

Features

- Including Free Wheeling Diode
- High DC Current Gain
- Insulated Type

Applications

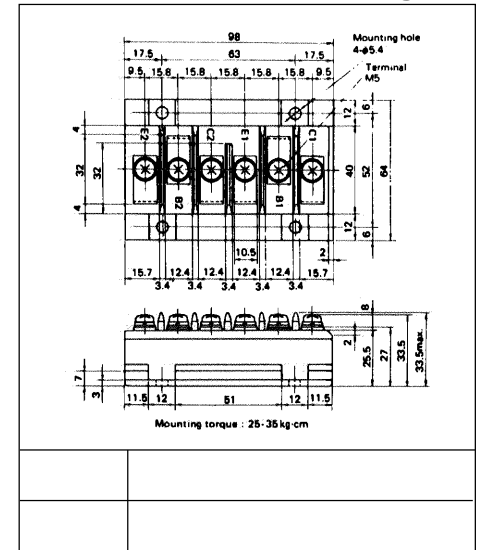
- High Power Switching
- AC Motor Controls
- DC Motor Controls
- Uninterruptible Power Supply

: Maximum ratings and characteristic

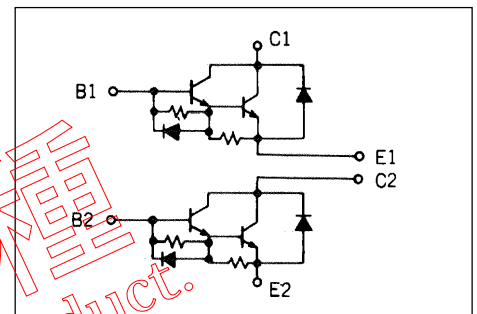
Absolute maximum ratings (Tc=25°C unless otherwise specified)

| Item | Symbol | Rating | Unit |
|----------------|-----------------------|-------------|------|
| | V _{CB0} | 600 | V |
| | V _{CE0} | 600 | V |
| | V _{CE0(SUS)} | 450 | V |
| | V _{EBO} | 6 | V |
| D C | I _c | 150 | A |
| | I _{CP} | 300 | A |
| DC | -I _c | 150 | A |
| DC | I _B | 9 | A |
| | I _{BP} | 18 | A |
| one Transistor | P _C | 600 | W |
| two Transistor | P _C | 1200 | W |
| | T _j | +150 | °C |
| | T _{stg} | -40 to +125 | °C |
| AC.1min | m | 450 | g |
| | Viso | 2500 | V |
| | Mounting *1 | 3.5 | N m |
| | Terminal *2 | 3.5 | N m |

Outline Drawings



Equivalent Circuit Schematic



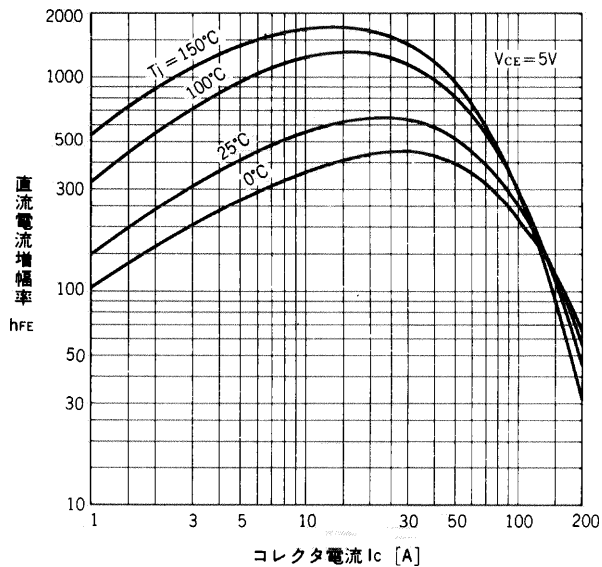
Electrical characteristics (Tc = 25°C unless otherwise specified)

| Item | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|------|-----------------------|---|------|------|------|-------|
| | V _{CB0} | I _{CBO} = 1mA | 600 | | | V |
| | V _{CE0} | I _c = 1mA | 600 | | | V |
| | V _{CE0(SUS)} | I _c = 1A | 450 | | | V |
| | V _{CEx(SUS)} | I _c =150A, V _{EB} =6V, V _{CE} =500V, I _B =4A, -I _B =4A | 500 | | | V |
| | V _{EBO} | I _{EBO} = 100mA | 6 | | | V |
| | I _{CBO} | V _{CB0} = 600V | | | 1.0 | mA |
| | I _{EBO} | V _{EBO} = 6V | | | 100 | mA |
| | -V _{CE} | -I _c = 150A | | | 1.5 | V |
| | h _{FE} | I _c = 150A, V _{CE} = 5V | 70 | | | - |
| | V _{CE(Sat)} | I _c = 150A, I _B = 4A | | | 2.0 | V |
| | V _{BE(Sat)} | | | | 2.5 | V |
| | t _{on} | I _c = 150A, P _w =50μs, | | | 2.0 | μs |
| | t _{stg} | I _{B1} = +4A, I _{B2} = -4A | | | 10.0 | μs |
| | t _f | R _L = 2Ω, Duty ≤ 2% | | | 2.5 | μs |
| | t _{rr} | -I _c = 150A, V _{BE} = -6V, -di/dt = 150A/μs | | | 0.6 | |

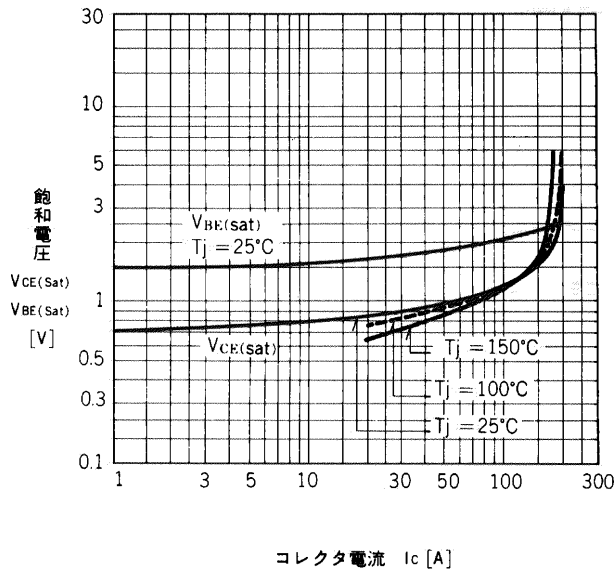
Thermal characteristics

| Item | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|------|----------------------|------------------------------|------|------|-------|-------|
| | R _{th(j-c)} | Transistor | | | 0.208 | °C/W |
| | R _{th(j-c)} | Diode | | | 0.5 | °C/W |
| | R _{th(c-f)} | Between case and cooling fin | | 0.03 | | °C/W |

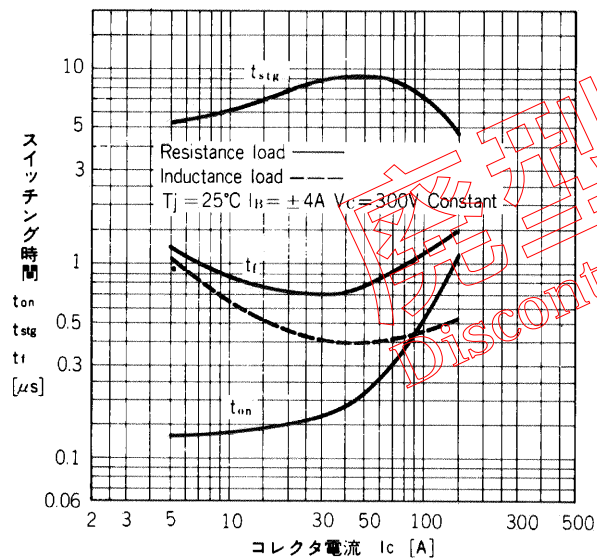
Characteristics



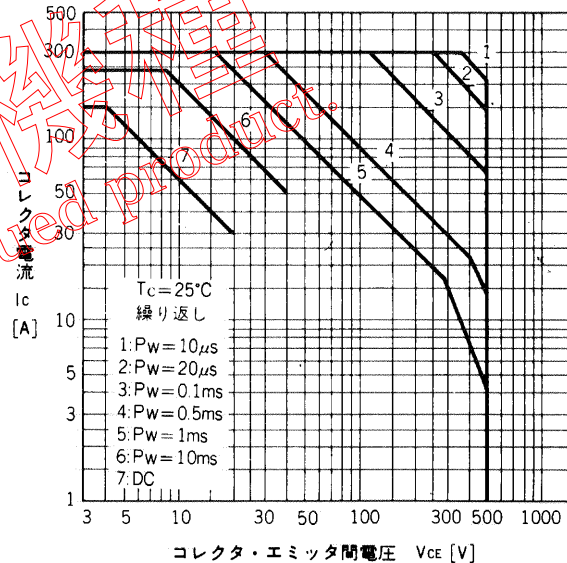
DC Current Gain



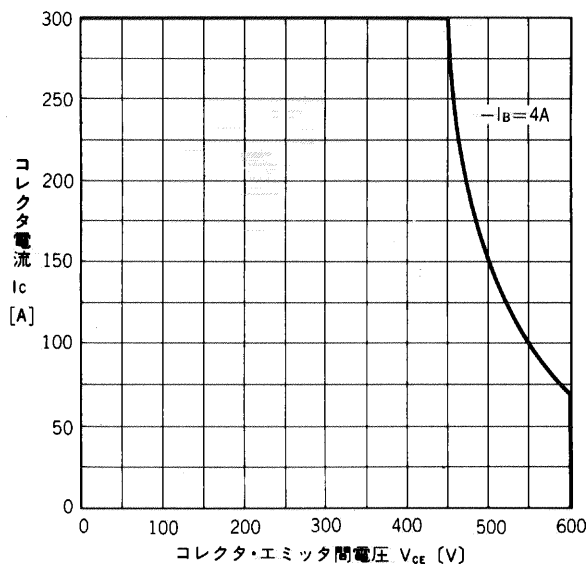
Base and Collector Saturation Voltage



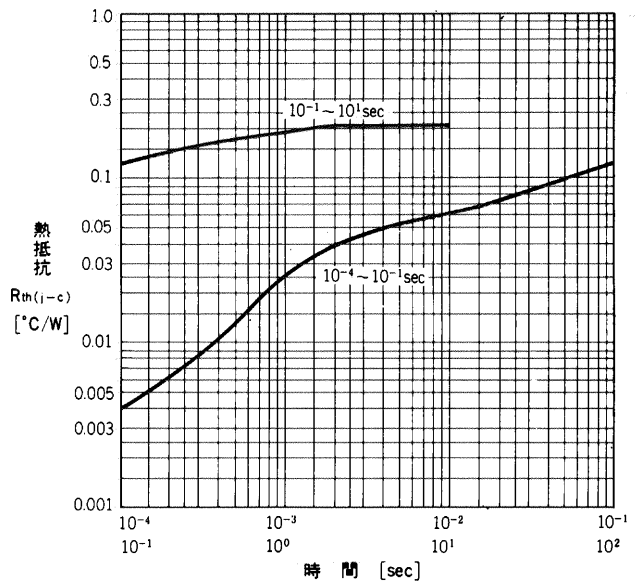
Switching Time



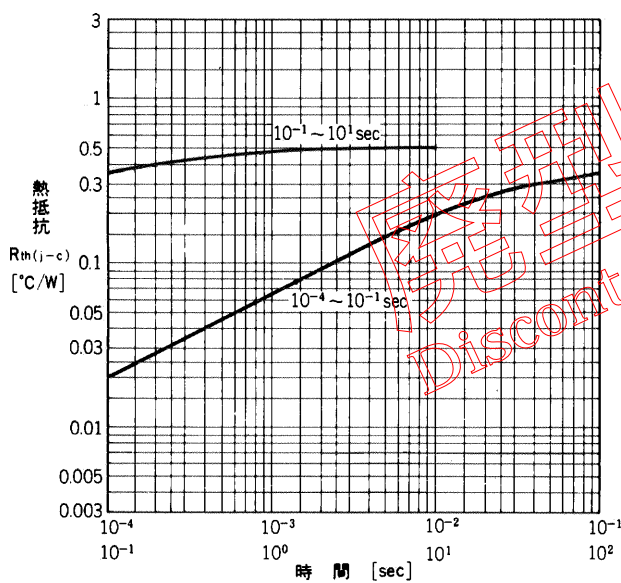
Safe Operating Area



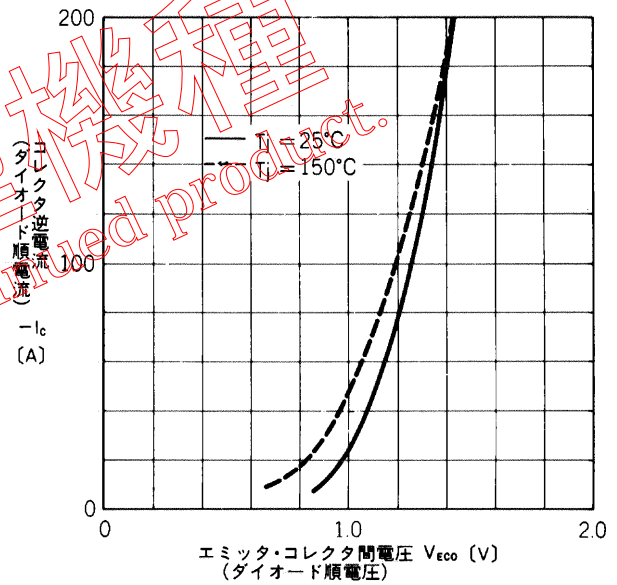
Reversed Biased Safe Operating Area



Transient Thermal Resistance (Transistor)

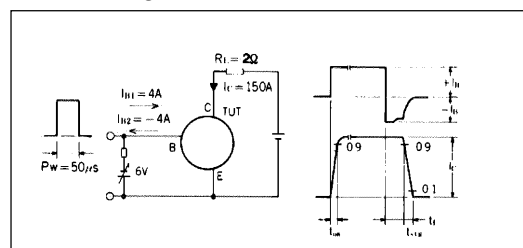


Transient Thermal Resistance (Diode)



Forward Voltage of Free Wheeling Diode

* Switching Time Test Circuit





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