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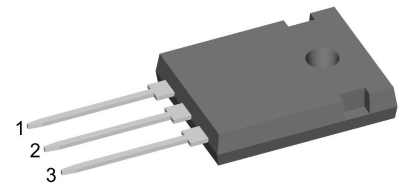
SiC Schottky Diode

$$V_{RRM} = 2x\ 1200\ V$$

$$I_{FAV} = 18\ A$$

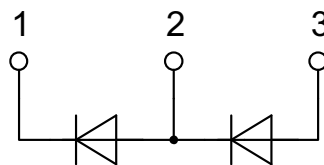
Ultra fast switching
Zero reverse recovery
Phase leg

Part number
DCG17P1200HR



Backside: isolated

E72873



Features / Advantages:

- Ultra fast switching
- Zero reverse recovery
- Zero forward recovery
- Temperature independent switching behavior
- Positive temperature coefficient of forward voltage
- $T_{VJM} = 175^{\circ}C$

Applications:

- Solar inverter
- Uninterruptible power supply (UPS)
- Welding equipment
- Switched-mode power supplies
- Medical equipment
- High speed rectifier

Package: ISO247

- Isolation Voltage: 3600 V~
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Soldering pins for PCB mounting
- Backside: DCB ceramic
- Reduced weight
- Advanced power cycling

Terms & Conditions of Usage

The data contained in this product data sheet is exclusively intended for technically trained staff. The user will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to his application. The specifications of our components may not be considered as an assurance of component characteristics. The information in the valid application- and assembly notes must be considered. Should you require product information in excess of the data given in this product data sheet or which concerns the specific application of your product, please contact the sales office, which is responsible for you. Due to technical requirements our product may contain dangerous substances. For information on the types in question please contact the sales office, which is responsible for you.

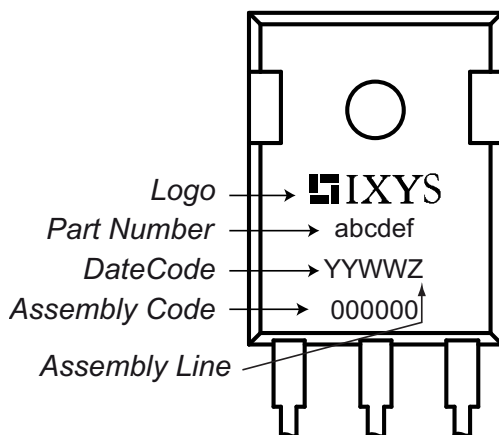
Should you intend to use the product in aviation, in health or live endangering or life support applications, please notify. For any such application we urgently recommend

- to perform joint risk and quality assessments;
- the conclusion of quality agreements;

- to establish joint measures of an ongoing product survey, and that we may make delivery dependent on the realization of any such measures.

| SiC Diode (per diode) | | | | Ratings | | | | |
|-----------------------|--|--|--|---------|------|------|---------------|---|
| Symbol | Definitions | Conditions | min. | typ. | max. | | | |
| V_{RSM} | max. non-repetitive reverse blocking voltage | | | | 1200 | V | | |
| V_{RRM} | max. repetitive reverse blocking voltage | | | | 1200 | V | | |
| I_R | reverse current | $V_R = V_{RRM}$ | $T_{VJ} = 25^\circ\text{C}$ | | 35 | 200 | μA | |
| | | | $T_{VJ} = 175^\circ\text{C}$ | | 65 | 400 | μA | |
| V_F | forward voltage | $I_F = 20\text{ A}$ $I_F = 40\text{ A}$ | $T_{VJ} = 25^\circ\text{C}$ | | 1.5 | 1.8 | V | |
| | | | $T_{VJ} = 175^\circ\text{C}$ | | 2.2 | 3.0 | V | |
| | | $T_C = 80^\circ\text{C}$ $T_C = 100^\circ\text{C}$ | rectangular, d = 0.5 $T_{VJ} = 175^\circ\text{C}$ | | | | 18 | A |
| | | | | | | | 16 | A |
| I_{F25} | forward current | based on typ. V_{F0} and r_F | $T_C = 25^\circ\text{C}$ | | | 31.7 | A | |
| I_{F80} | | | $T_C = 80^\circ\text{C}$ | | | 24.3 | A | |
| I_{F100} | | | $T_C = 100^\circ\text{C}$ | | | 21.2 | A | |
| I_{FSM} | max forward surge current | t = 10 ms, half sine (50 Hz) t _p = 10 μs , pulse | $T_{VJ} = 25^\circ\text{C}$ | | | | A | |
| | | | $V_R = 0\text{V}$ | | | 1000 | A | |
| V_{F0} | threshold voltage | } for power loss calculation | $T_{VJ} = 125^\circ\text{C}$ | | 0.78 | | V | |
| r_F | slope resistance | | $T_{VJ} = 175^\circ\text{C}$ | | 0.73 | | V | |
| | | | $T_{VJ} = 125^\circ\text{C}$ | | 57.0 | | m Ω | |
| | | | $T_{VJ} = 175^\circ\text{C}$ | | 70.5 | | m Ω | |
| Q_C | total capacitive charge | $V_R = 800\text{ V}$, $I_F = 20\text{ A}$ dI/dt = 200 A/ μs | $T_{VJ} = 25^\circ\text{C}$ | | 99 | | nC | |
| C | total capacitance | $V_R = 0\text{ V}$ $V_R = 400\text{ V}$ $V_R = 800\text{ V}$ | $T_{VJ} = 25^\circ\text{C}$, f = 1 MHz | | 1500 | | pF | |
| | | | | | 93 | | pF | |
| | | | | | 67 | | pF | |
| | | | | | | | | |
| R_{thJC} | thermal resistance junction to case | with heatsink compound; IXYS test setup | | | 1.6 | | K/W | |
| R_{thJH} | thermal resistance junction to heatsink | | | 2.1 | | K/W | | |

| Package ISO247 | | | | Ratings | | |
|----------------|--------------------------------|------------------------------|----------------------------------|---------|--------------|--------|
| Symbol | Definitions | Conditions | | min. | typ. | max. |
| I_{RMS} | RMS current | per terminal | | | | 70 A |
| T_{stg} | storage temperature | | | -40 | | 150 °C |
| T_{op} | operation temperature | | | -40 | | 150 °C |
| T_{VJ} | virtual junction temperature | | | -40 | | 175 °C |
| Weight | | | | | 6 | g |
| M_D | mounting torque | | | 0.8 | | 1.2 Nm |
| F_C | mounting force with clip | | | 40 | | 120 N |
| $d_{Spp/App}$ | creepage distance on surface / | terminal to terminal | | 2.7 | | mm |
| $d_{Spb/Appb}$ | striking distance through air | terminal to backside | | 4.1 | | mm |
| V_{ISOL} | isolation voltage | t = 1 second t = 1 minute | 50/60 Hz; RMS; $I_{ISOL} < 1$ mA | | 3600 3000 | V V |

Product Marking

Part description

D = Diode
 C = SiC
 G = Extreme fast
 17 = Current Rating [A]
 P = Phase leg
 1200 = Reverse Voltage [V]
 HR = ISO247 (3)

| Ordering | Part Name | Marking on Product | Delivering Mode | Base Qty | Ordering Code |
|----------|--------------|--------------------|-----------------|----------|---------------|
| Standard | DCG17P1200HR | DCG17P1200HR | Tube | 30 | 523045 |

Equivalent Circuits for Simulation *on die level, typical

| | | $T_{VJ} = 125^{\circ}C$ | $T_{VJ} = 175^{\circ}C$ | |
|--------------|--------------------|-------------------------|-------------------------|----|
| $V_{0\ max}$ | threshold voltage | 0.78 | 0.73 | V |
| $R_{0\ max}$ | slope resistance * | 57.0 | 70.5 | mΩ |

Outlines ISO247

