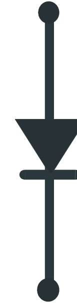
Data Sheet, Doc. No. 5SYA 1331-00 2017-05

5SLZ 12G1700
Fast-Diode Die

V_{RRM} = 1700 V
I_F = 100 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} ≥ 25 °C		1700	V
DC forward current	I_F			100	A
Peak forward current	I_{FRM}	Limited by T_{vjmax}		200	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 = 100 A	T_{vj} = 25 °C		1.65	2.2	V
			T_{vj} = 125 °C		1.75		V
			T_{vj} = 175 °C		1.70		V
Continous reverse current	I_R	V_R = 1700 V	T_{vj} = 25 °C			1	µA
			T_{vj} = 125 °C		100		µA
			T_{vj} = 175 °C		3		mA
Reverse recovery current	I_{rr}	V_{CC} = 900 V, I_F = 100 A, di/dt = 1300 A/µs L_σ = 120 nH inductive load Switch: 5SMY 12K1730	T_{vj} = 25 °C		100		A
			T_{vj} = 125 °C		125		A
			T_{vj} = 175 °C		135		A
Recovered charge	Q_{rr}		T_{vj} = 25 °C		25		µC
			T_{vj} = 125 °C		42		µC
			T_{vj} = 175 °C		57		µC
Reverse recovery time	t_{rr}		T_{vj} = 25 °C		500		ns
			T_{vj} = 125 °C		620		ns
			T_{vj} = 175 °C		740		ns
Reverse recovery energy	E_{rec}		T_{vj} = 25 °C		16		mJ
			T_{vj} = 125 °C		26		mJ
			T_{vj} = 175 °C		35		mJ

[2)] Characteristic values according to IEC 60747 - 2

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Mechanical properties

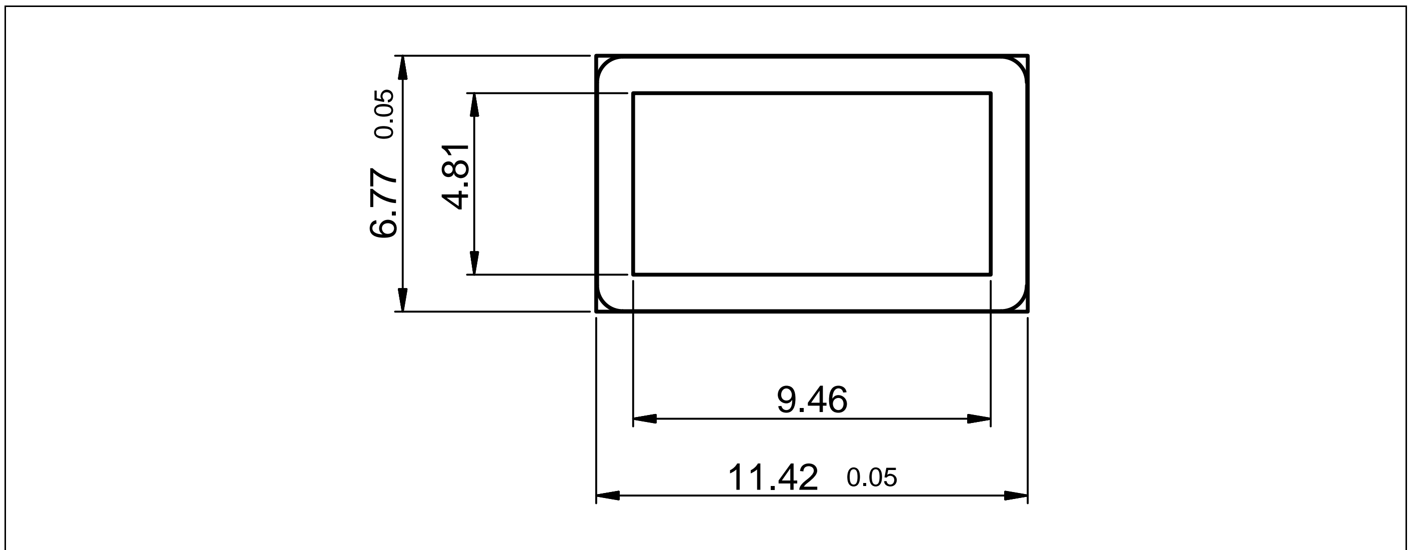
Parameter	Symbol	Conditions	min	Unit
Dimensions	Overall die	L x W	11.42 x 6.77	mm
	exposed front metal	L x W	9.46 x 4.81	mm
	thickness		370 ± 15	µm
Metallization [3)]	front (E)	AlSi1	4	µm
	back (C)	Al / Ti / Ni / Ag	1.2	µm

[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
Unsawn 6" wafer die (on blue tape)	5SLZ 76G1700
Sawn 6" wafer die (on blue tape)	5SLZ 86G1700

Outline drawing



Note: all dimensions are shown in millimeters

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

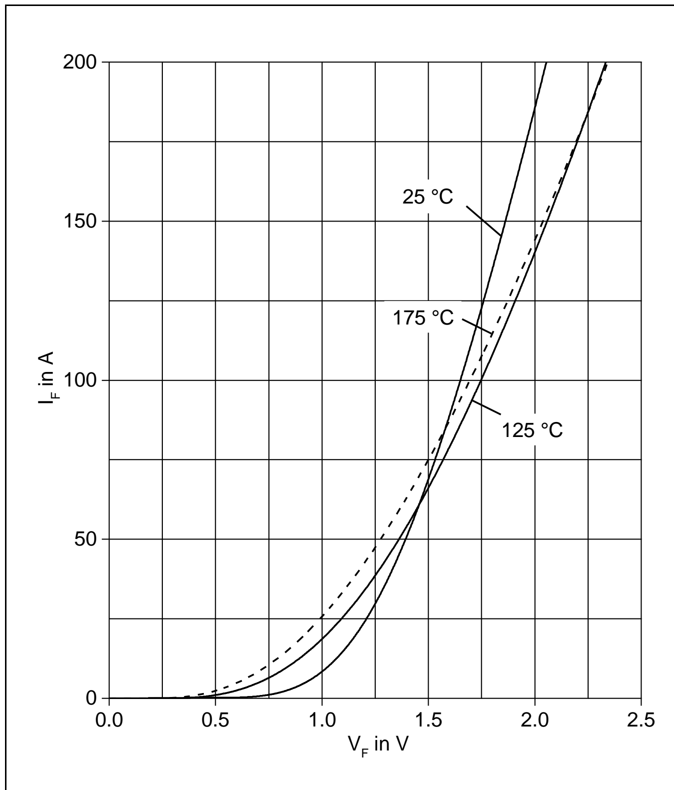


Fig. 1 Typical diode forward characteristics, chip level

Related documents:

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

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