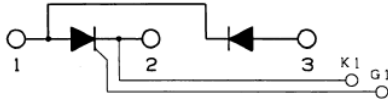


THYRISTOR

150A Avg 1600 Volts

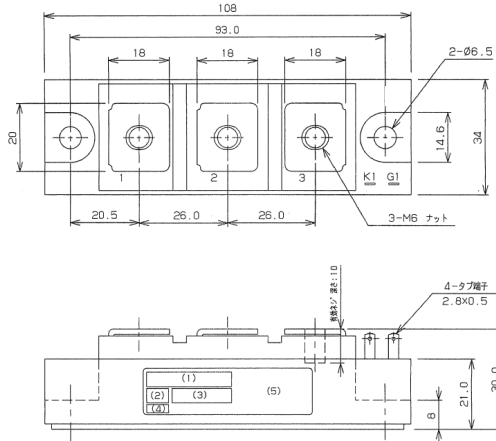
PDH15116

■回路図 CIRCUIT



■外形寸法図 OUTLINE DRAWING

Dimension: [mm]



■最大定格 Maximum Ratings

| 項目 Parameter | 記号 Symbol | 耐圧クラス Grade | 単位 Unit |
|---|--------------|-------------|------------|
| | | PDH15116 | |
| くり返しピークオフ電圧 Repetitive Peak Off-State Voltage | V_{DRM} | 1600 | V |
| 非くり返しピークオフ電圧 Non Repetitive Peak Off-State Voltage | V_{DSM} | 1700 | V |
| くり返しピーク逆電圧 Repetitive Peak Reverse Voltage | V_{RRM} | 1600 | V |
| 非くり返しピーク逆電圧 Non Repetitive Peak Reverse Voltage | V_{RSM} | 1700 | V |

| 項目 Parameter | 記号 Symbol | 条件 Conditions | 定格値 Max. Rated Value | 単位 Unit | |
|---|------------------|--|--------------------------|------------------|-----|
| | | 商用周波数 180° 通電 Half Sine Wave | $T_c = 73^\circ\text{C}$ | | |
| 平均オン電流 Average On-State Current | $I_{O(AV)}$ | | 150 | A | |
| 実効オン電流 RMS On-State Current | I_{TRMS} | | 235 | A | |
| サージオン電流 Surge On-State Current | I_{TSM} | 50Hz 正弦半波, 1サージ, 非くり返し Half Sine Wave, 1Pulse, Non-Repetitive | 3200 | A | |
| 電流二乗時間積 I Squared t | I^2t | 2~10ms | 51200 | A ² s | |
| 臨界オン電流上昇率 Critical Rate of Rise of Turned-On Current | di/dt | $V_D = 2/3 V_{DRM}$, $I_{TM} = 2 \cdot I_O$, $T_j = 125^\circ\text{C}$ $I_G = 300\text{mA}$, $di_G/dt = 0.2\text{A}/\mu\text{s}$ | 100 | A/ μs | |
| ピークゲート電力損失 Peak Gate Power | P_{GM} | | 5 | W | |
| 平均ゲート電力損失 Average Gate Power | $P_{G(AV)}$ | | 1 | W | |
| ピークゲート電流 Peak Gate Current | I_{GM} | | 2 | A | |
| ピークゲート電圧 Peak Gate Voltage | V_{GM} | | 10 | V | |
| ピークゲート逆電圧 Peak Gate Reverse Voltage | V_{RGM} | | 5 | V | |
| 動作接合温度範囲 Operating Junction Temperature Range | T_{jw} | | -40 ~ +125 | °C | |
| 保存温度範囲 Storage Temperature Range | T_{stg} | | -40 ~ +125 | °C | |
| 絶縁耐圧 Isolation Voltage | V_{iso} | 端子-ベース間, AC 1分間 Terminal to Base, AC 1min. | 2500 | V | |
| 締付トルク Mounting Torque | ベース部 Mounting | F サマロコンパウンド塗布 Greased | M6 | 2.5 ~ 3.5 | N·m |
| | 主端子部 Terminal | | M6 | 2.5 ~ 3.5 | N·m |

■ 電気的特性 Electrical Characteristics

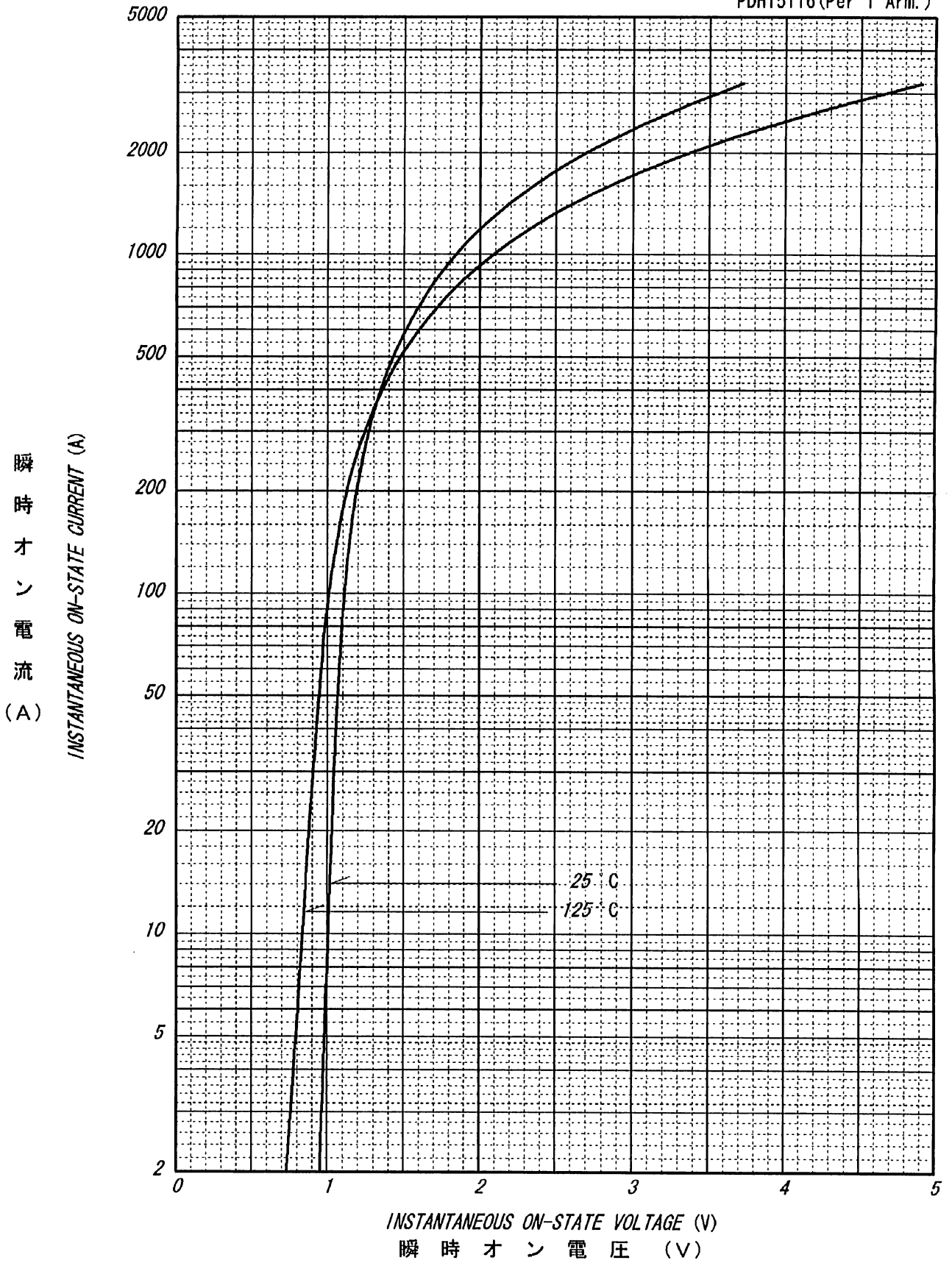
| 項目 Parameter | 記号 Symbol | 条件 Conditions | 特性値 (最大) Maximum Value | | | 単位 Unit |
|---|---------------|--|---------------------------|-----------|-----------|---------------------------|
| | | | 最小 Min | 標準 Typ | 最大 Max | |
| ピークオフ電流 Peak Off-State Current | I_{DM} | $T_j = 125^\circ\text{C}$, $V_{DM} = V_{DRM}$ | | | 50 | mA |
| ピーク逆電流 Peak Reverse Current | I_{RM} | $T_j = 125^\circ\text{C}$, $V_{RM} = V_{RRM}$ | | | 50 | mA |
| ピークオン電圧 Peak Off-State Voltage | V_{TM} | $T_j = 25^\circ\text{C}$, $I_{TM} = 450\text{A}$ | | | 1.38 | V |
| トリガゲート電流 Gate Current to Trigger | I_{GT} | $V_D = 6\text{V}$, $I_T = 1\text{A}$ | $T_j = -40^\circ\text{C}$ | | 300 | mA |
| | | | $T_j = 25^\circ\text{C}$ | | 150 | |
| | | | $T_j = 125^\circ\text{C}$ | | 80 | |
| トリガゲート電圧 Gate Voltage to Trigger | V_{GT} | $V_D = 6\text{V}$, $I_T = 1\text{A}$ | $T_j = -40^\circ\text{C}$ | | 5 | V |
| | | | $T_j = 25^\circ\text{C}$ | | 3 | |
| | | | $T_j = 125^\circ\text{C}$ | | 2 | |
| 非トリガゲート電圧 Gate Non-Trigger Voltage | V_{GD} | $T_j = 125^\circ\text{C}$, $V_D = 2/3 V_{DRM}$ | 0.25 | | | V |
| 臨界オフ電圧上昇率 Critical Rate of Rise of Off-State Voltage | dv/dt | $T_j = 125^\circ\text{C}$, $V_D = 2/3 V_{DRM}$ | 500 | | | V/ μs |
| ターンオフ時間 Turn-Off Time | t_q | $T_j = 125^\circ\text{C}$, $I_{TM} = I_o$, $V_D = 2/3 V_{DRM}$ $dv/dt = 20\text{V}/\mu\text{s}$, $V_R = 100\text{V}$, $-di/dt = 20\text{A}/\mu\text{s}$ | | 100 | | μs |
| ターンオン時間 Turn-On Time | t_{gt} | $T_j = 25^\circ\text{C}$, $V_D = 2/3 V_{DRM}$ $I_G = 300\text{mA}$, $di_G/dt = 0.2\text{A}/\mu\text{s}$ | | 6 | | μs |
| 遅れ時間 Delay Time | t_d | | | 2 | | μs |
| 立ち上がり時間 Rise Time | t_r | | | 4 | | μs |
| ラッチング電流 Latching Current | I_L | $T_j = 25^\circ\text{C}$ | | 120 | | mA |
| 保持電流 Holding Current | I_H | $T_j = 25^\circ\text{C}$ | | 80 | | mA |
| 熱抵抗 Thermal Resistance | $R_{th(j-c)}$ | 接合部-ケース間 Junction to Case | | | 0.25 | $^\circ\text{C}/\text{W}$ |
| 接触熱抵抗 Thermal Resistance | $R_{th(c-f)}$ | ケースフィン間, サーマルコンパウンド塗布 Case to Fin, Greased | | | 0.15 | $^\circ\text{C}/\text{W}$ |

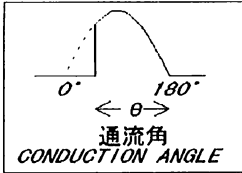
 質量 --- 約280 g
 Approximate Weight

1アーム当りの値 Value Per 1 Arm.

オン電圧特性
ON-STATE CURRENT VS. VOLTAGE

PDH15116 (Per 1 Arm.)



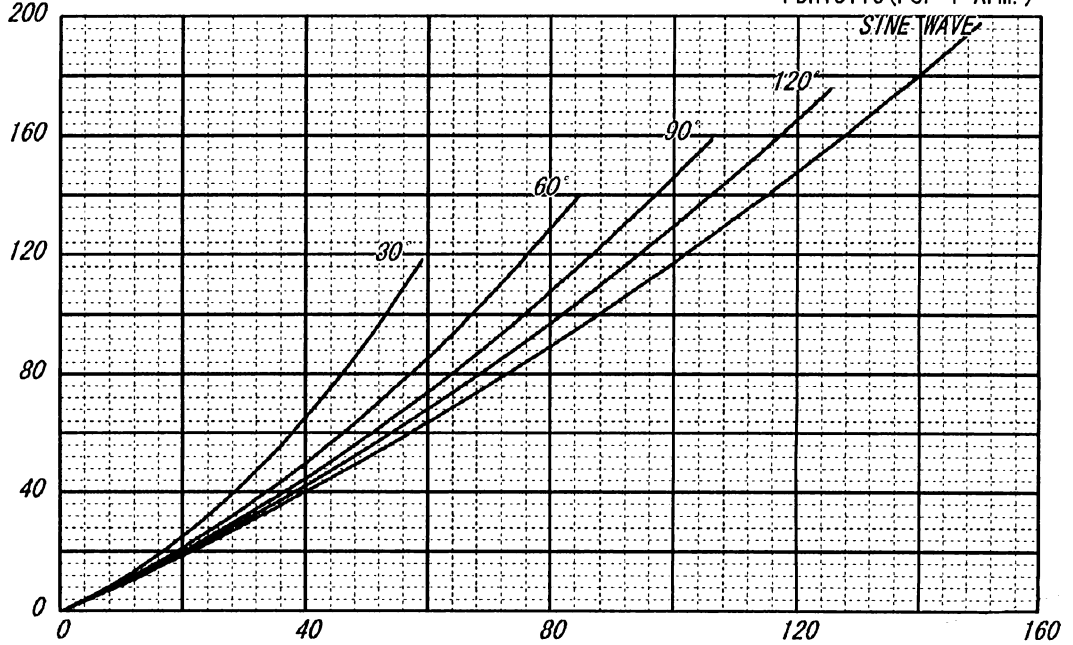


平均オン電力損失特性
AVERAGE ON-STATE POWER DISSIPATION

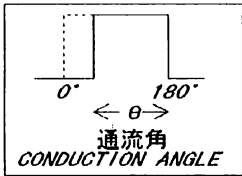
for SINUSOIDAL CURRENT WAVEFORM

PDH15116 (Per 1 Arm.)

平均オン電力損失 (W)
AVERAGE ON-STATE POWER DISSIPATION (W)



AVERAGE ON-STATE CURRENT (A)
平均オン電流 (A)

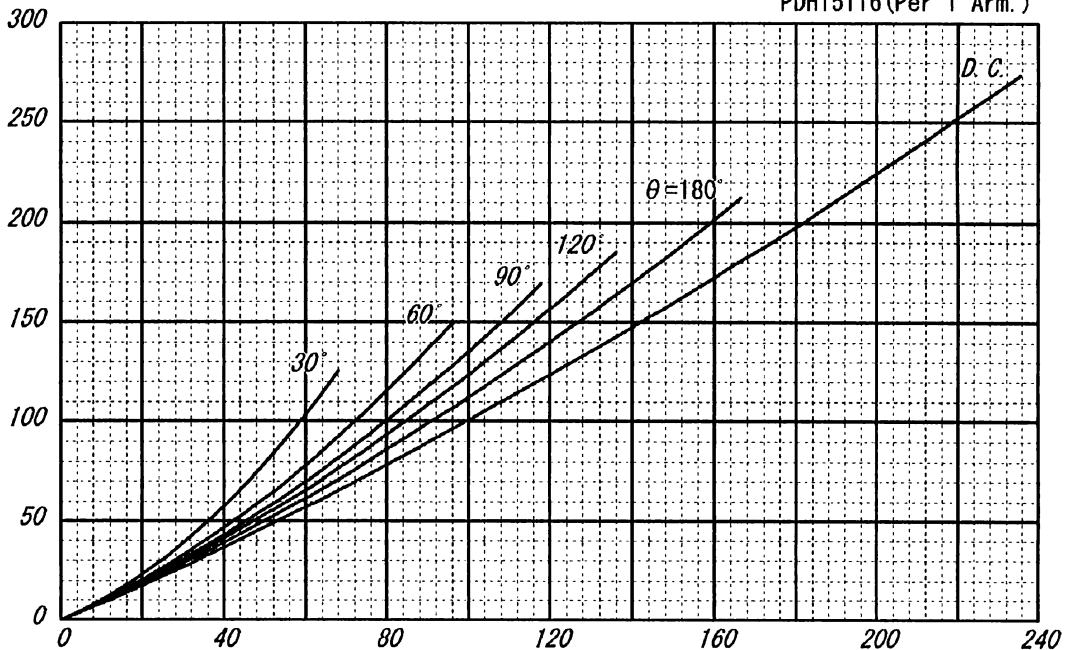


平均オン電力損失特性
AVERAGE ON-STATE POWER DISSIPATION

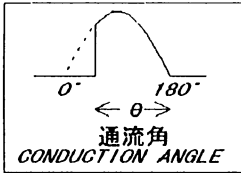
for RECTANGULAR CURRENT WAVEFORM

PDH15116 (Per 1 Arm.)

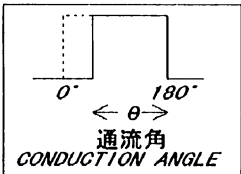
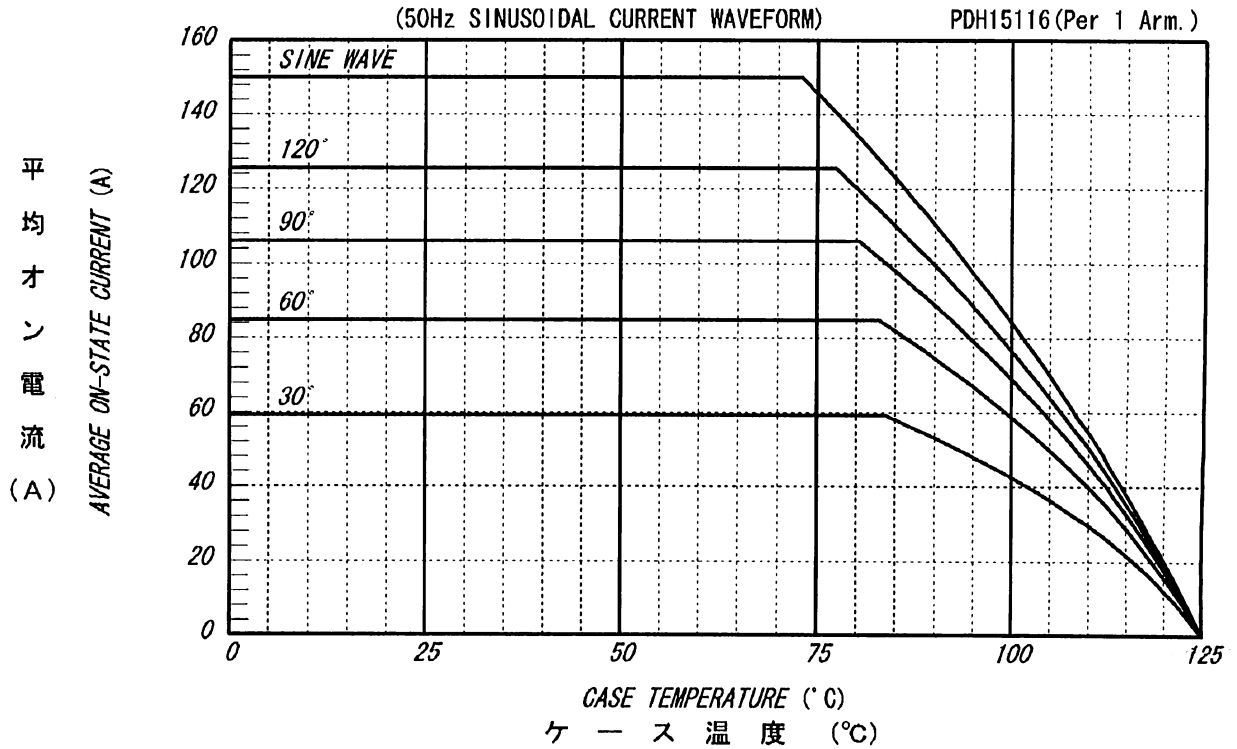
平均オン電力損失 (W)
AVERAGE ON-STATE POWER DISSIPATION (W)



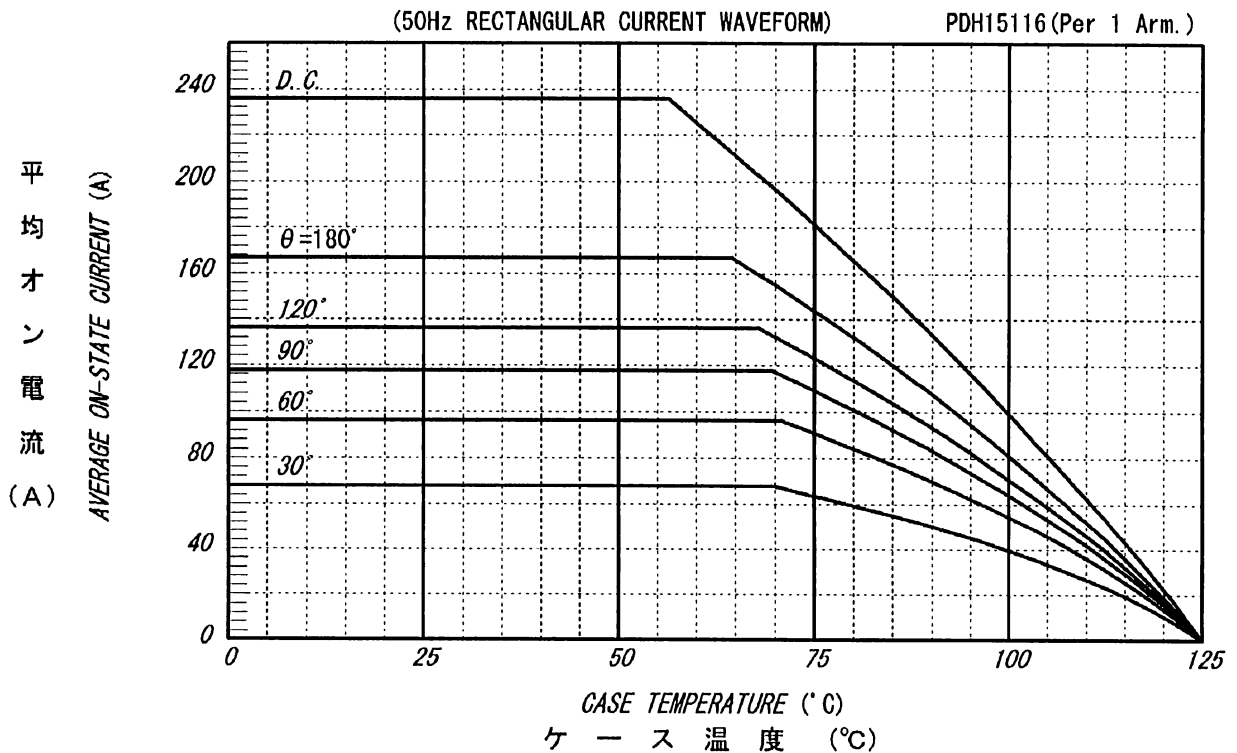
AVERAGE ON-STATE CURRENT (A)
平均オン電流 (A)



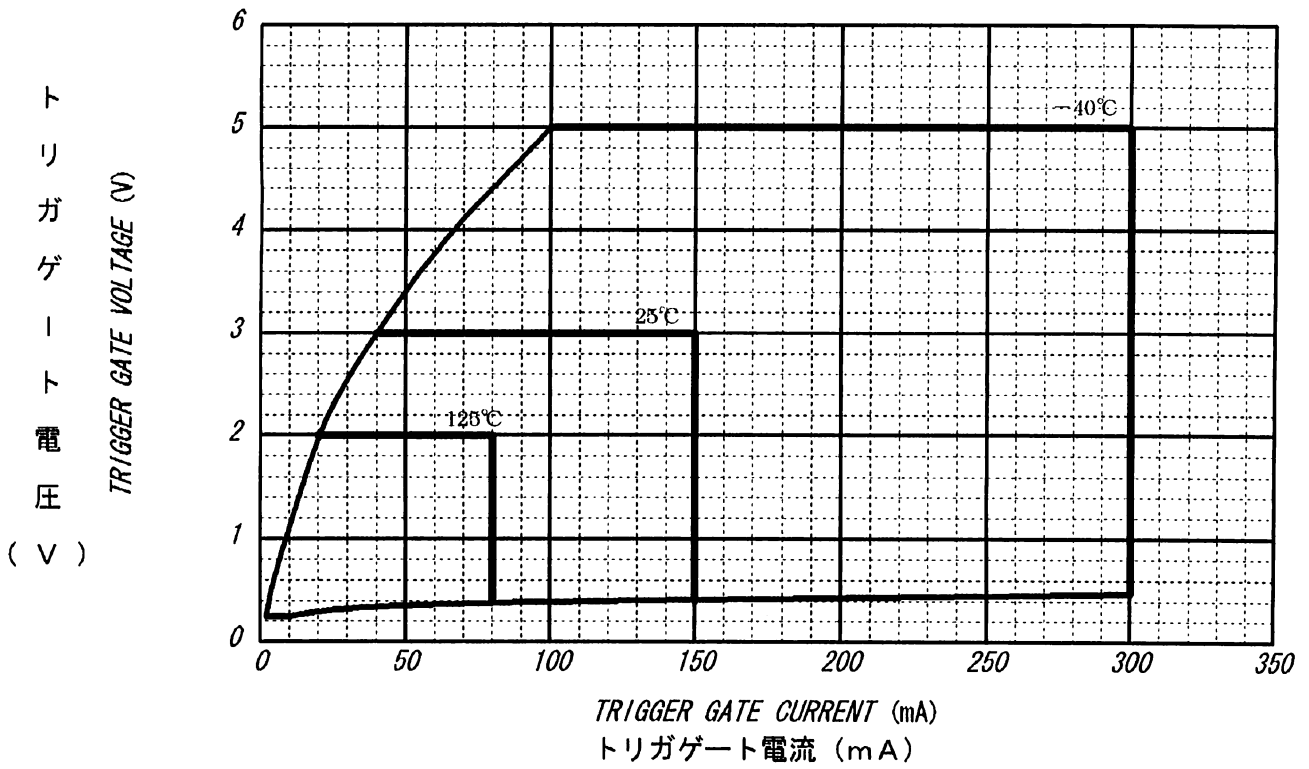
平均オン電流 - ケース温度定格
 AVERAGE ON-STATE CURRENT VS. CASE TEMPERATURE



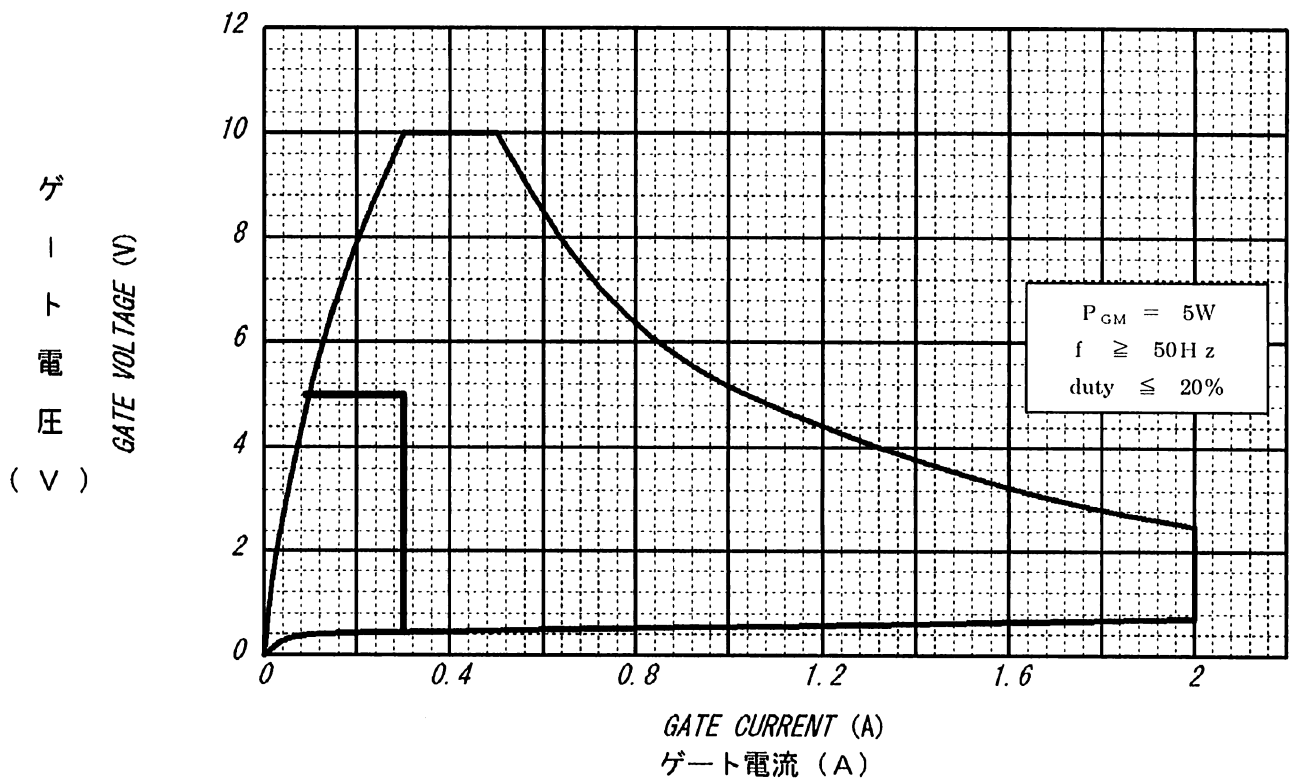
平均オン電流 - ケース温度定格
 AVERAGE ON-STATE CURRENT VS. CASE TEMPERATURE



ゲート特性
GATE CHARACTERISTICS



ゲート定格
GATE RATINGS

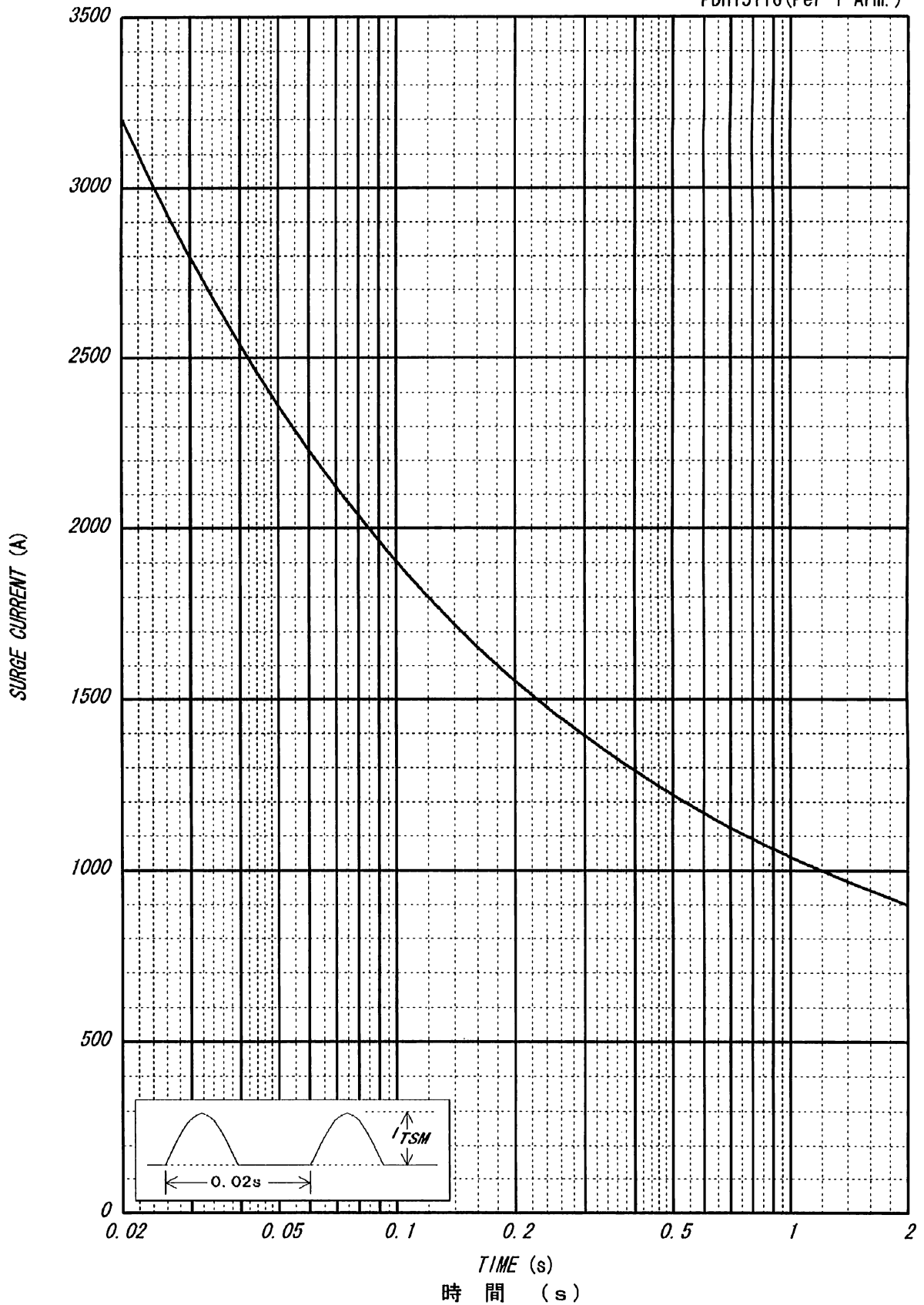


サージ電流定格
SURGE CURRENT RATINGS

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

PDH15116 (Per 1 Arm.)

サ
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ジ
電
流
(A)



過渡熱抵抗特性
 MAXIMUM TRANSIENT THERMAL IMPEDANCE

Junction to Case

PDH15116 (Per 1 Arm.)

