

TRIPLE DIFFUSED PLANER TYPE HIGH SPEED SWITCHING

■ Features

- High voltage, High speed switching
- Low saturation voltage
- High reliability

■ Applications

- Switching regulators
- DC-DC convertor
- Solid State Relay
- 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 _{CB0} | 250 | V |
| Collector-Emitter voltage | V _{CE0} | 200 | V |
| Collector-Emitter voltage | V _{CE0(SUS)} | 200 | V |
| Emitter-Base voltage | V _{EBO} | 7 | V |
| Collector current | I _C | 10 | A |
| Base current | I _B | 5 | A |
| Collector power dissipation | P _C | 100 | W |
| Operating junction temperature | T _j | +150 | °C |
| Storage temperature | T _{stg} | -55 to +150 | °C |

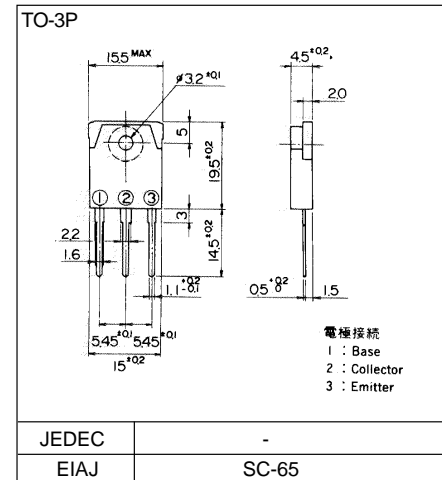
● Electrical characteristics (Tc =25°C unless otherwise specified)

| Item | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|--------------------------------------|-----------------------|--|------|------|------|-------|
| Collector-Base voltage | V _{CB0} | I _{CBO} = 0.1mA | 250 | | | V |
| Collector-Emitter voltage | V _{CE0} | I _{CEO} = 10mA | 200 | | | V |
| Collector-Emitter voltage | V _{CE0(SUS)} | I _C = 1A | 200 | - | | V |
| Emitter-Base voltage | V _{EBO} | I _{EBO} = 0.1mA | 7 | - | | V |
| Collector-Base leakage current | I _{CBO} | V _{CB0} = 250V | | - | 0.1 | mA |
| Emitter-Base leakage current | I _{EBO} | V _{EBO} = 7V | | - | 0.1 | mA |
| D.C. current gain | h _{FE} | I _C = 2A, V _{CE} = 5V | 20 | | 60 | |
| Collector-Emitter saturation voltage | V _{CE(Sat)} | I _C = 2A, I _B = 0.8A | | | 0.2 | V |
| Base-Emitter saturation voltage | V _{BE(Sat)} | I _C = 5A, I _B = 1A | | | 1.1 | V |
| *1 | t _{on} | I _C = 6A, I _{B1} = -I _{B2} = 1.2A | | | 0.8 | μs |
| Switching time | t _{stg} | R _L = 10 ohm, P _w = 20μs Duty=<2% | | | 2.0 | μs |
| | t _f | | | | 0.5 | μs |

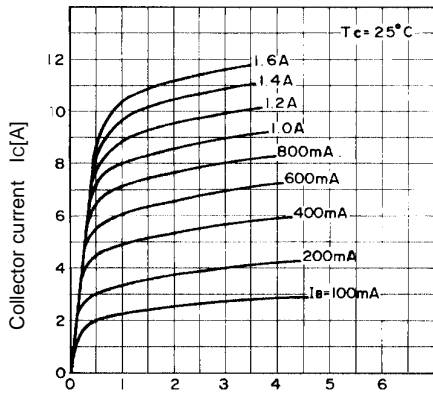
● Thermal characteristics

| Item | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|--------------------|----------------------|------------------|------|------|------|-------|
| Thermal resistance | R _{th(j-c)} | Junction to case | | | 1.25 | °C/W |

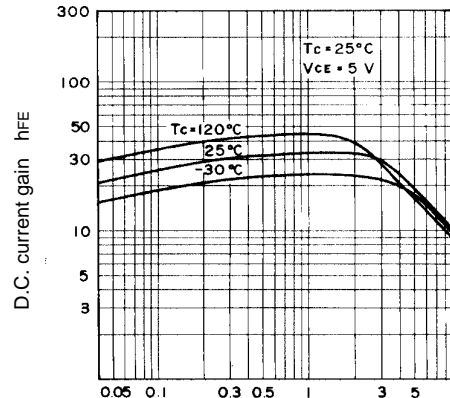
■ Outline Drawings



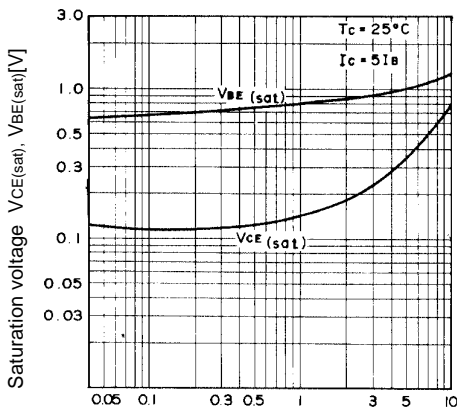
Characteristics



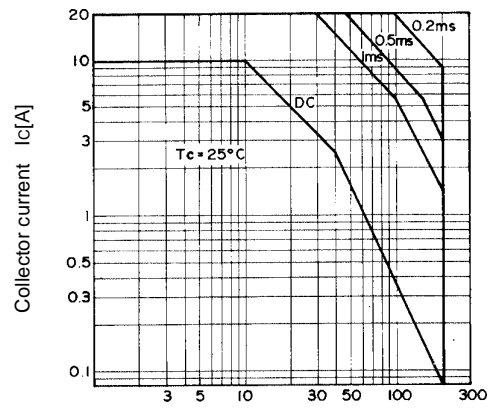
Collector Output Characteristics



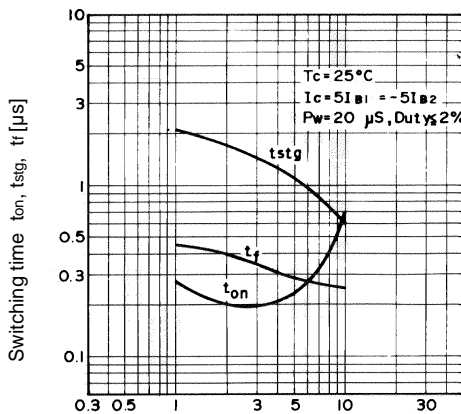
DC Current Gain



Base and Collector Saturation Voltage



Safe Operating Area



Switching Time

*1 Switching Time Test Circuit

