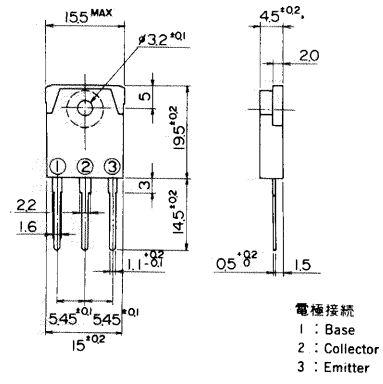
# 2SD1049

FUJI POWER TRANSISTOR

**TRIPLE DIFFUSED PLANER TYPE**
**HIGH CURRENT,HIGH SPEED SWITCHING**

## ■ Outline Drawings

TO-3P




| | |
|---|---|
| JEDEC | - |
| EIAJ | SC-65 |

## ■ Features

- **High current,High speed switching**
- **High reliability**

## ■ Applications

- **Switching regulators**
- **Motor controls**
- **High frequency inverters**
- **General purpose power amplifiers**

## ■ Maximum ratings and characteristics

● **Absolute maximum ratings (Tc=25°C unless otherwise specified)**

| Item | Symbol | Ratings | Unit |
|---|---|---|---|
| Collector-Base voltage | $V_{CBO}$ | 120 | V |
| Collector-Emitter voltage | $V_{CEO}$ | 80 | V |
| Emitter-Base voltage | $V_{EBO}$ | 7 | V |
| Collector current | $I_C$ | 25 | A |
| Base current | $I_B$ | 5 | A |
| Collector power disspation | $P_C$ | 80 | W |
| Operating junction temperature | $T_j$ | +150 | ℃ |
| Storage temperature | $T_{stg}$ | -55 to +150 | ℃ |

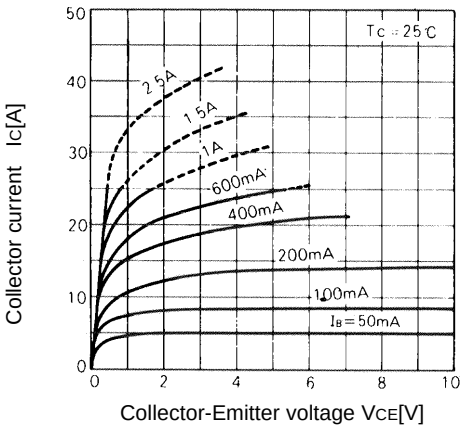
● **Electrical characteristics ($T_C$ =25°C unless otherwise specified)**

| Item | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| Collector-Base voltage | $V_{CBO}$ | $I_{CBO}$ = 0.1mA | 120 | | | V |
| Collector-Emitter voltage | $V_{CEO}$ | $I_{CEO}$ = 10mA | 80 | | | V |
| Emitter-Base voltage | $V_{EBO}$ | $I_{EBO}$ = 0.1mA | 7 | | | V |
| Collector-Base leakage current | $I_{CBO}$ | $V_{CBO}$ = 120V | | | 0.1 | mA |
| Emitter-Base leakage current | $I_{EBO}$ | $V_{EBO}$ = 7V | | | 0.1 | mA |
| D.C. current gain | $h_{FE}$ | $I_C$ = 25A, $V_{CE}$ = 5V | 20 | | | |
| Collector-Emitter saturation voltage | $V_{CE(Sat)}$ | $I_C$ = 25A, $I_B$ = 2.5A | | | 1.5 | V |
| Base-Emitter saturation voltage | $V_{BE(Sat)}$ | | | | 2.0 | V |
| *1 | $t_{on}$ | $I_C$ = 25A, $I_{B1}$ = -$I_{B2}$ = 2.5A | | | 1.0 | µs |
| Switching time | $t_{stg}$ | $R_L$ = 3 ohm ,Pw = 20µs Duty=<2% | | | 2.5 | µs |
| | $t_f$ | | | | 0.4 | µs |

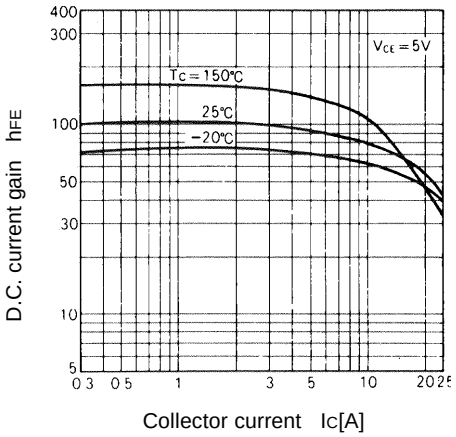
● **Thermal characteristics**

| Item | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| Thermal resistance | $R_{th(j-c)}$ | Junction to case | | | 1.55 | °C/W |

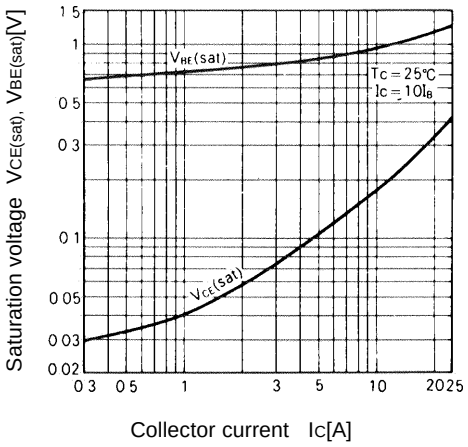
## Characteristics



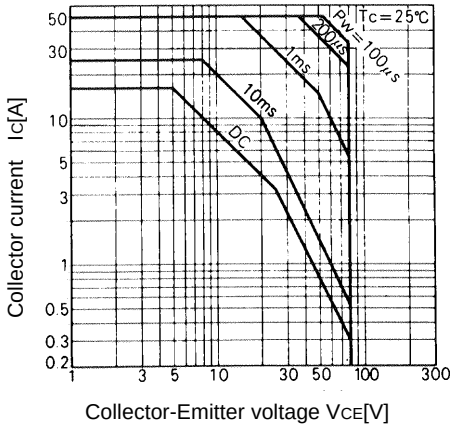

**Collector Output Characteristics**



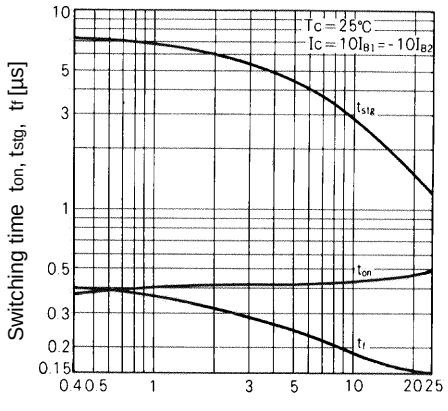

**DC Current Gain**




**Base and Collector Saturation Voltage**




**Safe Operating Area**




**Switching Time**

***1 Switching Time Test Circuit**