

iC-SN85 BLCC SN1C

INFRARED LED



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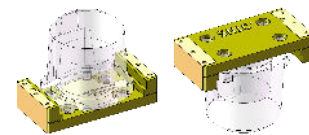
FEATURES

- ◆ 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

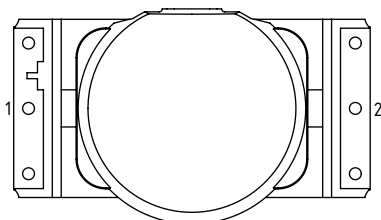
PACKAGES



BLCC SN1C

PACKAGING INFORMATION (top view)

PIN CONFIGURATION SN1C



PIN FUNCTIONS

No.	Name	Function
1	A	Anode (+)
2	C	Cathode (-)

ABSOLUTE MAXIMUM RATINGS

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

Item No.	Symbol	Parameter	Conditions			Unit
				Min.	Max.	
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.

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THERMAL DATA

Item No.	Symbol	Parameter	Conditions				Unit
				Min.	Typ.	Max.	
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

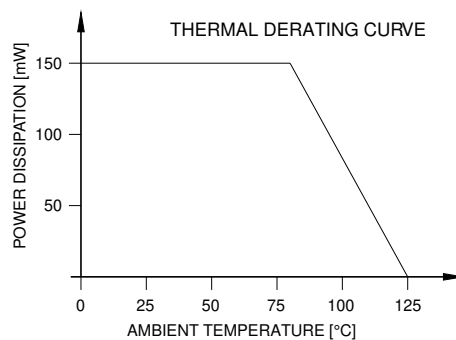


Figure 1: Maximum power dissipation with respect to temperature

ELECTRICAL CHARACTERISTICS

Tamb = 25°C, unless otherwise noted

Item No.	Symbol	Parameter	Conditions				Unit
				Min.	Typ.	Max.	
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	3.4	8.1		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
007	2φ	Divergence, SD2C package	IF = 20 mA		4		deg.
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.

RADIATION PATTERN

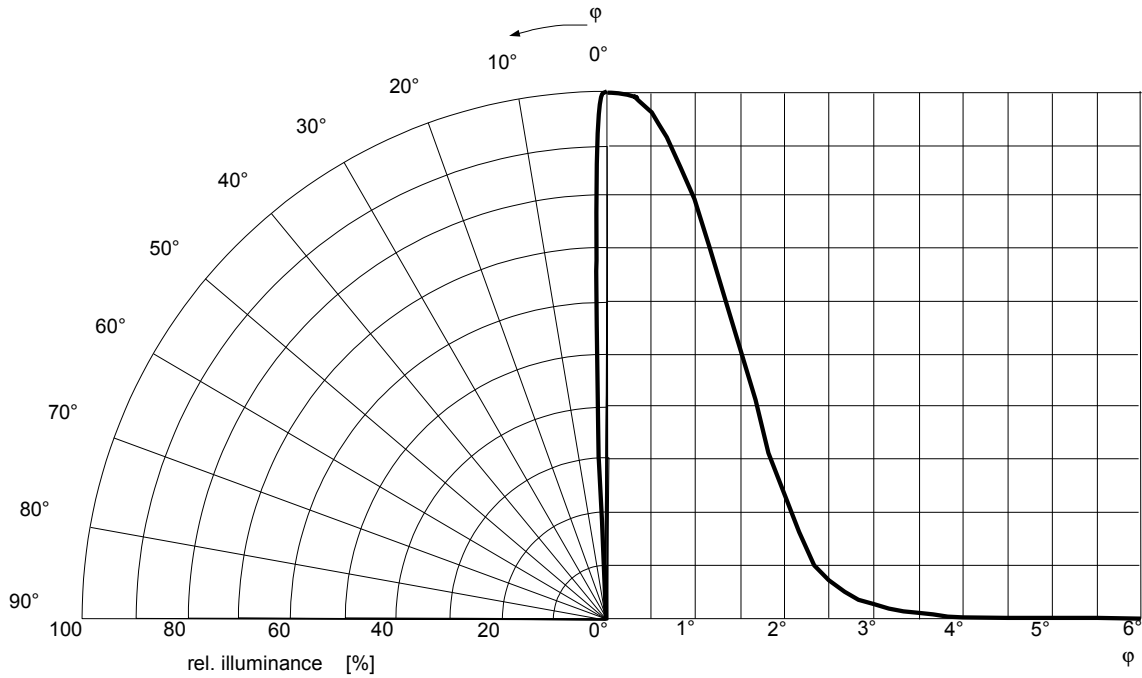


Figure 2: Rel. radiant output

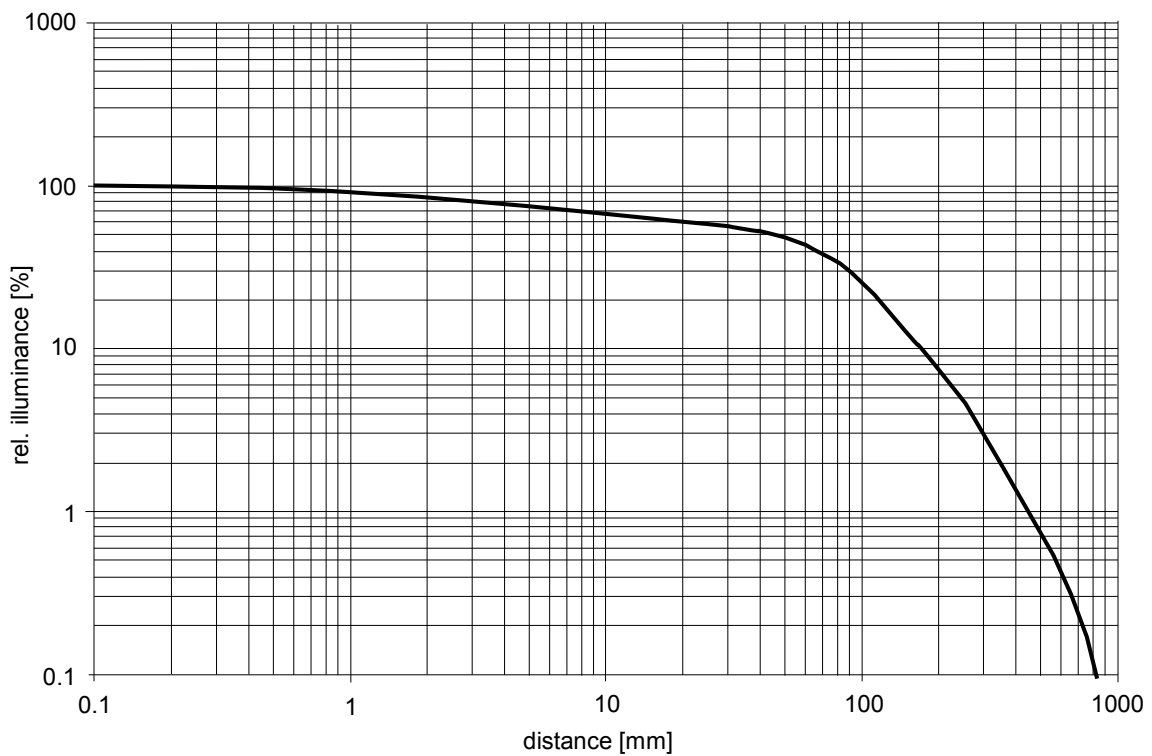
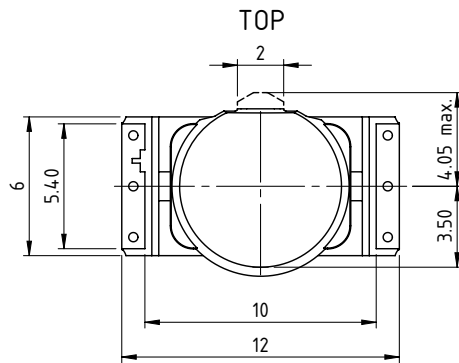
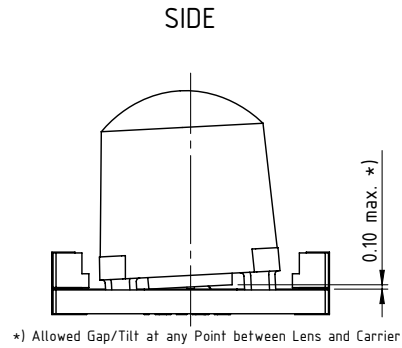
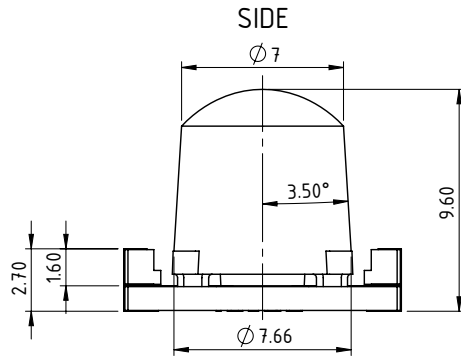
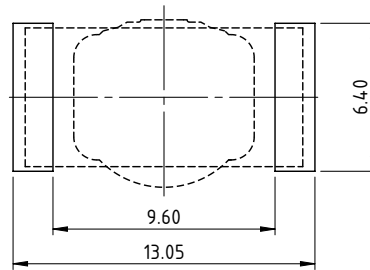


Figure 3: Rel. radiant illuminance vs. distance

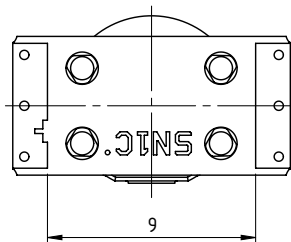
PHYSICAL DIMENSIONS



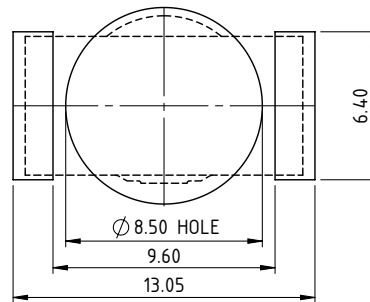
RECOMMENDED PCB-FOOTPRINT



BOTTOM



RECOMMENDED PCB-FOOTPRINT
 (plug-through assembly)



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Figure 4: Package dimensions [mm]

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-SN85 / iC-SN85 Z			
No.	Chip Design	Function, Parameter/Code	Description and Application Hints
1	iC-SN85	initial chip release	see datasheet revision A1
2	iC-SN85 Z	Maximum Ratings G002 Electrical Characteristics 003	changed to 1.0 A min. / typ. values increased to 3.4 / 8.1 mW

Table 1: Notes on chip functions regarding iC-SN85 / iC-SN85 Z

REVISION HISTORY

Rel.	Rel. Date*	Chapter	Modification	Page
A1	2010-09-06	...	Initial	all
B2	2012-08-22	PACKAGING INFORMATION	BLCC package drawing	1
B3	2013-05-29	SAFETY ADVICES	Chapter supplemented	5
B4	2014-07-22	PHYSICAL DIMENSIONS	BLCC package drawing	4
	2014-07-22	HANDLING ADVICES	Chapter supplemented	5
C1	2021-12-14	PACKAGES	Drawing updated	1
		PACKAGING INFORMATION	Drawing updated	1
		PHYSICAL DIMENSIONS	New lens dimension, mold incline changed	4
C2	2023-05-15	PACKAGES	Drawing update	1
		PACKAGING INFORMATION	Drawing update	1
		PHYSICAL DIMENSIONS	Rounded shape on the sprue side	4

* Release Date format: YYYY-MM-DD

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ORDERING INFORMATION

Type	Package	Order Designation
iC-SN85	2-Pin BLCC, 12 mm x 6 mm, height 9.6 mm RoHS compliant	iC-SN85 BLCC SN1C

Please send your purchase orders to our order handling team:

Fax: +49 (0) 61 35 - 92 92 - 692

E-Mail: dispo@ichaus.com

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

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