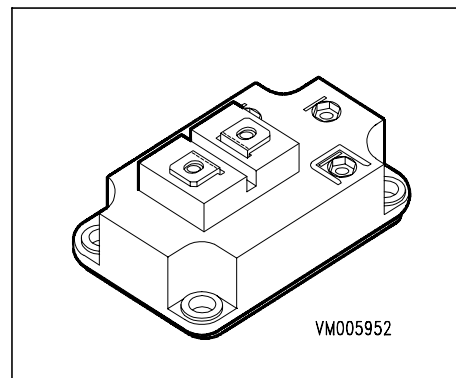


### Diode Power Module

#### Preliminary data

- Inside fast free-wheeling diode
- Package with insulated metal base plate
- Diode especially for brake choppers
- matched with BSM 300 GA 120 DN 2



| Type              | $V_{R25}$ | $I_{FDC}$ | Package        | Ordering Code    |
|-------------------|-----------|-----------|----------------|------------------|
| BYM 300 A 120 DN2 | 1200V     | 450A      | SINGLE DIODE 1 | C67067-A2900-A70 |

#### Maximum Ratings

| Parameter                                                                                 | Symbol       | Values        | Unit             |
|-------------------------------------------------------------------------------------------|--------------|---------------|------------------|
| Diode reverse voltage<br>$T_j = 25\text{ °C}$                                             | $V_{R25}$    | 1200          | V                |
| DC current<br>$T_C = 25\text{ °C}$<br>$T_C = 80\text{ °C}$                                | $I_{FDC}$    | 450<br>300    | A                |
| Pulsed diode current, $t_p = 1\text{ ms}$<br>$T_C = 25\text{ °C}$<br>$T_C = 80\text{ °C}$ | $I_{Fpuls}$  | 900<br>600    |                  |
| $i^2t$ -value, $t_p = 10\text{ ms}$<br>$T_j = 0\text{ °C}$                                | $\int i^2 t$ | 42000         | A <sup>2</sup> s |
| Power dissipation per diode<br>$T_C = 25\text{ °C}$                                       | $P_D$        | 1000          | W                |
| Chip temperature                                                                          | $T_j$        | + 150         | °C               |
| Storage temperature                                                                       | $T_{stg}$    | -55 ... + 150 |                  |
| Thermal resistance, chip case                                                             | $R_{thJC}$   | ≤ 0.125       | K/W              |
| Insulation test voltage, $t = 1\text{ min.}$                                              | $V_{is}$     | 2500          | Vac              |
| Creepage distance                                                                         | -            | 20            | mm               |
| Clearance                                                                                 | -            | 11            |                  |
| DIN humidity category, DIN 40 040                                                         | -            | F             | sec              |
| IEC climatic category, DIN IEC 68-1                                                       | -            | 55 / 150 / 56 |                  |

### Electrical Characteristics, at $T_j = 25\text{ °C}$ , unless otherwise specified

| Parameter | Symbol | Values |      |      | Unit |
|-----------|--------|--------|------|------|------|
|           |        | min.   | typ. | max. |      |

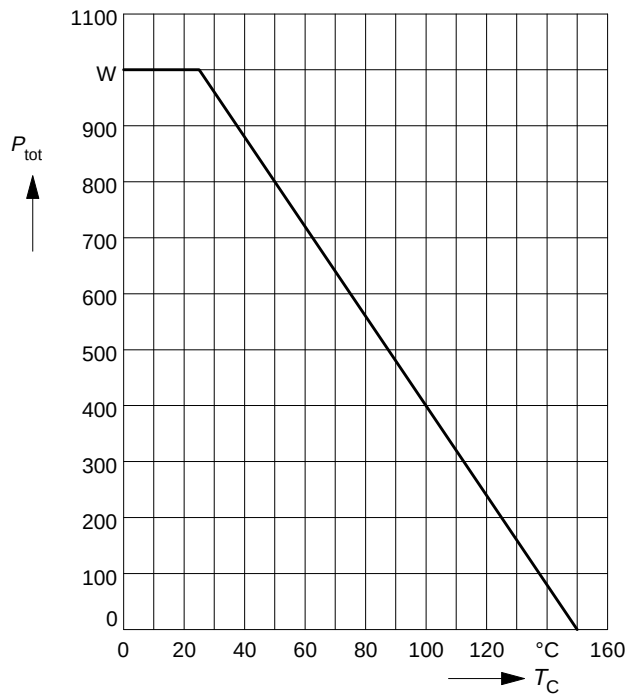
### Free-Wheel Diodes

|                                                                                                                                                                                            |          |        |            |          |               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------|------------|----------|---------------|
| Diode forward voltage<br>$I_F = 300\text{ A}$ , $V_{GE} = 0\text{ V}$ , $T_j = 25\text{ °C}$<br>$I_F = 300\text{ A}$ , $V_{GE} = 0\text{ V}$ , $T_j = 125\text{ °C}$                       | $V_F$    | -<br>- | 2.3<br>1.8 | 2.8<br>- | V             |
| Reverse current<br>$V_{CA} = 1200\text{ V}$ , $T_j = 25\text{ °C}$<br>$V_{CA} = 1200\text{ V}$ , $T_j = 125\text{ °C}$                                                                     | $I_R$    | -<br>- | 0.6<br>6   | 0.8<br>- | mA            |
| Reverse recovery time<br>$I_F = 300\text{ A}$ , $V_R = -600\text{ V}$ , $V_{GE} = 0\text{ V}$<br>$dI_F/dt = -2500\text{ A/}\mu\text{s}$ , $T_j = 125\text{ °C}$                            | $t_{rr}$ | -      | 0.55       | -        | $\mu\text{s}$ |
| Reverse recovery charge<br>$I_F = 300\text{ A}$ , $V_R = -600\text{ V}$ , $V_{GE} = 0\text{ V}$<br>$dI_F/dt = -2500\text{ A/}\mu\text{s}$<br>$T_j = 25\text{ °C}$<br>$T_j = 125\text{ °C}$ | $Q_{rr}$ | -<br>- | 14<br>40   | -<br>-   | $\mu\text{C}$ |

## Power dissipation

$$P_{\text{tot}} = f(T_C)$$

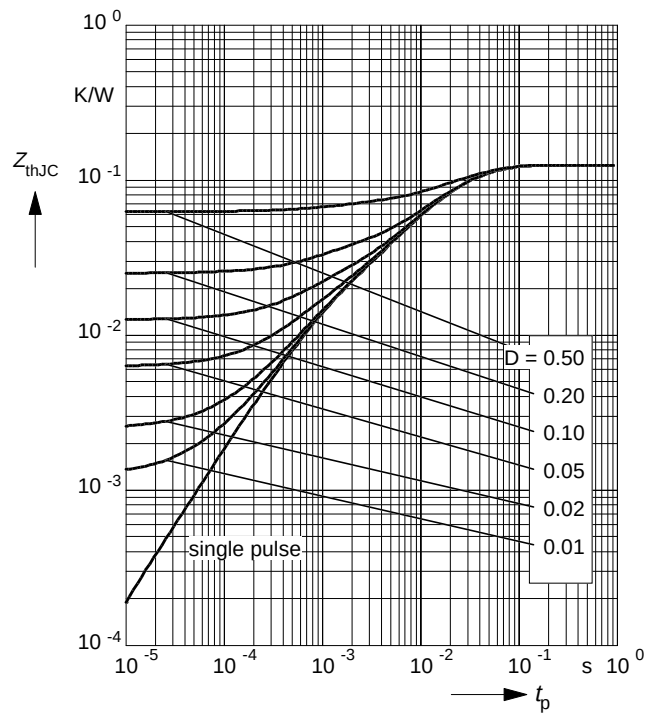
parameter:  $T_j \leq 150^\circ\text{C}$



## Transient thermal impedance Diode

$$Z_{\text{th JC}} = f(t_p)$$

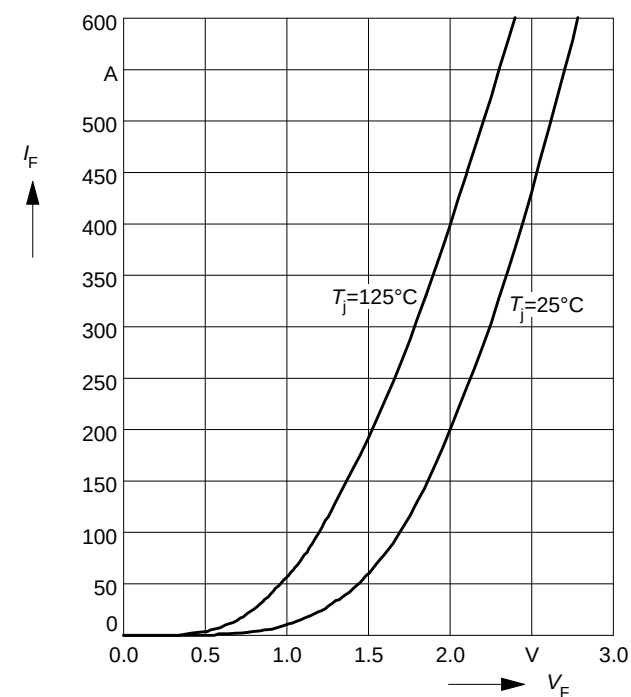
parameter:  $D = t_p / T$



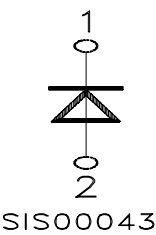
## Forward characteristics of fast recovery reverse diode

$$I_F = f(V_F)$$

parameter:  $T_j$



Circuit Diagram



Package Outlines

Dimensions in mm

Weight: 420 g

