

**STANDARD RECOVERY DIODES
 (Lead-Free)**

Stud Version

Features

- High surge current capability
- Very low V_F

105 A

Major Ratings and Characteristics

| Parameters | 105PF | Units |
|------------------|-------------|------------------|
| $I_{F(AV)}$ | 105 | A |
| @ T_C | 150 | °C |
| $I_{F(RMS)}$ | 160 | A |
| I_{FSM} @ 50Hz | 2300 | A |
| @ 60Hz | 2400 | A |
| I^2t @ 50Hz | 23900 | A ² s |
| @ 60Hz | 26450 | A ² s |
| V_{RRM} range | 400 | V |
| T_J range | - 40 to 180 | °C |



105PF40T

Final I2028 rev. D 01/05

International
IRF Rectifier**ELECTRICAL SPECIFICATIONS**

Voltage Ratings

| Type number | Voltage Code | V_{RRM} maximum repetitive peak reverse voltage V | V_{RSM} maximum non-repetitive peak reverse voltage V | I_{RRM} max. @ $T_J = 150^\circ\text{C}$ mA |
|-------------|--------------|--|--|---|
| 105PF | 40 | 400 | 500 | 5 |

Forward Conduction

| Parameter | 105PF | Units | Conditions |
|--|-------|--------------------|--|
| $I_{F(AV)}$ Max. average forward current @ Case temperature | 105 | A | 180° conduction, half sine wave |
| | 150 | °C | |
| | 150 | A | |
| | 135 | °C | |
| $I_{F(RMS)}$ Max. RMS forward current | 160 | A | |
| I_{FSM} Max. peak, one-cycle forward, non-repetitive surge current | 2300 | A | t = 10ms No voltage |
| | 2400 | | t = 8.3ms reapplied |
| | 1970 | | t = 10ms 100% V_{RRM} |
| | 2050 | | t = 8.3ms reapplied |
| I^2t Maximum I^2t for fusing | 26450 | A ² s | t = 10ms No voltage |
| | 23900 | | t = 8.3ms reapplied |
| | 19400 | | t = 10ms 100% V_{RRM} |
| | 17440 | | t = 8.3ms reapplied |
| $I^2\sqrt{t}$ Maximum $I^2\sqrt{t}$ for fusing | 200 | ka ² √s | t = 0.1 to 10ms, no voltage reapplied |
| $V_{F(TO)}$ Value of threshold voltage | 0.75 | V | $T_J = T_J$ max. |
| r_f Value of forward slope resistance | 1.0 | mΩ | $T_J = T_J$ max. |
| V_{FM} Max. forward voltage drop | 1.05 | V | $V_{Ipk} = 200\text{A}$, $T_J = 25^\circ\text{C}$, $t_p = 400\mu\text{s}$ rectangular wave |

Thermal and Mechanical Specifications

| Parameter | 105PF | Units | Conditions |
|--|-----------------------|----------|--|
| T_J Max. junction operating temperature range | -40 to 180 | °C | |
| T_{stg} Max. storage temperature range | -40 to 180 | | |
| R_{thJC} Max. thermal resistance, junction to case | 0.25 | °C/W | AC operation |
| R_{thCS} Max. thermal resistance, case to heatsink | 0.25 | | Mounting surface, smooth, flat and greased |
| T Allowable mounting torque (1) As general recommendation we suggest to tight on hexagon and not on nut (2) Torque must be applicable only to hexagon and not to plastic structure | 2.8 | N m | Top thread; using bus-bar or plate, only. |
| | 25 | lbf · in | Avoid silicone grease on thread |
| | 3.4 ^{+0-10%} | N m | Bottom base; tightening on nut (1) |
| | 30 | lbf · in | Not lubricated threads |
| | 2.3 ^{+0-10%} | N m | Bottom base; tightening on hexagon (2) |
| | 20 | lbf · in | Lubricated threads |
| wt Approximate weight | 17 (0.6) | g (oz) | unleaded device |
| Case style | DO-203AB (DO5) | | See Outline Table |

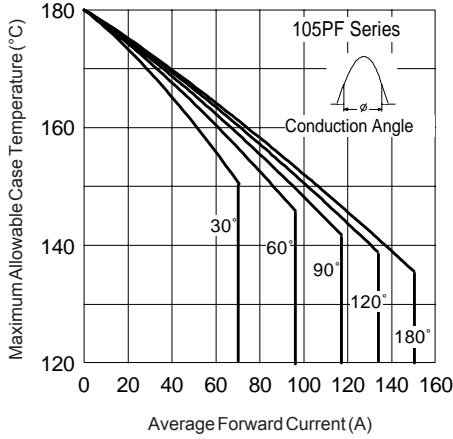


Fig. 1 - Current Ratings Characteristics

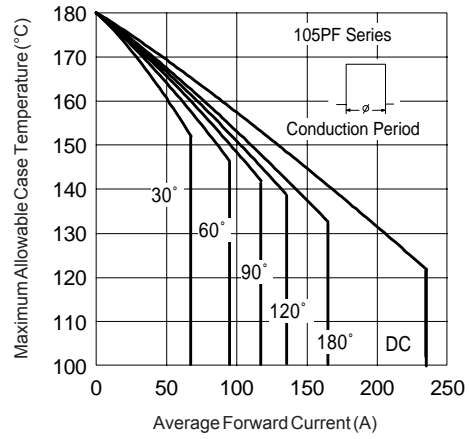


Fig. 2 - Current Ratings Characteristics

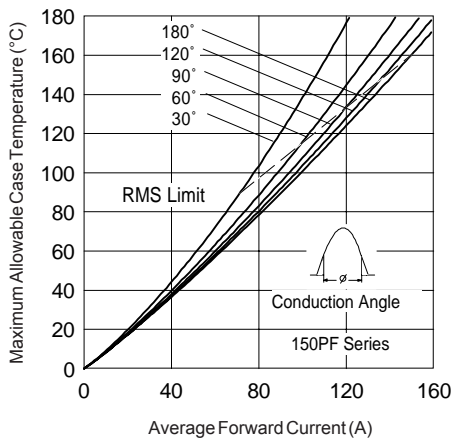


Fig. 3 - Current Ratings Characteristics

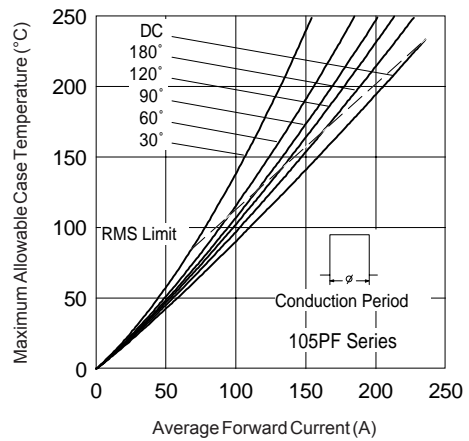


Fig. 4 - Current Ratings Characteristics

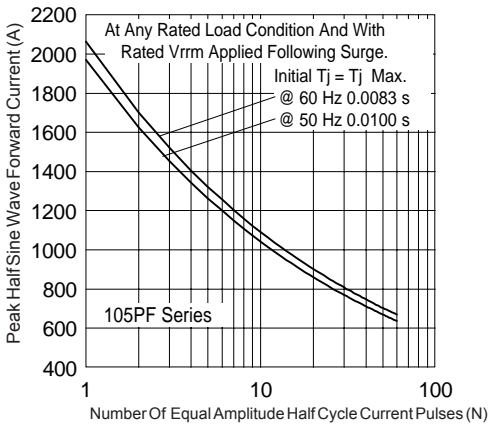


Fig. 5 - Maximum Non-Repetitive Surge Current

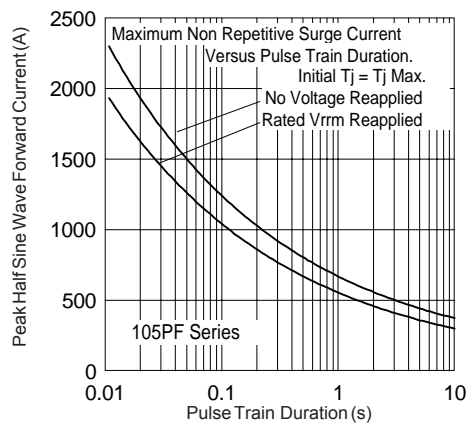


Fig. 6 - Maximum Non-Repetitive Surge Current

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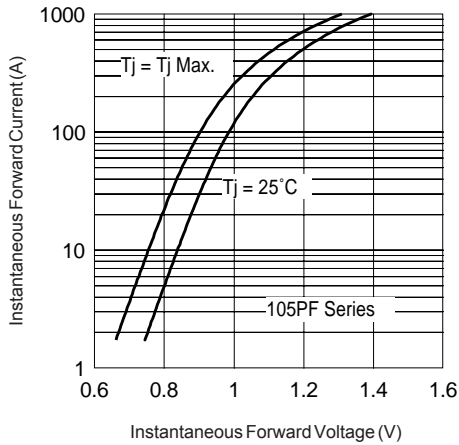


Fig. 7 - Forward Voltage Drop Characteristics

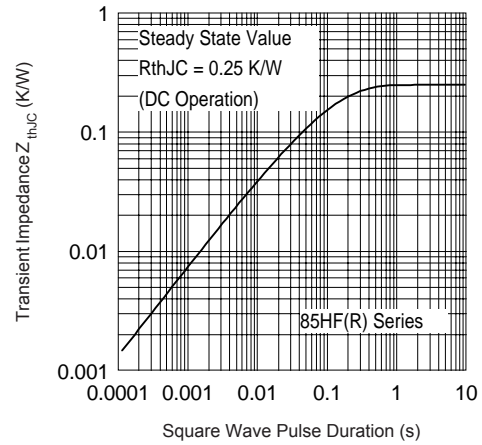
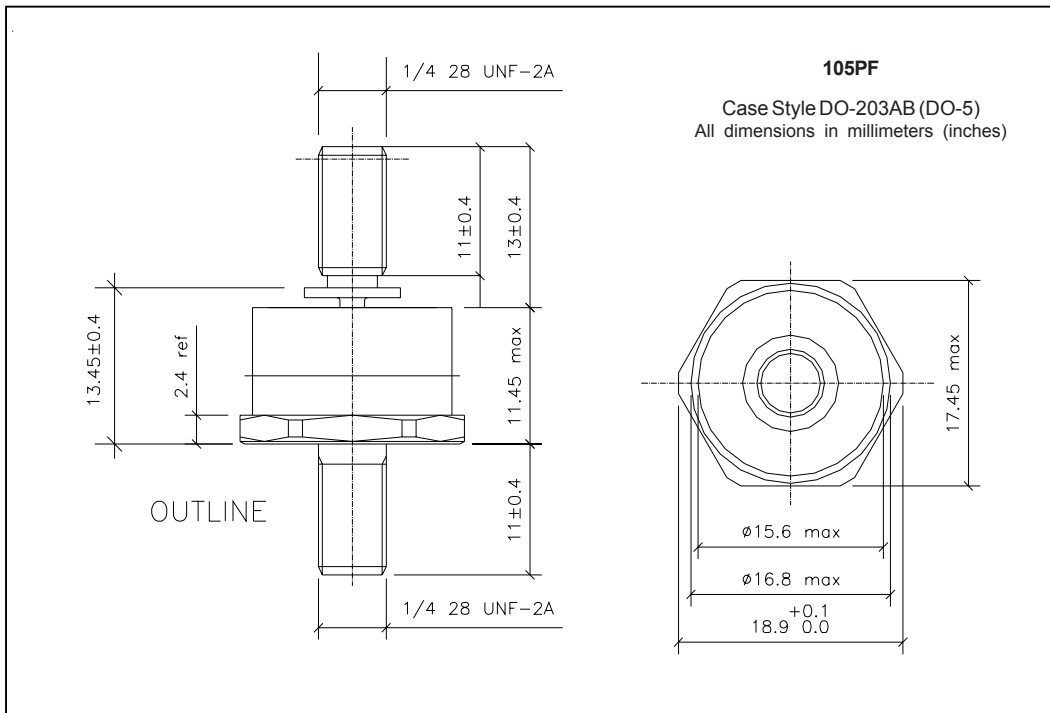


Fig. 8 - Thermal Impedance Z_{thJC} Characteristics

Outline Table



Ordering Information Table

| | | | |
|--------------------|-----------|-----------------------------|----------|
| Device Code | | | |
| 105 | PF | 40 | T |
| ① | ② | ③ | ④ |
| 1 | - | Current Rating (105 = 105A) | |
| 2 | - | PF = Plastic Package | |
| 3 | - | Voltage Rating (40 = 400V) | |
| 4 | - | T = Top Thread | |

Data and specifications subject to change without notice.
This product has been designed and qualified for Industrial Level and Lead-Free.
Qualification Standards can be found on IR's Web site.