

IGBT Module-Dual

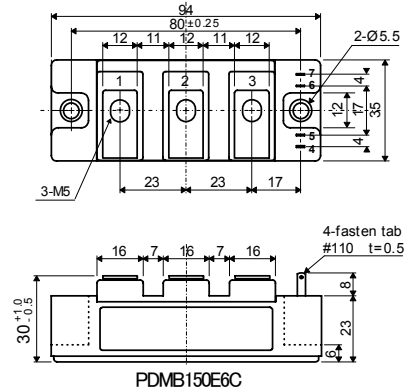
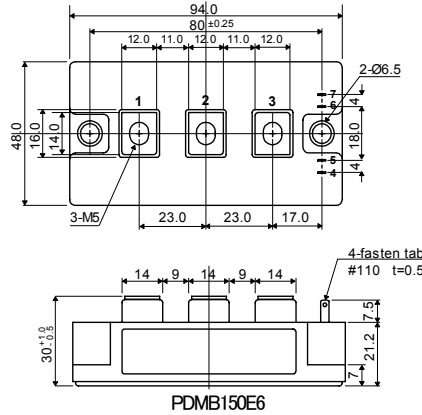
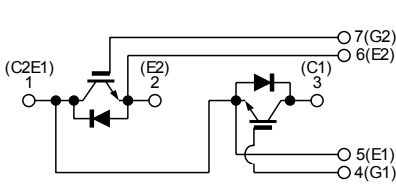
150 A, 600V

PDMB150E6

PDMB150E6C

□ 回路図 : CIRCUIT

□ 外形寸法図 : OUTLINE DRAWING



Dimension: [mm]

□ 最大定格 : MAXIMUM RATINGS (T_c = 25°C)

| Item | Symbol | Rated Value | Unit | |
|--|--|-------------|----------|-----------------|
| コレクタ・エミッタ間電圧 Collector-Emmitter Voltage | V _{CEs} | 600 | V | |
| ゲート・エミッタ間電圧 Gate-Emmitter Voltage | V _{GES} | ±20 | V | |
| コレクタ電流 Collector Current | DC | 150 | A | |
| | 1ms | 300 | | |
| コレクタ損失 Collector Power Dissipation | P _c | 560 | W | |
| 接合温度 Junction Temperature Range | T _j | -40~+150 | °C | |
| 保存温度 Storage Temperature Range | T _{stg} | -40~+125 | °C | |
| 絶縁耐圧(Terminal to Base AC, 1 minute) Isolation Voltage | V _{iso} | 2,500 | V (RMS) | |
| 締め付けトルク Mounting Torque | Module Base to Heatsink Busbar to Main Terminal | PDMB150E6 | 3 (30.6) | N・m (kgf・cm) |
| | | PDMB150E6C | 2 (20.4) | |

□ 電気的特性 : ELECTRICAL CHARACTERISTICS (T_c = 25°C)

| Characteristic | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|-----------------------|--|------|-------|------|------|
| コレクタ遮断電流 Collector-Emmitter Cut-Off Current | I _{CEs} | V _{CE} = 600V, V _{GE} = 0V | — | — | 1.0 | mA |
| ゲート漏れ電流 Gate-Emmitter Leakage Current | I _{GES} | V _{GE} = ±20V, V _{CE} = 0V | — | — | 1.0 | μA |
| コレクタ・エミッタ間飽和電圧 Collector-Emmitter Saturation Voltage | V _{CE(sat)} | I _c = 150A, V _{GE} = 15V | — | 2.1 | 2.6 | V |
| ゲートしきい値電圧 Gate-Emmitter Threshold Voltage | V _{GE(th)} | V _{CE} = 5V, I _c = 150mA | 4.0 | — | 8.0 | V |
| 入力容量 Input Capacitance | C _{ies} | V _{CE} = 10V, V _{GE} = 0V, f = 1MHz | — | 7,500 | — | pF |
| スイッチング時間 Switching Time | 上昇時間 Rise Time | V _{CC} = 300V R _l = 2.0Ω R _g = 5.1Ω V _{GE} = ±15V | — | 0.15 | 0.30 | μs |
| | ターンオン時間 Turn-on Time | | — | 0.25 | 0.40 | |
| | 下降時間 Fall Time | | — | 0.10 | 0.35 | |
| | ターンオフ時間 Turn-off Time | | — | 0.35 | 0.70 | |

□ フリーホイールダイオードの特性 : FREE WHEELING DIODE RATINGS & CHARACTERISTICS (T_c = 25°C)

| Item | Symbol | Rated Value | Unit |
|------------------------|--------|-------------|------|
| 順電流 Forward Current | DC | 150 | A |
| | 1ms | 300 | |

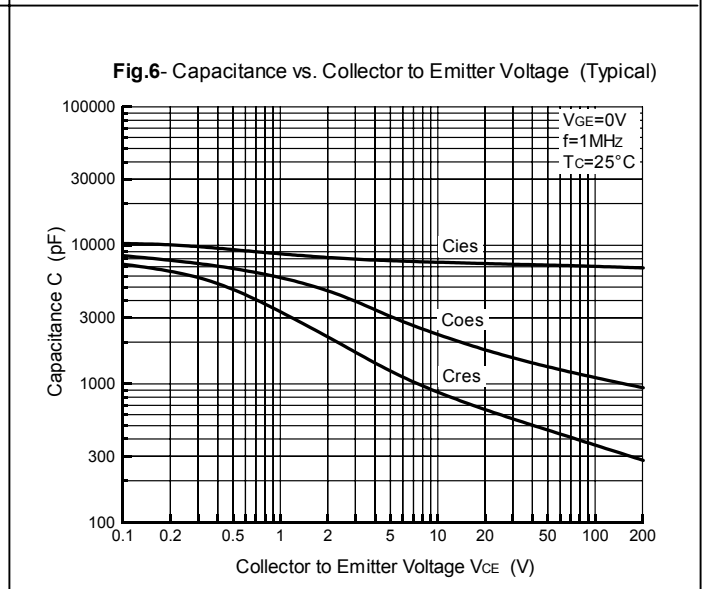
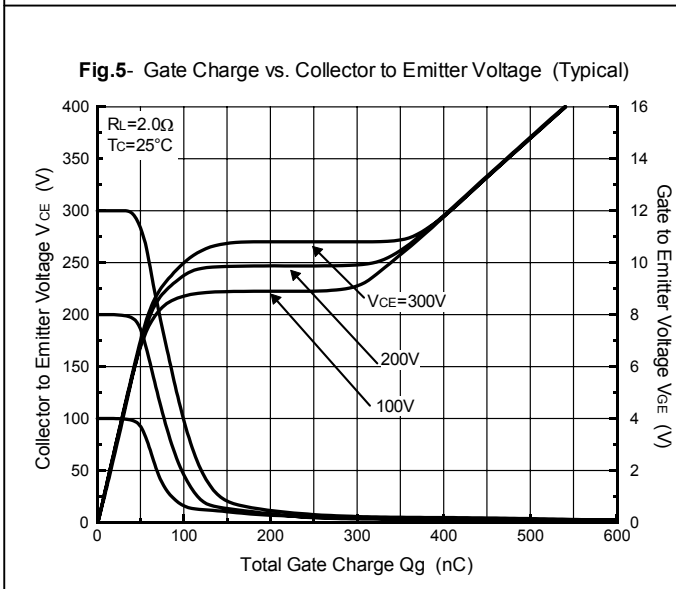
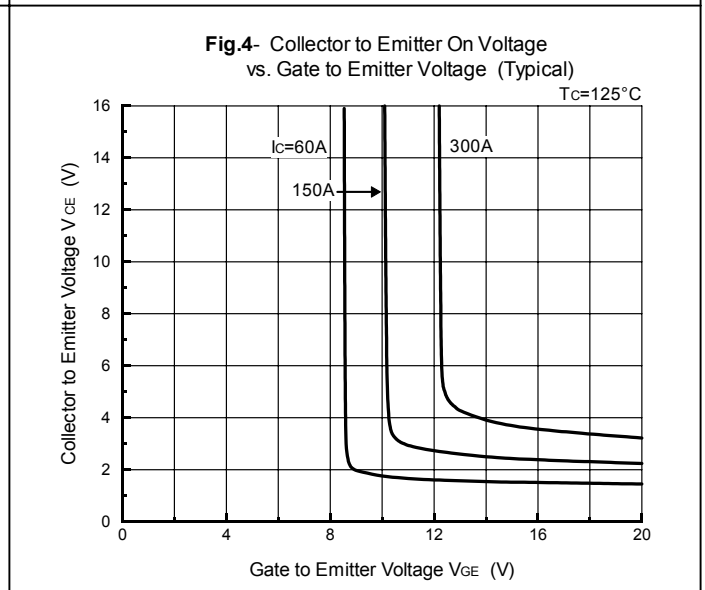
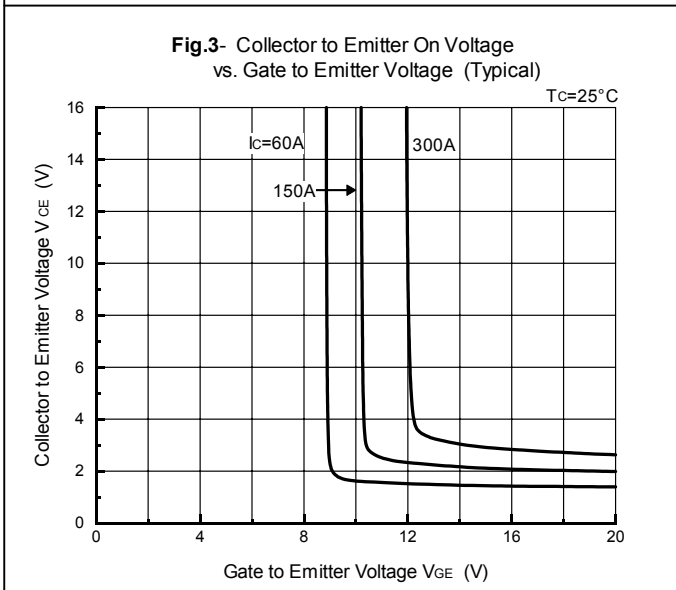
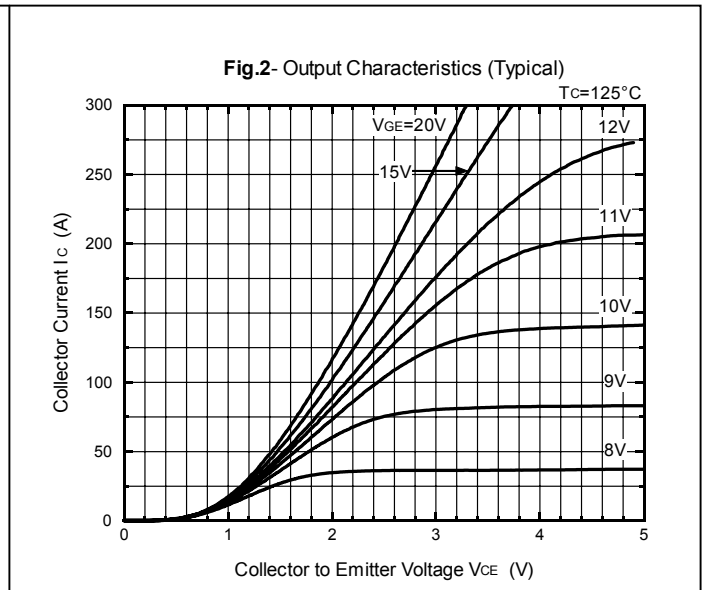
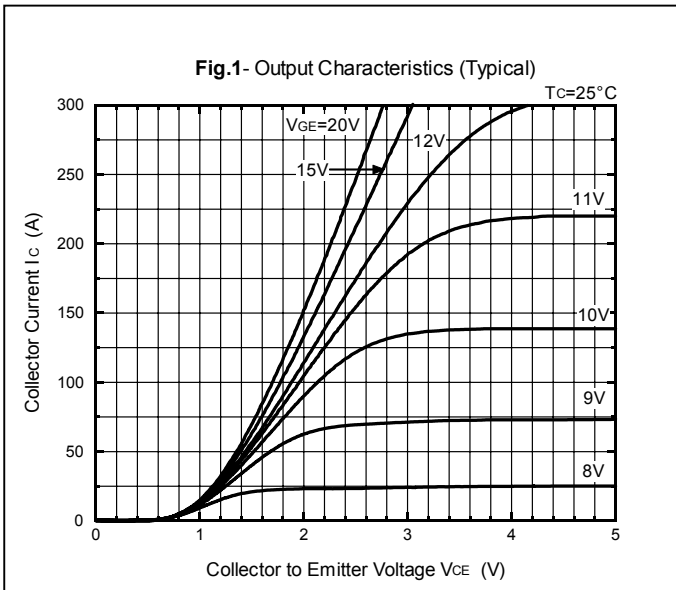
| Characteristic | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|--------------------------------|-----------------|--|------|------|------|------|
| 順電圧 Peak Forward Voltage | V _F | I _F = 150A, V _{GE} = 0V | — | 1.9 | 2.4 | V |
| 逆回復時間 Reverse Recovery Time | t _{rr} | I _F = 150A, V _{GE} = -10V di/dt = 300A/μs | — | 0.15 | 0.25 | μs |

□ 熱的特性 : THERMAL CHARACTERISTICS

| Characteristic | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|--------------------------|----------------------|----------------|------|------|------|------|
| 熱抵抗 Thermal Impedance | R _{th(j-c)} | IGBT | — | — | 0.22 | °C/W |
| | | Diode | — | — | 0.45 | |

PDMB150E6

PDMB150E6C



PDMB 150E6
PDMB 150E6C

Fig.7- Collector Current vs. Switching Time (Typical)

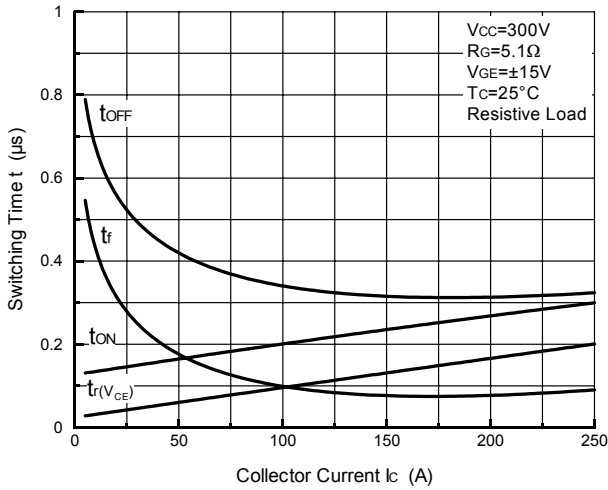


Fig.8- Series Gate Impedance vs. Switching Time (Typical)

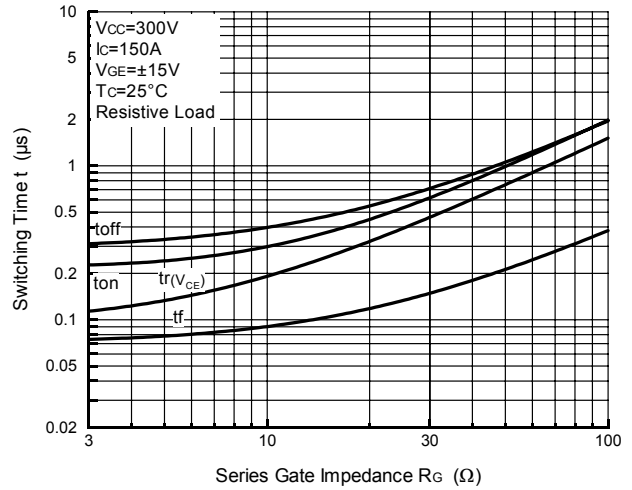


Fig.9- Collector Current vs. Switching Time

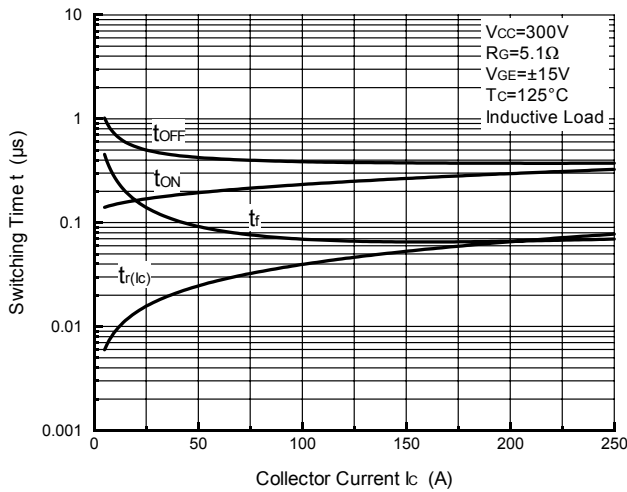


Fig.10- Series Gate Impedance vs. Switching Time

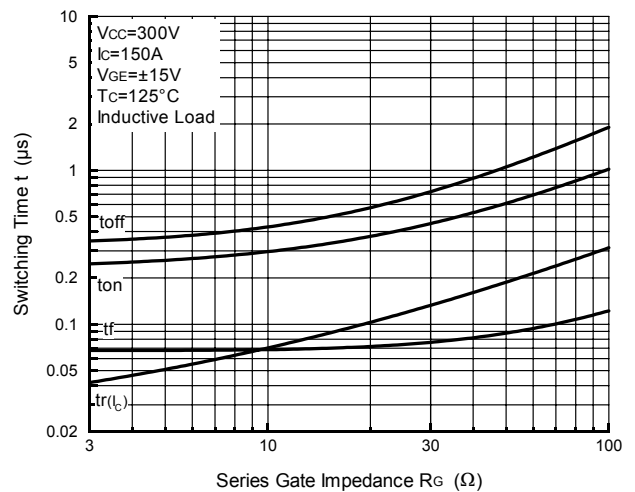


Fig.11- Collector Current vs. Switching Loss

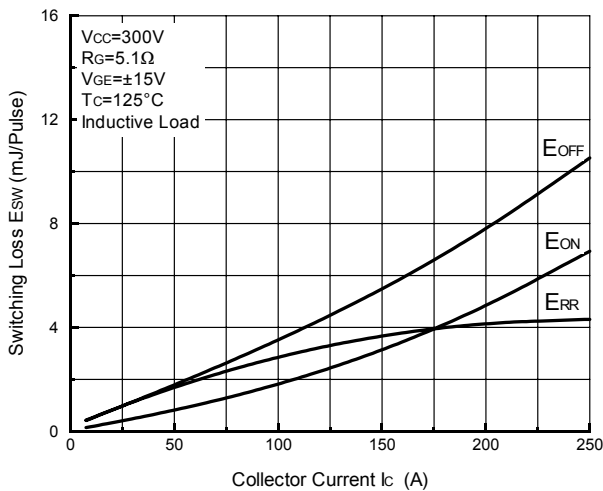
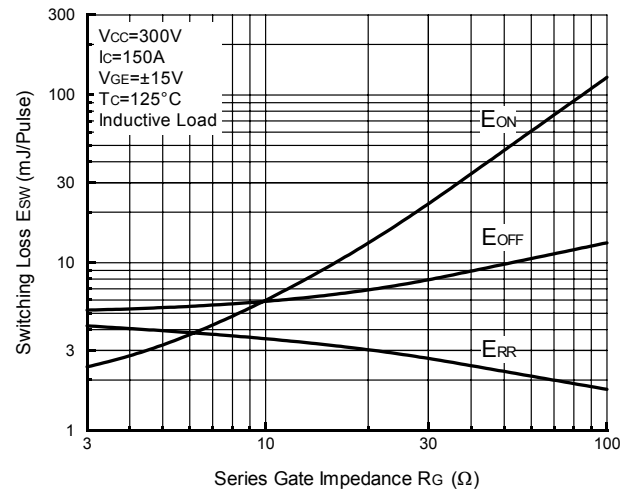


Fig.12- Series Gate Impedance vs. Switching Loss



PDMB 150E6

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Fig.13- Forward Characteristics of Free Wheeling Diode (Typical)

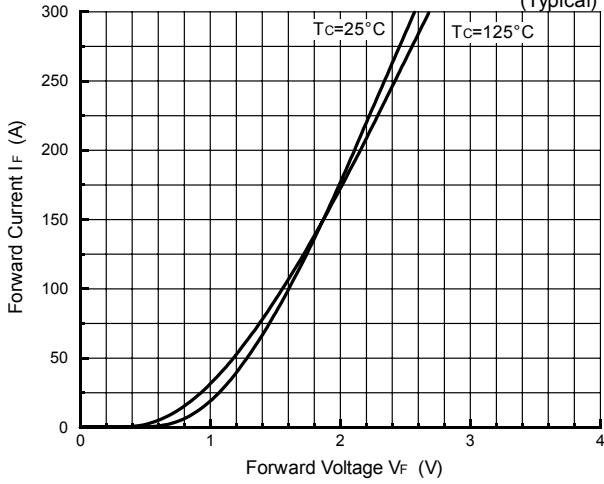


Fig.14- Reverse Recovery Characteristics (Typical)

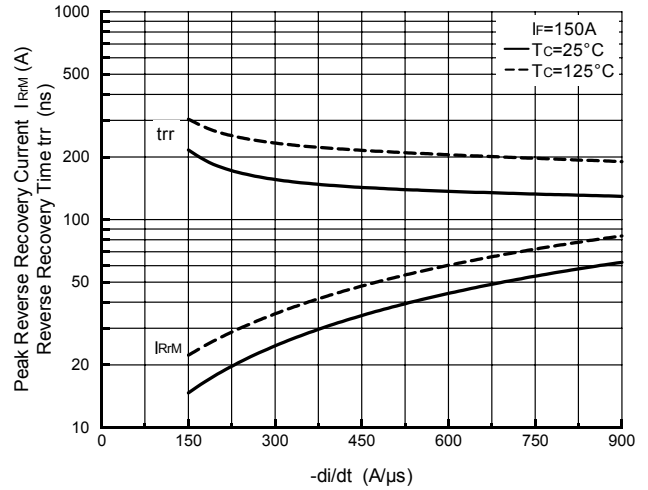


Fig.15- Reverse Bias Safe Operating Area

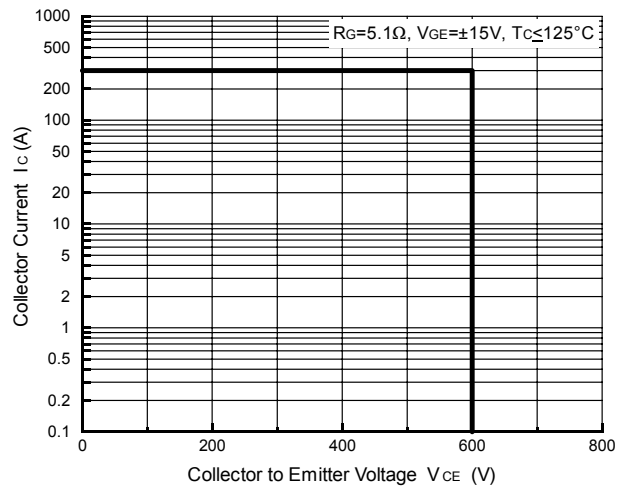


Fig.16- Transient Thermal Impedance

