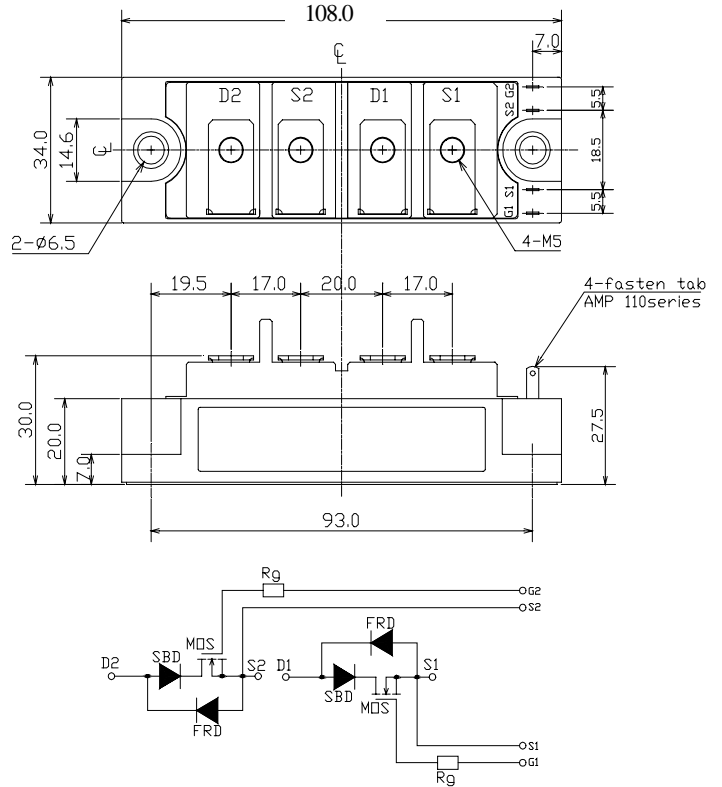
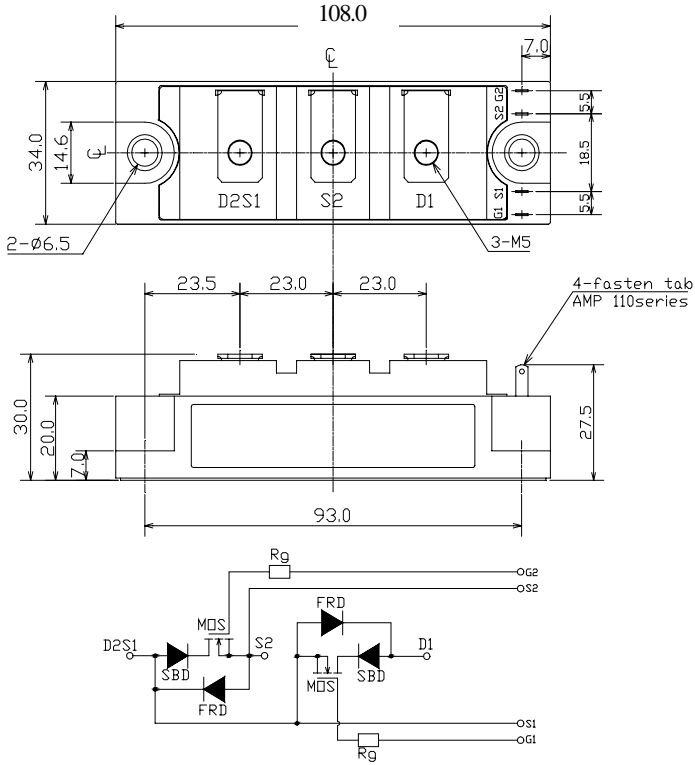


**MOSFET 75A 500V**

**PDM755HA  
P2HM755HA**

**PDM755HA**

**P2HM755HA**



質量 Approximate Weight :220g

質量 Approximate Weight :220g

最大定格 Maximum Ratings

| 項目<br>Rating                                     | 目        | 記号<br>Symbol | 耐圧・クラス Grade                                    | 単位<br>Unit |
|--|----------|--------------|---|------------|
|  |          |              | PDM755HA / P2HM755HA                            |            |
| ドレイン・ソース間電圧<br>Drain-Source Voltage              |          | $V_{DSS}$    | 500<br>$V_{GS}=0V$                              | V          |
| ゲート・ソース間電圧<br>Gate-Source Voltage                |          | $V_{GSS}$    | $\pm 20$  | V          |
| ドレイン電流 (連続)<br>Continuous Drain Current          | Duty=50% | $I_D$        | 75 ( $T_c=25$ )                                 | A          |
|  | D.C.     |              | 53 ( $T_c=25$ )                                 |            |
| パルスドレイン電流<br>Pulsed Drain Current                |          | $I_{DM}$     | 150 ( $T_c=25$ )                                | A          |
| 全損失<br>Total Power Dissipation                   |          | $P_D$        | 500 ( $T_c=25$ )                                | W          |
| 動作接合温度範囲<br>Operating Junction Temperature Range |          | $T_{jw}$     | - 40 ~ +150                                     |            |
| 保存温度範囲<br>Storage Temperature Range              |          | $T_{stg}$    | - 40 ~ +125                                     |            |
| 絶縁耐圧<br>RMS Isolation Voltage                    |          | $V_{iso}$    | 2000  | V          |
|  |          |              | 端子 - ベース間, AC1 分間 Terminals to Base, AC 1 min . |            |
| 締付トルク<br>Mounting Torque                         |          | $F_{tor}$    | 3.0 ( 本体取付 Module Base to Heat sink )           | N · m      |
|  |          |              | 2.0 ( ネジ端子部 Bus bar to Main Terminals )         |            |

## 電気的特性 Electrical Characteristics ( @Tc = 25 unless otherwise noted )

| 項目<br>Characteristic   | 記号<br>Symbol        | 条件<br>Condition  | 特性値 (最大)<br>Maximum Value |            |            | 単位<br>Unit |
|--|---------------------|--|---------------------------|------------|------------|------------|
|  |                     |  | 最小<br>Min.                | 標準<br>Typ. | 最大<br>Max. |            |
| ドレイン遮断電流<br>Zero Gate Voltage Drain Current                  | IDSS                | V <sub>DS</sub> = V <sub>DSS</sub> , V <sub>GS</sub> = 0V                        |                           |            | 1          | mA         |
|  |                     | T <sub>J</sub> = 125 , V <sub>DS</sub> = V <sub>DSS</sub> , V <sub>GS</sub> = 0V |                           |            | 4          |            |
| ゲート・ソース間しきい値電圧<br>Gate-Source Threshold Voltage              | V <sub>GS(th)</sub> | V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 5mA                         | 2                         | 2.9        | 4          | V          |
| ゲート・ソース間漏れ電流<br>Gate-Source Leakage Current                  | I <sub>GSS</sub>    | V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V                                     |                           |            | 10         | μA         |
| ドレイン・ソース間オン抵抗 (MOSFET部)<br>Static Drain-Source On-Resistance | r <sub>D(on)</sub>  | V <sub>GS</sub> = 10V, I <sub>D</sub> = 35A                                      |                           | 55         | 65         | m          |
| ドレイン・ソース間オン電圧<br>Drain-Source On-Voltage                     | V <sub>D(on)</sub>  | V <sub>GS</sub> = 10V, I <sub>D</sub> = 35A                                      |                           | 2.4        | 2.9        | V          |
| 順伝達コンダクタンス<br>Forward Transconductance                       | g <sub>fg</sub>     | V <sub>DS</sub> = 15V, I <sub>D</sub> = 35A                                      |                           | 75         |            | S          |
| 入力容量<br>Input Capacitance                                    | C <sub>iss</sub>    | V <sub>GS</sub> = 0V<br>V <sub>DS</sub> = 25V<br>f = 1MHz                        |                           | 16         |            | nF         |
| 出力容量<br>Output Capacitance                                   | C <sub>oss</sub>    |  |                           | 1.8        |            | nF         |
| 帰還容量<br>Reverse Transfer Capacitance                         | C <sub>rss</sub>    |  |                           | 0.4        |            | nF         |
| ターン・オン遅延時間<br>Turn-On Delay Time                             | t <sub>d(on)</sub>  |  |                           | 180        |            | ns         |
| 上昇時間<br>Rise Time  | t <sub>r</sub>      | V <sub>DD</sub> = 1/2V <sub>DSS</sub><br>I <sub>D</sub> = 35A                    |                           | 70         |            | ns         |
| ターン・オフ遅延時間<br>Turn-Off Delay Time                            | t <sub>d(off)</sub> | V <sub>GS</sub> = -5V, +10V<br>R <sub>G</sub> = 5                                |                           | 390        |            | ns         |
| 下降時間<br>Fall Time  | t <sub>f</sub>      |  |                           | 50         |            | ns         |

## 内部ダイオード定格・特性 Source-Drain Diode Ratings and Characteristics ( @Tc = 25 unless otherwise noted )

| 項目<br>Characteristic                    | 記号<br>Symbol    | 条件<br>Condition                            | 特性値 (最大)<br>Maximum Value |            |            | 単位<br>Unit |
|---|-----------------|--|---------------------------|------------|------------|------------|
|   |                 |  | 最小<br>Min.                | 標準<br>Typ. | 最大<br>Max. |            |
| ソース電流 (連続)<br>Continuous Source Current | I <sub>S</sub>  | D. C.                                      |                           |            | 53         | A          |
| パルスソース電流<br>Pulsed Source Current       | I <sub>SM</sub> |  |                           |            | 150        | A          |
| ダイオード順電圧<br>Diode Forward Voltage       | V <sub>SD</sub> | I <sub>S</sub> = 75A                       |                           |            | 1.8        | V          |
| 逆回復時間<br>Reverse Recovery Time          | t <sub>rr</sub> | I <sub>S</sub> = 75A<br>- dis/dt = 100A/μs |                           | 70         |            | ns         |
| 逆回復電荷<br>Reverse Recovery Charge        | Q <sub>r</sub>  |  |                           | 0.15       |            | μC         |

## 熱抵抗特性 Thermal Characteristics

| 項目<br>Characteristic   | 記号<br>Symbol         | 条件<br>Condition  | 特性値 (最大)<br>Maximum Value |            |            | 単位<br>Unit |
|--|----------------------|--|---------------------------|------------|------------|------------|
|  |                      |  | 最小<br>Min.                | 標準<br>Typ. | 最大<br>Max. |            |
| 熱抵抗 (接合部 - ケース間)<br>Thermal Resistance, Junction to Case     | R <sub>th(j-c)</sub> | MOSFET   |                           |            | 0.25       | /W         |
|  |                      | Diode  |                           |            | 2.0        |            |
| 接触熱抵抗 (ケース - 冷却フィン間)<br>Thermal Resistance, Case to Heatsink | R <sub>th(c-f)</sub> | サーマルコンパウンド塗布<br>Mounting surface flat, smooth, and greased |                           |            | 0.1        |            |

# 定格・特性曲線

Fig. 1 Typical Output Characteristics

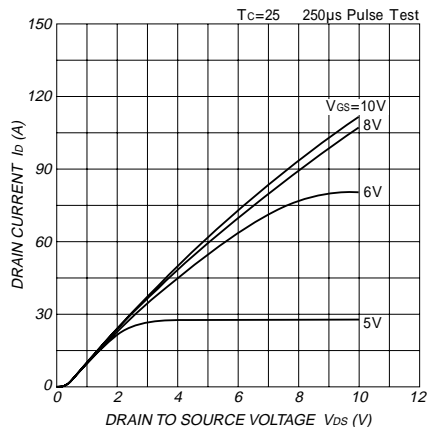


Fig. 2 Typical Drain-Source On-Voltage Vs. Gate-Source Voltage

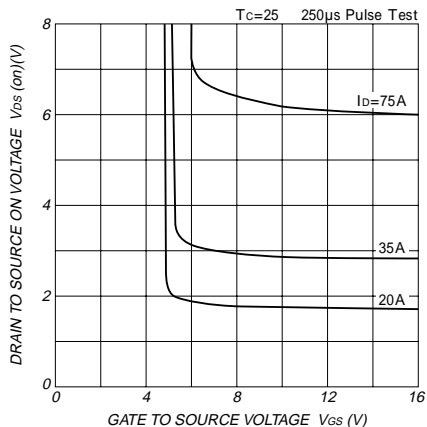


Fig. 3 Typical Drain-Source On Voltage Vs. Junction Temperature

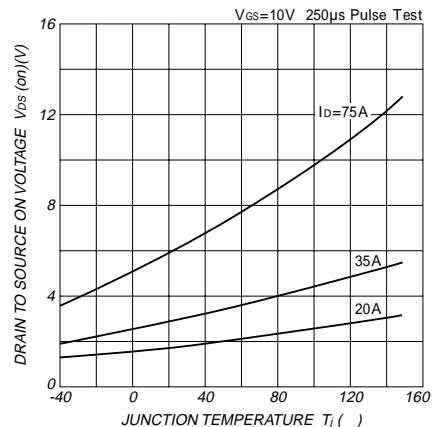


Fig. 4 Typical Capacitance Vs. Drain-Source Voltage

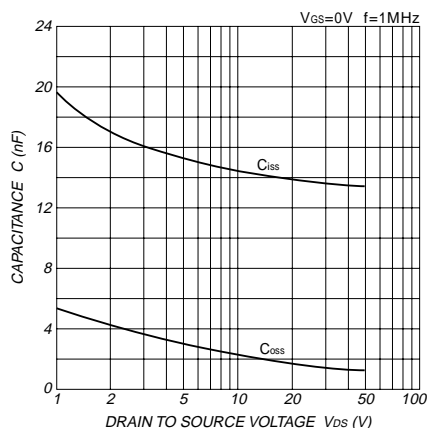


Fig. 5 Typical Gate Charge Vs. Gate-Source Voltage

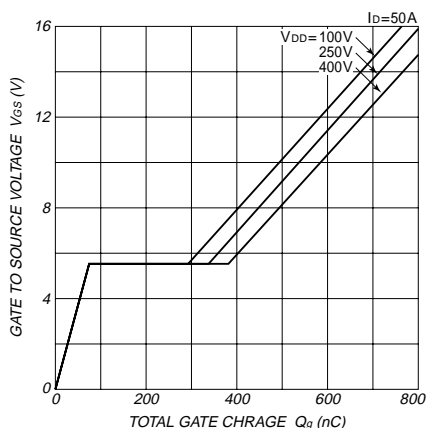


Fig. 6 Typical Switching Time Vs. Series Gate Impedance

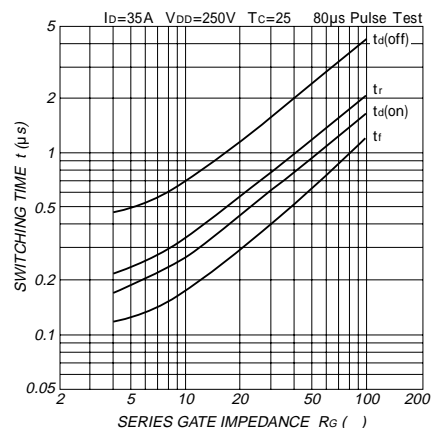


Fig. 7 Typical Switching Time Vs. Drain Current

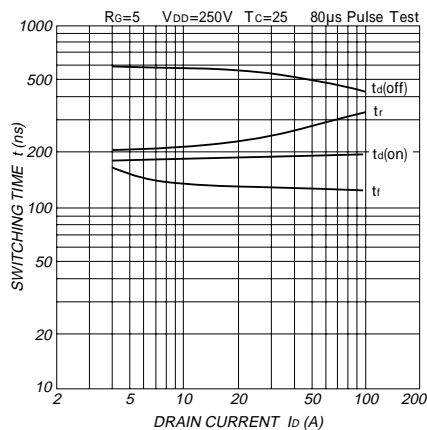


Fig. 8 Typical Source-Drain Diode Forward Characteristics

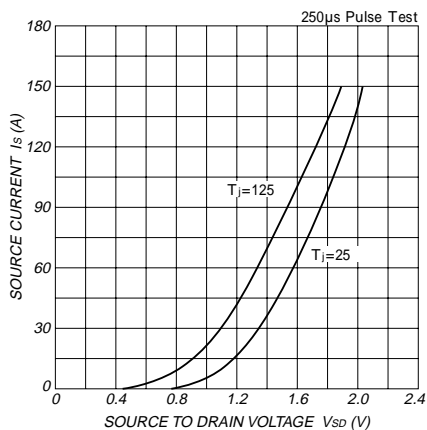


Fig. 9 Typical Reverse Recovery Characteristics

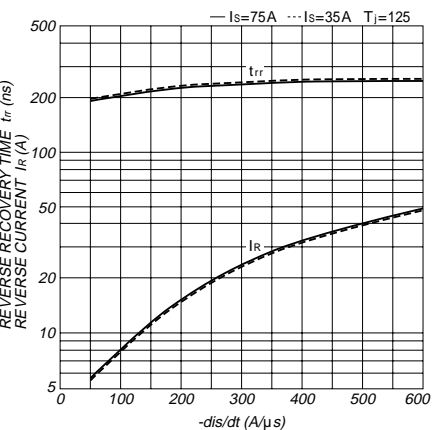


Fig. 10 Maximum Safe Operating Area

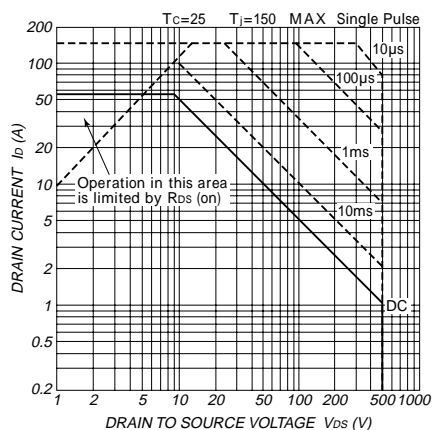


Fig. 11-1 Normalized Transient Thermal Impedance (MOSFET)

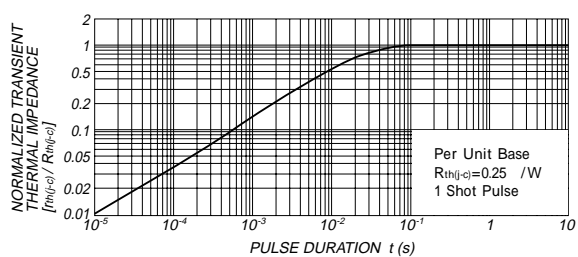
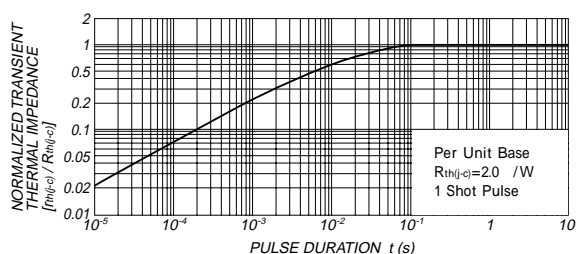


Fig. 11-2 Normalized Transient Thermal Impedance (DIODE)



MOSFETデータシート