

# 2SD2101

Silicon NPN Triple Diffused

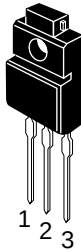
# HITACHI

## Application

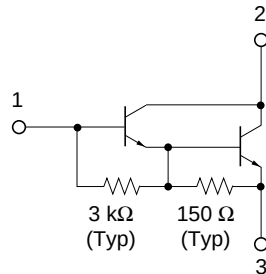
Low frequency power amplifier

## Outline

TO-220FM



- 1. Base
- 2. Collector
- 3. Emitter



Absolute Maximum Ratings (Ta = 25°C)

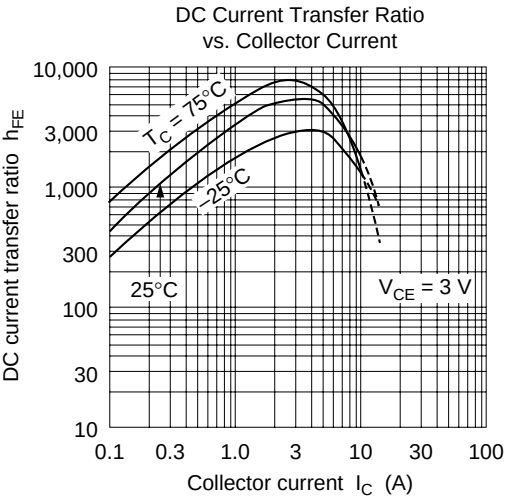
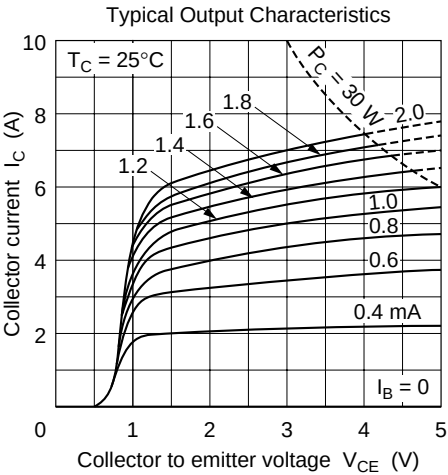
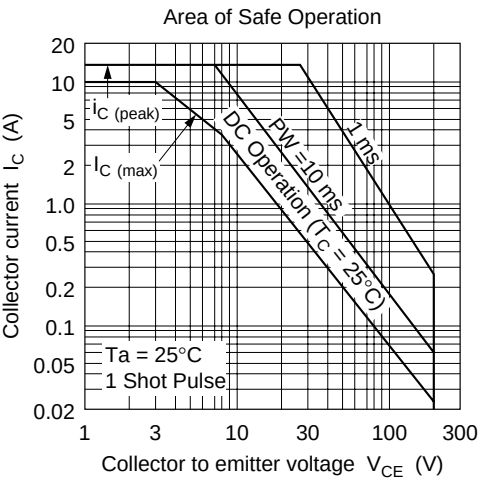
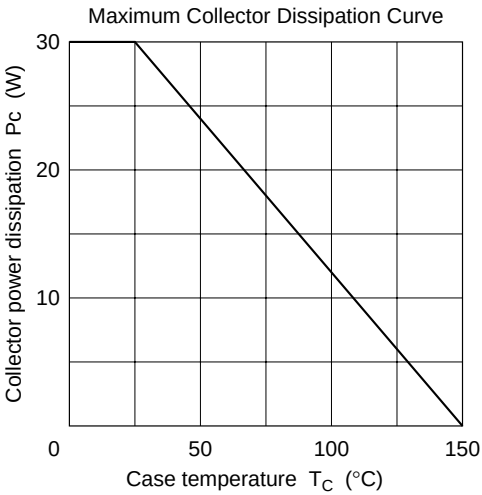
| Item                         | Symbol        | Rating      | Unit |
|------------------------------|---------------|-------------|------|
| Collector to base voltage    | $V_{CBO}$     | 200         | V    |
| Collector to emitter voltage | $V_{CEO}$     | 200         | V    |
| Emitter to base voltage      | $V_{EBO}$     | 7           | V    |
| Collector current            | $I_C$         | 10          | A    |
| Collector peak current       | $I_{C(peak)}$ | 15          | A    |
| Collector power dissipation  | $P_C$         | 2           | W    |
|                              | $P_C^{*1}$    | 30          |      |
| Junction temperature         | $T_j$         | 150         | °C   |
| Storage temperature          | $T_{stg}$     | −55 to +150 | °C   |

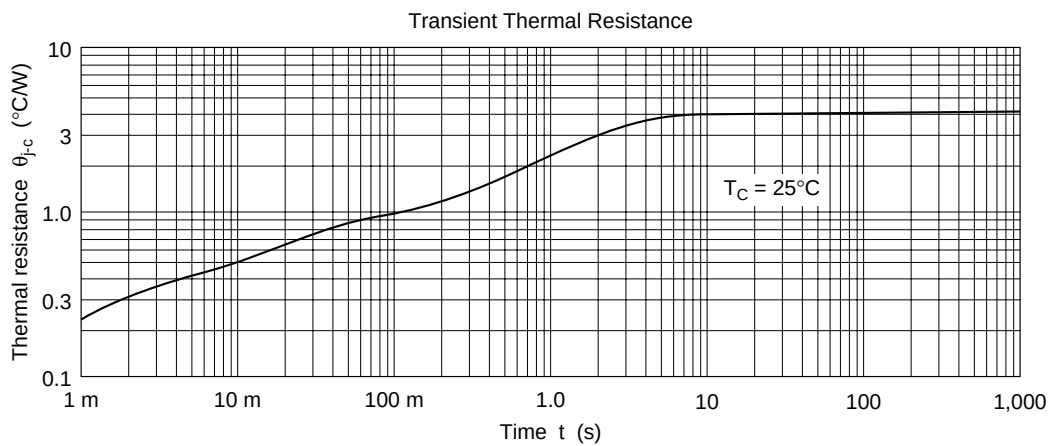
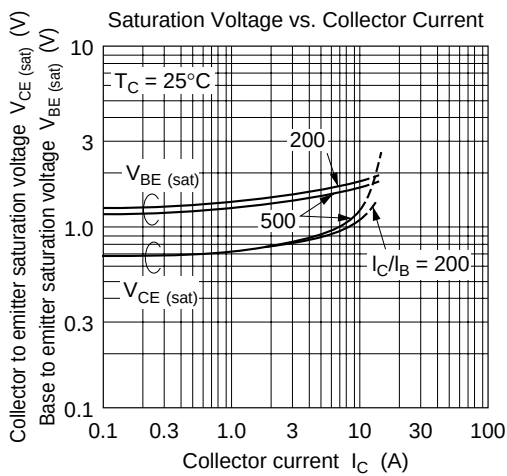
Note: 1. Value at  $T_C = 25^{\circ}C$ .

Electrical Characteristics (Ta = 25°C)

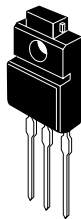
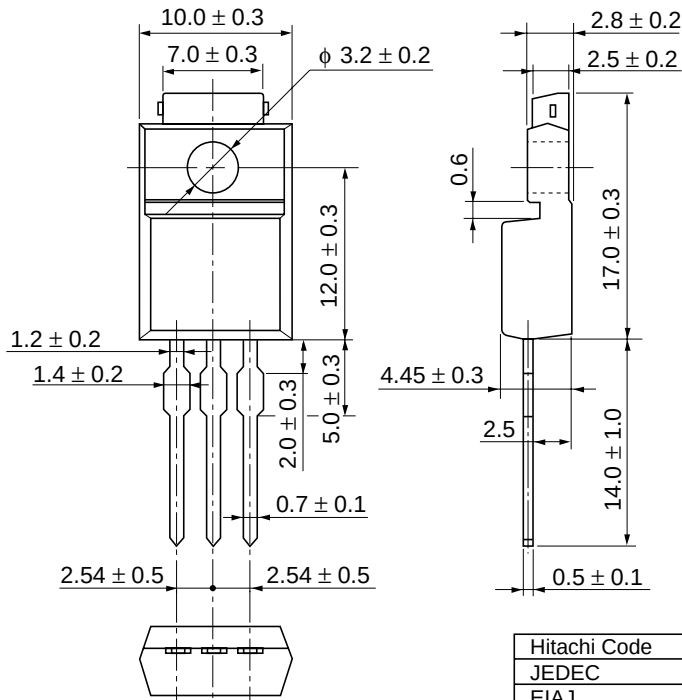
| Item                                    | Symbol         | Min  | Typ | Max | Unit          | Test conditions                                  |
|-----------------------------------------|----------------|------|-----|-----|---------------|--------------------------------------------------|
| Collector to base breakdown voltage     | $V_{(BR)CBO}$  | 200  | —   | —   | V             | $I_C = 0.1\text{ mA}$ , $I_E = 0$                |
| Collector to emitter breakdown voltage  | $V_{(BR)CEO}$  | 200  | —   | —   | V             | $I_C = 25\text{ mA}$ , $R_{BE} = \infty$         |
| Collector to emitter sustain voltage    | $V_{CEO(SUS)}$ | 170  | —   | —   | V             | $I_C = 5\text{ A}$ , $L = 5\text{ mH}$           |
| Emitter to base breakdown voltage       | $V_{(BR)EBO}$  | 7    | —   | —   | V             | $I_E = 50\text{ mA}$ , $I_C = 0$                 |
| Collector cutoff current                | $I_{CBO}$      | —    | —   | 10  | $\mu\text{A}$ | $V_{CB} = 180\text{ V}$ , $I_E = 0$              |
|                                         | $I_{CEO}$      | —    | —   | 50  |               | $V_{CE} = 180\text{ V}$ , $R_{BE} = \infty$      |
| DC current transfer ratio               | $h_{FE}$       | 1500 | —   | —   |               | $V_{CE} = 3\text{ V}$ , $I_C = 5\text{ A}^{*1}$  |
| Collector to emitter saturation voltage | $V_{CE(sat)1}$ | —    | —   | 1.5 | V             | $I_C = 5\text{ A}$ , $I_B = 10\text{ mA}^{*1}$   |
|                                         | $V_{CE(sat)2}$ | —    | —   | 3.0 |               | $I_C = 10\text{ A}$ , $I_B = 100\text{ mA}^{*1}$ |
| Base to emitter saturation voltage      | $V_{BE(sat)1}$ | —    | —   | 2.0 | V             | $I_C = 5\text{ A}$ , $I_B = 10\text{ mA}^{*1}$   |
|                                         | $V_{BE(sat)2}$ | —    | —   | 3.5 |               | $I_C = 10\text{ A}$ , $I_B = 100\text{ mA}^{*1}$ |

Note: 1. Pulse test.





Unit: mm



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

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