

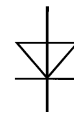
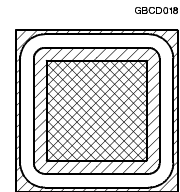
Absolute Maximum Ratings			
Symbol	Conditions ¹⁾	Values	Units
V_{RRM}		1200	V
I_{FSM}	(≥ 2 bondwires 300 μm \varnothing)		
	$t_p = 10 \text{ ms}$; \sin ; $T_j = 150^\circ\text{C}$	180	A
I_t^2	$t_p = 10 \text{ ms}$; \sin ; $T_j = 150^\circ\text{C}$	162	A^2s
T_{solder}	max. 120 s (transfer)	375	$^\circ\text{C}$
T_{vj} , T_{stg}	min	- 55	$^\circ\text{C}$
T_{vj} , T_{stg}	max	+ 150	$^\circ\text{C}$

SEMICELL CAL - Diode Chips³⁾

SKCD 18C 120 I

4,2 x 4,2 mm; 15 A⁴⁾; 1200 V

Characteristics					
Symbol	Conditions ¹⁾	min.	typ.	max.	Units
I_{RM}	$T_j = 25^\circ\text{C}/125^\circ\text{C}$; V_{RRM}			0,1 / 2	mA
V_F	$I_F = 15 \text{ A}$; $T_j = 25^\circ\text{C}$		2,0	2,5	V
	$T_j = 125^\circ\text{C}$		1,8	2,3	V
V_F	$I_F = 22 \text{ A}$; $T_j = 25^\circ\text{C}$		2,3		V
	$T_j = 125^\circ\text{C}$		2,15		V
$V_{T(TO)}$	$T_j = 125^\circ\text{C}$, see Fig. 1		1,0	1,2	V
r_T	$T_j = 125^\circ\text{C}$		50	75	$\text{m}\Omega$
I_{RRM}	$I_F = 15 \text{ A}$; ²⁾				
	$T_j = 125^\circ\text{C}$		16		A
Q_{rr}	$I_F = 15 \text{ A}$; $T_j = 25^\circ\text{C}$		1,5		μC
	²⁾ $T_j = 125^\circ\text{C}$		2,7		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	17,6	mm^2
$A_{\text{act.}}$	active area	9,2	mm^2
w	weight	12	mg
Supplied on frames Please contact factory			

- ¹⁾ $T_{\text{case}} = 25^\circ\text{C}$, unless otherwise specified
- ²⁾ $V_R = 600 \text{ V}$; $-di_F/dt = 400 \text{ A}/\mu\text{s}$;
- 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 $R_{\text{thjc}} = 1,5 \text{ K/W}$
 $T_{jm} = 150^\circ\text{C}$; $T_{\text{case}} = 80^\circ\text{C}$.
- ⁵⁾ DCB = Direct Copper Bonding Technology

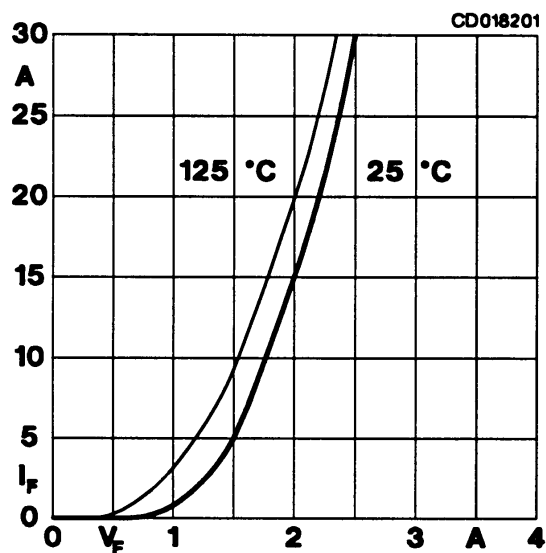


Fig. 1 Typ. CAL diode forward characteristic

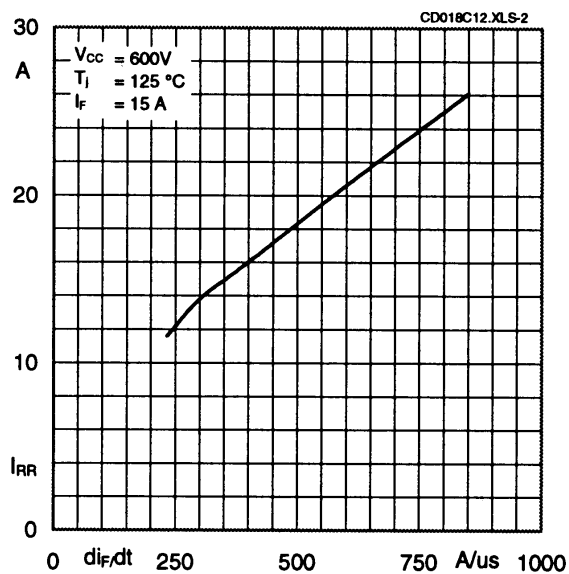


Fig. 2 Typ. peak reverse recovery current $I_{RR} = f (di_F/dt)$

$T_J = 125\text{ °C}$
 $di_F/dt = -400\text{ A/}\mu\text{s}$

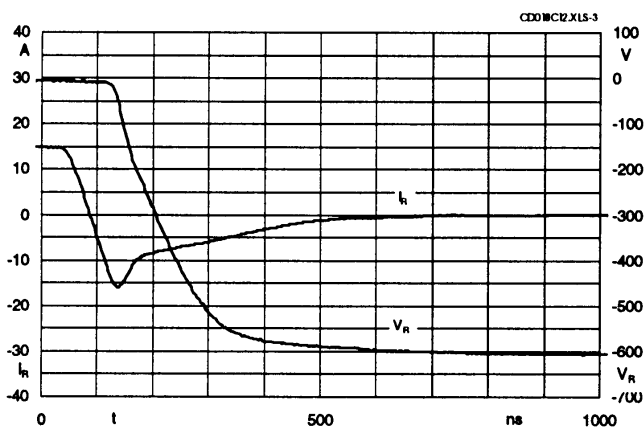


Fig. 3 Typ. diode reverse recovery behaviour $i = f (t)$

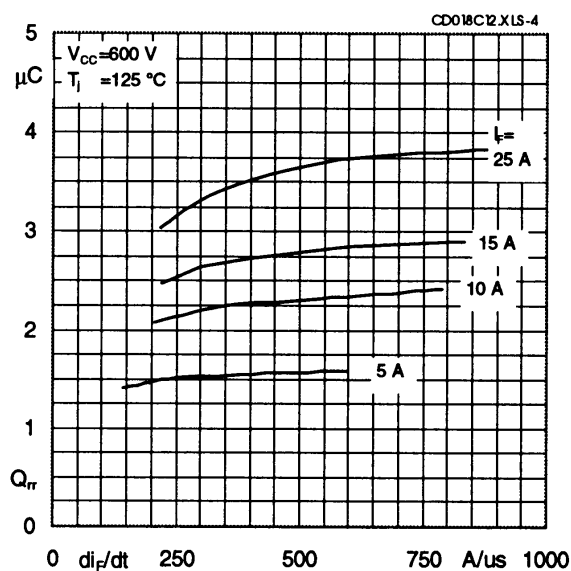


Fig. 4 Typ. reverse recovery charge $Q_{RR} = f (di_F/dt)$

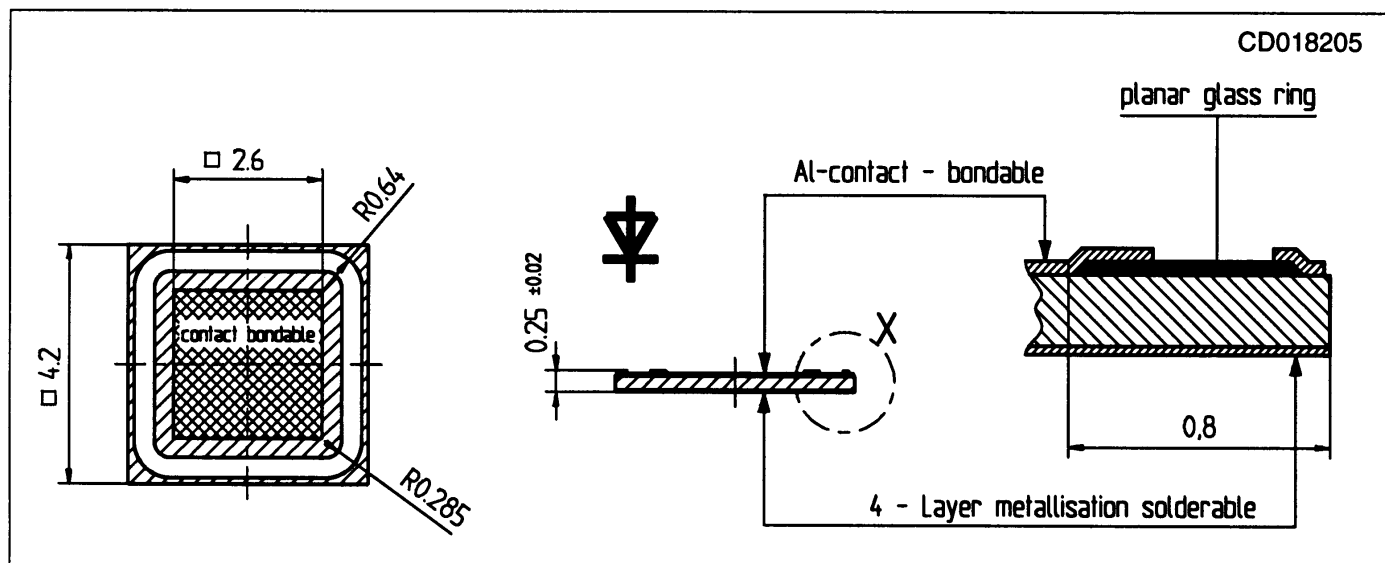


Fig. 5 Mechanical outline (dimensions in mm)