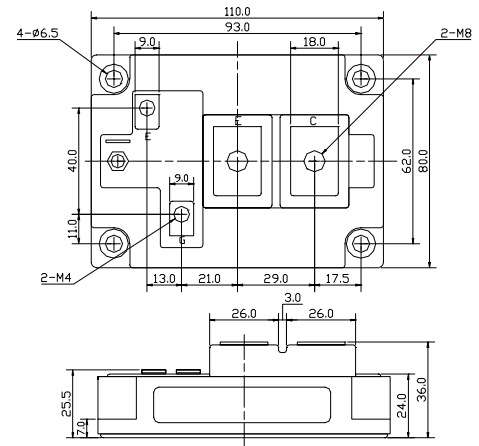
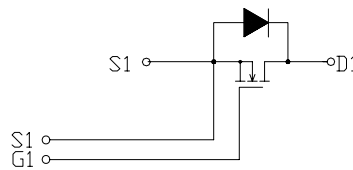


**特長**

- \* 大容量 (800A<sub>DC</sub>) です
- \* トレンチゲートMOSFETを搭載
- \* 超低R<sub>DS(on)</sub>: 1.4m (@800A) を実現
- \* 内臓ダイオードが高速

**用途**

- \* バッテリーフォークリフト用チョッパ
- \* 48V級直流電源制御用

**結線図**

**最大定格 : MAXIMUM RATINGS (T<sub>c</sub> = 25 )**

質量 : 約650g

| Item   | Symbol           | Rated Value             | Unit               |            |
|--|------------------|-------------------------|--------------------|------------|
| ドレイン・ソース間電圧 (V <sub>GS</sub> = 0V)<br>Drain-Source Voltage | V <sub>DSS</sub> | 150                     | V                  |            |
| ゲート・ソース間電圧<br>Gate-Source Voltage                          | V <sub>GSS</sub> | ±20                     | V                  |            |
| ドレイン電流<br>Drain Current                                    | I <sub>D</sub>   | Duty=50%                | 800                |            |
|  |                  | DC 端子温度=80              | 640                |            |
| パルスドレイン電流<br>Pulsed Drain Current                          | I <sub>DM</sub>  | 1,600                   | A                  |            |
| 全損失<br>Total Power Dissipation                             | P <sub>D</sub>   | 2,650                   | W                  |            |
| 動作接合温度<br>Junction Temperature Range                       | T <sub>j</sub>   | -40 ~ +150              |                    |            |
| 保存温度<br>Storage Temperature Range                          | T <sub>stg</sub> | -40 ~ +125              |                    |            |
| 絶縁耐圧 (Terminal to Base AC, 1minute)<br>Isolation Voltage   | V <sub>ISO</sub> | 2,500                   | V <sub>(RMS)</sub> |            |
| 締め付けトルク<br>Mounting Torque                                 | F <sub>tor</sub> | Module Base to Heatsink | 3 (30.6)           |            |
|  |                  | Busbar to Main Terminal | M4                 | 1.4 (14.3) |
|  |                  |                         | M8                 | 10.5 (107) |

**電気的特性 : ELECTRICAL CHARACTERISTICS (T<sub>c</sub> = 25 )**

| Characteristic  | Symbol                   | Test Condition  | Min.                        | Typ. | Max. | Unit |
|---|--------------------------|---|-----------------------------|------|------|------|
| ドレイン遮断電流<br>Zero Gate Voltage Drain Current           | I <sub>DSS</sub>         | V <sub>DS</sub> = 150V, V <sub>GS</sub> = 0V              | -                           | -    | 4.8  | mA   |
| ゲート漏れ電流<br>Gate-Source Leakage Current                | I <sub>GSS</sub>         | V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V              | -                           | -    | 4.8  | μA   |
| ゲートしきい値電圧<br>Gate-Source Threshold Voltage            | V <sub>GS(th)</sub>      | V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 20mA | 1.0                         | 2.0  | 3.2  | V    |
| ドレイン・ソース間オン抵抗 (MOSFET部)<br>Drain-Source On-Resistance | R <sub>DS(on)</sub>      | V <sub>GS</sub> = 10V, I <sub>D</sub> = 800A              | -                           | 1.15 | 1.4  | m    |
| ドレイン・ソース間オン電圧<br>Drain-Source On-Voltage              | V <sub>DS(on)</sub>      | V <sub>GS</sub> = 10V, I <sub>D</sub> = 800A              | -                           | 1.10 | 1.25 | V    |
| 順伝達コンダクタンス<br>Forward Transconductance                | g <sub>fs</sub>          | V <sub>DS</sub> = 15V, I <sub>D</sub> = 800A              |                             |      |      |      |
| 入力容量<br>Input Capacitance                             | C <sub>ies</sub>         | V <sub>GS</sub> = 0V V <sub>DS</sub> = 10V f = 1MHz       | -                           | 165  | -    | nF   |
| 出力容量<br>Output Capacitance                            | C <sub>oss</sub>         |   | -                           | 20   | -    | pF   |
| 帰還容量<br>Reverse Transfer Capacitance                  | C <sub>rss</sub>         |   | -                           | 20   | -    | pF   |
| スイッチング時間<br>Switching Time                            | 上昇時間<br>Rise Time        | t <sub>r</sub>  | V <sub>DD</sub> = 80V       |      | -    | ns   |
|   | ターンオン時間<br>Turn-on Time  | t <sub>on</sub>   | I <sub>D</sub> = 400A       |      | -    |      |
|   | 下降時間<br>Fall Time        | t <sub>f</sub>  | R <sub>G</sub> = 0.75       |      | -    |      |
|   | ターンオフ時間<br>Turn-off Time | t <sub>off</sub>  | V <sub>GS</sub> = -5V, +10V |      | -    |      |

**MOSFET** Module-Single

800 A, 150V

**PHM8001**
**内部逆方向ダイオードの定格と特性: *Source-Drain DIODE RATINGS & CHARACTERISTICS* (T<sub>c</sub>=25 )**

| Characteristic                       | Symbol          | Test Condition                              | Min. | Typ. | Max. | Unit |
|--------------------------------------|-----------------|---|------|------|------|------|
| ソ - ス電流<br>Continuous Source Current | I <sub>s</sub>  | Dutv=50%<br>DC 端子温度=80                      | -    | -    | 800  | A    |
| パルスソ - ス電流<br>Pulsed Source Current  | I <sub>SM</sub> |   | -    | -    | 1600 | A    |
| ダイオード順電圧<br>Diode Forward Voltage    | V <sub>SD</sub> | I <sub>s</sub> =800A                        | -    | 1.10 | 1.76 | V    |
| 逆回復時間<br>Reverse Recovery Time       | t <sub>rr</sub> | I <sub>s</sub> =800A<br>-d is/ dt=1600A/ μs | -    | -    | 130  | ns   |

**熱 的 特 性 : *THERMAL CHARACTERISTICS***

| Characteristic                                       | Symbol               | Test Condition  | Min. | Typ. | Max.  | Unit |
|--|----------------------|---|------|------|-------|------|
| 接合・ケ - ス間熱抵抗<br>Thermal Impedance, Junction to Case  | R <sub>th(j-c)</sub> |   | -    | -    | 0.047 | /W   |
| ケ - ス・フィン間熱抵抗<br>Thermal Impedance, Case to Heatsink | R <sub>th(c-f)</sub> | サ - マルコンパウンド塗布<br>Mounting surface flat, smooth,<br>and greased | -    | -    | 0.035 | /W   |

Fig.1- Output Characteristics (Typical)

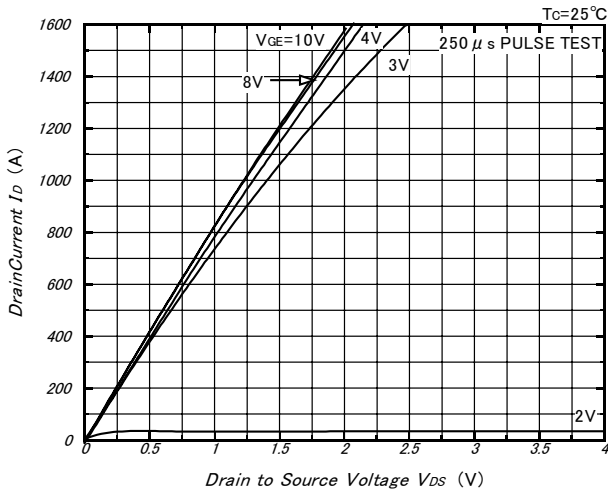


Fig.2- Drain to Source On Voltage vs. Gate to Source Voltage (Typical)

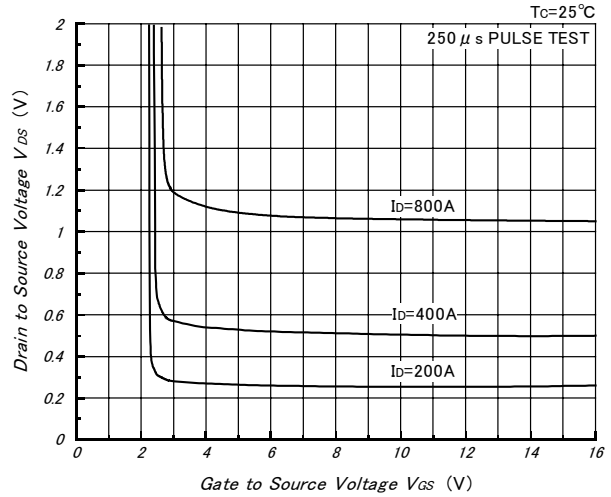


Fig.3- Drain to Source On Voltage vs. Junction Temperature (Typical)

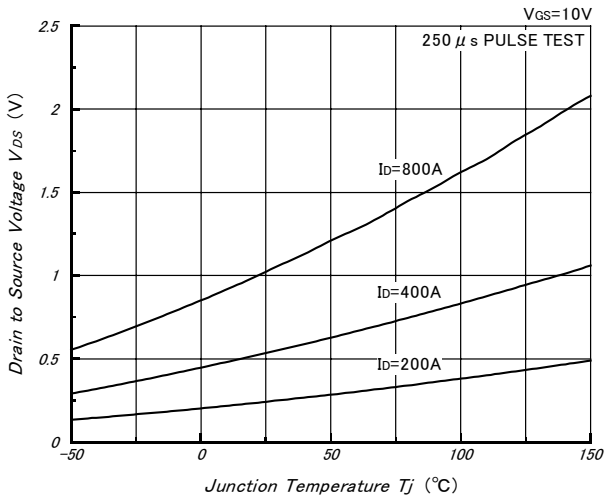


Fig.4- Capacitance vs. Drain to Source Voltage (Typical)

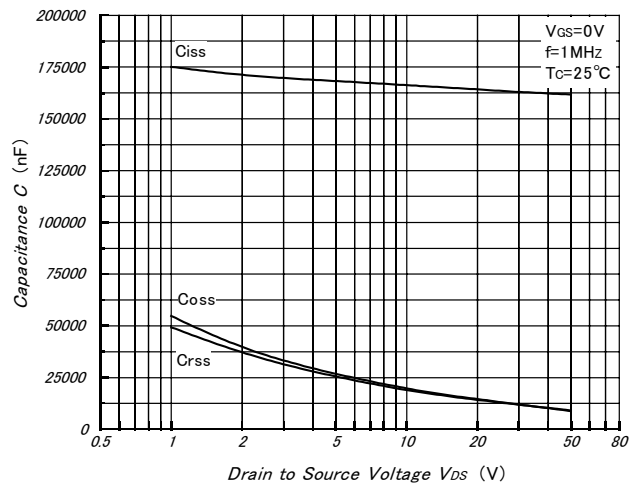


Fig.5- Gate Charge vs. Gate to Source Voltage (Typical)

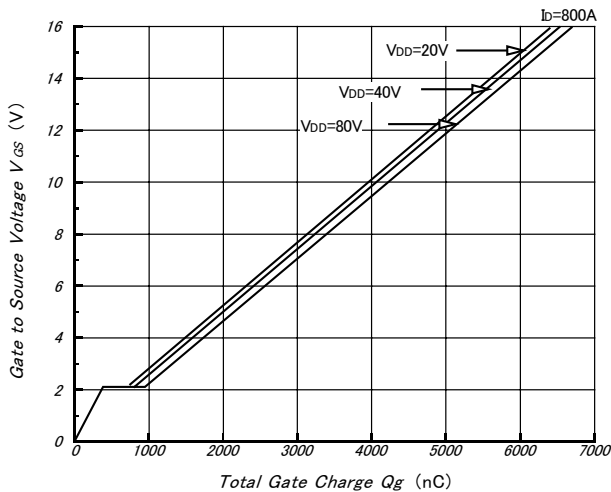


Fig.6- Series Gate Impedance vs. Switching Time (Typical)

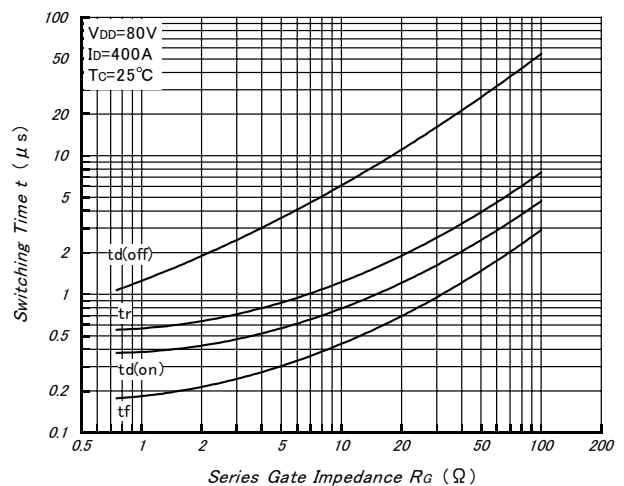


Fig.7- Drain Current vs. Switching Time (Typical)

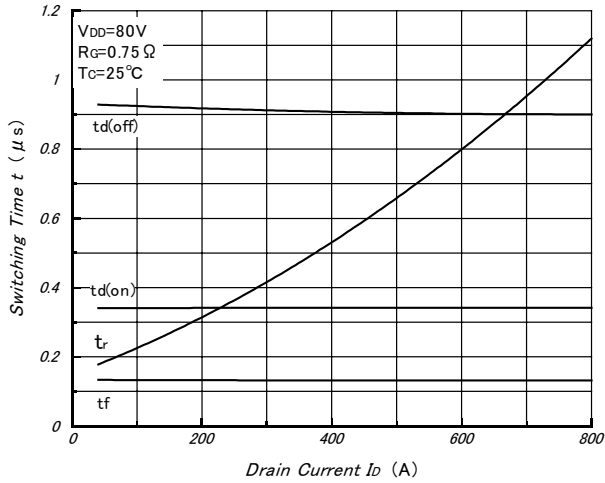


Fig.8- Source to Drain Diode Forward Characteristics (Typical)

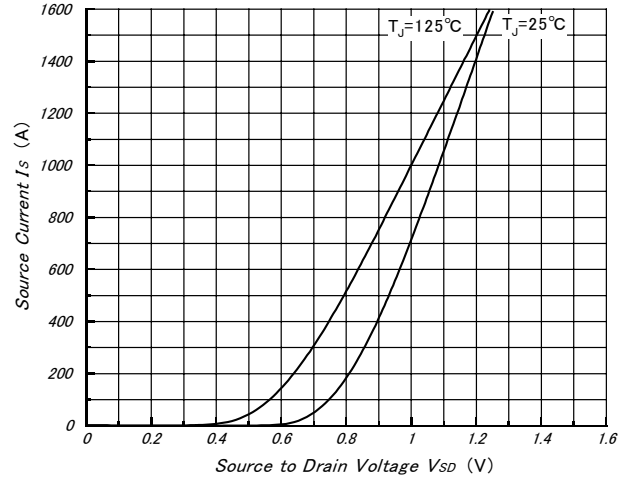


Fig.9- Reverse Recovery Characteristics (Typical)

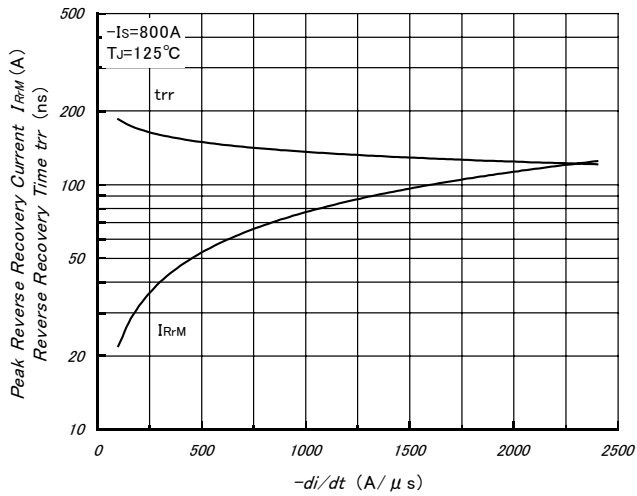


Fig.10- Maximum Transient Thermal Impedance

