

Absolute Maximum Ratings			
Symbol	Conditions ¹⁾	Values	Units
V_{RRM}		1200	V
I_{FSM}	(≥ 3 bondwires 300 μm $\varnothing$)		
$t_p = 10 \text{ ms}; \sin; T_j = 150 \text{ }^\circ\text{C}$		250	A
I_t^2	$t_p = 10 \text{ ms}; \sin; T_j = 150 \text{ }^\circ\text{C}$	310	A^2s
T_{solder}	max. 120 s (transfer)	375	$^\circ\text{C}$
T_{vj}, T_{stg}	min	- 55	$^\circ\text{C}$
T_{vj}, T_{stg}	max	+ 150	$^\circ\text{C}$

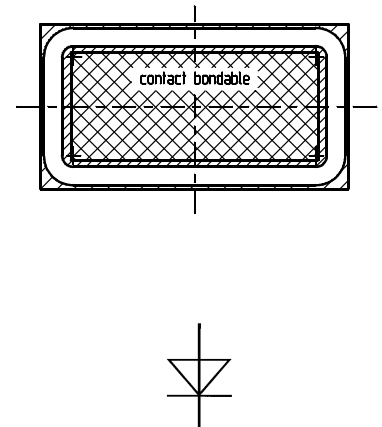
SEMICELL CAL - Diode Chips³⁾

SKCD 23C 120 I

6,6 x 3,5 mm; 25 A⁴⁾; 1200 V
Preliminary Data

GBCD023

Characteristics					
Symbol	Conditions ¹⁾	min.	typ.	max.	Units
I_{RM}	$T_j = 25 \text{ }^\circ\text{C}/125 \text{ }^\circ\text{C}; V_{RRM}$			0,1 / 4	mA
V_F	$I_F = 25 \text{ A}; T_j = 25 \text{ }^\circ\text{C}$		2	2,5	V
	$T_j = 125 \text{ }^\circ\text{C}$		1,8		V
V_F	$I_F = 40 \text{ A}; T_j = 25 \text{ }^\circ\text{C}$		2,4		V
	$T_j = 125 \text{ }^\circ\text{C}$		2,25		V
$V_{T(TO)}$	$T_j = 125 \text{ }^\circ\text{C}$, see Fig. 1		1,0	1,2	V
r_T	$T_j = 125 \text{ }^\circ\text{C}$		28	45	$\text{m}\Omega$
I_{RRM}	$I_F = 25 \text{ A}; T_j = 125 \text{ }^\circ\text{C}$		20		A
Q_{rr}	$I_F = 25 \text{ A}; T_j = 25 \text{ }^\circ\text{C}$		1,8		μC
	$T_j = 125 \text{ }^\circ\text{C}$		3,7		μC
T_{solder}	10 min		250		$^\circ\text{C}$
T_{solder}	5 min			320	$^\circ\text{C}$



Features

- Low voltage drop
- low temperature dependence
- Very soft reverse recovery under **all** conditions
- CAL = Controlled Axial Lifetime Technology
- Top side = Al for bonding by aluminum wire
- Bottom = 4 layer metallisation for soldering

Typical Applications

- Inverse diode for IGBT (in inverter drives)
- Freewheeling diode in brake choppers or step-up choppers with IGBT or MOSFET
- UPS Uninterruptible Power Supplies
- Hybrid circuits for static power converters

Mechanical Data			
A_{tot}	total area	23	mm^2
$A_{\text{act.}}$	active area	14,5	mm^2
w	weight	15	mg
Supplied on frames Please contact factory			

- 1) $T_{\text{case}} = 25 \text{ }^\circ\text{C}$, unless otherwise specified
2) $V_R = 600 \text{ V}; -di_F/dt = 500 \text{ A}/\mu\text{s};$
3) CAL = Controlled Axial Lifetime Technology
4) Soldered on DCB ceramic (Al_2O_3) 0,4 mm thick on a 3 mm copper base plate $R_{\text{thjc}} = 1 \text{ K/W}$
 $T_{jm} = 150 \text{ }^\circ\text{C}; T_{\text{case}} = 80 \text{ }^\circ\text{C}.$

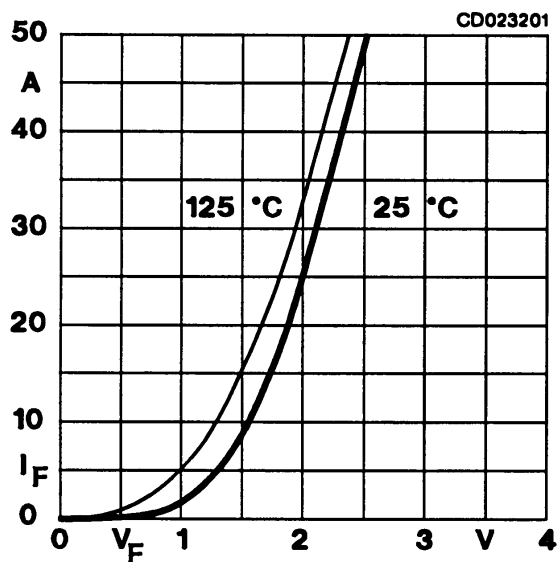


Fig. 1 Typ. CAL diode forward characteristic

Fig. 2 Typ peak reverse recovery current $I_{RR} = f(dI_F/dt)$

Fig. 3 Typ. diode reverse recovery behaviour $i = f(t)$

Fig. 4 Typ. reverse recovery charge $Q_{rr} = f(dI_F/dt)$

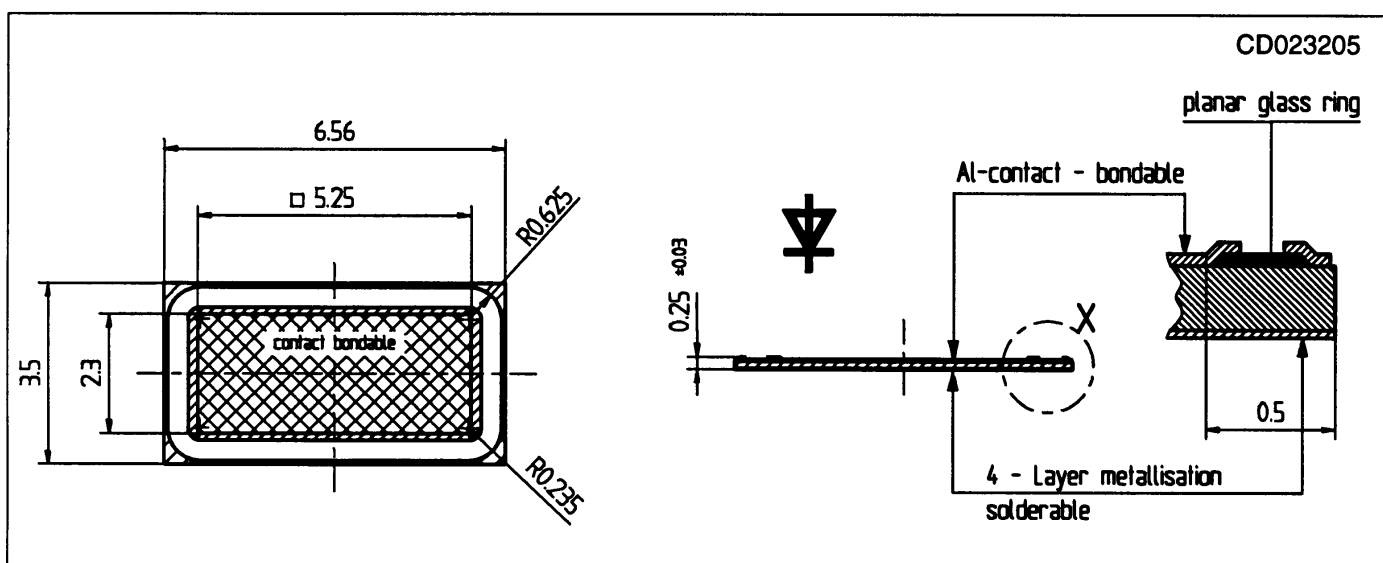


Fig. 5 Mechanical outline (dimensions in mm)