



70HF(R) SERIES

POWER RECTIFIER

Reverse Voltage - 100 to 1600 Volts

Forward Current - 70.0 Amperes

Features

- High surge current capability
- Designed for a wide range of applications
- Stud cathode and stud anode version
- Leaded version available
- Types up to 1600V V_{RRM}

Typical Applications

- Battery charges
- Converters
- Power supplies
- Machine tool controls



case style
DO-203AB (DO-5)

Mechanical Data

- **Case:** DO-203AB(DO-5)
- **Polarity:** Selection available
- **Weight:** 17 grams

Major Ratings and Characteristics

| Parameters | | 70HF(R) | | Units |
|--------------|---------|-------------|--------------|-------------|
| | | 10 to 120 | 140 to 160 | |
| $I_{F(AV)}$ | | 70 | 70 | Amps |
| | @ T_C | 140 | 110 | $^{\circ}C$ |
| $I_{F(RMS)}$ | | 110 | | Amps |
| I_{FSM} | @50Hz | 1200 | | Amps |
| | @60Hz | 1250 | | Amps |
| I^2t | @50Hz | 7100 | | A^2s |
| | @60Hz | 6540 | | A^2s |
| V_{RRM} | range | 100 to 1200 | 1400 to 1600 | Volts |
| T_J | range | -65 to 180 | -65 to 150 | $^{\circ}C$ |

ELECTRICAL SPECIFICATIONS

Voltage Ratings

| Type number | Voltage Code | V_{RRM} maximum repetitive peak reverse voltage Volts | V_{RSM} maximum non-repetitive peak reverse voltage Volts | $V_{R(BR)}$ minimum avalanche voltage Volts ⁽¹⁾ | I_{RRM} max. @ $T_J=T_J$ max. mA |
|-------------|--------------|--|--|---|--|
| 70HF(R) | 10 | 100 | 200 | - | 15 |
| | 20 | 200 | 300 | - | |
| | 40 | 400 | 500 | 500 | |
| | 60 | 600 | 720 | 725 | 9 |
| | 80 | 800 | 960 | 950 | |
| | 100 | 1000 | 1200 | 1150 | |
| | 120 | 1200 | 1440 | 1350 | 4.5 |
| | 140 | 1400 | 1650 | 1550 | |
| | 160 | 1600 | 1900 | 1750 | |

(1) Avalanche version only available from V_{RRM} 400V to 1600V.

Forward Conduction

| Parameter | | 70HF(R) | | Units | Conditions | | |
|--------------|---|-----------|------------|------------------|--|-----------------------------|--|
| | | 10 to 120 | 140 to 160 | | | | |
| $I_{F(AV)}$ | Max. average forward current @ Case temperature | 70 | 70 | Amps | 180° conduction, half sine wave | | |
| | | 140 | 110 | °C | | | |
| $I_{F(RMS)}$ | Max. RMS forward current | 110 | | Amps | | | |
| I_{FSM} | Max. peak, one-cycle forward, non-repetitive surge current | 1200 | | Amps | t=10ms | No voltage reapplied | Sinusoidal half wave Initial $T_J=T_J$ max. |
| | | 1250 | | | t=8.3ms | | |
| | | 1000 | | | t=10ms | 100% V_{RRM} reapplied | |
| | | 1050 | | | t=8.3ms | | |
| I^2t | Maximum I^2t for fusing | 7100 | | A ² S | t=10ms | No voltage reapplied | |
| | | 6450 | | | t=8.3s | | |
| | | 5000 | | | t=10ms | 100% V_{RRM} reapplied | |
| | | 4550 | | | t=8.3ms | | |
| V_{FM} | Max. forward voltage drop | 1.35 | | Volts | $I_{pk}=220A, T_J=25^\circ C, t_p=400\mu s$ rectangular wave | | |

Thermal and Mechanical Specifications

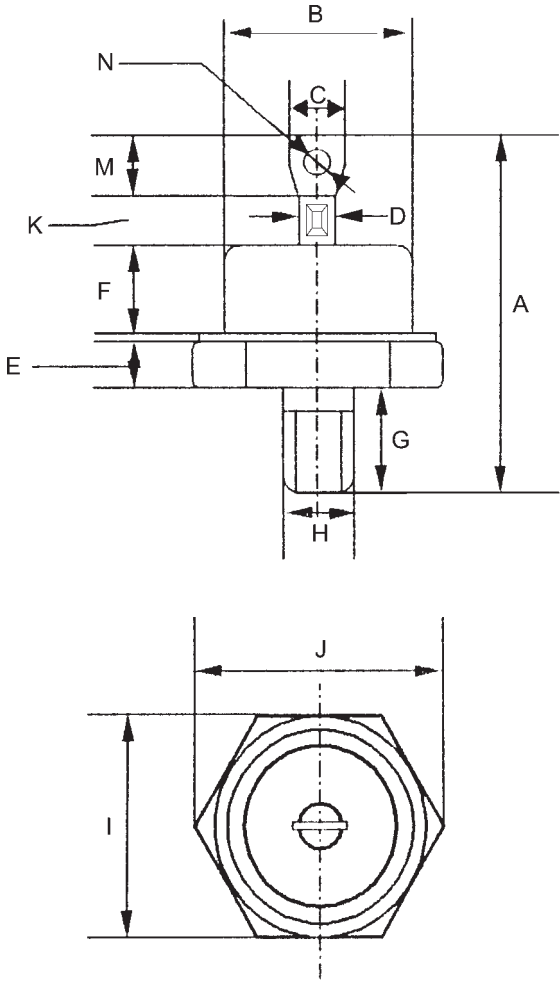
| Parameter | 70HF(R) | | Units | Conditions |
|---|-----------------|------------|--------|--|
| | 10 to 120 | 140 to 160 | | |
| T _J Max. junction operating temperature range | -65 to 180 | -65 to 150 | °C | |
| T _{stg} Max. storage temperature range | -65 to 180 | -65 to 150 | | |
| R _{thJC} Max. thermal resistance, junction to case | 0.45 | | K/W | DC operation |
| R _{thCS} Max. thermal resistance, case to heatsink | 0.25 | | | Mounting surface, smooth, flat and greased |
| T Max. allowed mounting torque 10% | 2.3-2.4 | | Nm | Not lubricated threads |
| | 20-30 | | lbf-in | |
| wt approximate weight | 17 (0.6) | | g(oz) | |
| Case style | DO-203AB (DO-5) | | | See Outline Table |

Ordering information Table

Device Code: 70 HF R 160 M
 1 2 3 4 5

1. 70 - Standard device
2. HF - Standard diode
3. None - stud normal polarity (cathode to stud)
 R - stud reverse polarity (Anode to stud)
4. Voltage code: cade x 10=V_{RRM}
5. None - stud base DO-203AB (DO-5) 1/4" 28 UNF-2A
 M - stud base DO-203AB (DO-5) M6x1

Outlines Table



70HF(R)

Case Style DO-203AB(DO-5)

All dimenions in millimeters(inches)

| DIMENSIONS | | | |
|------------|--------|-------|------|
| DIM | inches | mm | Note |
| A | | 34.06 | |
| B | | 12.83 | |
| C | | 6.48 | |
| D | | 3.68 | |
| E | | 3.30 | |
| F | | 5.92 | |
| G | | 11.10 | |
| H | | 5.84 | |
| I | | 17.27 | |
| J | | 19.05 | |
| K | | 5.38 | |
| M | | 7.42 | |
| N | | φ 3.8 | |

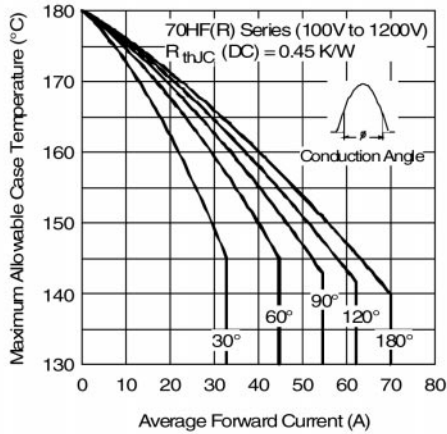


Fig. 1 - Current Ratings Characteristics

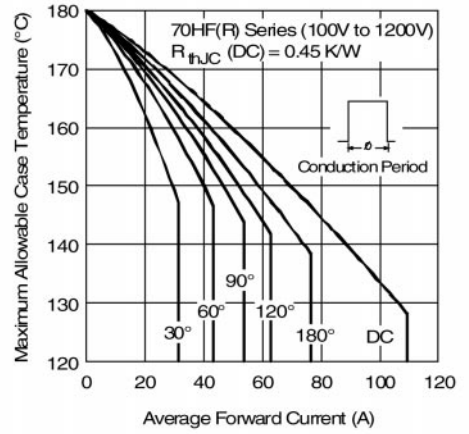


Fig. 2 - Current Ratings Characteristics

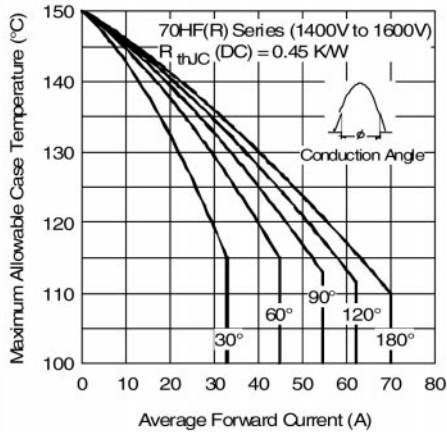


Fig. 3 - Current Ratings Characteristics

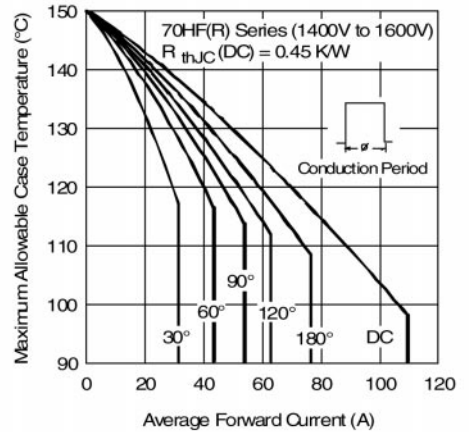


Fig. 4 - Current Ratings Characteristics

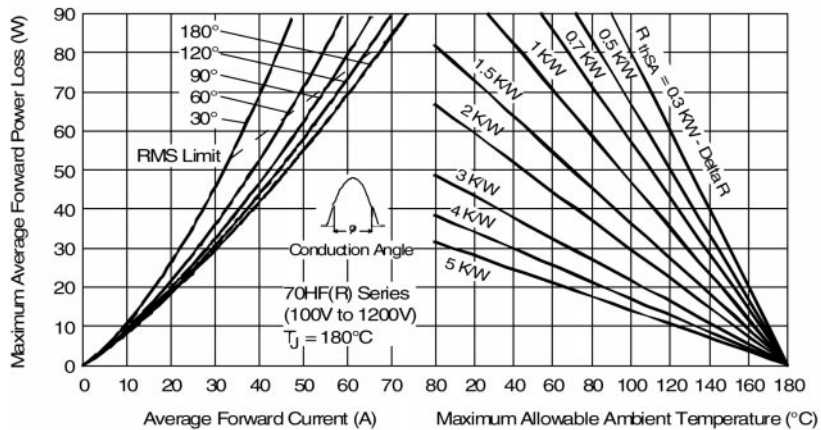


Fig. 5 - Forward Power Loss Characteristics

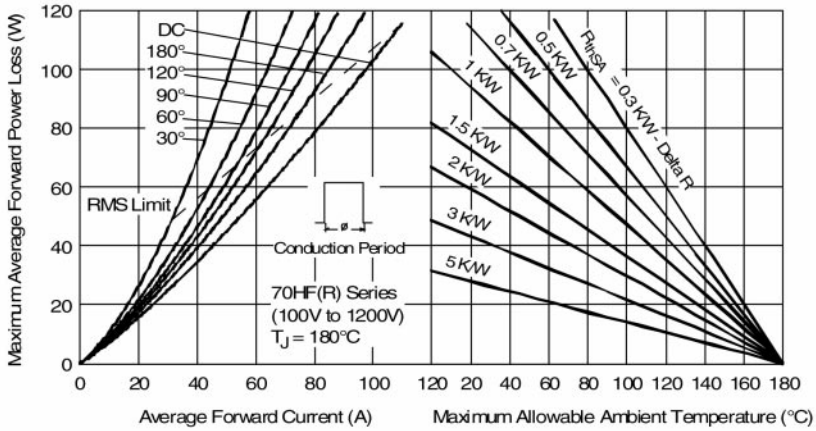


Fig. 6 - Forward Power Loss Characteristics

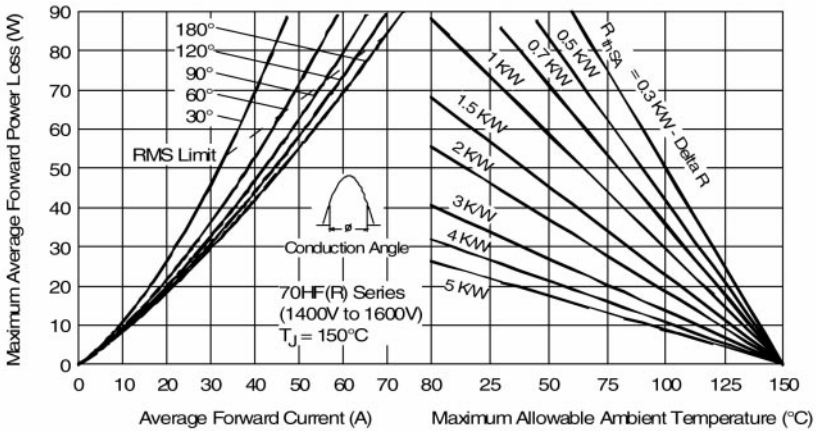


Fig. 7 - Forward Power Loss Characteristics

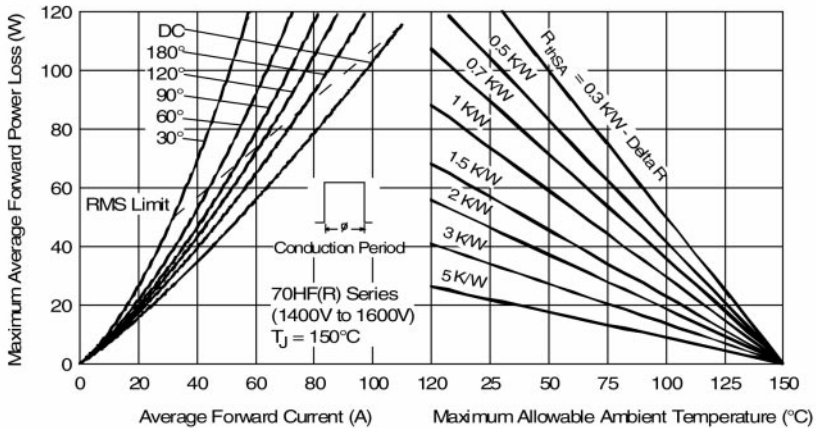


Fig. 8 - Forward Power Loss Characteristics

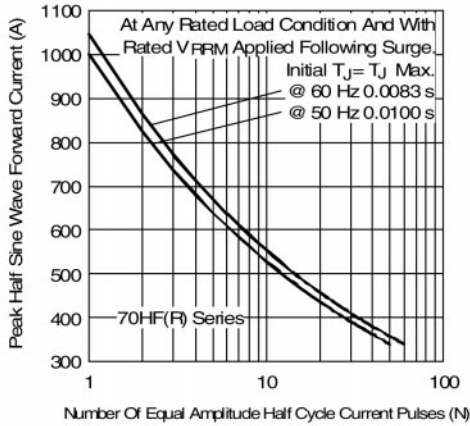


Fig. 9 - Maximum Non-Repetitive Surge Current

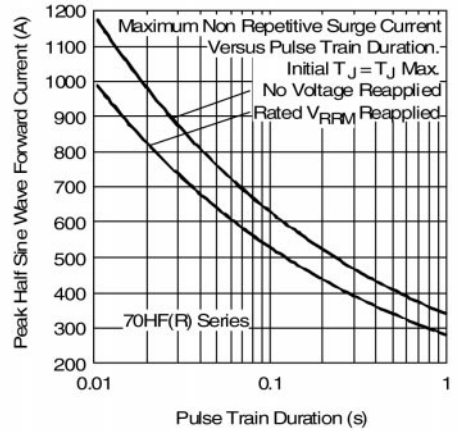


Fig. 10 - Maximum Non-Repetitive Surge Current

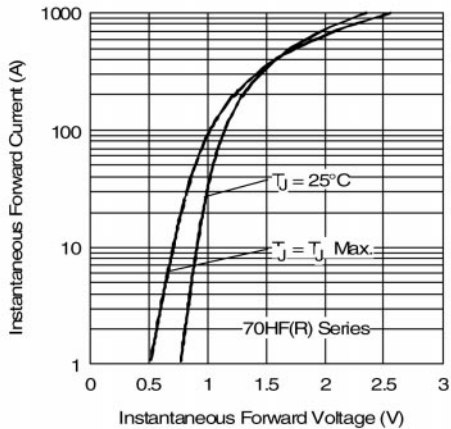


Fig. 11 - Forward Voltage Drop Characteristics

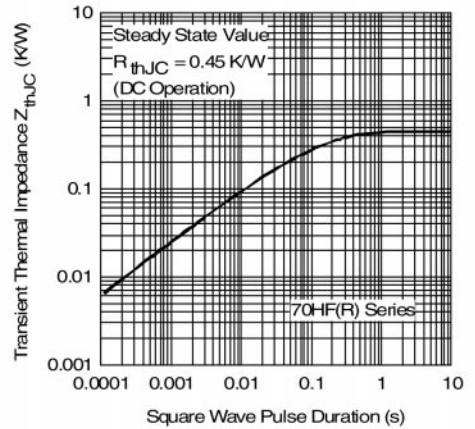


Fig. 12 - Thermal Impedance Z_{thJC} Characteristics

This datasheet has been download from:

www.datasheetcatalog.com

Datasheets for electronics components.