

5SLZ 12E1700

Fast-Diode Die

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

$$I_F = 50 \text{ A}$$

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}	$T_{vj} \geq 25 \text{ }^\circ\text{C}$		1700	V
DC forward current	I_F			50	A
Peak forward current	I_{FRM}	Limited by T_{vjmax}		100	A
Junction temperature	$T_{vj(op)}$		-40	175	$^\circ\text{C}$

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	$I_F = 50 \text{ A}$	$T_{vj} = 25 \text{ }^\circ\text{C}$		1.6	2.2	V
			$T_{vj} = 125 \text{ }^\circ\text{C}$		1.75		V
			$T_{vj} = 175 \text{ }^\circ\text{C}$		1.70		V
Continuous reverse current	I_R	$V_R = 1700 \text{ V}$	$T_{vj} = 25 \text{ }^\circ\text{C}$			1	μA
			$T_{vj} = 125 \text{ }^\circ\text{C}$		65		μA
			$T_{vj} = 175 \text{ }^\circ\text{C}$		1.5		mA
Reverse recovery current	I_{rr}		$T_{vj} = 25 \text{ }^\circ\text{C}$		65		A
			$T_{vj} = 125 \text{ }^\circ\text{C}$		75		A
			$T_{vj} = 175 \text{ }^\circ\text{C}$		85		A
Recovered charge	Q_{rr}	$V_{CC} = 900 \text{ V},$ $I_F = 50 \text{ A},$ $di/dt = 800 \text{ A}/\mu\text{s}$ $L_\sigma = 240 \text{ nH}$ inductive load	$T_{vj} = 25 \text{ }^\circ\text{C}$		14		μC
			$T_{vj} = 125 \text{ }^\circ\text{C}$		25		μC
			$T_{vj} = 175 \text{ }^\circ\text{C}$		30		μC
Reverse recovery time	t_{rr}	Switch: 5SMY 12J1730	$T_{vj} = 25 \text{ }^\circ\text{C}$		100		ns
			$T_{vj} = 125 \text{ }^\circ\text{C}$		120		ns
			$T_{vj} = 175 \text{ }^\circ\text{C}$		140		ns
Reverse recovery energy	E_{rec}		$T_{vj} = 25 \text{ }^\circ\text{C}$		9		mJ
			$T_{vj} = 125 \text{ }^\circ\text{C}$		14		mJ
			$T_{vj} = 175 \text{ }^\circ\text{C}$		19		mJ

²⁾ Characteristic values according to IEC 60747 - 2

Mechanical properties ³⁾

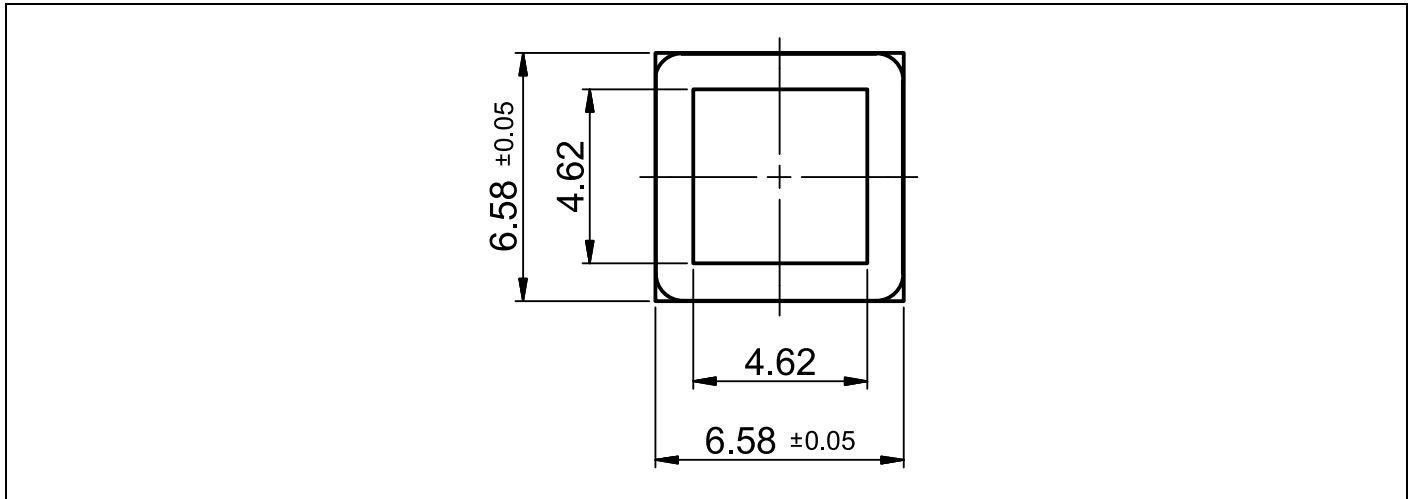
Parameter	Symbol	Conditions	min	Unit
Dimensions	Overall die	L x W	6.58 x 6.58	mm
	exposed front metal thickness	L x W	4.62 x 4.62	mm
			370 ± 15	µm
Metallization ³⁾	front (E)	AlSi1	4	µm
	back (C)	Al / Ti / Ni / Ag	1.2	µm

³⁾ Please refer to Application Note 5SYA 2059: Applying IGBT and diode dies

Form of delivery

Description	Part number
Unsawn 6" wafer die (on blue tape)	5SLZ 76E1700

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.

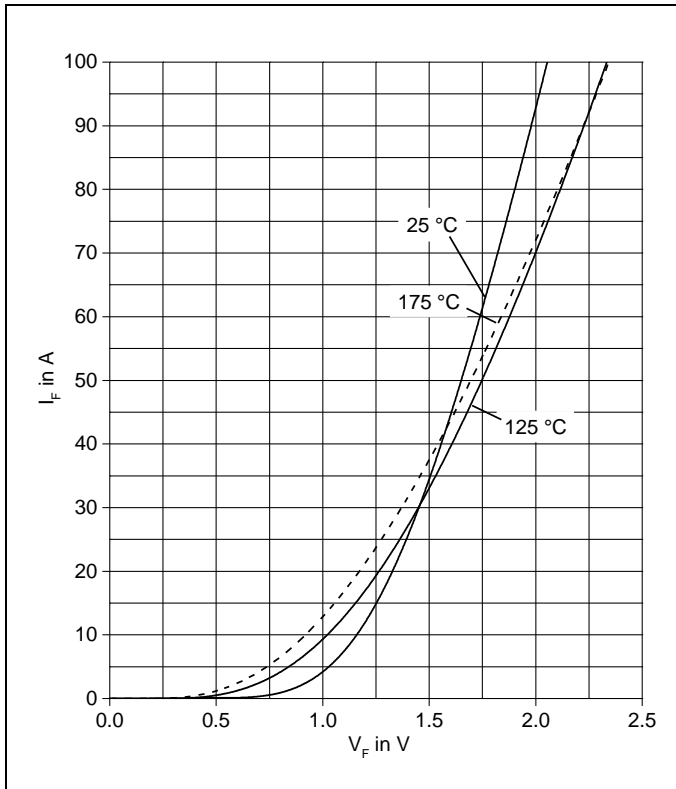


Fig. 1 Typical diode forward characteristics

Related documents:

- 5SYA 2045 Thermal runaway during blocking
- 5SYA 2059 Applying IGBT and Diode dies
- 5SYA 2093-00 Thermal design of IGBT Modules
- 5SZK 9114 Handling, packing and storage conditions for sawn wafer dies and bare die
- 5SYA 2057 IGBT diode safe operating area (SOA)

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