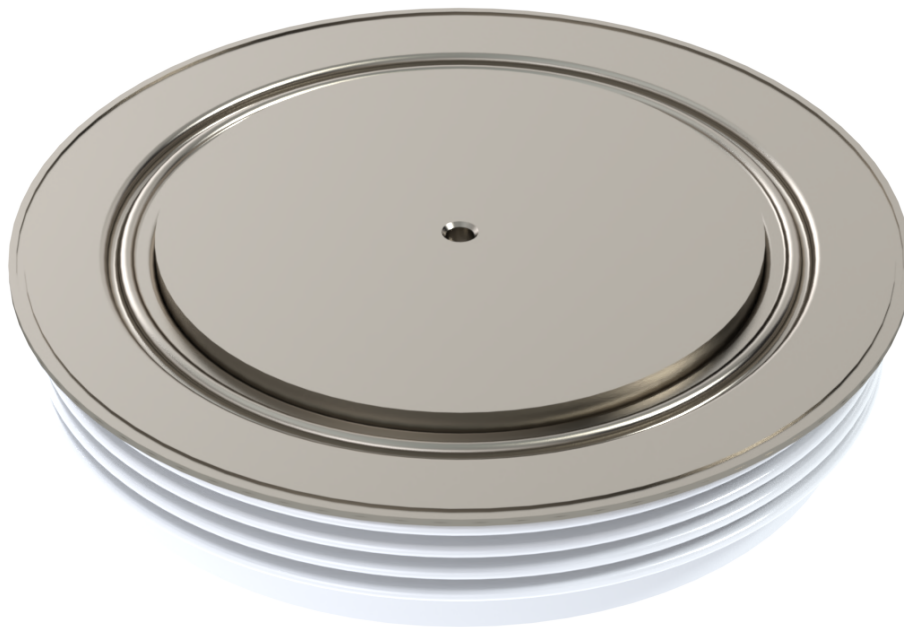


**Rectifier
Diode
Type SA48GW5139J0**

Contact us!

Date: April, 2020
Data Sheet Issue: 1



ORDERING INFORMATION

(Please quote 12 to 15 digit code as below)

| | | | | | | |
|----|--------------|--------------|--------------|-----------|--------------|---------------|
| SA | 48 | GW | 5139 | J | 0 | |
| - | Voltage Code | Outline Code | Current code | Type code | Special code | Optional code |

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Absolute Maximum Ratings

| VOLTAGE RATINGS | | MAXIMUM LIMITS | UNITS |
|-----------------|---|----------------|-------|
| V_{RRM} | Repetitive peak reverse voltage, (note 1) | 4800 | V |
| V_{RSM} | Non-repetitive peak reverse voltage, (note 1) | 4900 | V |
| V_{RDC} | Maximum reverse D.C. Voltage, (note 1) | 2500 | V |
| note 1) | De-Rating factor of 0.13% per °C is applicable for T_j below 25°C | | |

| OTHER RATINGS | | MAXIMUM LIMITS | UNITS |
|---------------|--|-------------------|--------|
| $I_{F(AV)M}$ | Maximum average forward current, $T_{sink} = 55^{\circ}C$, (note 1) | 5139 | A |
| $I_{F(AV)M}$ | Maximum average forward current, $T_{sink} = 100^{\circ}C$, (note 1) | 3650 | A |
| $I_{F(AV)M}$ | Maximum average forward current, $T_{sink} = 100^{\circ}C$, (note 2) | 2000 | A |
| $I_{F(RMS)}$ | Nominal RMS forward current, $T_{sink} = 25^{\circ}C$ (note 1) | 9365 | A |
| $I_{f(d.c.)}$ | D.C. forward current, $T_{sink} = 25^{\circ}C$ (note 3) | 8510 | A |
| I_{FSM} | Peak non-repetitive surge current $t_p = 10ms$, $V_{RM} = 60\%V_{RRM}$, (note 4) | 55.0 | kA |
| I_{FSM2} | Peak non-repetitive surge current $t_p = 10ms$, $V_{RM} \leq 10V$, (note 4) | 60.5 | kA |
| I^2t | I^2t capacity for fusing $t_p = 10ms$, $V_{RM} = 60\%V_{RRM}$, (note 4) | $15.1 \cdot 10^6$ | A^2s |
| I^2t | I^2t capacity for fusing $t_p = 10ms$, $V_{RM} \leq 10V$, (note 4) | $18.3 \cdot 10^6$ | A^2s |
| T_{jop} | Operating temperature range | -40 to +160 | °C |
| T_{stg} | Storage temperature range | -55 to +160 | °C |
| note 1) | Double-side cooled, single phase, 50Hz, 180° half-sinewave. | | |
| note 2) | Cathode-side cooled, single phase, 50Hz, 180° half-sinewave. | | |
| note 3) | Double-side cooled. | | |
| note 4) | Half-sinewave, 160°C T_j initial. | | |

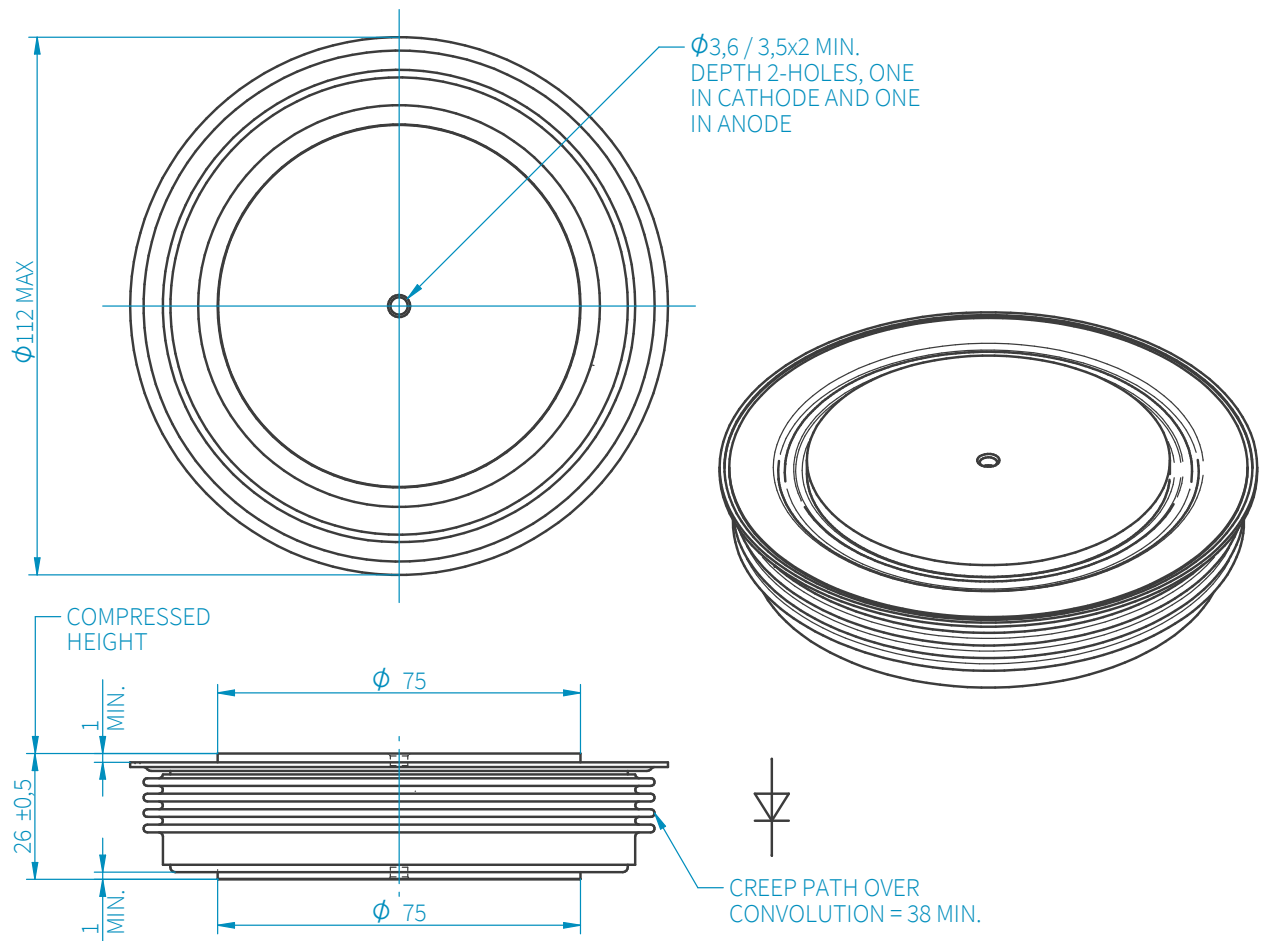
Characteristics

| | PARAMETER | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|-------------------|---|--|-----|-------|-------|-------|
| V _{FM} | Maximum peak forward voltage | I _{FM} =3000A | - | - | 1.25 | V |
| | | I _{FM} =15400A | - | - | 2.62 | V |
| V _{T0} | Threshold Voltage | Valid from 2000A to 6000A | - | - | 0.826 | V |
| r _T | Slope resistance | | - | - | 0.136 | mΩ |
| I _{RRM} | Peak reverse current | Rated V _{RRM} | - | - | 100 | mA |
| Q _{rr} | Recovered charge | | - | 12400 | 13500 | μC |
| Q _{ra} | Recovered charge, 50% Chord | I _{FM} = 2000A, t _p = 2000μs, di/dt = 10A/μs, V _R = 100V | - | 8250 | - | μC |
| I _{rm} | Reverse recovery current | | - | 290 | - | A |
| t _{rr} | Reverse recovery time, 50% Chord | | - | 57 | - | μs |
| R _{thJK} | Thermal resistance, junction to heatsink | Double side cooled | - | - | 8 | K/kW |
| | | Anode side cooled | - | - | 13 | K/kW |
| | | Cathode side cooled | - | - | 20 | K/kW |
| F | Mounting force | note 2) | 60 | - | 70 | kN |
| W _t | Weight | | - | 1150 | - | g |
| note 1) | Unless otherwise indicated T _j = 160°C | | | | | |
| note 2) | For other clamp forces consult factory | | | | | |

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