

$V_{RRM} = 3300 \text{ V}$

$I_F = 125 \text{ A}$

Fast-Diode Die

5SLY 12M3300



Die size: 13.6 x 13.6 mm

Doc. No. 5SYA 1676-00 May 08

- 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}			3300	V
Continuous forward current	I_F			125	A
Repetitive peak forward current	I_{FRM}	Limited by T_{vjmax}		250	A
Junction temperature	T_{vj}		-40	125	°C

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	$I_F = 125 \text{ A}$	$T_{vj} = 25 \text{ °C}$	2.05		V
			$T_{vj} = 125 \text{ °C}$	2.2		V
Continuous reverse current	I_R	$V_R = 3300 \text{ V}$	$T_{vj} = 25 \text{ °C}$		50	μA
			$T_{vj} = 125 \text{ °C}$	2.5		mA
Peak reverse recovery current	I_{rr}	$I_F = 125 \text{ A},$ $V_R = 1800 \text{ V},$ $di/dt = 640 \text{ A}/\mu\text{s},$ $L_\sigma = 1200 \text{ nH},$ Inductive load, Switch: 2x 5SMY12M3300	$T_{vj} = 25 \text{ °C}$	175		A
			$T_{vj} = 125 \text{ °C}$	205		A
Recovered charge	Q_{rr}	$I_F = 125 \text{ A},$ $V_R = 1800 \text{ V},$ $di/dt = 640 \text{ A}/\mu\text{s},$ $L_\sigma = 1200 \text{ nH},$ Inductive load, Switch: 2x 5SMY12M3300	$T_{vj} = 25 \text{ °C}$	90		μC
			$T_{vj} = 125 \text{ °C}$	140		μC
Reverse recovery time	t_{rr}	$I_F = 125 \text{ A},$ $V_R = 1800 \text{ V},$ $di/dt = 640 \text{ A}/\mu\text{s},$ $L_\sigma = 1200 \text{ nH},$ Inductive load, Switch: 2x 5SMY12M3300	$T_{vj} = 25 \text{ °C}$	680		ns
			$T_{vj} = 125 \text{ °C}$	880		ns
Reverse recovery energy	E_{rec}	$I_F = 125 \text{ A},$ $V_R = 1800 \text{ V},$ $di/dt = 640 \text{ A}/\mu\text{s},$ $L_\sigma = 1200 \text{ nH},$ Inductive load, Switch: 2x 5SMY12M3300	$T_{vj} = 25 \text{ °C}$	105		mJ
			$T_{vj} = 125 \text{ °C}$	175		mJ

²⁾ Characteristic values according to IEC 60747 - 2

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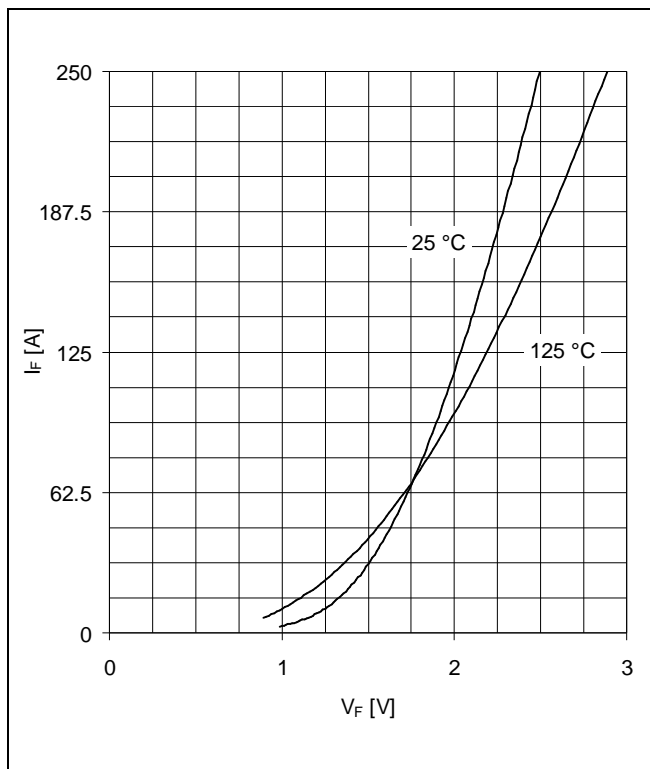


Fig. 1 Typical diode forward characteristics

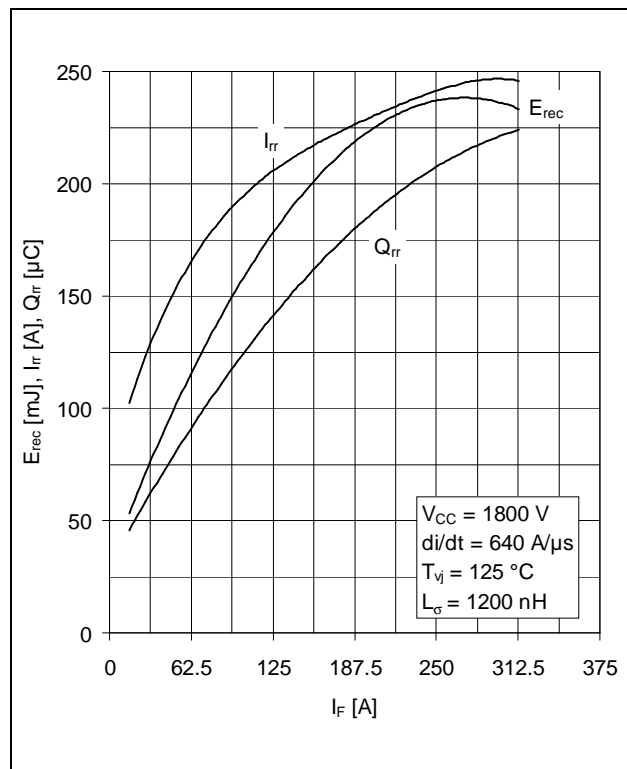


Fig. 2 Typical reverse recovery characteristics vs. forward current

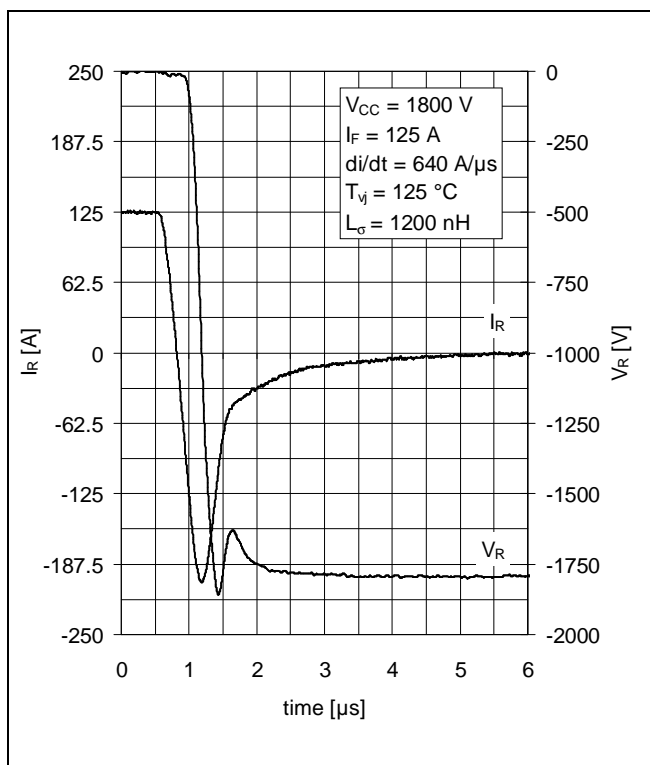


Fig. 3 Typical diode reverse recovery behaviour

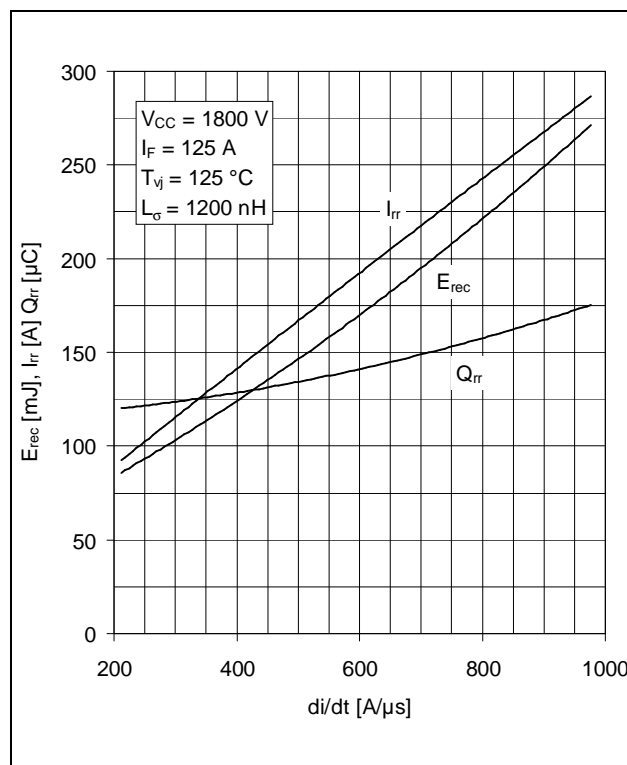


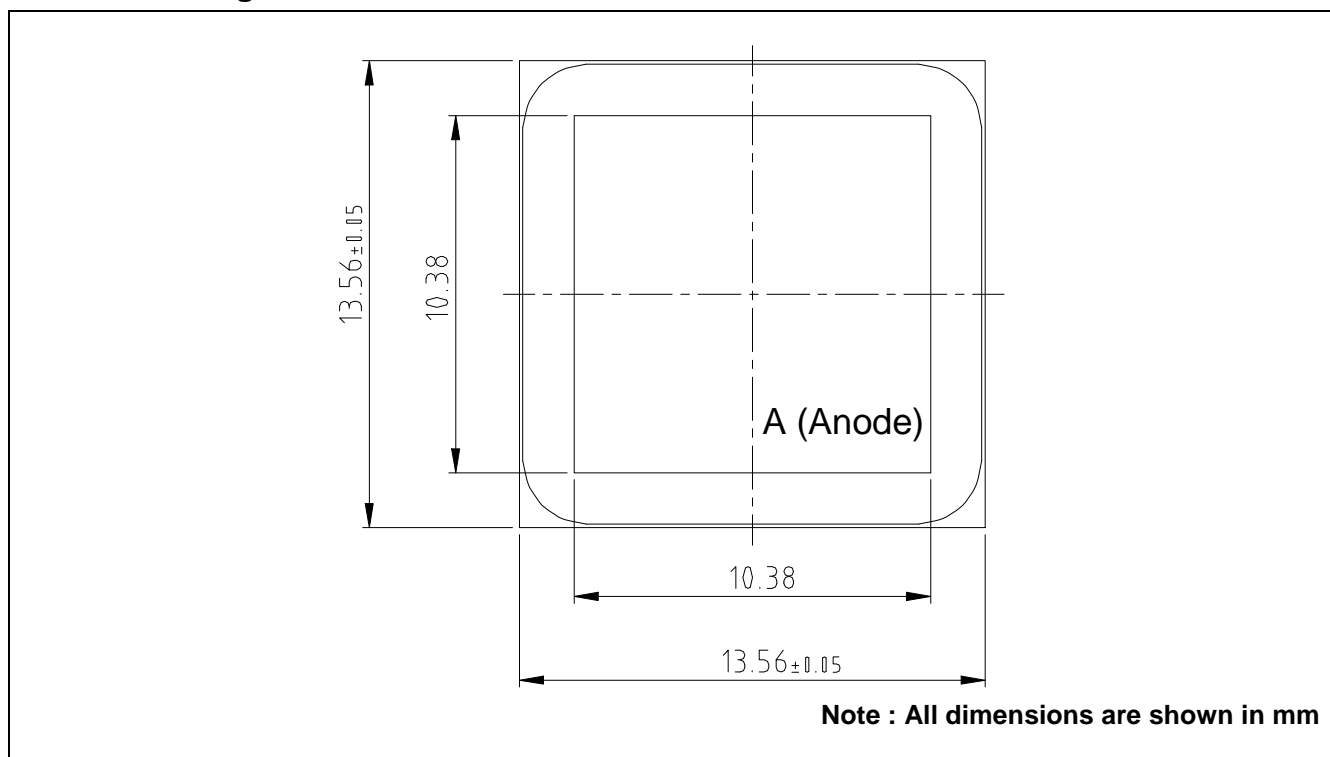
Fig. 4 Typical reverse recovery vs. di/dt

Mechanical properties

Parameter				Unit
Dimensions	Overall die	L x W	13.6 x 13.6	mm
	exposed front metal	L x W	10.4 x 10.4	mm
	thickness		385 ± 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.

Outline Drawing



This product has been designed and qualified for Industrial Level.

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