

iC-SG85 BLCC SG1C

Infrared LED



Rev B3, Page 1/5

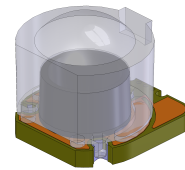
FEATURES

- ◆ 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

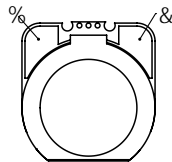
PACKAGES



SG1C

PACKAGING INFORMATION (top view)

PIN CONFIGURATION SG1C



1X150 180000 2.0%

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			1000	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.

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

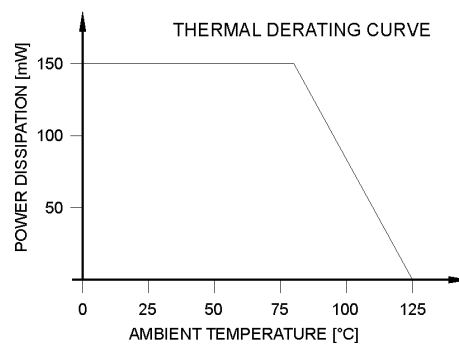


Figure 1: Maximum power dissipation with respect to temperature

ELECTRICAL CHARACTERISTICS

Tamb = 25°C, unless otherwise noted

Item No.	Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Electrical and Optical Characteristics							
001	V _F	Forward voltage	IF = 20 mA		1.4	1.8	V
002	V _R	Reverse voltage	IR = 5 μA	5			V
003	φ _e	Radiant power	IF = 20 mA		4.0		mW
004	TK(φ _e)	Temperature coefficient of radiant power	IF = 20 mA, Tj = 25°C...125°C		-0.6		%/K
005	λ _p	Peak wavelength	IF = 20 mA	840	850	860	nm
006	Δλ	Spectral half width	IF = 20 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.

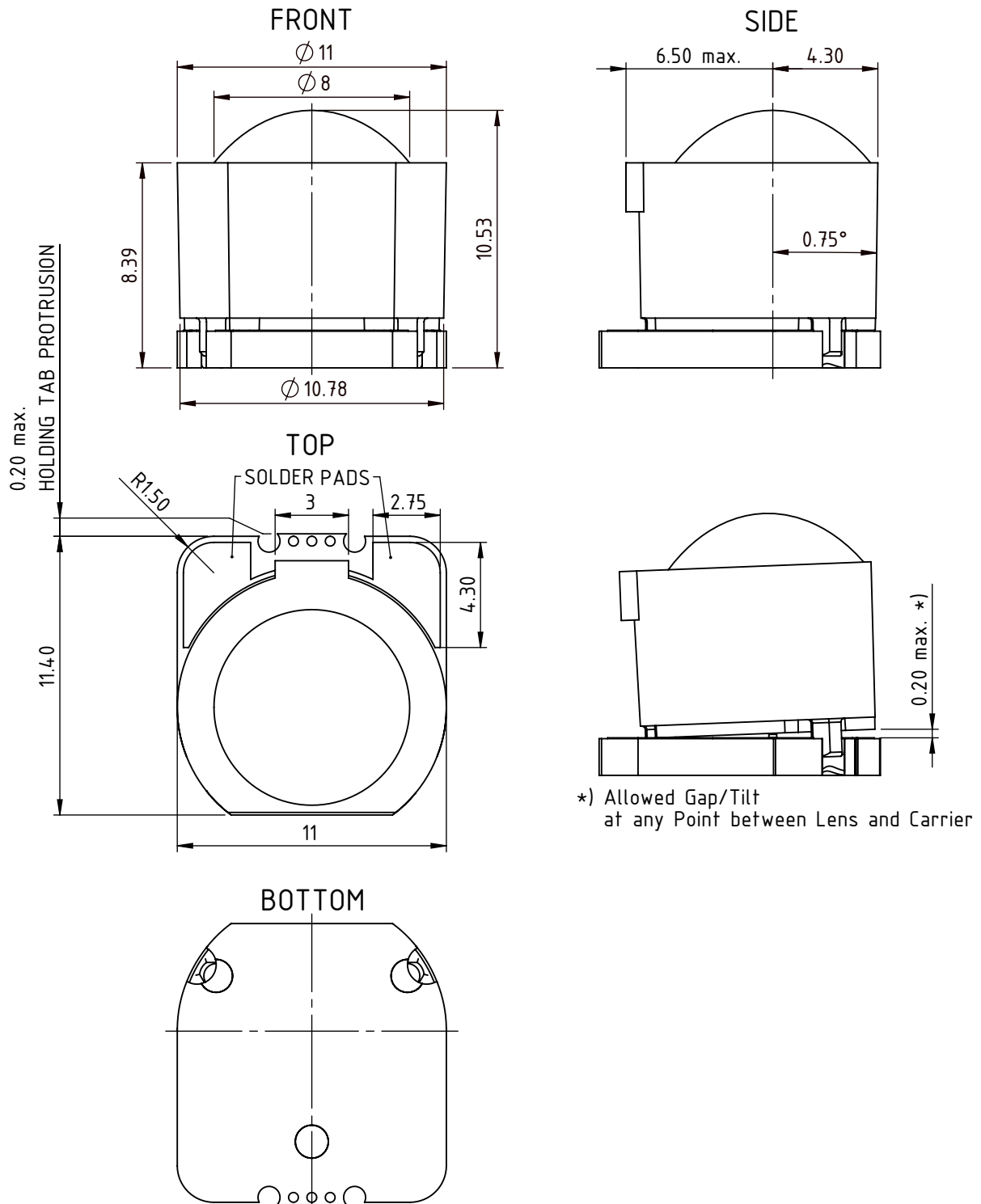
iC-SG85 BLCC SG1C

Infrared LED



Rev B3, Page 3/5

PACKAGE DIMENSIONS



drc_sg1c_pack_1, 4:1

Figure 2: Package view

iC-SG85 BLCC SG1C

Infrared LED



Rev B3, Page 4/5

SAFETY ADVICES

Depending on the mode of operation, these devices emit highly concentrated non visible infrared light which can be hazardous to the human eye.

Products which incorporate these devices have to follow the safety precautions given in IEC 60825-1 and IEC 62471.

HANDLING ADVICES

Because of the specific housing materials and geometries used, these LED devices are sensitive to rough handling or assembly and can thus be easily damaged

or may fail in regard to their electro-optical operation. Excessive mechanical stress or load on the lens surface or to the glued cap must be avoided.

DESIGN REVIEW: Notes on chip characteristics

iC-SG85 / iC-SG85 Z			
No.	Chip Design	Function, Parameter/Code	Description and Application Hints
1	iC-SG85	initial chip release	see datasheet revision A1
2	iC-SG85 Z	Maximum Ratings G002 Electrical Characteristics 003	changed to 1.0 A typ. values increased to 4.0 mW
3	iC-SG85 Z	Update Package View Handling Advices	Allowed Gap/Tilt

Table 4: Notes on chip functions regarding iC-SG85 / iC-SG85 Z

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; 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.

iC-SG85 BLCC SG1C

Infrared LED



Rev B3, Page 5/5

ORDERING INFORMATION

Type	Package	Order Designation
iC-SG85	SG1C	iC-SG85 BLCC SG1C

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

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

Tel.: +49 (0) 61 35-9292-0
Fax: +49 (0) 61 35-9292-192
Web: <http://www.ichaus.com>
E-Mail: sales@ichaus.com

Appointed local distributors: http://www.ichaus.com/sales_partners