V_{RRM} = 1200 V
I_F = 50 A

Diode-Die

5SLY 12E1200

Die size: 6.3 x 6.3 mm

Doc. No. 5SYA 1681-03 12 14

- **Ultra low losses**
- **Fast and soft reverse-recovery**
- **Highly rugged SPT+ design**
- **Passivation: Silicon Nitride plus Polyimide**

Maximum rated values [1)]

Parameter	Symbol	Conditions	min	max	Unit
Repetitive peak reverse voltage	V_{RRM}			1200	V
Continuous forward current	I_F			50	A
Repetitive peak forward current	I_{FRM}	Limited by T_{vjmax}		100	A
Junction temperature	T_{vj}			175	°C
	$T_{vj(op)}$		-40	150	

[1)] Maximum rated values indicate limits beyond which damage to the device may occur per IEC 60747 - 2

Diode characteristic values [2)]

Parameter	Symbol	Conditions		min	typ	max	Unit
Continuous forward voltage	V_F	I_F = 50 A	T_{vj} = 25 °C		1.8	2.1	V
			T_{vj} = 125 °C		1.85		V
Continuous reverse current	I_R	V_R = 1200 V	T_{vj} = 25 °C			100	µA
			T_{vj} = 125 °C		0.5		mA
Peak reverse recovery current	I_{rr}	I_F = 50 A, V_R = 600 V, di/dt = 1000 A/µs, L_σ = 60 nH, Inductive load, Switch: 1x 5SMY 12H1280	T_{vj} = 25 °C		45		A
			T_{vj} = 125 °C		55		A
Recovered charge	Q_{rr}		T_{vj} = 25 °C		6.5		µC
			T_{vj} = 125 °C		12.7		µC
Reverse recovery time	t_{rr}		T_{vj} = 25 °C		250		ns
			T_{vj} = 125 °C		360		ns
Reverse recovery energy	E_{rec}		T_{vj} = 25 °C		2.4		mJ
			T_{vj} = 125 °C		5		mJ

[2] Characteristic values according to IEC 60747 - 2

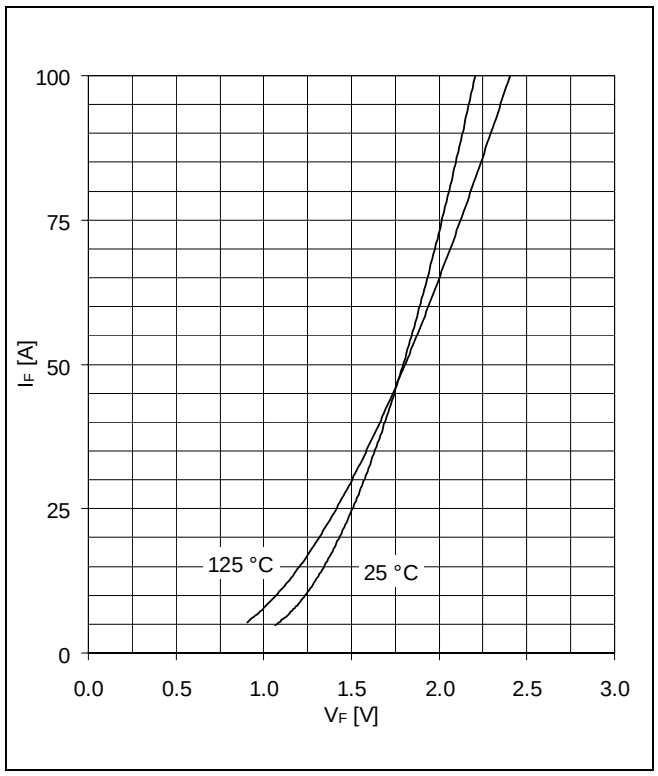


Fig. 1 Typical diode forward characteristics

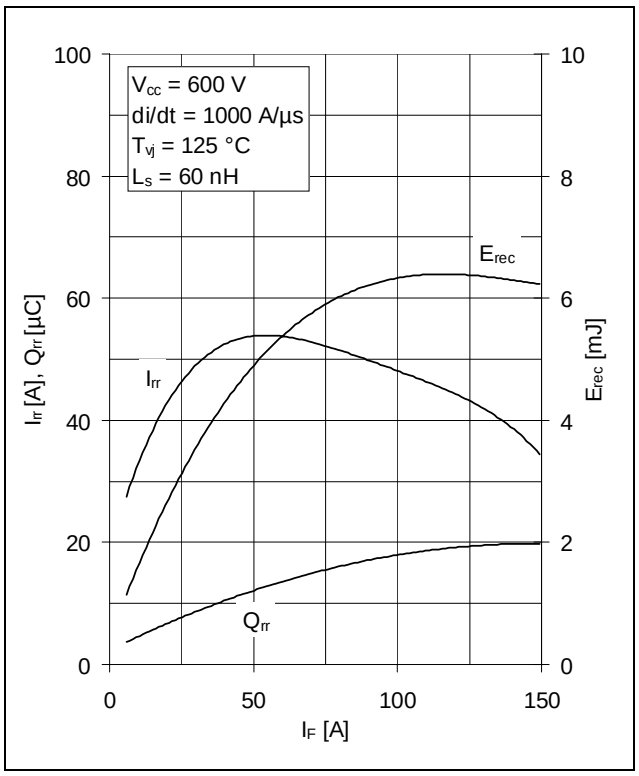


Fig. 2 Typical reverse recovery characteristics vs. forward current

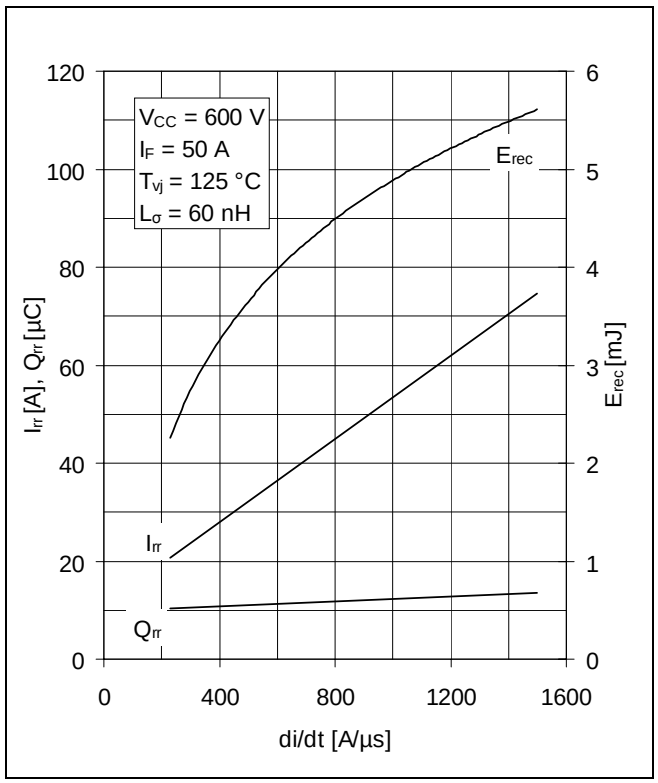


Fig. 3 Typical reverse recovery vs. di/dt

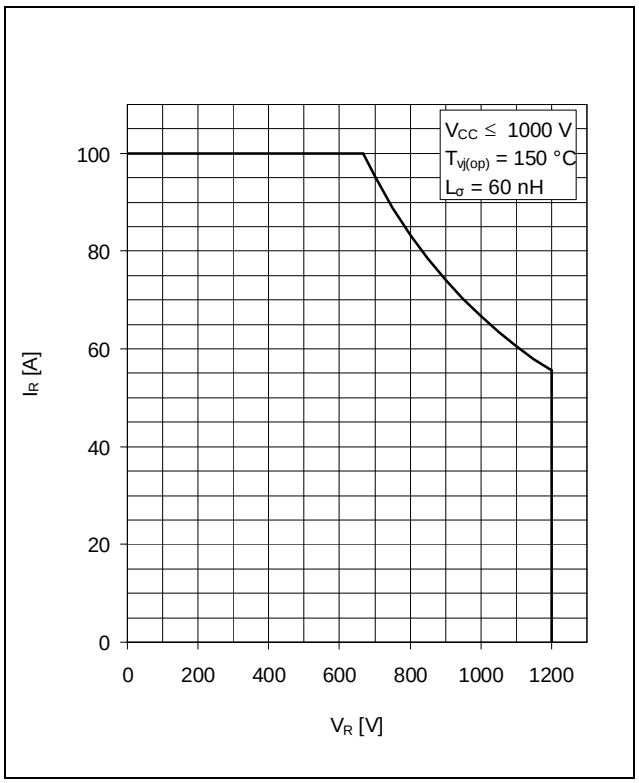


Fig. 4 Safe operating area (FBSOA)

Mechanical properties

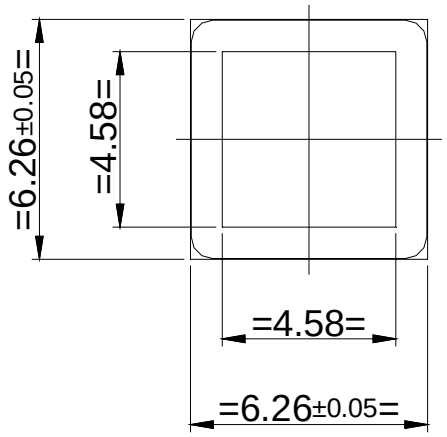
Parameter				Unit
Dimensions	Overall die	L x W	6.3 x 6.3	mm
	exposed front metal	L x W	4.6 x 4.6	mm
	thickness		350 ± 15	µm
Metallization [3]	front (A)	AlSi1	4	µm
	back (K)	Al / Ti / Ni / Ag	1.2	µm

[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	5SLY 76E1200
Sawn 6" wafer die (on blue tape)	5SLY 86E1200

Outline Drawing



Note : All dimensions are shown in mm

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.

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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Doc. No. 5SYA 1681-03 12 14