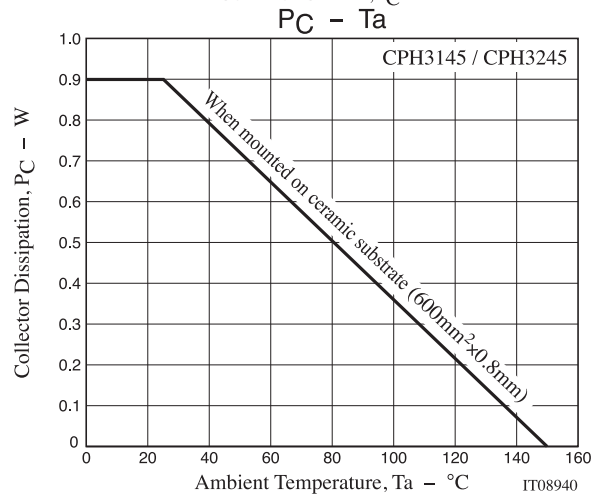
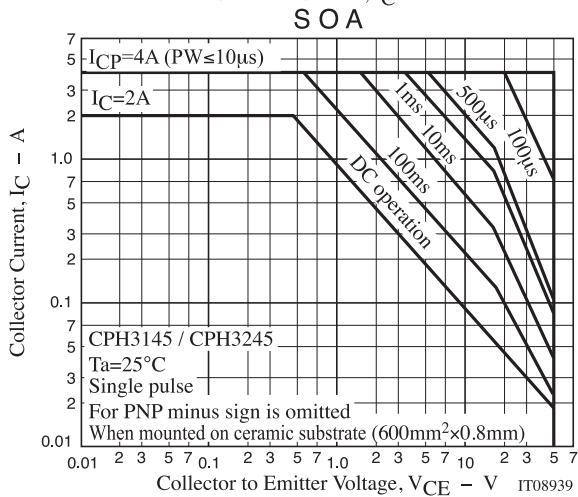
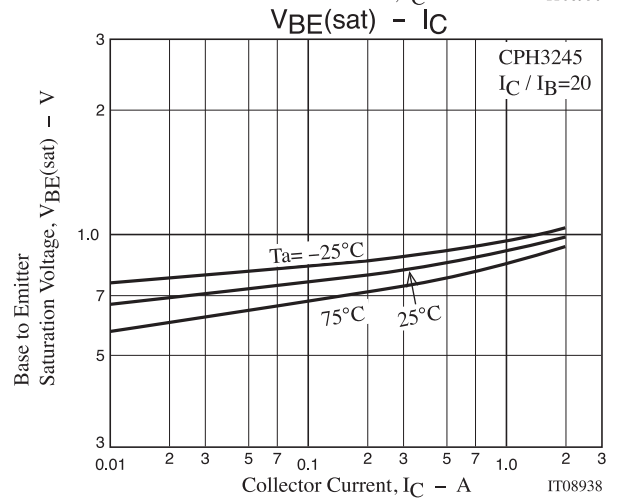
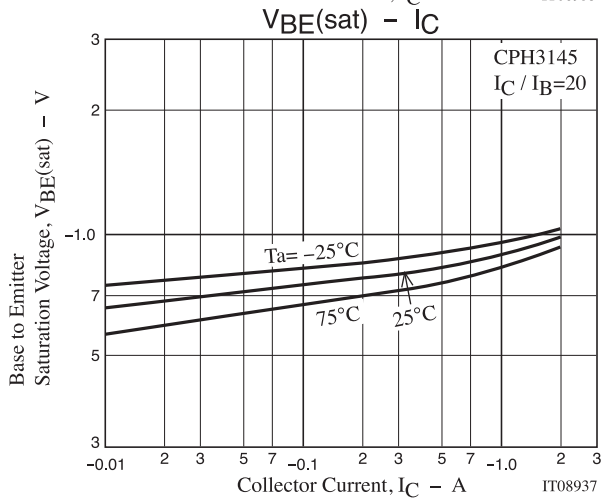
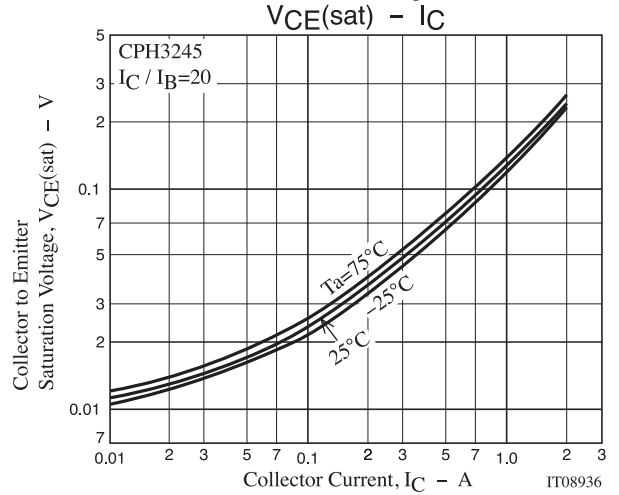
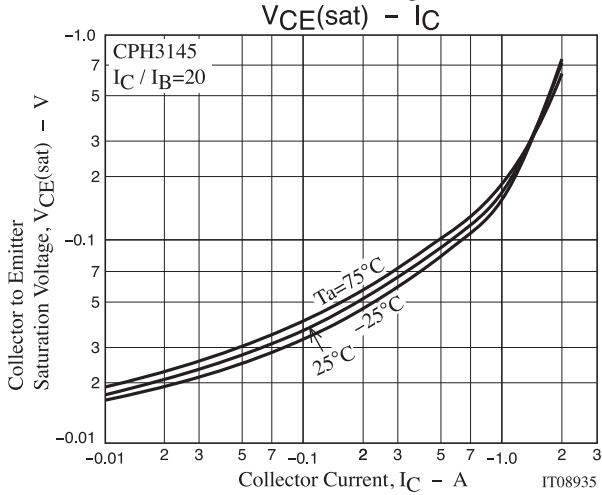
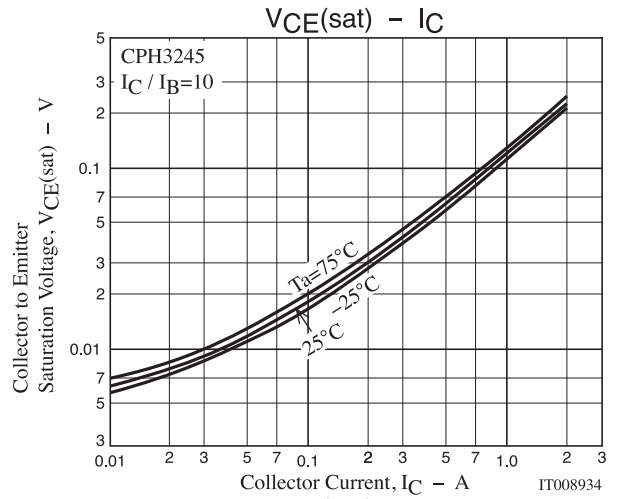
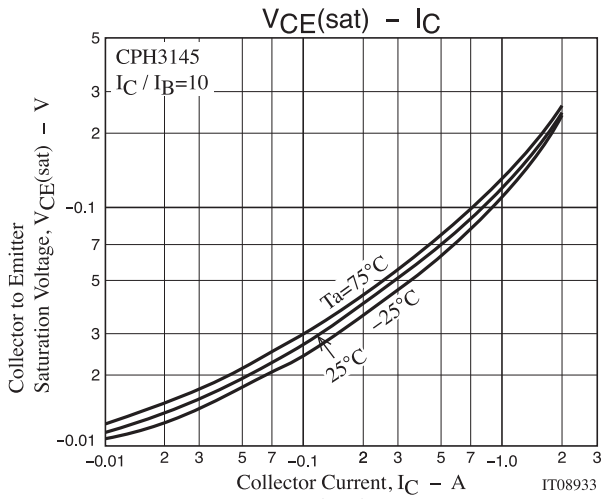
CPH3245



**CPH3145/CPH3245**



### CPH3145/CPH3245

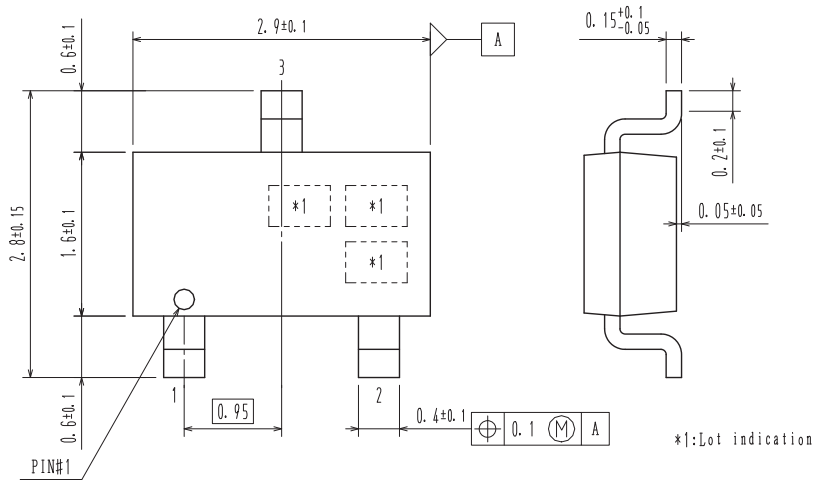


# CPH3145/CPH3245

## PACKAGE DIMENSIONS

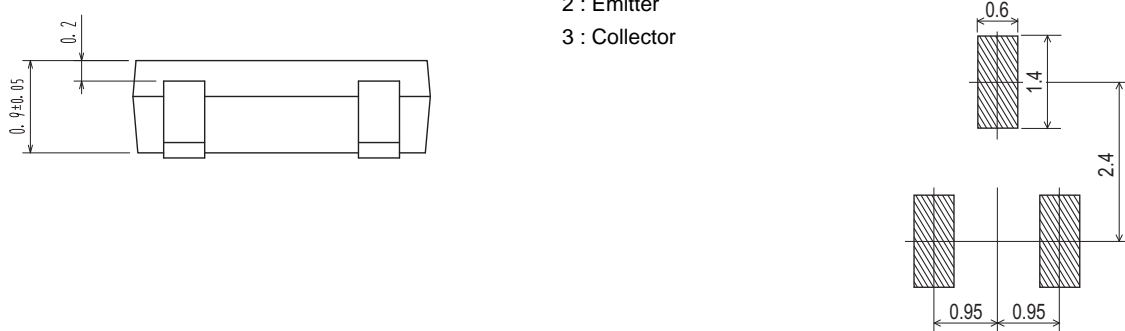
unit : mm

CPH3  
CASE 318BA  
ISSUE O



- 1 : Base
- 2 : Emitter
- 3 : Collector

### Recommended Soldering Footprint



## ORDERING INFORMATION

| Device       | Marking | Package                                    | Shipping (Qty / Packing) |
|--------------|---------|--|--------------------------|
| CPH3145-TL-E | BE      | CPH3<br>SC-59, SOT-23, TO-236<br>(Pb-Free) | 3,000 / Tape & Reel      |
| CPH3245-TL-E | DQ      |  |                          |

† For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D. [http://www.onsemi.com/pub\\_link/Collateral/BRD8011-D.PDF](http://www.onsemi.com/pub_link/Collateral/BRD8011-D.PDF)

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