

iC-SG85 BLCC SG4C

Infrared LED



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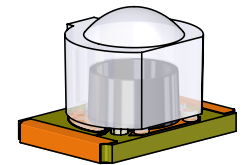
FEATURES

- ◆ 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

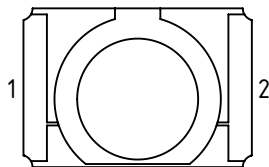


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SG4C

PACKAGING INFORMATION (top view)

PIN CONFIGURATION SG4C



drb_sg4c_pack_3, 2:1

PIN FUNCTIONS

No. Name Function

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

ABSOLUTE MAXIMUM RATINGS

Beyond these values damage may occur ($T_a = 25^\circ\text{C}$, unless otherwise noted)

Item No.	Symbol	Parameter	Conditions			Unit
				Min.	Max.	
G001	IF	Forward current (DC)			100	mA
G002	IFSM	Surge forward current	$t_p \leq 10 \mu\text{s}$, 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

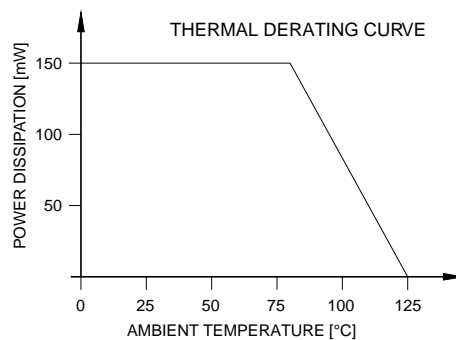


Figure 1: Maximum power dissipation with respect to temperature

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	I _F = 20 mA		1.4	1.8	V
002	V _R	Reverse voltage	I _R = 5 μA	5			V
003	Φ _e	Radiant power	I _F = 20 mA		4.0		mW
004	TK(Φ _e)	Temperature coefficient of radiant power	I _F = 20 mA, T _j = 25°C...125°C		-0.6		%/K
005	λ _p	Peak wavelength	I _F = 20 mA	840	850	860	nm
006	Δλ	Spectral half width	I _F = 20 mA		30		nm
008	t _r , t _f	Switching time	I _F = 100 mA, R _L = 50 Ω		12		ns

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

PHYSICAL DIMENSIONS

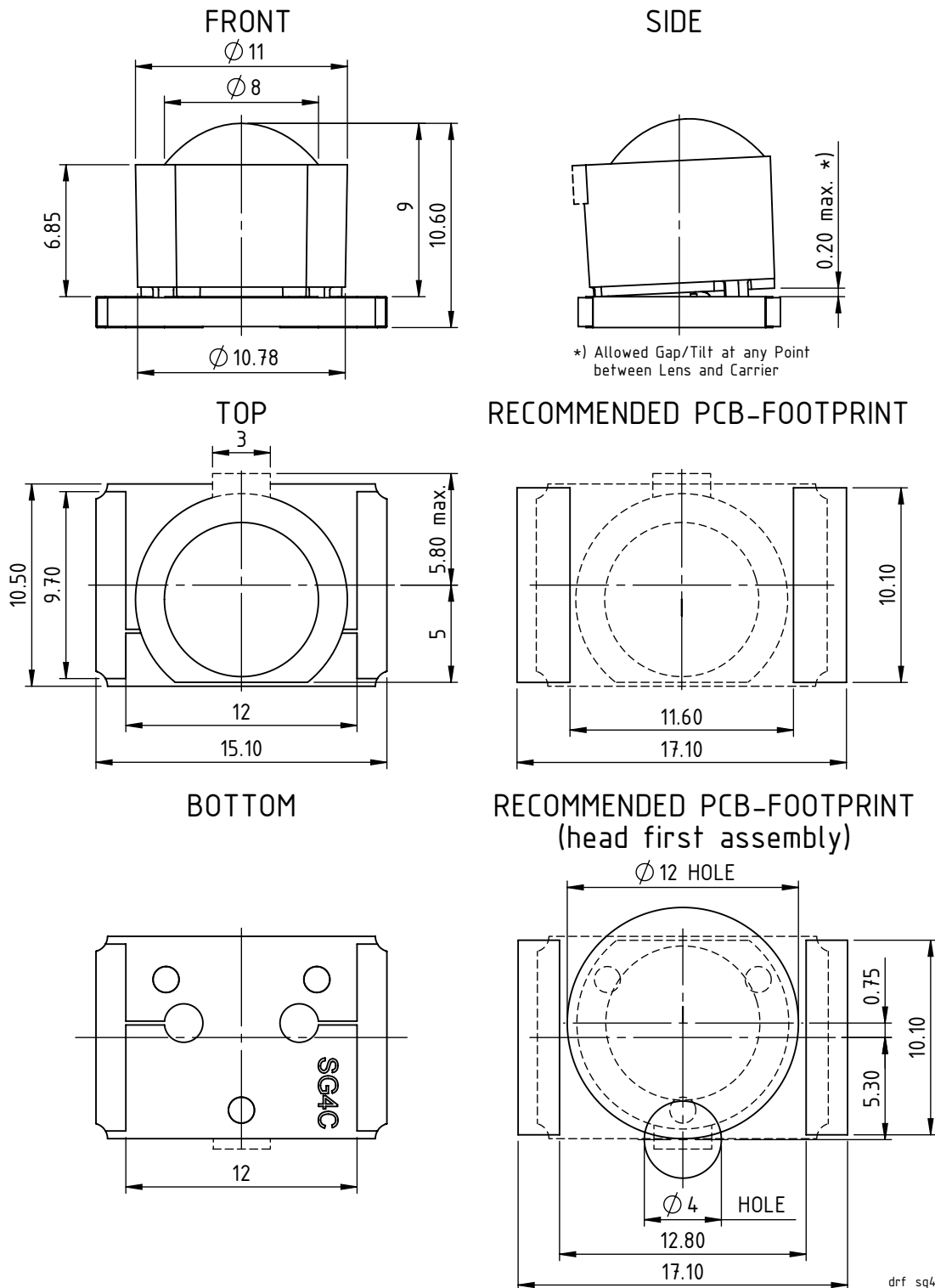


Figure 2: Package view

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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.

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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

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ORDERING INFORMATION

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

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