

# iC-SG85 BLCC SG4C

Infrared LED

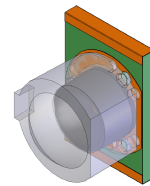
## FEATURES

Emission peak at 850 nm matched to silicon sensors  
Optimized irradiance pattern  
High temperature range -40 to 125 °C  
High optical output power  
Fast switching speed

## APPLICATIONS

Illumination for high resolution optical encoder  
Modulated light barriers

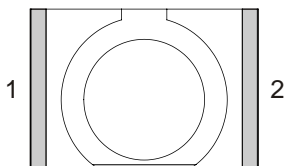
## PACKAGES



SG4C

## PACKAGES (top view)

### PIN CONFIGURATION SG4C



### PIN FUNCTIONS

#### No. Name Function

1	C	Cathode (-)
2	A	Anode (+)

## ABSOLUTE MAXIMUM RATINGS

Beyond these values damage may occur (Ta = 25°C, unless otherwise noted)

Item No.	Symbol	Parameter	Conditions	Min.		Max.	Unit
G001	IF	Forward current (DC)				100	mA
G002	IFSM	Surge forward current	tp ≤ 10 μs, 5 % duty cycle			1500	mA
G003	VR	Reverse voltage				5	V
G004	P	Power dissipation	temperature dependence see fig. 1			150	mW

All voltages are referenced to ground unless otherwise stated.

All currents flowing into the device pins are positive; all currents flowing out of the device pins are negative.

# iC-SG85 BLCC SG4C

## Infrared LED

### THERMAL DATA

Item No.	Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
T01	Ta	Operating Ambient Temperature Range		-40		125	°C
T02	Ts	Storage Temperature Range		-40		125	°C
T03	Tpk	Soldering Temperature	tpk < 5 s, manual soldering; Not suitable for reflow or vapor phase soldering.			260	°C
T04	Rthja	Thermal resistance junction to ambient			300		K/W
T05	Tj	Junction Temperature		-40		125	°C

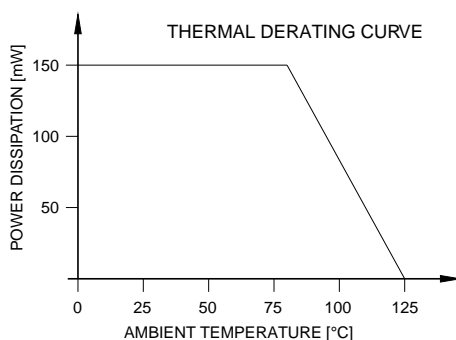


Figure 1: Maximum power dissipation with respect to temperature

### ELECTRICAL CHARACTERISTICS

Tamb = 25°C, unless otherwise noted

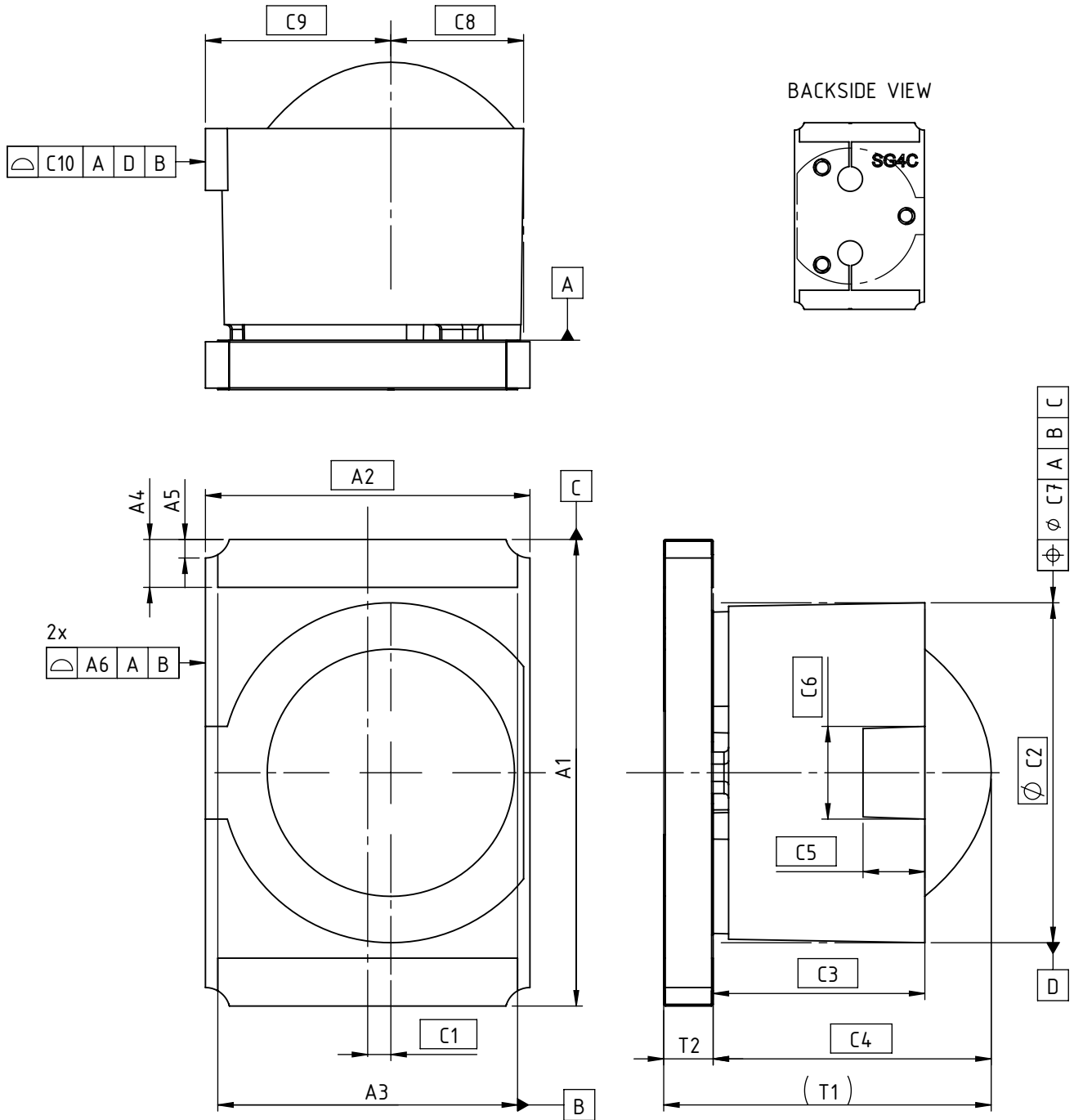
Item No.	Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
<b>Electrical and Optical Characteristics</b>							
001	VF	Forward voltage	IF = 20 mA		1.4	1.8	V
002	VR	Reverse voltage	IR = 5 μA	5			V
003	Φe	Radiant power	IF = 20 mA		2.7		mW
004	TK(Φe)	Temperature coefficient of radiant power	IF = 20 mA, Tamb = 25°C...125°C		-0.6		%/K
005	λp	Peak wavelength	IF = 20 mA	840	850	860	nm
006	Δλ	Spectral half width	IF = 10 mA		30		nm
008	tr, tf	Switching time	IF = 100 mA, RL = 50 Ω		12		ns

Remarks: Measured optical characteristics may depend on conditions and equipment and thus differ in its given typical values.

# iC-SG85 BLCC SG4C

Infrared LED

## PHYSICAL DIMENSIONS



$\frac{\text{C11}}{\text{A D B}}$  : ALL LENS SURFACES UNLESS OTHERWISE SPECIFIED

# iC-SG85 BLCC SG4C

## Infrared LED



Rev A1, Page 4/5

### DIMENSION TABLE

Item	Parameter	Comment	Value			Unit
			Min	Typ	Max	
	<b>Substrate</b>					
A1	Outline Y			15.00		mm
A2	Outline X			10.50		mm
A3	Lead Dimension			9.70	±0.05	mm
A4	Lead Width			1.50	±0.15	mm
A5	Notch				0.80	mm
A6	Outline Profile Tolerance	2x, with respect to Leads			0.50	mm
	<b>Lens</b>					
C1	Position Lens vs. Center			0.75		mm
C2	Lens Body Diameter			11.00		
C3	Lens Body Height	Base to Shoulder		6.85		mm
C4	Lens Body Height	Base to Tip		9.00		mm
C5	Lug Length			2.00		mm
C6	Lug Width			3.00		mm
C7	Positional Tolerance Lens	vs. Leads			0.15	mm
C8	Lens Flat	vs. Center of Lens		4.30		mm
C9	Lug Extension	vs. Center of Lens		6.00		mm
C10	Lug Profile Tolerance				0.20	mm
C11	Lens Profile Tolerance	all Surfaces			0.05	mm
	<b>Thickness Specifications</b>					
T1	Overall Thickness		10.40		10.90	mm
T2	Substrate Thickness		1.45		1.85	mm

iC-Haus expressly reserves the right to change its products and/or specifications. An info letter gives details as to any amendments and additions made to the relevant current specifications on our internet website [www.ichaus.de/infoletter](http://www.ichaus.de/infoletter); this letter is generated automatically and shall be sent to registered users by email.

Copying – even as an excerpt – is only permitted with iC-Haus' approval in writing and precise reference to source.

iC-Haus does not warrant the accuracy, completeness or timeliness of the specification and does not assume liability for any errors or omissions in these materials.

The data specified is intended solely for the purpose of product description. No representations or warranties, either express or implied, of merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information/specification or the products to which information refers and no guarantee with respect to compliance to the intended use is given. In particular, this also applies to the stated possible applications or areas of applications of the product.

iC-Haus conveys no patent, copyright, mask work right or other trade mark right to this product. iC-Haus assumes no liability for any patent and/or other trade mark rights of a third party resulting from processing or handling of the product and/or any other use of the product.

As a general rule our developments, IPs, principle circuitry and range of Integrated Circuits are suitable and specifically designed for appropriate use in technical applications, such as in devices, systems and any kind of technical equipment, in so far as they do not infringe existing patent rights. In principle the range of use is limitless in a technical sense and refers to the products listed in the inventory of goods compiled for the 2008 and following export trade statistics issued annually by the Bureau of Statistics in Wiesbaden, for example, or to any product in the product catalogue published for the 2007 and following exhibitions in Hanover (Hannover-Messe).

We understand suitable application of our published designs to be state-of-the-art technology which can no longer be classed as inventive under the stipulations of patent law. Our explicit application notes are to be treated only as mere examples of the many possible and extremely advantageous uses our products can be put to.

# iC-SG85 BLCC SG4C

Infrared LED

preliminary



Rev A1, Page 5/5

## ORDERING INFORMATION

Type	Package	Order Designation
iC-SG85	SG4C	iC-SG85 BLCC SG4C

For technical support, information about prices and terms of delivery please contact:

**iC-Haus GmbH**  
Am Kuemmerling 18  
D-55294 Bodenheim  
GERMANY

**Tel.: +49 (61 35) 92 92-0**  
**Fax: +49 (61 35) 92 92-192**  
**Web: <http://www.ichaus.com>**  
**E-Mail: [sales@ichaus.com](mailto:sales@ichaus.com)**

Appointed local distributors: [http://www.ichaus.com/sales\\_partners](http://www.ichaus.com/sales_partners)