

5SLZ 12J1700

Fast-Diode Die

$V_{RRM} = 1700\text{ V}$

$I_F = 150\text{ A}$

Ultra low losses
 Fast and soft reverse-recovery
 Large SOA
 Passivation: SIPOS, Nitride plus polyimide



Maximum rated values ¹⁾

| Parameter | Symbol | Conditions | min | max | Unit |
|---------------------------------|--------------|----------------------------|-----|------|------|
| Repetitive peak reverse voltage | V_{RRM} | $T_{vj} \geq 25\text{ °C}$ | | 1700 | V |
| DC forward current | I_F | | | 150 | A |
| Peak forward current | I_{FRM} | Limited by T_{vjmax} | | 300 | A |
| Junction temperature | $T_{vj(op)}$ | | -40 | 175 | °C |

¹⁾ Maximum rated values indicate limits beyond which damage to the device may occur per IEC 60747

Diode characteristic values ²⁾

| Parameter | Symbol | Conditions | min | typ | max | Unit |
|----------------------------|-----------|--|--------------------------|------|-----|------|
| Forward voltage | V_F | $I_F = 150\text{ A}$ | $T_{vj} = 25\text{ °C}$ | 1.65 | 2.2 | V |
| | | | $T_{vj} = 125\text{ °C}$ | 1.75 | | V |
| | | | $T_{vj} = 175\text{ °C}$ | 1.70 | | V |
| Continuous reverse current | I_R | $V_R = 1700\text{ V}$ | $T_{vj} = 25\text{ °C}$ | | 1 | µA |
| | | | $T_{vj} = 125\text{ °C}$ | 250 | | µA |
| | | | $T_{vj} = 175\text{ °C}$ | 4.4 | | mA |
| Reverse recovery current | I_{rr} | | $T_{vj} = 25\text{ °C}$ | 135 | | A |
| | | | $T_{vj} = 125\text{ °C}$ | 165 | | A |
| | | | $T_{vj} = 175\text{ °C}$ | 190 | | A |
| Recovered charge | Q_{rr} | $V_{CC} = 900\text{ V},$ $I_F = 150\text{ A},$ $di/dt = 1300\text{ A}/\mu\text{s}$ $L_{\sigma} = 200\text{ nH}$ inductive load | $T_{vj} = 25\text{ °C}$ | 43 | | µC |
| | | | $T_{vj} = 125\text{ °C}$ | 68 | | µC |
| | | | $T_{vj} = 175\text{ °C}$ | 93 | | µC |
| Reverse recovery time | t_{rr} | Switch: 5SMY 12M1730 | $T_{vj} = 25\text{ °C}$ | 650 | | ns |
| | | | $T_{vj} = 125\text{ °C}$ | 810 | | ns |
| | | | $T_{vj} = 175\text{ °C}$ | 915 | | ns |
| Reverse recovery energy | E_{rec} | | $T_{vj} = 25\text{ °C}$ | 21 | | mJ |
| | | | $T_{vj} = 125\text{ °C}$ | 37 | | mJ |
| | | | $T_{vj} = 175\text{ °C}$ | 52 | | mJ |

²⁾ Characteristic values according to IEC 60747 - 2

Mechanical properties

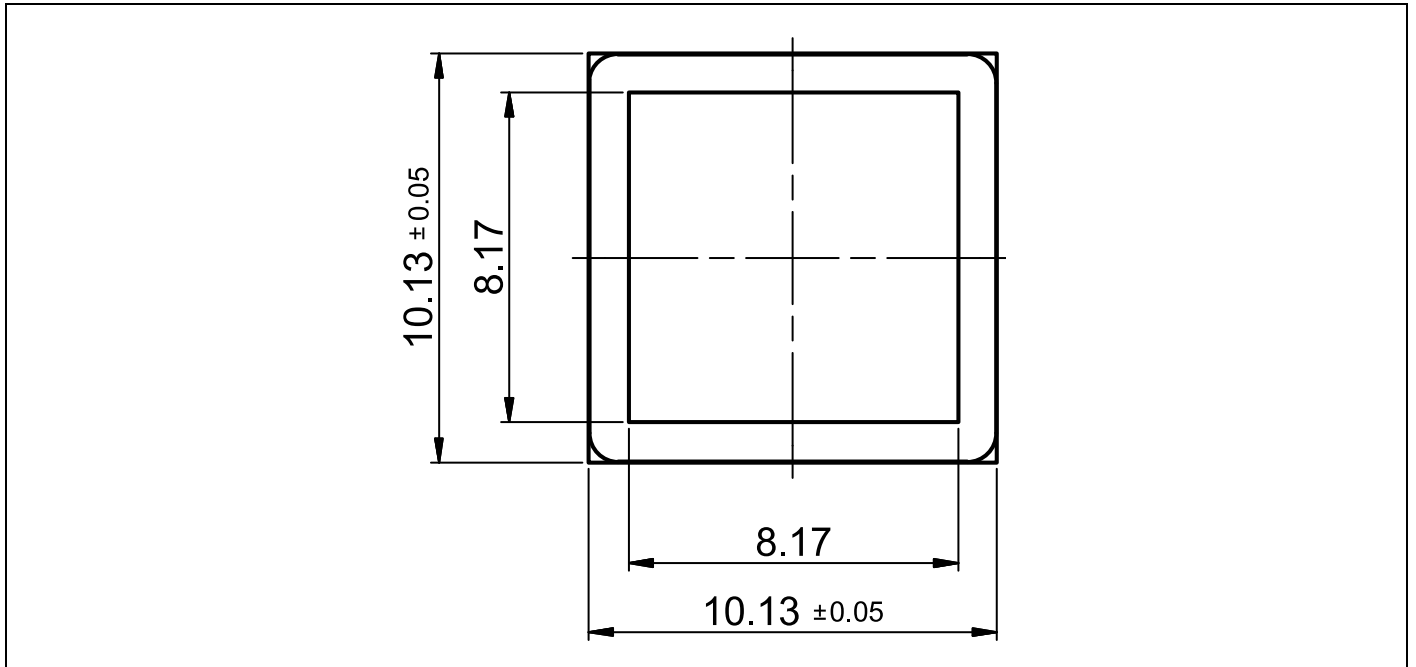
| Parameter | Symbol | Conditions | min | Unit |
|-----------------------------|---------------------|-------------------|---------------|------|
| Dimensions | Overall die | L x W | 10.13 x 10.13 | mm |
| | exposed front metal | L x W | 8.17 x 8.17 | mm |
| | thickness | | 370 ± 15 | µm |
| Metallization ³⁾ | front (E) | AlSi1 | 4 | µm |
| | back (C) | Al / Ti / Ni / Ag | 1.2 | µm |

³⁾ For assembly instructions refer to: IGBT and Diode chips from ABB Switzerland Ltd, Semiconductors, Doc. No. 5SYA 2033.

Form of delivery

| Description | Part number |
|----------------------------------|--------------|
| Sawn 6" wafer die (on blue tape) | 5SLZ 86J1700 |

Outline drawing



Note: all dimensions are shown in millimeters

This is an electrostatic sensitive device, please observe the international standard IEC 60747-1, chap. IX.
This product has been designed and qualified for Industrial Level.

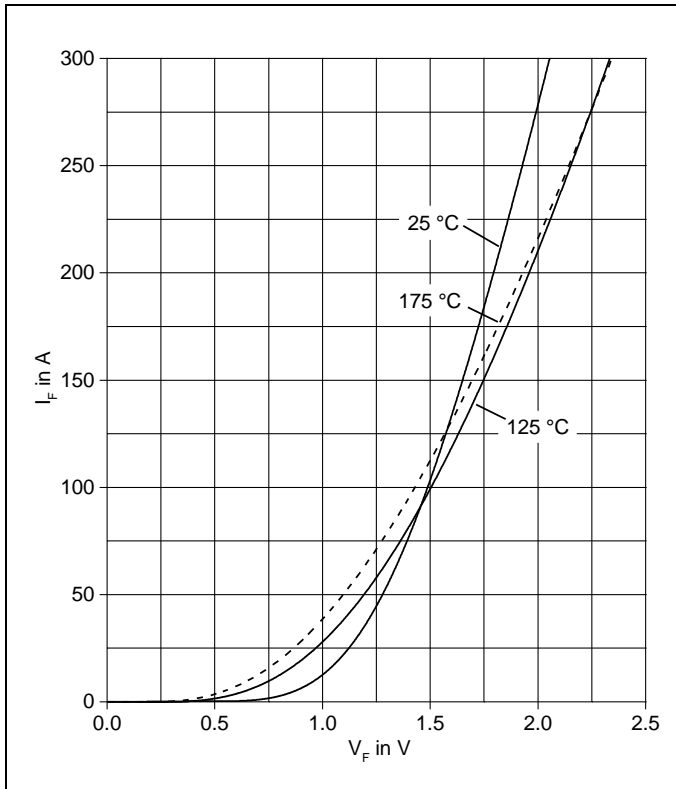


Fig. 1 Typical diode forward characteristics, chip level

Related documents:

- 5SYA 2045 Thermal runaway during blocking
- 5SYA 2059 Applying IGBT and Diode dies
- 5SYA 2093-00 Thermal design of IGBT Modules

ABB Switzerland Ltd.
Semiconductors
Fabrikstrasse 3
CH-5600 Lenzburg
Switzerland

Phone: +41 58 586 1419
Fax: +41 58 586 1306
E-Mail: abbsem@ch.abb.com

www.abb.com/semiconductors

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