

7MBR25SA120

IGBT Modules

IGBT MODULE (S series) 1200V / 25A / PIM



■ Features

- Low $V_{CE(sat)}$
- Compact package
- P.C. board mount
- Converter diode bridge, Dynamic brake circuit

■ Applications

- Inverter for motor drive
- AC and DC servo drive amplifier
- Uninterruptible power supply

■ Maximum ratings and characteristics

● Absolute maximum ratings ($T_c=25^\circ\text{C}$ unless without specified)

| Item | Symbol | Condition | Rating | Unit | | |
|---------------------------------|-------------------------------------|-----------|--------------------------------|------------------------|----------------------|---|
| Inverter | Collector-Emitter voltage | V_{CES} | 1200 | V | | |
| | Gate-Emitter voltage | V_{GES} | ± 20 | V | | |
| | Collector current | I_C | Continuous | $T_c=25^\circ\text{C}$ | 35 | A |
| | | | | $T_c=80^\circ\text{C}$ | 25 | |
| | | I_{CP} | 1ms | $T_c=25^\circ\text{C}$ | 70 | A |
| | | | | $T_c=80^\circ\text{C}$ | 50 | |
| $-I_C$ | | | 25 | A | | |
| Collector power dissipation | P_C | 1 device | 180 | W | | |
| Brake | Collector-Emitter voltage | V_{CES} | 1200 | V | | |
| | Gate-Emitter voltage | V_{GES} | ± 20 | V | | |
| | Collector current | I_C | Continuous | $T_c=25^\circ\text{C}$ | 25 | A |
| | | | | $T_c=80^\circ\text{C}$ | 15 | |
| | | I_{CP} | 1ms | $T_c=25^\circ\text{C}$ | 50 | A |
| | | | | $T_c=80^\circ\text{C}$ | 30 | |
| Collector power dissipation | P_C | 1 device | 110 | W | | |
| Repetitive peak reverse voltage | V_{RRM} | | 1200 | V | | |
| Converter | Repetitive peak reverse voltage | V_{RRM} | 1600 | V | | |
| | Average output current | I_O | 50Hz/60Hz sine wave | 25 | A | |
| | Surge current (Non-Repetitive) | I_{FSM} | $T_j=150^\circ\text{C}$, 10ms | 260 | A | |
| | I^2t (Non-Repetitive) | I^2t | half sine wave | 338 | A^2s | |
| Operating junction temperature | T_j | | +150 | $^\circ\text{C}$ | | |
| Storage temperature | T_{stg} | | -40 to +125 | $^\circ\text{C}$ | | |
| Isolation voltage | between terminal and copper base *2 | V_{iso} | AC : 1 minute | AC 2500 | V | |
| | | | | AC 2500 | | |
| Mounting screw torque | | | 3.5 *1 | N-m | | |

*1 Recommendable value : 2.5 to 3.5 N-m (M5)

*2 All terminals should be connected together when isolation test will be done.

*3 Terminal 8 and 9 should be connected together. Terminal 1 to 7 and 10 to 24 should be connected together and shorted to copper base.

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

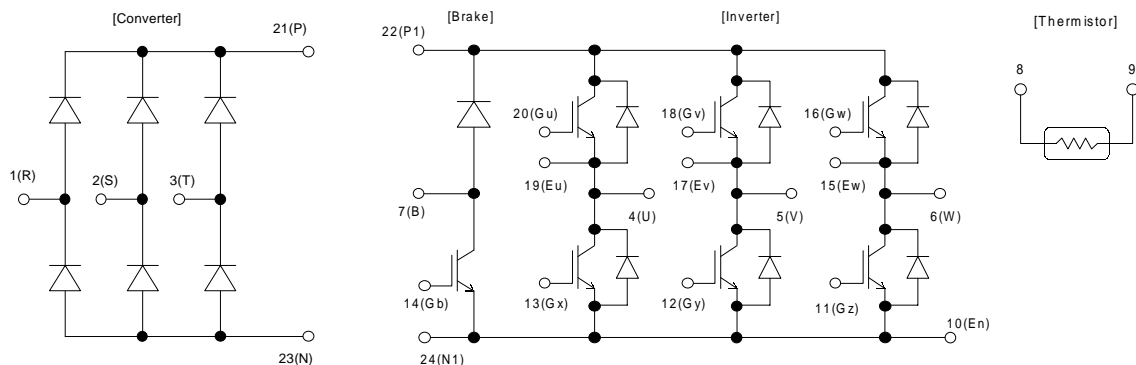
| Item | Symbol | Condition | Characteristics | | | Unit | | | |
|------------------------------|--------------------------------------|-----------|-------------------------|----------|------|------|------|------|-----|
| | | | Min. | Typ. | Max. | | | | |
| Inverter | Zero gate voltage collector current | ICES | VCE=1200V, VGE=0V | | | 1.0 | mA | | |
| | Gate-Emitter leakage current | IGES | VCE=0V, VGE=±20V | | | 0.2 | µA | | |
| | Gate-Emitter threshold voltage | VGE(th) | VCE=20V, Ic=25mA | | | 5.5 | 7.2 | 8.5 | V |
| | Collector-Emitter saturation voltage | VCE(sat) | VGE=15V, Ic=25A | chip | 2.1 | | V | | |
| | | | | terminal | 2.2 | 2.6 | | | |
| | Input capacitance | Cies | VGE=0V, VCE=10V, f=1MHz | | | 3000 | | pF | |
| | Turn-on time | ton | VCC=600V | | | 0.35 | 1.2 | µs | |
| | | tr | Ic=25A | | | 0.25 | 0.6 | | |
| | | tr(i) | VGE=±15V | | | 0.1 | | | |
| | Turn-off | toff | RG=51Ω | | | 0.45 | 1.0 | | |
| tf | | | | | 0.08 | 0.3 | | | |
| Forward on voltage | VF | IF=25A | chip | 2.3 | | V | | | |
| | | | terminal | 2.4 | 3.2 | | | | |
| Reverse recovery time of FRD | trr | IF=25A | | | | 0.35 | µs | | |
| Brake | Zero gate voltage collector current | ICES | VCEs=1200V, VGE=0V | | | 1.0 | mA | | |
| | Gate-Emitter leakage current | IGES | VCE=0V, VGE=±20V | | | 0.2 | µA | | |
| | Collector-Emitter saturation voltage | VCE(sat) | Ic=15A, VGE=15V | chip | 2.1 | | V | | |
| | | | | terminal | 2.2 | 2.6 | | | |
| | Turn-on time | ton | VCC=600V | | | 0.35 | 1.2 | µs | |
| | | tr | Ic=15A | | | 0.25 | 0.6 | | |
| | Turn-off time | toff | VGE=±15V | | | 0.45 | 1.0 | | |
| | | tf | RG=82Ω | | | 0.08 | 0.3 | | |
| | Reverse current | Irrm | VR=1200V | | | | 1.0 | mA | |
| | Forward on voltage | VFM | IF=25A | chip | 1.1 | | V | | |
| terminal | | | | 1.2 | 1.5 | | | | |
| Reverse current | Irrm | VR=1600V | | | | 1.0 | mA | | |
| Thermistor | Resistance | R | T=25°C | | | 5000 | Ω | | |
| | | | T=100°C | | | 465 | | 495 | 520 |
| | B value | B | T=25/50°C | | | 3305 | 3375 | 3450 | K |

● Thermal resistance Characteristics

| Item | Symbol | Condition | Characteristics | | | Unit |
|---------------------------------|----------|-----------------------|-----------------|------|------|------|
| | | | Min. | Typ. | Max. | |
| Thermal resistance (1 device) | Rth(j-c) | Inverter IGBT | | | 0.69 | °C/W |
| | | Inverter FWD | | | 1.30 | |
| | | Brake IGBT | | | 1.14 | |
| | | Converter Diode | | | 0.90 | |
| Contact thermal resistance * | Rth(c-f) | With thermal compound | | 0.05 | | |

* This is the value which is defined mounting on the additional cooling fin with thermal compound

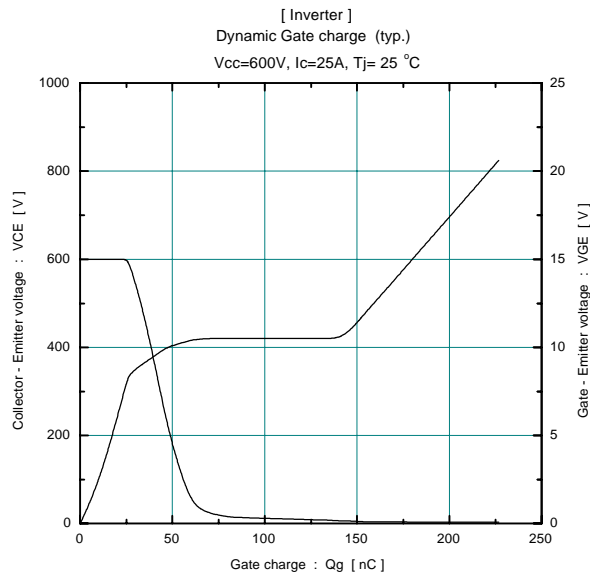
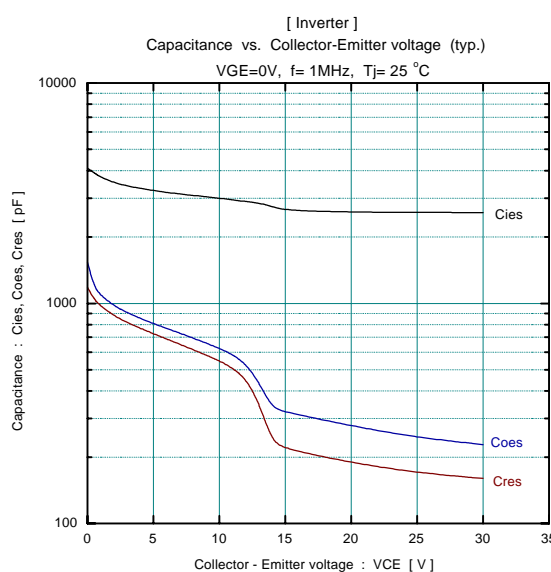
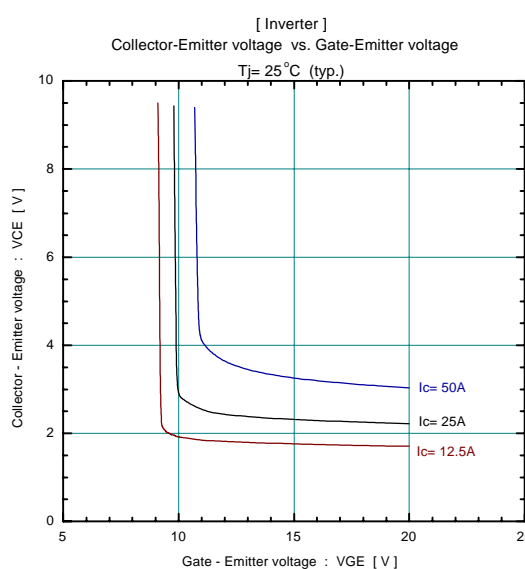
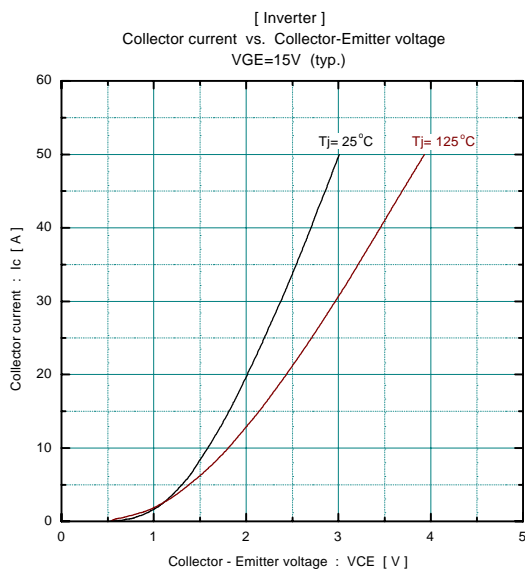
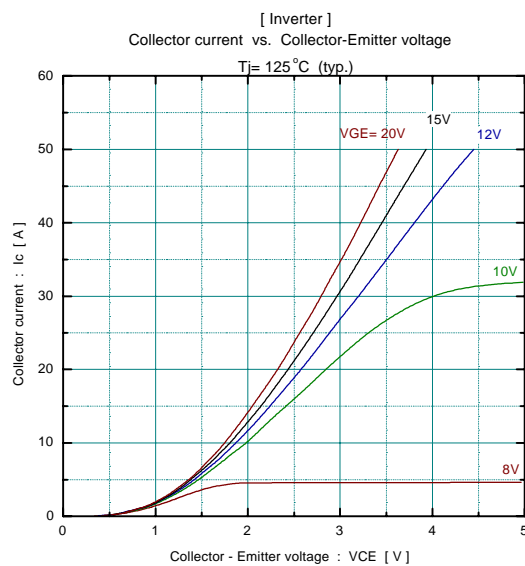
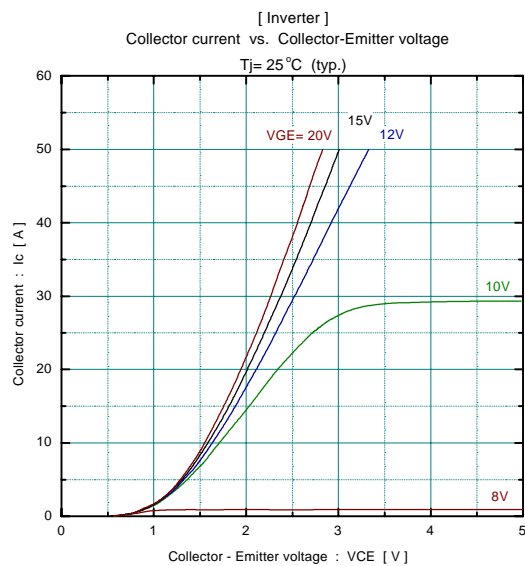
■ Equivalent Circuit Schematic



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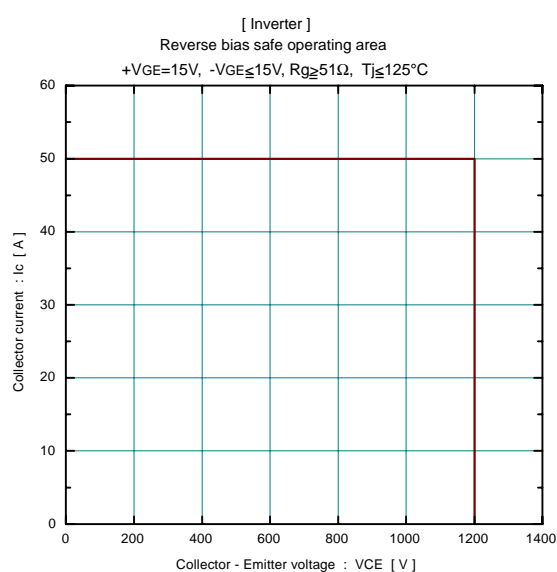
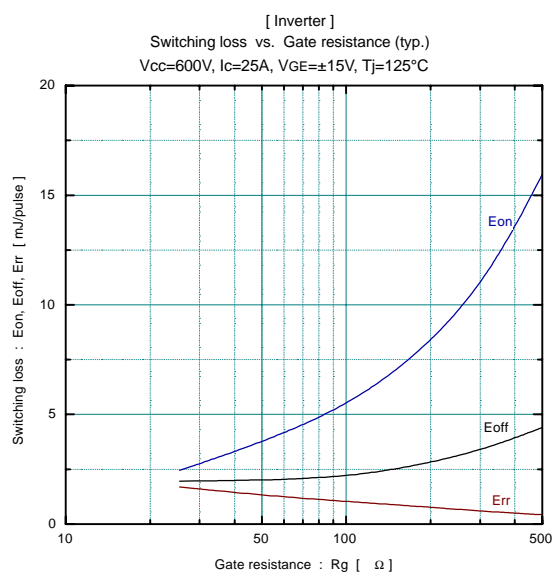
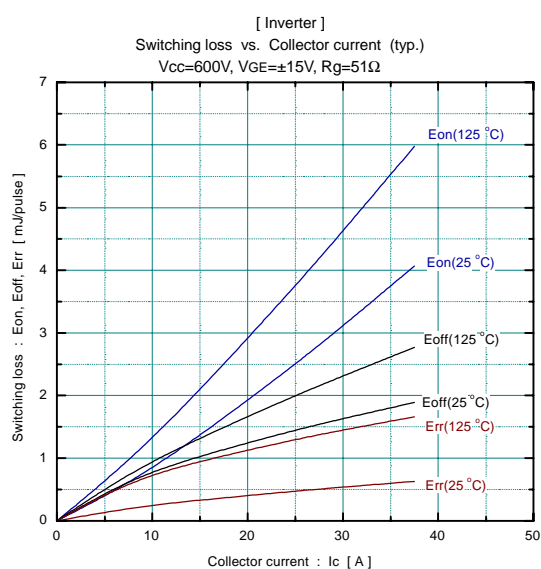
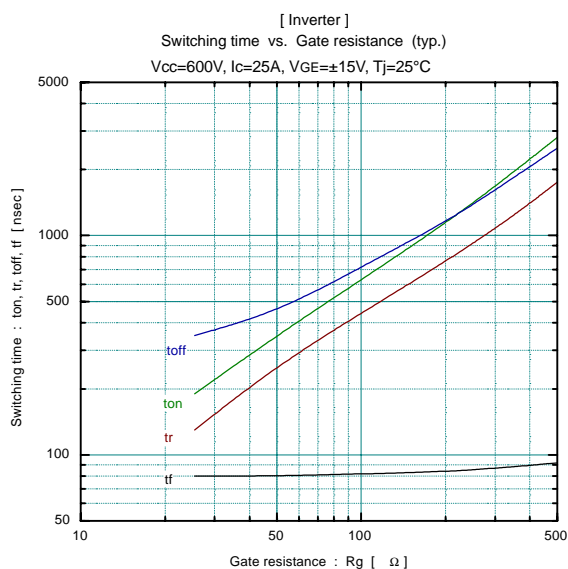
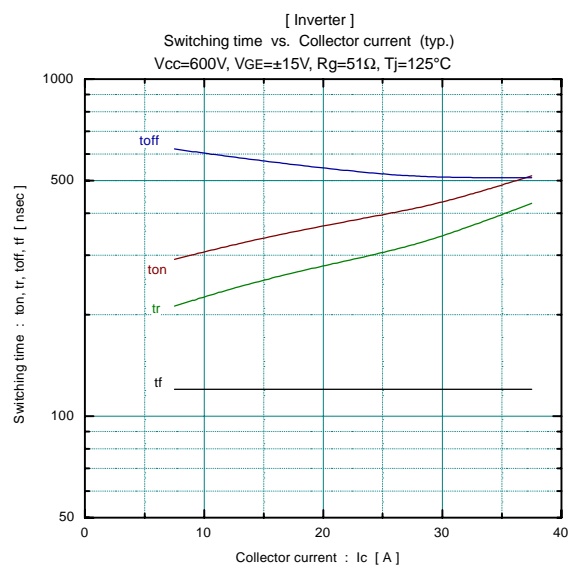
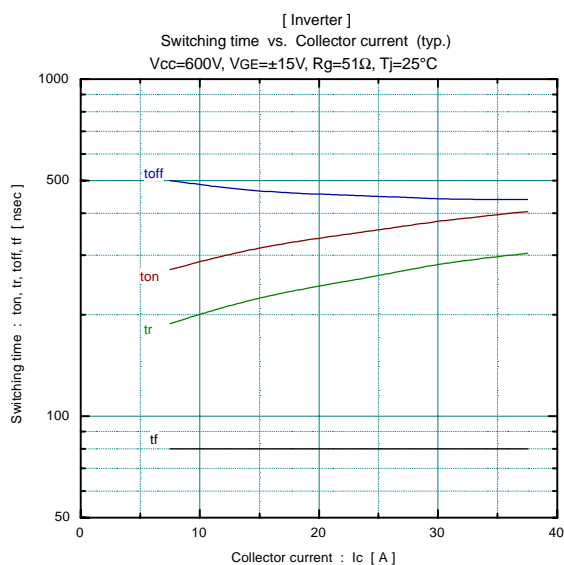
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Characteristics (Representative)



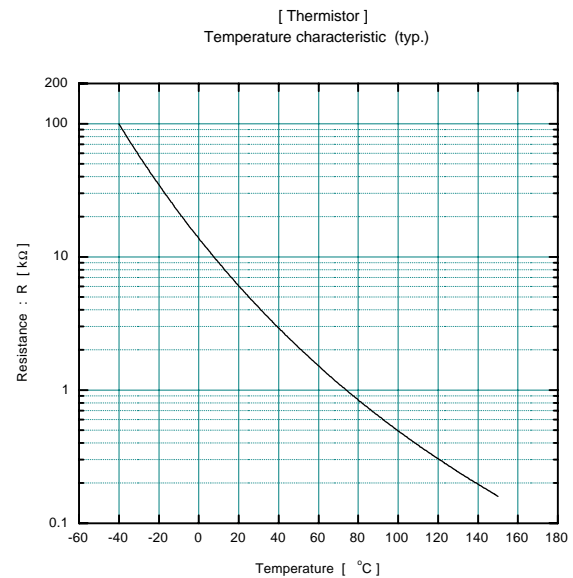
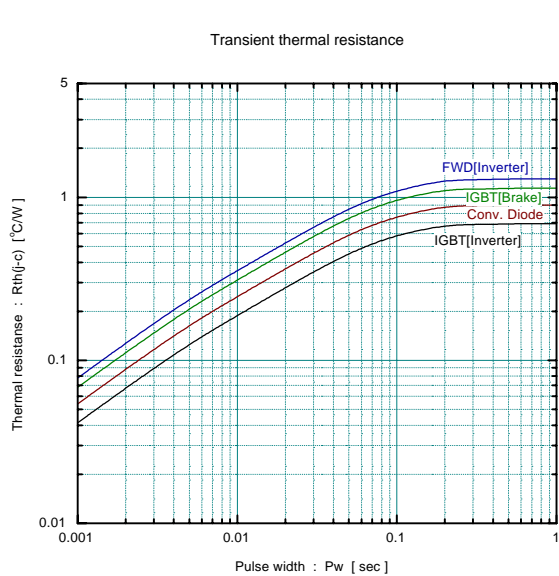
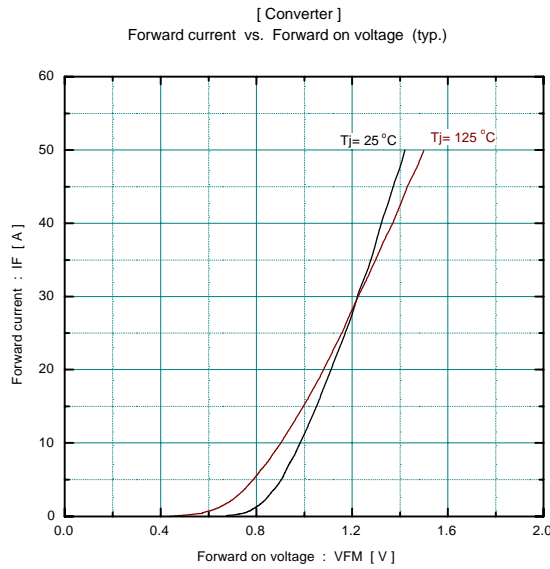
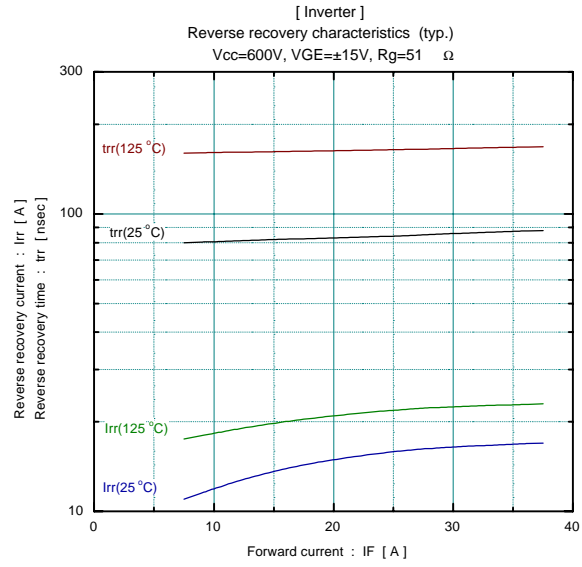
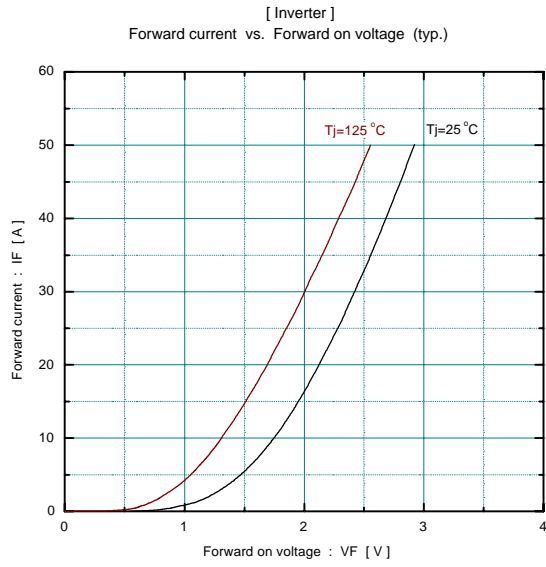
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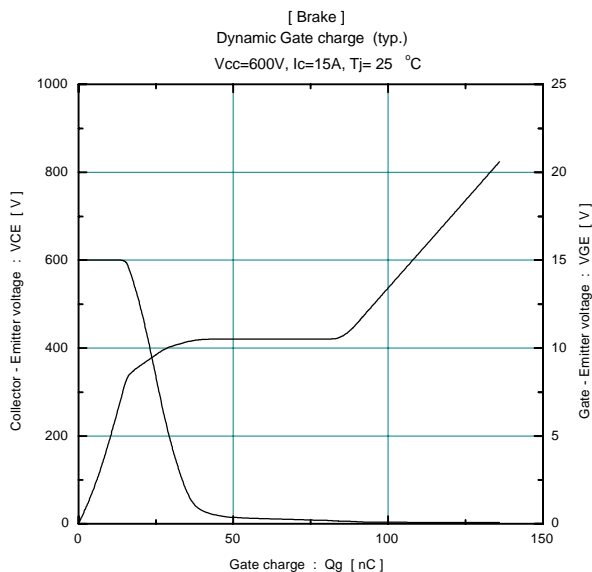
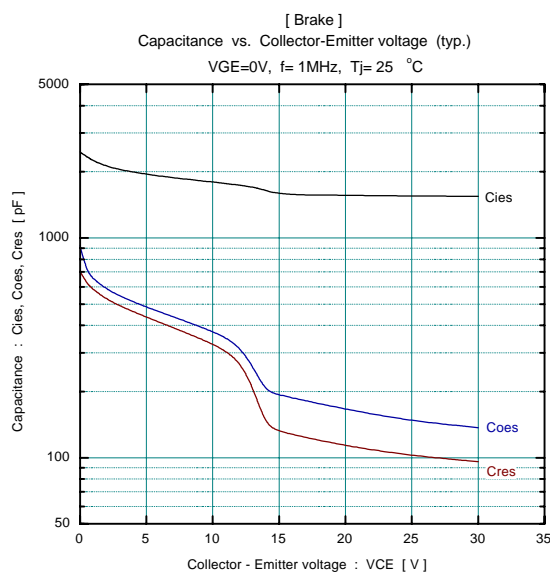
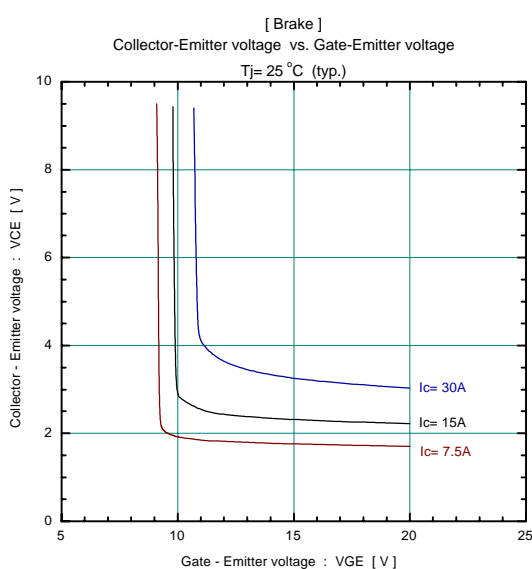
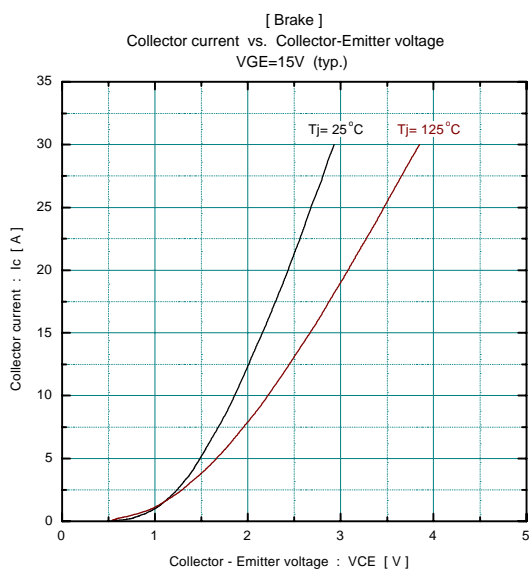
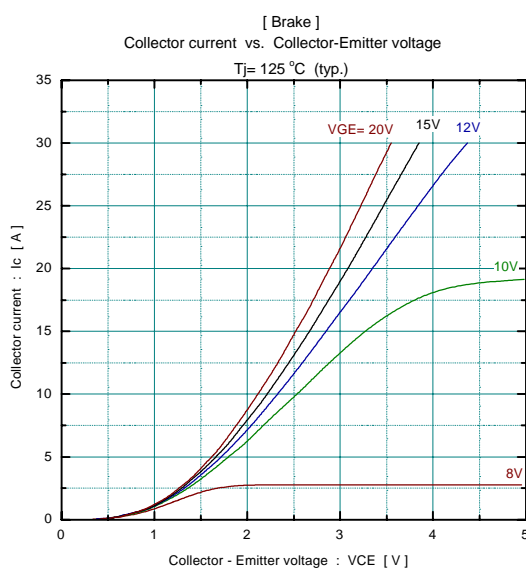
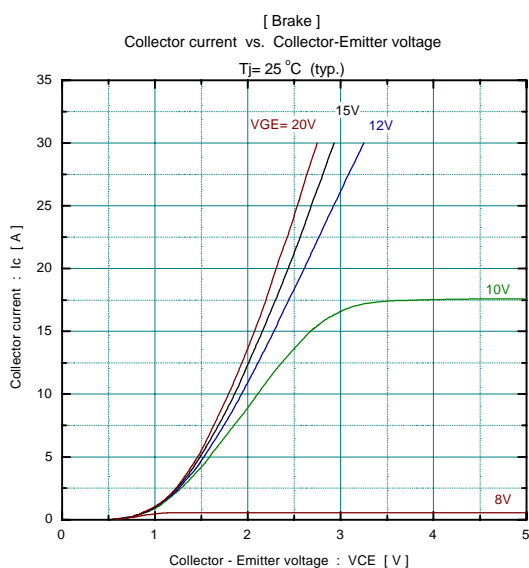
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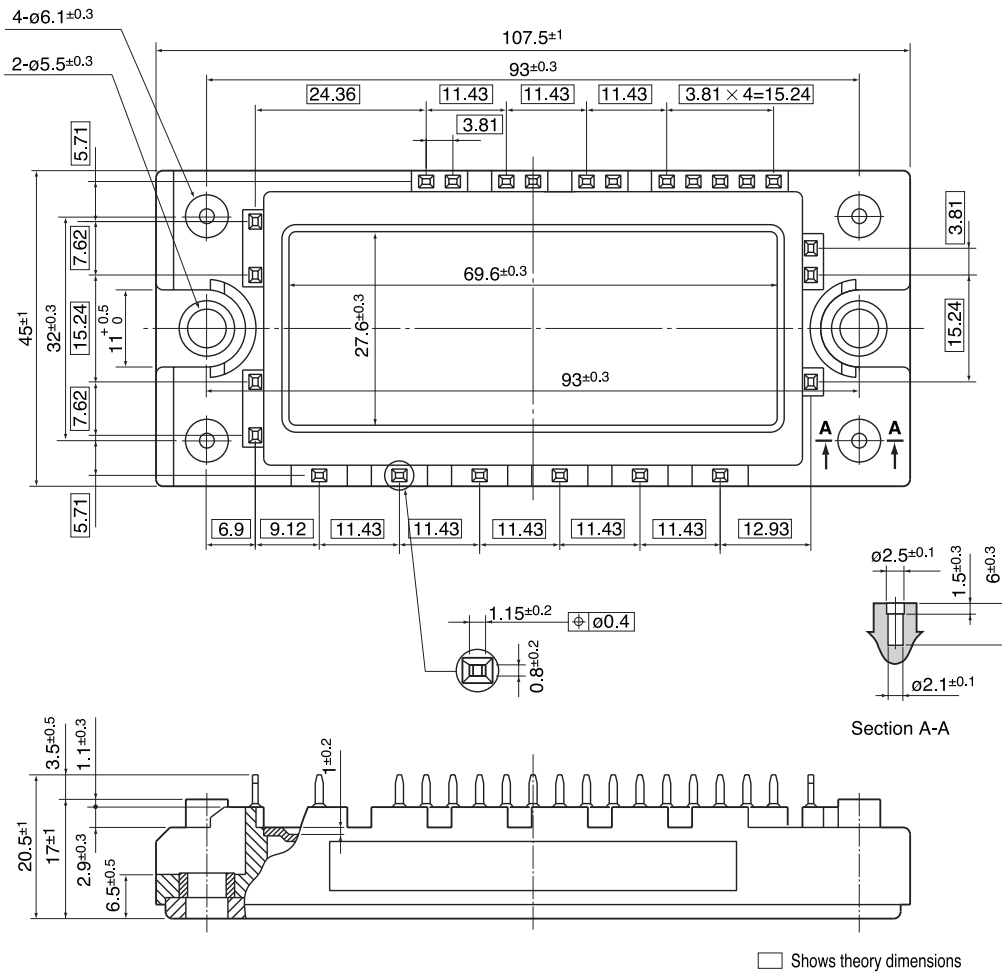
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Outline Drawings, mm

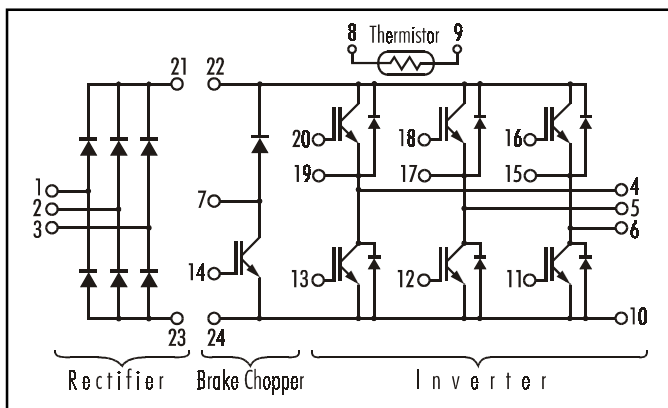


Power Integrated Module (PIM)

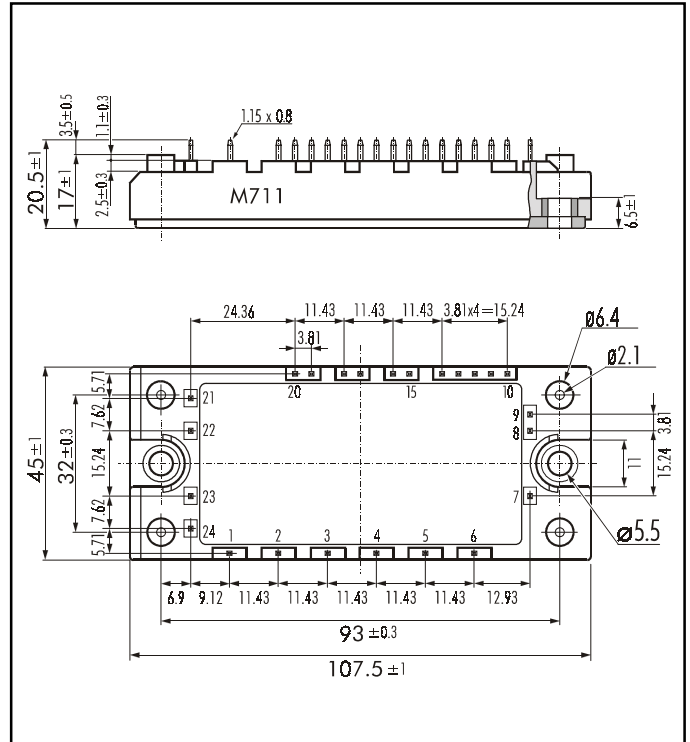
■ Features

- NPT-Technology
- Solderable Package
- Square SC SOA at $10 \times I_C$
- High Short Circuit Withstand-Capability
- Small Temperature Dependence of the Turn-Off Switching Loss
- Low Losses And Soft Switching

■ Equivalent Circuit



■ Outline Drawing

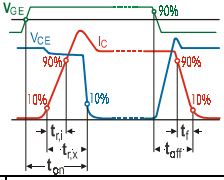
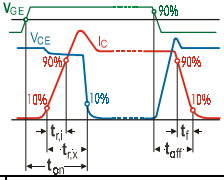


■ Absolute Maximum Ratings ($T_c=25^\circ\text{C}$)

| | Items | Symbols | Test Conditions | Rated Values | Units | |
|---------------|---------------------------------|-----------------------------|---|---------------------------------------|----------------------|---|
| Inverter | Collector-Emitter Voltage | V_{CES} | | 1200 | V | |
| | Gate -Emitter Voltage | V_{GES} | | ± 20 | | |
| | Collector Current | I_C | Continuous | $25^\circ\text{C} / 80^\circ\text{C}$ | 35 / 25 | A |
| | | $I_{C\ PULSE}$ | 1ms | $25^\circ\text{C} / 80^\circ\text{C}$ | 70 / 50 | |
| | | $-I_C\ PULSE$ | | | 25 | |
| | Collector Power Dissipation | P_C | 1 device | 180 | W | |
| Rectifier | Repetitive Peak Reverse Voltage | V_{RRM} | | 1600 | V | |
| | Average Output Current | I_O | 50Hz/60Hz sinus wave | 25 | A | |
| | Surge Current (Non Repetitive) | I_{FSM} | $T_j=150^\circ\text{C}$, 10 ms, sinus wave | 260 | | |
| | I^2t (Non Repetitive) | | | 338 | A^2s | |
| Brake Chopper | Collector-Emitter Voltage | V_{CES} | | 1200 | V | |
| | Gate -Emitter Voltage | V_{GES} | | ± 20 | | |
| | Collector Current | I_C | Continuous | $25^\circ\text{C} / 80^\circ\text{C}$ | 25 / 15 | A |
| | | $I_{C\ PULSE}$ | 1ms | $25^\circ\text{C} / 80^\circ\text{C}$ | 50 / 30 | |
| | | Collector Power Dissipation | P_C | 1 device | 110 | W |
| | Repetitive Peak Reverse Voltage | V_{RRM} | | 1200 | V | |
| | Operating Junction Temperature | T_j | | +150 | $^\circ\text{C}$ | |
| | Storage Temperature | T_{Stg} | | -40 ~ +125 | | |
| | Isolation Voltage | V_{ISO} | A.C. 1min. | 2500 | V | |
| | Mounting Screw Torque* | | | 3.5 | Nm | |

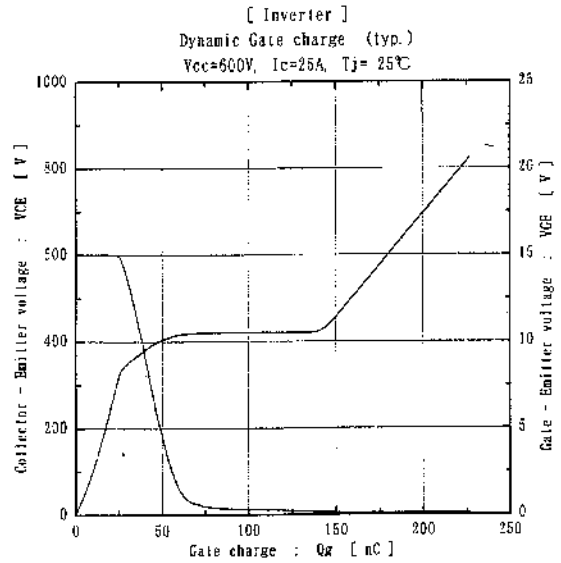
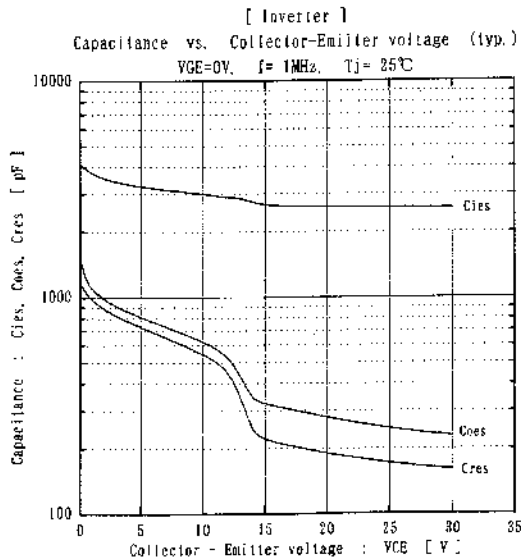
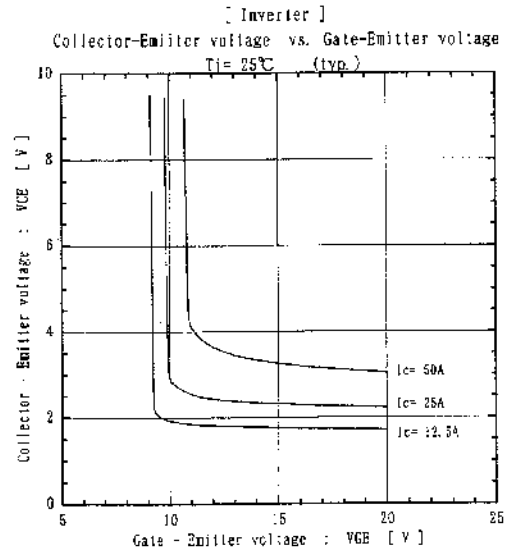
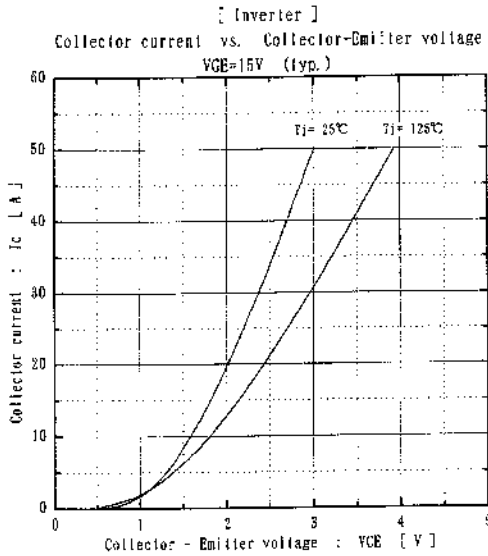
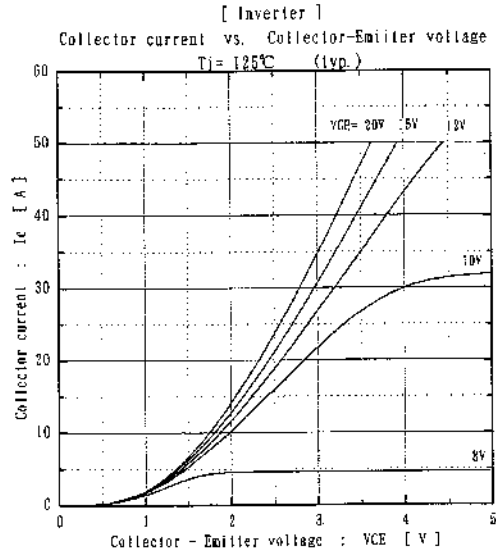
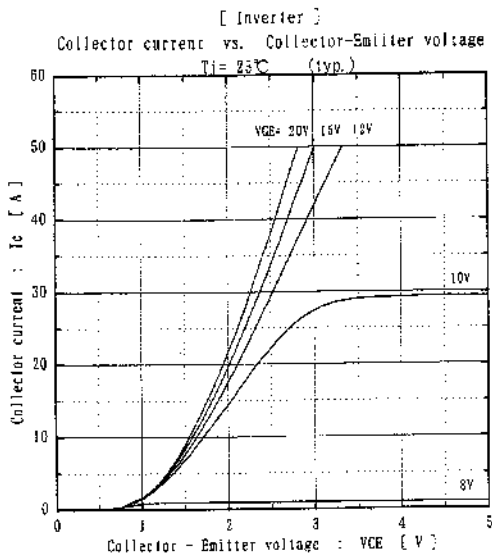
Note: *:Recommendable Value; 2.5 ~ 3.5 Nm (M5)

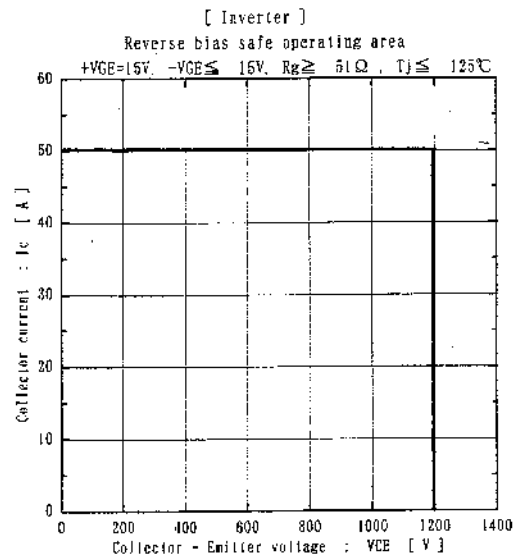
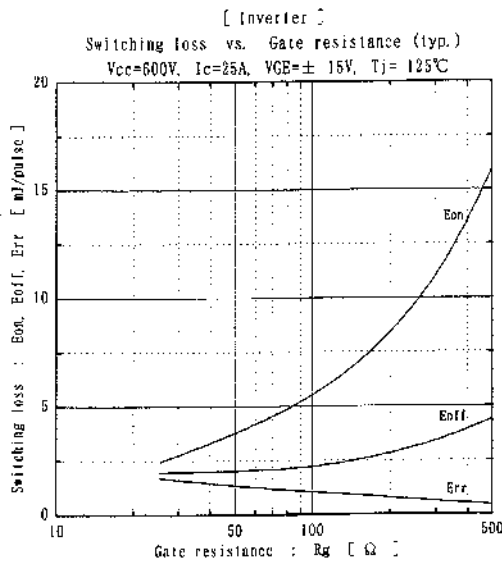
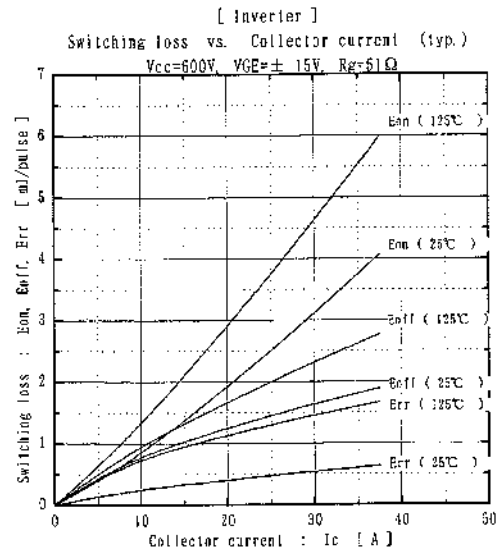
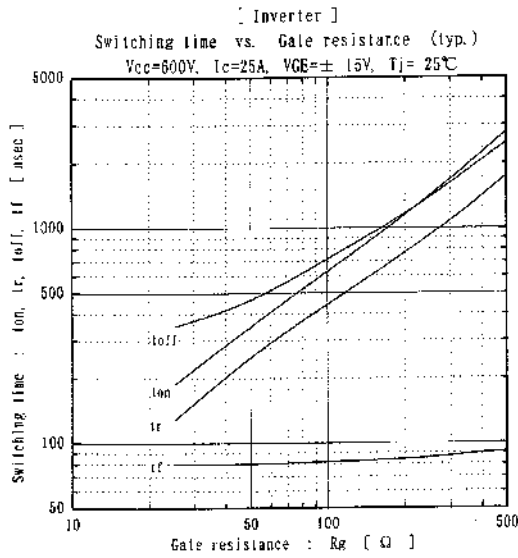
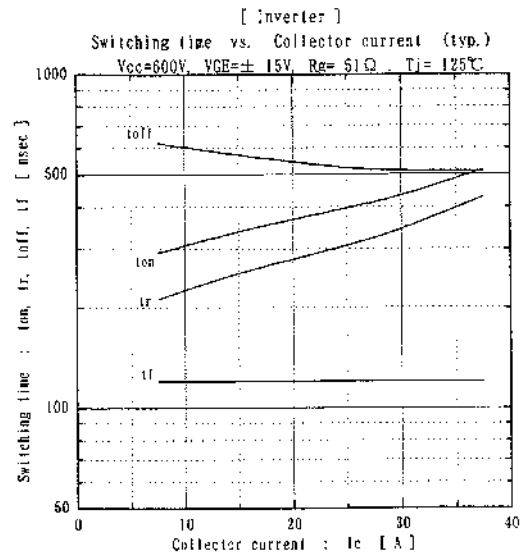
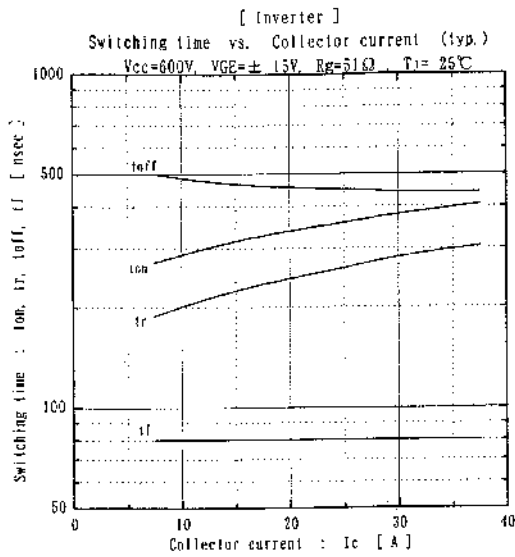
■ Electrical Characteristics (T_j=25°C)

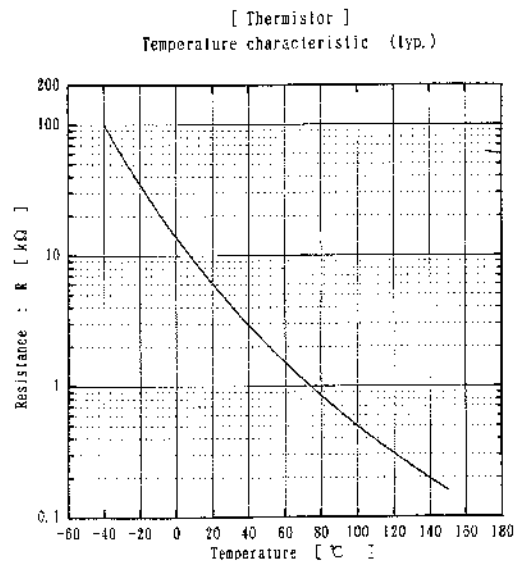
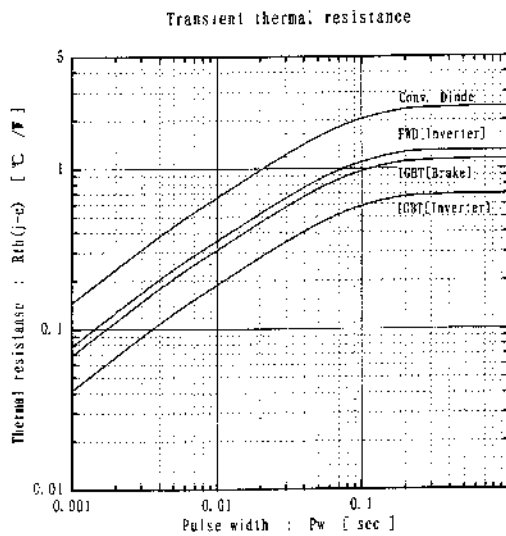
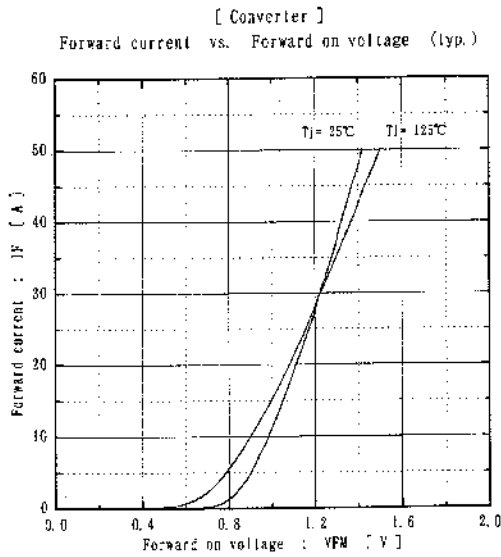
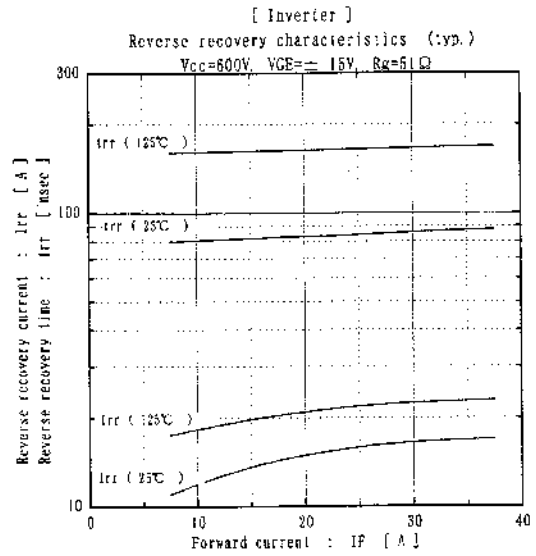
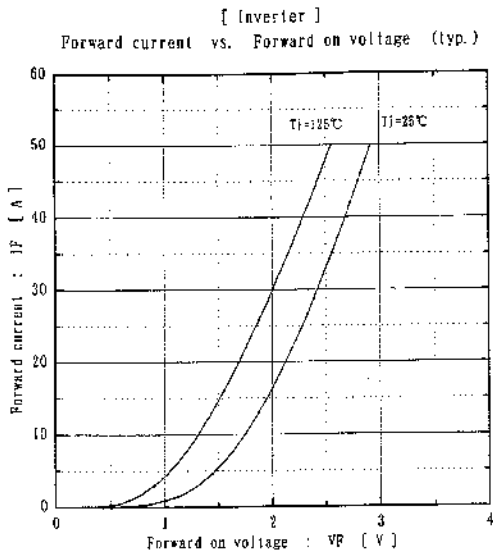
| Items | | Symbols | Test Conditions | Min. | Typ. | Max. | Units | | |
|-----------------|--------------------------------------|--------------------------------------|--|--|------|------|-------|----|----|
| Inverter | IGBT | Zero Gate Voltage Collector Current | I _{CES} | V _{GE} =0V V _{CE} =1200V | | 1.0 | mA | | |
| | | Gate-Emitter Leakage Current | I _{GES} | V _{CE} =0V V _{GE} =±20V | | 200 | nA | | |
| | | Gate-Emitter Threshold Voltage | V _{GE(th)} | V _{GE} =20V I _C =25mA | 5.5 | 7.2 | 8.5 | V | |
| | | Collector-Emitter Saturation Voltage | V _{CE(sat)} | V _{GE} =15V I _C = 25A | | 2.1 | 2.7 | | |
| | | Input Capacitance | C _{ies} | f=1MHz, V _{GE} =0V, V _{CE} =10V | | 3000 | | pF | |
| | Turn-on Time | t _{on} | V _{CC} = 600V |  | | 0.35 | 1.2 | μs | |
| | | t _{r,x} | I _C = 25A | | | 0.25 | 0.6 | | |
| | Turn-off Time | t _{r,i} | V _{GE} = ±15V | | | 0.10 | | | |
| | | t _{off} | R _G = 51Ω | | | 0.45 | 1.0 | | |
| | | t _f | Inductive Load | | | 0.08 | 0.3 | | |
| FRD | Diode Forward On-Voltage | V _F | I _F =25A | Chip | | 2.3 | V | | |
| | Reverse Recovery Time | t _{rr} | I _F =25A | Terminal | | 2.4 | 3.2 | | |
| Rectifier | Forward Voltage | V _{FM} | I _F =25A | Chip | | 1.1 | V | | |
| | Reverse Current | I _R RM | V _R =1600V | Terminal | | 1.2 | 1.5 | | |
| Brake Chopper | Zero Gate Voltage Collector Current | I _{CES} | V _{GE} =0V V _{CE} =1200V | | | 1.0 | mA | | |
| | Gate-Emitter Leakage Current | I _{GES} | V _{CE} =0V V _{GE} =±20V | | | 200 | nA | | |
| | Collector-Emitter Saturation Voltage | V _{CE(sat)} | V _{GE} =15V | Chip | | 2.10 | | V | |
| | | | I _C =15A | Terminal | | 2.20 | 2.6 | | |
| | Turn-on Time | t _{on} | V _{CC} = 600V |  | | 0.35 | 1.2 | μs | |
| | | t _{r,x} | I _C = 15A | | | 0.25 | 0.6 | | |
| | Turn-off Time | t _{off} | V _{GE} = ±15V | | | 0.45 | 1.0 | | |
| t _f | | R _G = 82Ω | | | 0.08 | 0.3 | | | |
| Reverse Current | | I _R RM | V _R =1200V | | | | 1.0 | | mA |
| NTC | Resistance | R | T= 25°C | | | 5000 | | | Ω |
| | | | T=100°C | | 465 | 495 | 520 | | |
| | B Value | B | T=25 / 50°C | 3305 | 3375 | 3450 | K | | |

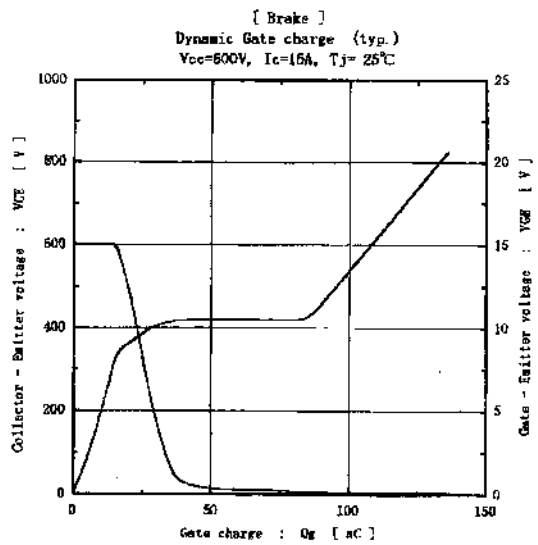
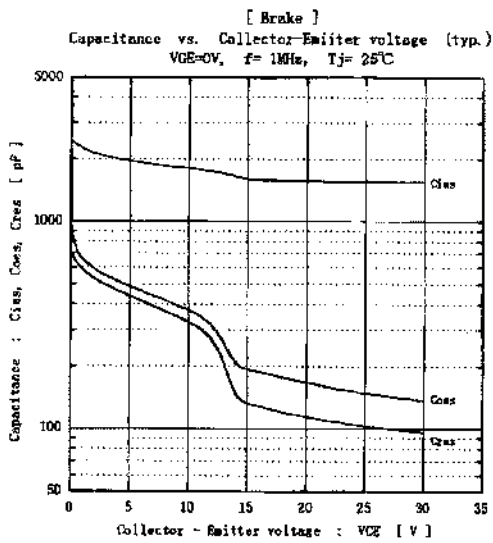
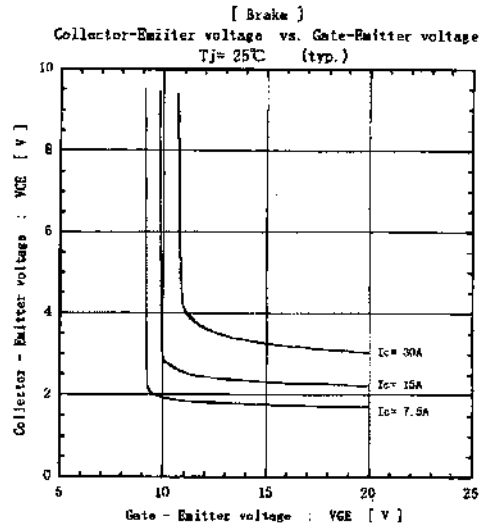
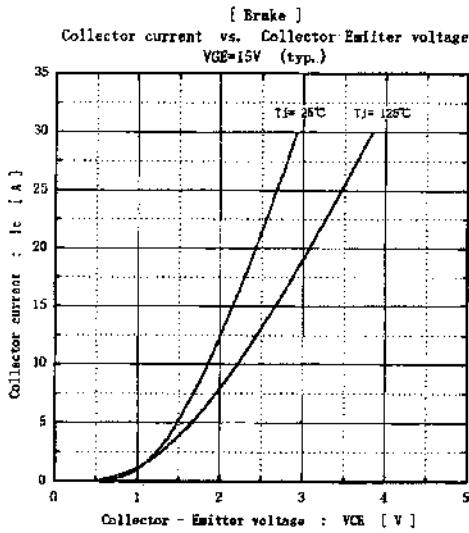
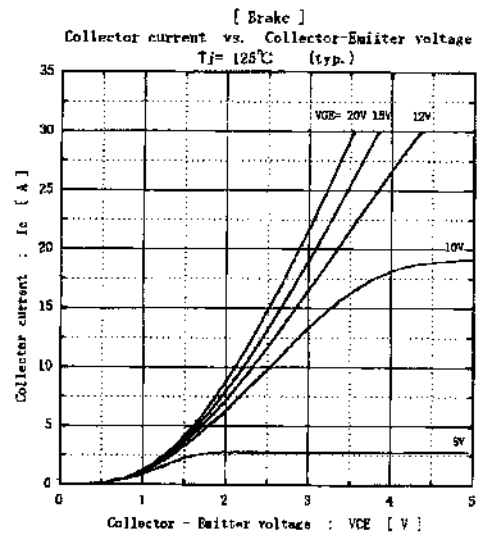
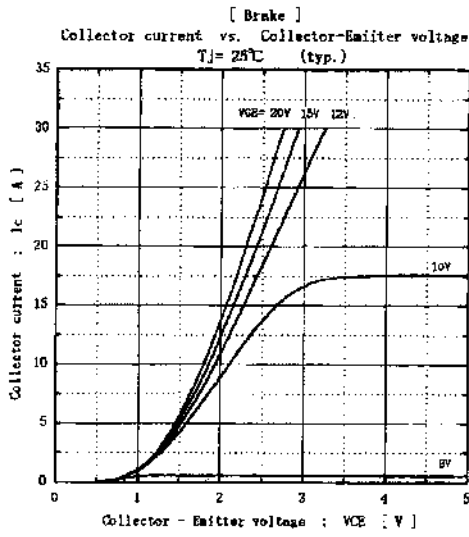
■ Thermal Characteristics

| Items | Symbols | Test Conditions | Min. | Typ. | Max. | Units |
|-------------------------------|----------------------|-----------------------|------|------|------|-------|
| Thermal Resistance (1 device) | R _{th(j-c)} | Inverter IGBT | | | 0.69 | °C/W |
| | | Inverter FRD | | | 1.30 | |
| | | Brake IGBT | | | 1.14 | |
| | | Rectifier Diode | | | 0.90 | |
| Contact Thermal Resistance | R _{th(c-f)} | With Thermal Compound | | 0.05 | | |









Модуль, igbt, fuji купить в Минске

www.fotorele.net www.tiristor.by радиодетали, электронные компоненты
email minsk17@tut.by tel.mob +375 44 758 47 80 velcom +375 29 758 47 80 МТС

подробно смотрите ниже: описание, технические характеристики, datasheet , фото, каталог

QR код



Продам
7MBR100U4B-120-50 , FUJI,

7MBR50SB-120-50 , FUJI,

7MBR35SD120 , FUJI,

7MBR35SB-120-50 , FUJI,

7MBR25SA-120-50 , FUJI,

7MBR50UA-120-50 , FUJI,

7MBR75U4B-120-50 , FUJI,

7MBR25UA120-50 , FUJI,

7MBR50VB120-50 , FUJI,

7MBR25VA120-50 , FUJI,

7MBR35VA120-50 , FUJI,

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