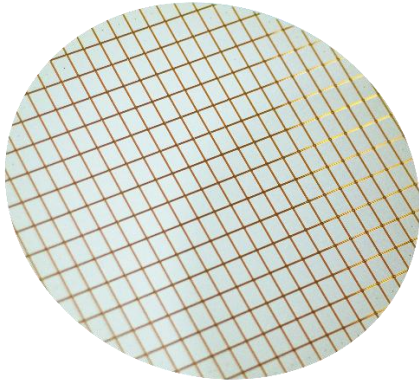


PRELIMINARY DATASHEET

SID0150C120d23

d23 QLLC Diode, 11.1mm x 5.4mm



$V_{RRM} = 1200\text{ V}$

$I_F = 150\text{ A}$

- d23 quasi local lifetime control diode design
- neutral temperature coefficient
- easy paralleling

Maximum ratings¹

PARAMETER	SYMBOL	CONDITIONS	MIN	MAX	UNIT
Repetitive peak reverse voltage	V_{RRM}	$T_{vj} \geq 25\text{ °C}$		1200	V
Continuous forward current	I_F	$T_{vj} < 175\text{ °C}$		150	A
Maximum repetitive forward current	I_{FRM}	t_p limited by $T_{vj\text{ max}}$ $T_{vj\text{ max}}$		300	A
Junction temperature	T_{vj}		-40	175	°C
Junction operating temperature	$T_{vj(op)}$		-40	175	°C

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



Diode²

PARAMETER	SYMBOL	CONDITIONS		MIN	TYP	MAX	UNIT
Cathode-Anode breakdown voltage	$V_{(BR)}$	$I_R = 0.25\text{mA}$, $T_{vj} = 25^\circ\text{C}$		1200			V
Forward voltage drop	V_F	$I_F = 150\text{ A}$	$T_{vj} = 25^\circ\text{C}$		1.80		V
			$T_{vj} = 125^\circ\text{C}$		tbd		V
			$T_{vj} = 175^\circ\text{C}$		1.90		V
Reverse leakage current	I_R	$V_R = 1200\text{ V}$	$T_{vj} = 25^\circ\text{C}$			3	μA
Peak reverse recovery current	I_{RM}	$V_R = 600\text{ V}$, $I_F = 150\text{ A}$, $di/dt = 2450\text{ A}/\mu\text{s}$ (175°C), $R_G = 4.0\ \Omega$, $V_{GE} = \pm 15\text{ V}$, IGBT: SIS020C120i25	$T_{vj} = 25^\circ\text{C}$		142		A
			$T_{vj} = 125^\circ\text{C}$		131		A
			$T_{vj} = 175^\circ\text{C}$		130		A
Recovery charge	Q_{rr}		$T_{vj} = 25^\circ\text{C}$		12.4		μC
			$T_{vj} = 125^\circ\text{C}$		20.0		μC
			$T_{vj} = 175^\circ\text{C}$		26.8		μC
Reverse recovery time	t_{rr}		$T_{vj} = 25^\circ\text{C}$		362		ns
			$T_{vj} = 125^\circ\text{C}$		550		ns
			$T_{vj} = 175^\circ\text{C}$		720		ns
Reverse recovery energy	E_{rec}		$T_{vj} = 25^\circ\text{C}$		5.1		mJ
			$T_{vj} = 125^\circ\text{C}$		8.6		mJ
			$T_{vj} = 175^\circ\text{C}$		12.0		mJ

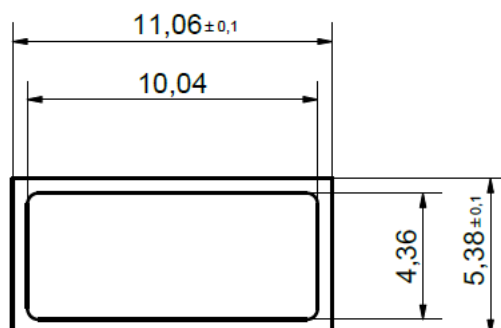
Mechanical properties

PARAMETER		UNIT
Die size	$(11.06 \pm 0.01) \times (5.38 \pm 0.01)$	mm^2
Thickness	130 ± 5	μm
Wafer diameter	300	mm
Maximum chips per wafer	1032	pcs
Frontside passivation	Polyimide	
Frontside metal	AlSiCu, 4000nm	
Backside metal	Al Ti Ni Ag System, 1100nm	

² Characteristic values according to IEC 60747-2



Chip drawing



This is an electrostatic sensitive device.

Ordering Information

OPTION		ARTICLE NUMBER
Packaging Method	Sawn on tape (_O10)	SID0150C120D23_ O10
	Wafer unsawn (_O20)	SID0150C120D23_ O20
	Waffle pack (_O30)	SID0150C120D23_ O30