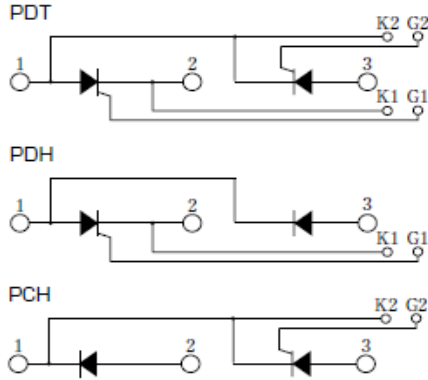


# THYRISTOR

## 60A Avg 1600 Volts

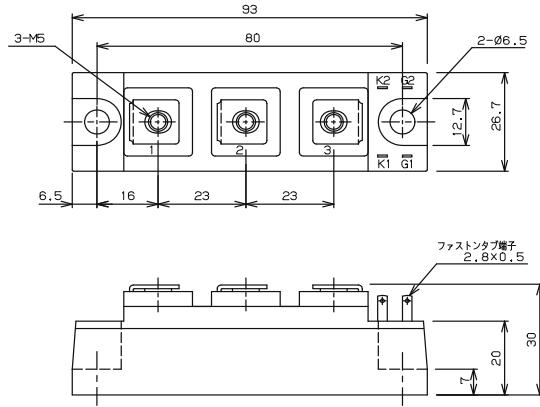
PDT6016  
PDH6016  
PCH6016

### ■回路図 CIRCUIT



### ■外形寸法図 OUTLINE DRAWING

Dimension: [mm]



### ■最大定格 Maximum Ratings

| 項目<br>Parameter                                       | 記号<br>Symbol | 耐圧クラス Grade             |  | 単位<br>Unit |
|---|--------------|-------------------------|--|------------|
|   |              | PDT6016/PDH6016/PCH6016 |  |            |
| くり返しピークオフ電圧<br>Repetitive Peak Off-State Voltage      | $V_{DRM}$    | 1600                    |  | V          |
| 非くり返しピークオフ電圧<br>Non Repetitive Peak Off-State Voltage | $V_{DSM}$    | 1700                    |  | V          |
| くり返しピーク逆電圧<br>Repetitive Peak Reverse Voltage         | $V_{RRM}$    | 1600                    |  | V          |
| 非くり返しピーク逆電圧<br>Non Repetitive Peak Reverse Voltage    | $V_{RSM}$    | 1700                    |  | V          |

| 項目<br>Parameter   | 記号<br>Symbol     | 条件<br>Conditions   | 定格値<br>Max. Rated Value | 単位<br>Unit             |           |                           |
|---|------------------|--|-------------------------|------------------------|-----------|---------------------------|
| 平均オン電流<br>Average On-State Current                      | $I_{O(AV)}$      | 商用周波数 180° 通電 $T_c=82^\circ\text{C}$<br>Half Sine Wave   | 60                      | A                      |           |                           |
| 実効オン電流<br>RMS On-State Current                          | $I_{TRMS}$       |  | 94                      | A                      |           |                           |
| サージオン電流<br>Surge On-State Current                       | $I_{ISM}$        | 50Hz 正弦半波, 1サケル, 非くり返し<br>Half Sine Wave, 1Pulse, Non-Repetitive   | 1200                    | A                      |           |                           |
| 電流二乗時間積<br>$I^2$ Squared t                              | $I^2t$           | 2~10ms   | 7200                    | $\text{A}^2 \text{s}$  |           |                           |
| 臨界オン電流上昇率<br>Critical Rate of Rise of Turned-On Current | $di/dt$          | $V_D=2/3 V_{DRM}$ , $I_{TM}=2 \cdot I_O$ , $T_J=125^\circ\text{C}$<br>$I_G=200\text{mA}$ , $di/dt=0.2\text{A}/\mu\text{s}$ | 100                     | $\text{A}/\mu\text{s}$ |           |                           |
| ピークゲート電力損失<br>Peak Gate Power                           | $P_{GM}$         |  | 5                       | W                      |           |                           |
| 平均ゲート電力損失<br>Average Gate Power                         | $P_{G(AV)}$      |  | 1                       | W                      |           |                           |
| ピークゲート電流<br>Peak Gate Current                           | $I_{GM}$         |  | 2                       | A                      |           |                           |
| ピークゲート電圧<br>Peak Gate Voltage                           | $V_{GM}$         |  | 10                      | V                      |           |                           |
| ピークゲート逆電圧<br>Peak Gate Reverse Voltage                  | $V_{RGM}$        |  | 5                       | V                      |           |                           |
| 動作接合温度範囲<br>Operating Junction Temperature Range        | $T_{JW}$         |  | -40 ~ +125              | $^\circ\text{C}$       |           |                           |
| 保存温度範囲<br>Storage Temperature Range                     | $T_{stg}$        |  | -40 ~ +125              | $^\circ\text{C}$       |           |                           |
| 絶縁耐圧<br>Isolation Voltage                               | $V_{iso}$        | 端子-ベース間, AC 1分間<br>Terminal to Base, AC 1min.  | 2500                    | V                      |           |                           |
| 締付トルク<br>Mounting Torque                                | ベース部<br>Mounting | F  | サマルコパッド 塗布<br>Greased   | M6                     | 2.4 ~ 3.5 | $\text{N} \cdot \text{m}$ |
|   | 主端子部<br>Terminal |  |                         | M5                     | 2.4 ~ 2.8 | $\text{N} \cdot \text{m}$ |

■電気的特性 Electrical Characteristics

| 項目<br>Parameter   | 記号<br>Symbol         | 条件<br>Conditions  | 特性値 (最大)<br>Maximum Value |            |            | 単位<br>Unit |
|---|----------------------|---|---------------------------|------------|------------|------------|
|   |                      |   | 最小<br>Min.                | 標準<br>Typ. | 最大<br>Max. |            |
| ピークオフ電流<br>Peak Off-State Current                       | I <sub>DM</sub>      | T <sub>j</sub> =125°C, V <sub>DM</sub> =V <sub>DRM</sub>  |                           |            | 15         | mA         |
| ピーク逆電流<br>Peak Reverse Current                          | I <sub>RM</sub>      | T <sub>j</sub> =125°C, V <sub>RM</sub> =V <sub>RRM</sub>  |                           |            | 15         | mA         |
| ピークオン電圧<br>Peak On-State Voltage                        | V <sub>TM</sub>      | T <sub>j</sub> =25°C, I <sub>TM</sub> =180A   |                           |            | 1.45       | V          |
| トリガゲート電流<br>Gate Current to Trigger                     | I <sub>GT</sub>      | V <sub>D</sub> =6V, I <sub>T</sub> =1A  | T <sub>j</sub> = -40°C    |            | 200        | mA         |
|   |                      |   | T <sub>j</sub> = 25°C     |            | 100        | mA         |
|   |                      |   | T <sub>j</sub> = 125°C    |            | 50         | mA         |
|   |                      |   | T <sub>j</sub> = -40°C    |            | 4          | V          |
| トリガゲート電圧<br>Gate Voltage to Trigger                     | V <sub>GT</sub>      | V <sub>D</sub> =6V, I <sub>T</sub> =1A  | T <sub>j</sub> = -40°C    |            | 4          | V          |
|   |                      |   | T <sub>j</sub> = 25°C     |            | 2.5        | V          |
|   |                      |   | T <sub>j</sub> = 125°C    |            | 2          | V          |
|   |                      |   | T <sub>j</sub> = 125°C    |            | 2          | V          |
| 非トリガゲート電圧<br>Gate Non-Trigger Voltage                   | V <sub>GD</sub>      | T <sub>j</sub> =125°C, V <sub>D</sub> =2/3V <sub>DRM</sub>  | 0.25                      |            |            | V          |
| 臨界オフ電圧上昇率<br>Critical Rate of Rise of Off-State Voltage | dv/dt                | T <sub>j</sub> =125°C, V <sub>D</sub> =2/3V <sub>DRM</sub>  | 500                       |            |            | V/μs       |
| ターンオフ時間<br>Turn-Off Time                                | t <sub>q</sub>       | T <sub>j</sub> =125°C, I <sub>TM</sub> =I <sub>O</sub> , V <sub>D</sub> =2/3V <sub>DRM</sub><br>dv/dt=20V/μs, V <sub>R</sub> =100V, -di/dt=20A/μs |                           | 100        |            | μs         |
| ターンオン時間<br>Turn-On Time                                 | t <sub>gt</sub>      |   |                           | 6          |            | μs         |
| 遅れ時間<br>Delay Time                                      | t <sub>d</sub>       | T <sub>j</sub> =25°C, V <sub>D</sub> =2/3V <sub>DRM</sub><br>I <sub>G</sub> =200mA, di <sub>G</sub> /dt=0.2A/μs                                   |                           | 2          |            | μs         |
| 立上がり時間<br>Rise Time                                     | t <sub>r</sub>       |   |                           | 4          |            | μs         |
| ラッチング電流<br>Latching Current                             | I <sub>L</sub>       | T <sub>j</sub> =25°C  |                           | 100        |            | mA         |
| 保持電流<br>Holding Current                                 | I <sub>H</sub>       | T <sub>j</sub> =25°C  |                           | 50         |            | mA         |
| 熱抵抗<br>Thermal Resistance                               | R <sub>th(j-c)</sub> | 接合部-ケース間<br>Junction to Case  |                           |            | 0.5        | °C/W       |
| 接触熱抵抗<br>Thermal Resistance                             | R <sub>th(c-f)</sub> | ケース-フィン間, サーマルコンパウンド塗布<br>Case to Fin, Greased  |                           |            | 0.2        | °C/W       |

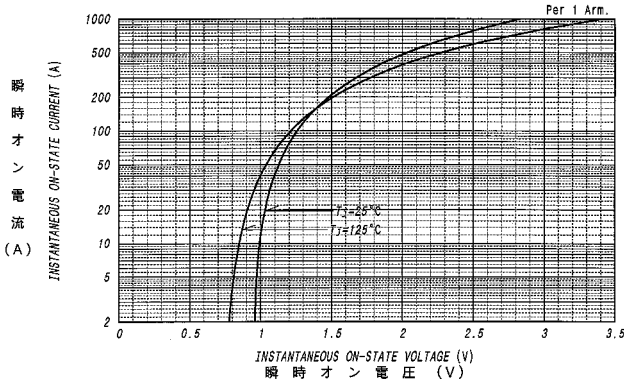
質量…約155g

Approximate Weight

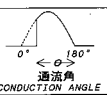
1アーム当りの値 Value Per 1 Arm.

■定格・特性曲線

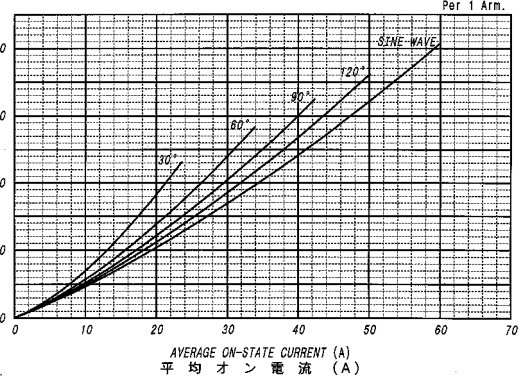
オン電圧特性  
ON-STATE CURRENT VS. VOLTAGE



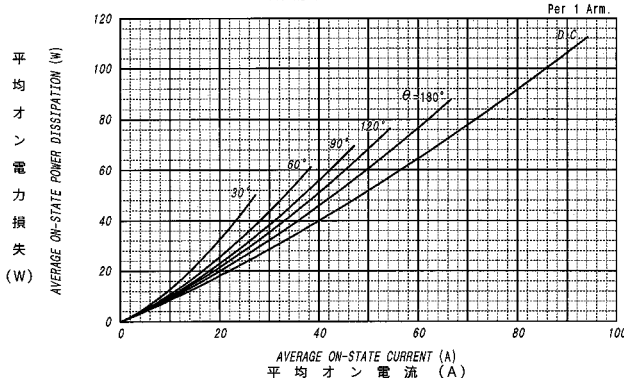
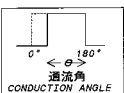
平均オン電力損失特性  
AVERAGE ON-STATE POWER DISSIPATION  
for SINUSOIDAL CURRENT WAVEFORM



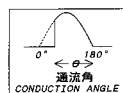
平均オン電力損失 (W)



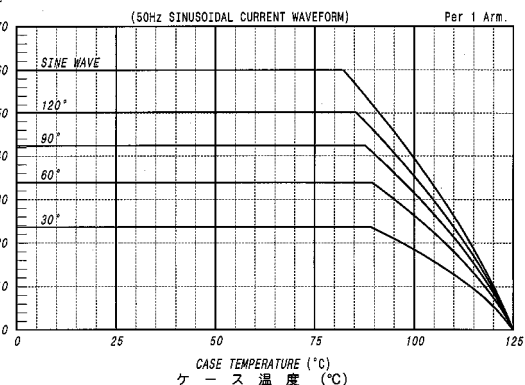
平均オン電力損失特性  
AVERAGE ON-STATE POWER DISSIPATION  
for RECTANGULAR CURRENT WAVEFORM

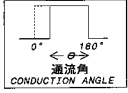


平均オン電流-ケース温度定格  
AVERAGE ON-STATE CURRENT VS. CASE TEMPERATURE

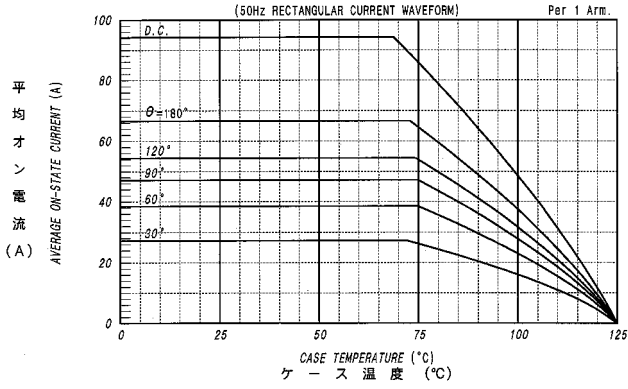


平均オン電流 (A)





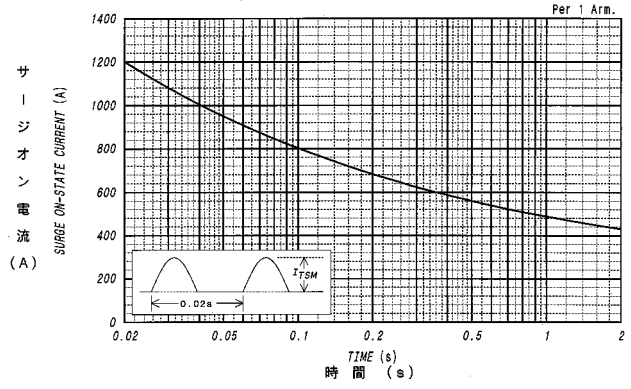
平均オン電流 - ケース温度定格  
AVERAGE ON-STATE CURRENT VS. CASE TEMPERATURE



ゲート特性  
GATE CHARACTERISTICS

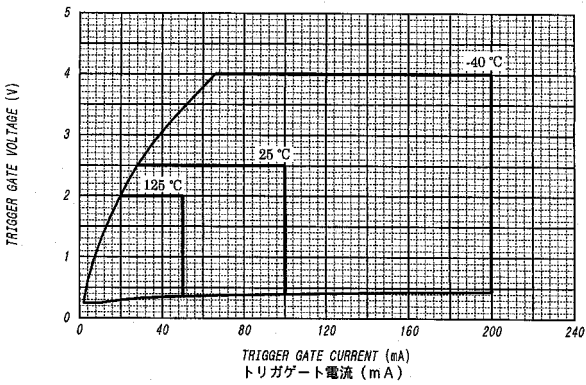
サージオン電流定格  
SURGE CURRENT RATINGS

f=50Hz, Half Sine Wave, Non-Repetitive, Tj=125°C

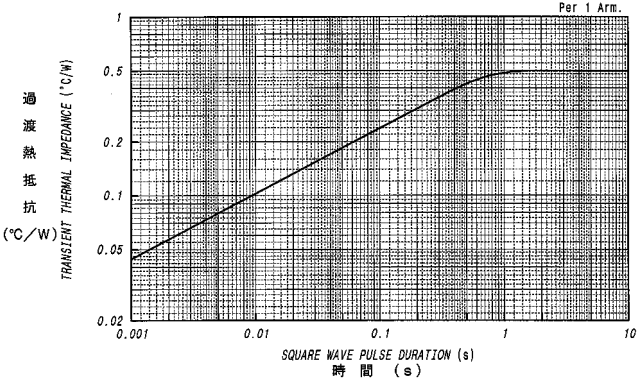


ゲート定格  
GATE RATINGS

トリガゲート電圧 (V)



過渡熱抵抗特性  
MAXIMUM TRANSIENT THERMAL IMPEDANCE  
Junction to Case



ゲート電圧 (V)

