

# 2SC2612

Silicon NPN Triple Diffused

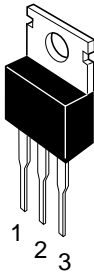
# HITACHI

## Application

High voltage, high speed and high power switching

## Outline

TO-220AB



1. Base
2. Collector (Flange)
3. Emitter

## Absolute Maximum Ratings (Ta = 25°C)

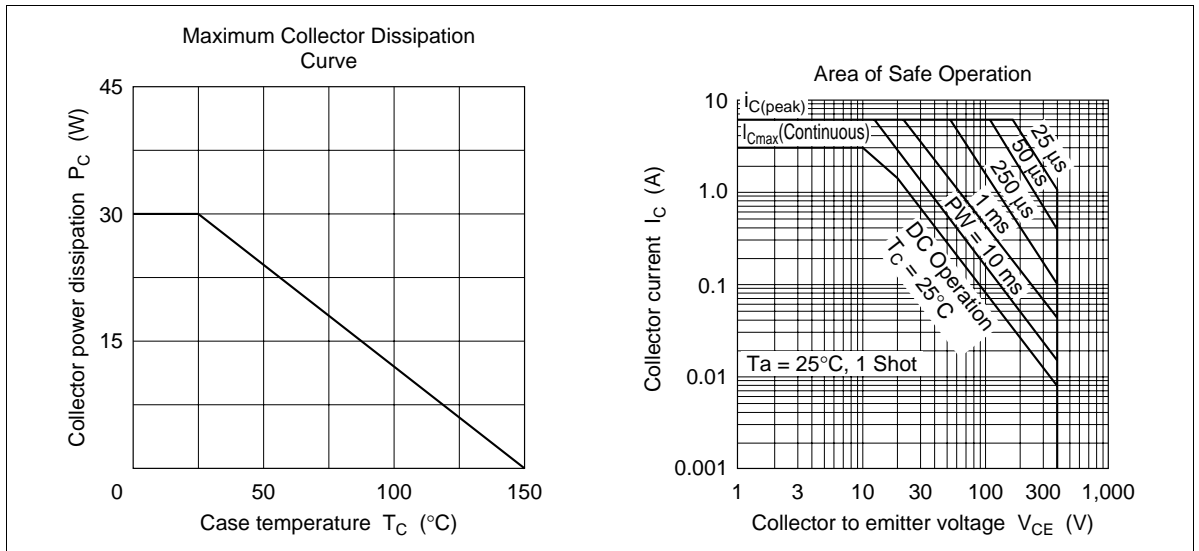
| Item                         | Symbol        | Ratings     | Unit |
|------------------------------|---------------|-------------|------|
| Collector to base voltage    | $V_{CBO}$     | 500         | V    |
| Collector to emitter voltage | $V_{CEO}$     | 400         | V    |
| Emitter to base voltage      | $V_{EBO}$     | 7           | V    |
| Collector current            | $I_C$         | 3           | A    |
| Collector peak current       | $I_{C(peak)}$ | 6           | A    |
| Base current                 | $I_B$         | 1.5         | A    |
| Collector power dissipation  | $P_C^{*1}$    | 30          | W    |
| Junction temperature         | $T_j$         | 150         | °C   |
| Storage temperature          | $T_{stg}$     | -55 to +150 | °C   |

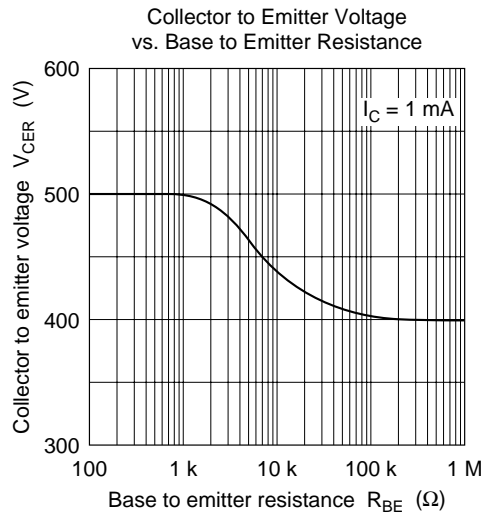
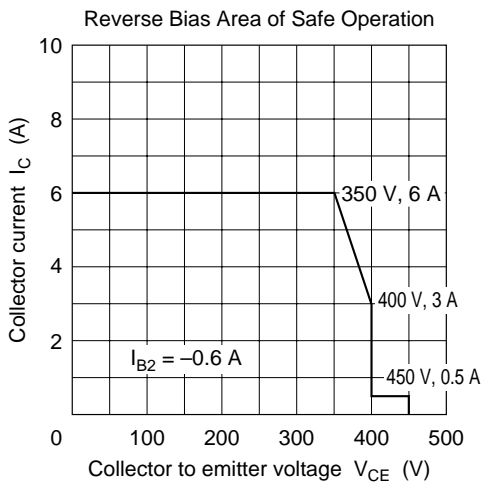
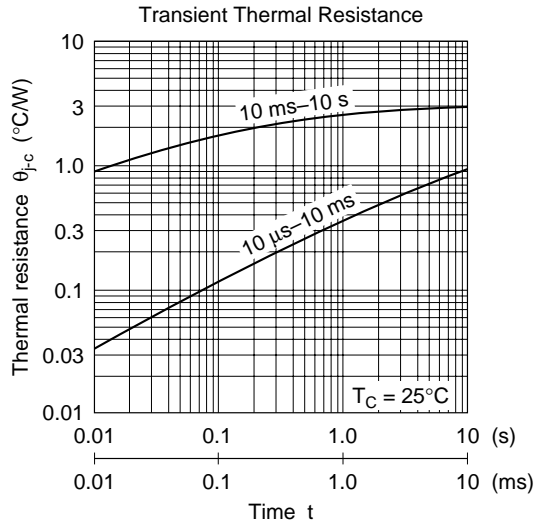
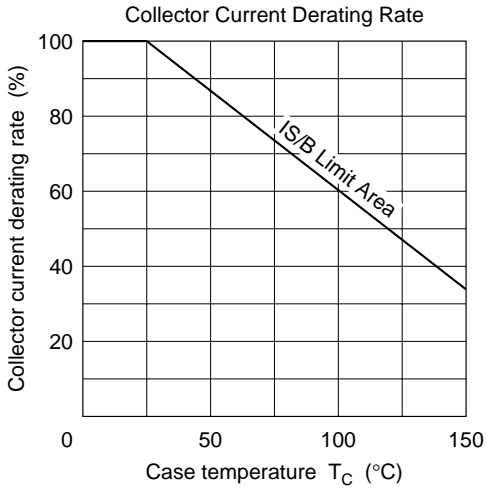
Note: 1. Value at  $T_C = 25^\circ\text{C}$ .

## Electrical Characteristics (Ta = 25°C)

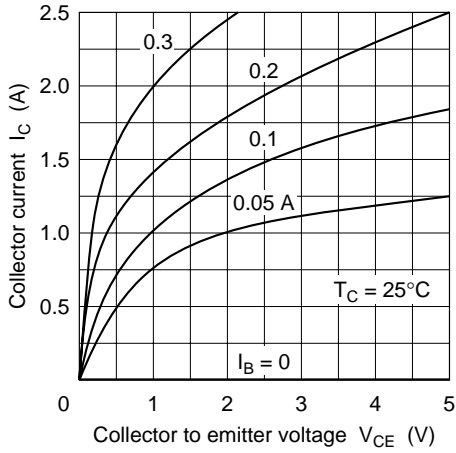
| Item                                    | Symbol         | Min | Typ | Max | Unit          | Test conditions  |
|---|----------------|-----|-----|-----|---------------|--|
| Collector to emitter sustain voltage    | $V_{CEO(sus)}$ | 400 | —   | —   | V             | $I_C = 0.2\text{ A}$ , $R_{BE} = \infty$ ,<br>$L = 100\text{ mH}$  |
|   | $V_{CEX(sus)}$ | 400 | —   | —   | V             | $I_C = 3\text{ A}$ , $I_{B1} = -I_{B2} = 0.6\text{ A}$<br>$V_{BE} = -5\text{ V}$ , $L = 180\text{ }\mu\text{H}$ ,<br>Clamped |
| Emitter to base breakdown voltage       | $V_{(BR)EBO}$  | 7   | —   | —   | V             | $I_E = 10\text{ mA}$ , $I_C = 0$   |
| Collector cutoff current                | $I_{CBO}$      | —   | —   | 100 | $\mu\text{A}$ | $V_{CB} = 400\text{ V}$ , $I_E = 0$  |
|   | $I_{CEO}$      | —   | —   | 100 | $\mu\text{A}$ | $V_{CE} = 350\text{ V}$ , $R_{BE} = \infty$  |
| DC current transfer ratio               | $h_{FE1}$      | 15  | —   | —   |               | $V_{CE} = 5\text{ V}$ , $I_C = 1.5\text{ A}^{*1}$  |
|   | $h_{FE2}$      | 7   | —   | —   |               | $V_{CE} = 5\text{ V}$ , $I_C = 3.0\text{ A}^{*1}$  |
| Collector to emitter saturation voltage | $V_{CE(sat)}$  | —   | —   | 1.0 | V             | $I_C = 1.5\text{ A}$ , $I_B = 0.3\text{ A}^{*1}$   |
| Base to emitter saturation voltage      | $V_{BE(sat)}$  | —   | —   | 1.5 | V             | $I_C = 1.5\text{ A}$ , $I_B = 0.3\text{ A}^{*1}$   |
| Turn on time                            | $t_{on}$       | —   | —   | 1.0 | $\mu\text{s}$ | $I_C = 3\text{ A}$ , $I_{B1} = -I_{B2} = 0.6\text{ A}$ ,   |
| Storage time                            | $t_{stg}$      | —   | 1.2 | 2.5 | $\mu\text{s}$ | $V_{CC} \cong 150\text{ V}$  |
| Fall time                               | $t_f$          | —   | —   | 1.0 | $\mu\text{s}$ |  |

Note: 1. Pulse test

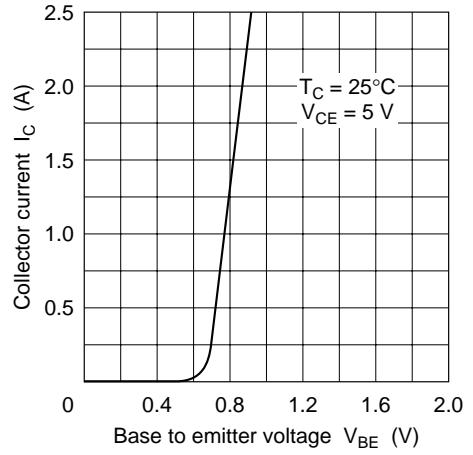




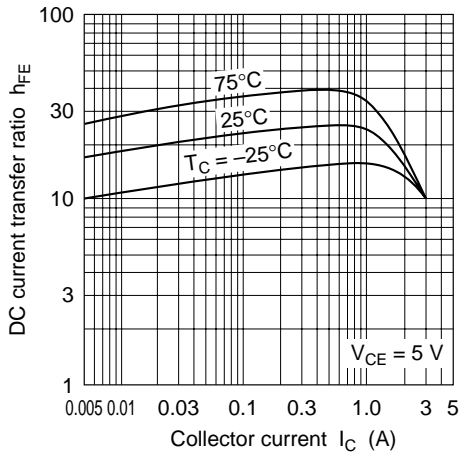
Typical Output Characteristics



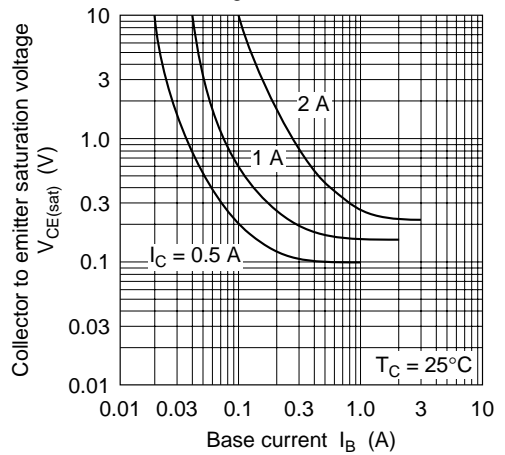
Typical Transfer Characteristics

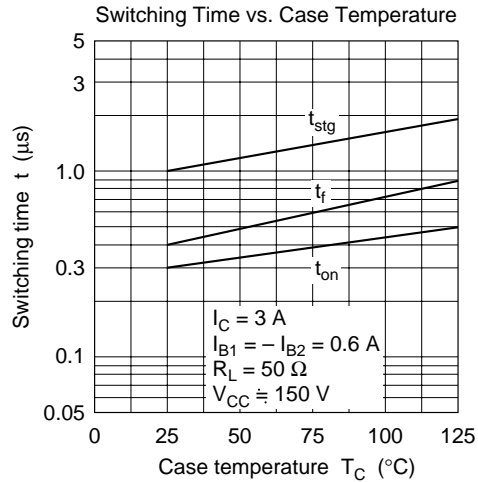
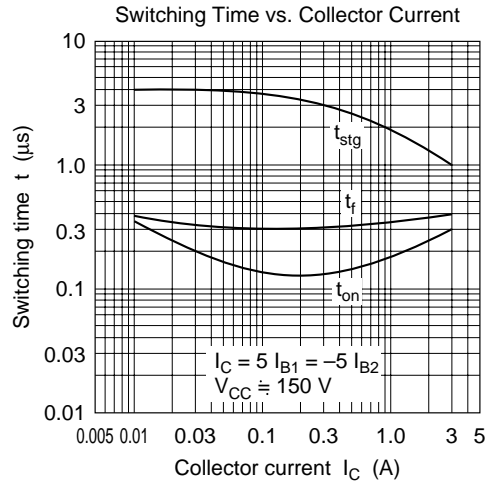
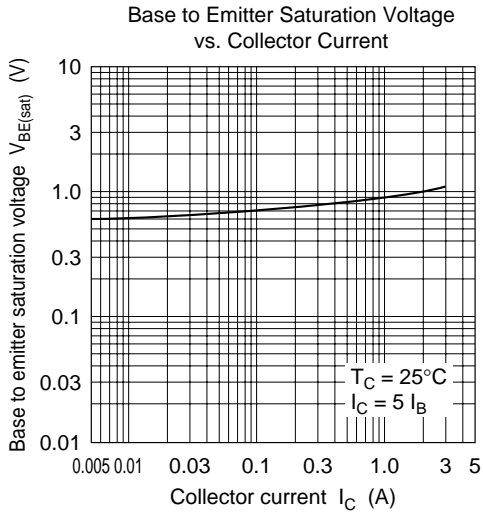


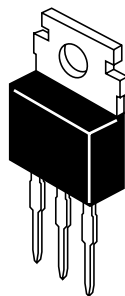
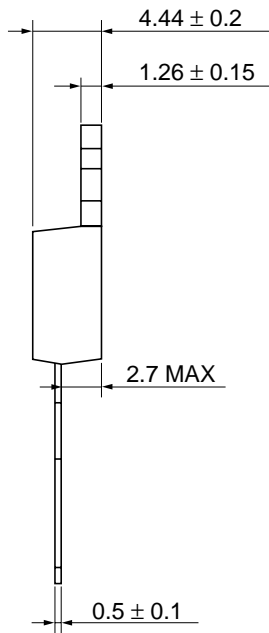
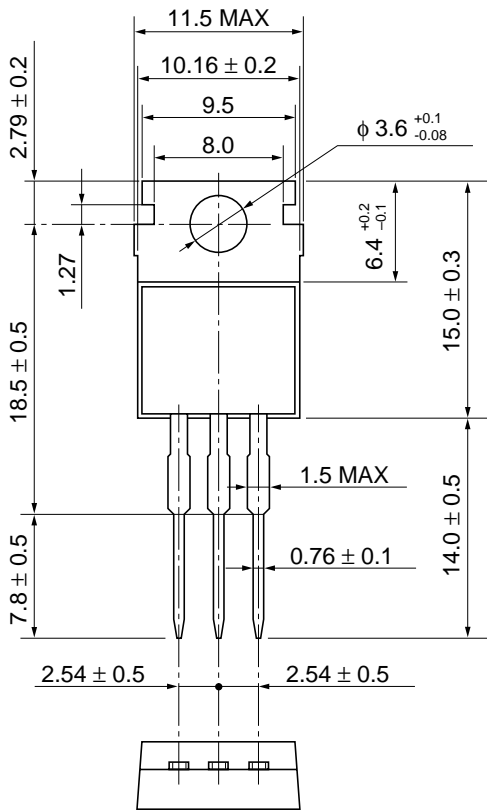
DC Current Transfer Ratio vs. Collector Current



Collector to Emitter Saturation Voltage vs. Base Current







|                          |          |
|--------------------------|----------|
| Hitachi Code             | TO-220AB |
| JEDEC                    | Conforms |
| EIAJ                     | Conforms |
| Weight (reference value) | 1.8 g    |

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## Hitachi, Ltd.

Semiconductor & Integrated Circuits.  
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan  
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL North America : <http://semiconductor.hitachi.com/>  
Europe : <http://www.hitachi-eu.com/hel/ecg>  
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## For further information write to:

Hitachi Semiconductor  
(America) Inc.  
179 East Tasman Drive,  
San Jose, CA 95134  
Tel: <1> (408) 433-1990  
Fax: <1> (408) 433-0223

Hitachi Europe GmbH  
Electronic components Group  
Dornacher Straße 3  
D-85622 Feldkirchen, Munich  
Germany  
Tel: <49> (89) 9 9180-0  
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.  
Electronic Components Group.  
Whitebrook Park  
Lower Cookham Road  
Maidenhead  
Berkshire SL6 8YA, United Kingdom  
Tel: <44> (1628) 585000  
Fax: <44> (1628) 778322

Hitachi Asia Pte. Ltd.  
16 Collyer Quay #20-00  
Hitachi Tower  
Singapore 049318  
Tel: 535-2100  
Fax: 535-1533

Hitachi Asia Ltd.  
Taipei Branch Office  
3F, Hung Kuo Building, No.167,  
Tun-Hwa North Road, Taipei (105)  
Tel: <886> (2) 2718-3666  
Fax: <886> (2) 2718-8180

Hitachi Asia (Hong Kong) Ltd.  
Group III (Electronic Components)  
7/F., North Tower, World Finance Centre,  
Harbour City, Canton Road, Tsim Sha Tsui,  
Kowloon, Hong Kong  
Tel: <852> (2) 735 9218  
Fax: <852> (2) 730 0281  
Telex: 40815 HITEC HX

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