iC-SN85 BLCC SN2C

INFRARED LED

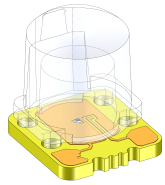
FEATURES

- 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
- Isolated backside

APPLICATIONS

- Illumination for high resolution optical encoder
- Modulated light barriers

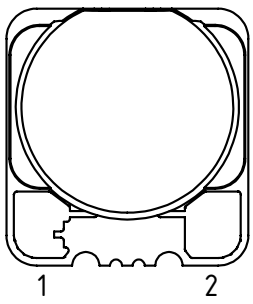
PACKAGES



BLCC SN2C

PACKAGING INFORMATION (top view)

PIN CONFIGURATION SN2C



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	Min.	Max.	Unit
G001	IF	Forward Current (DC)			100	mA
G002	IFSM	Surge Forward Current, iC-SN85z	tp $\leq$ 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

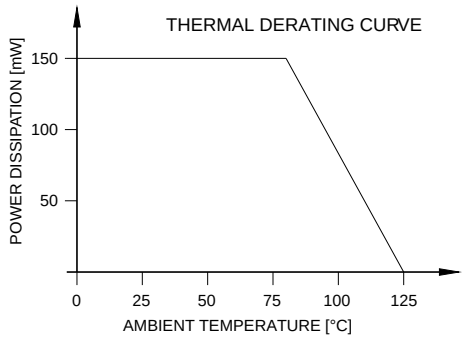


Figure 1: Maximum power dissipation with respect to temperature

ELECTRICAL CHARACTERISTICS

Tamb = 25°C, unless otherwise noted

Item No.	Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Electrical and Optical Characteristics							
001	VF	Forward Voltage	IF = 20 mA		1.4	1.8	V
002	VR	Reverse Voltage	IR = 5 µA	5			V
003	Φ_e	Radiant Power iC-SN85z	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	$\Delta\lambda$	Spectral Half Width	IF = 20 mA		30		nm
007	2ϕ	Divergence	IF = 20 mA		4		deg.
008	tr, tf	Switching Time	IF = 100 mA, RL = 50 Ω		12		ns

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

RADIATION PATTERN

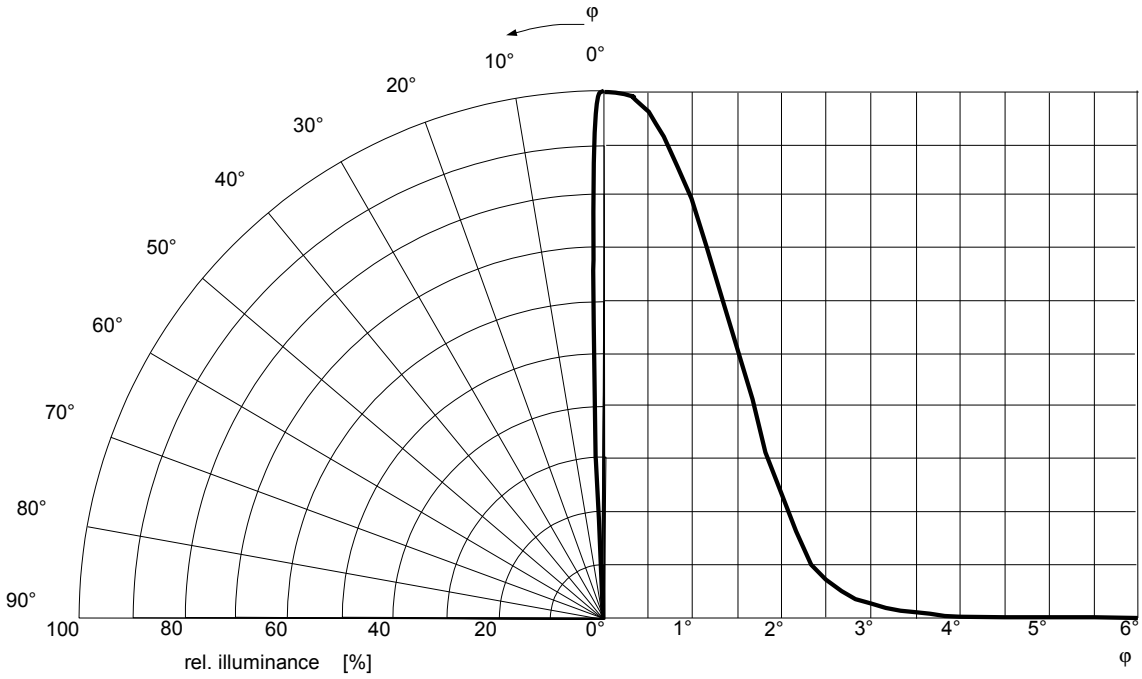


Figure 2: Rel. radiant output

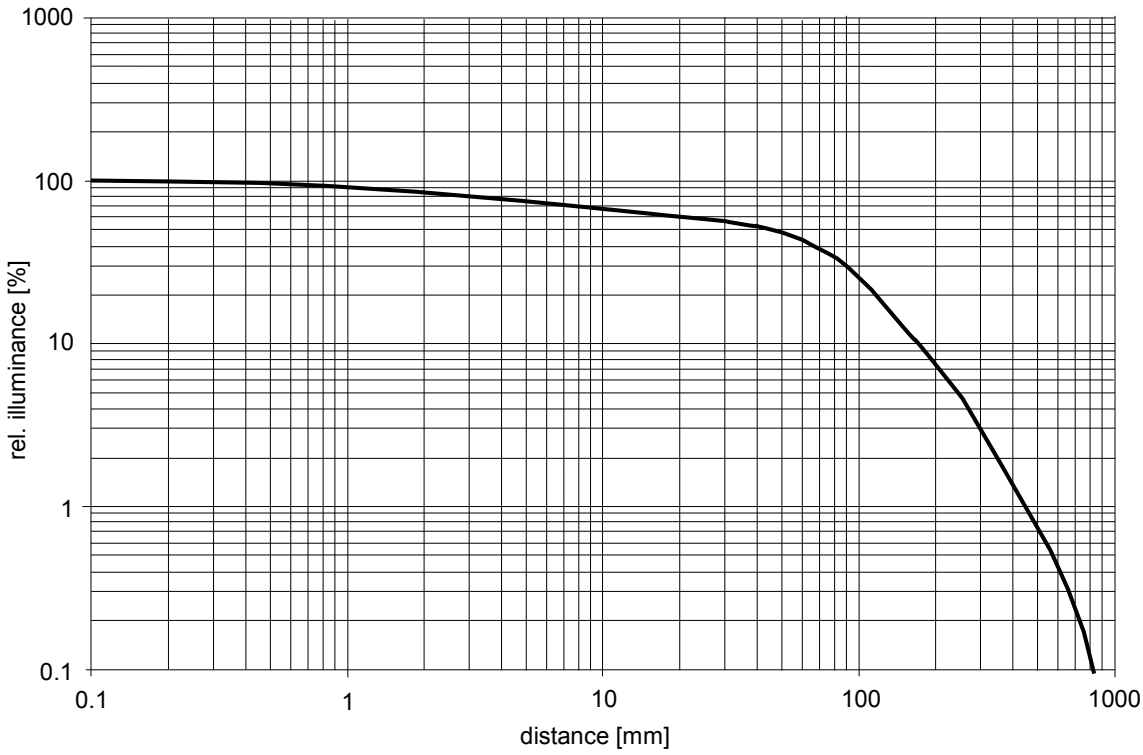


Figure 3: Rel. radiant illuminance vs. distance

PHYSICAL DIMENSIONS

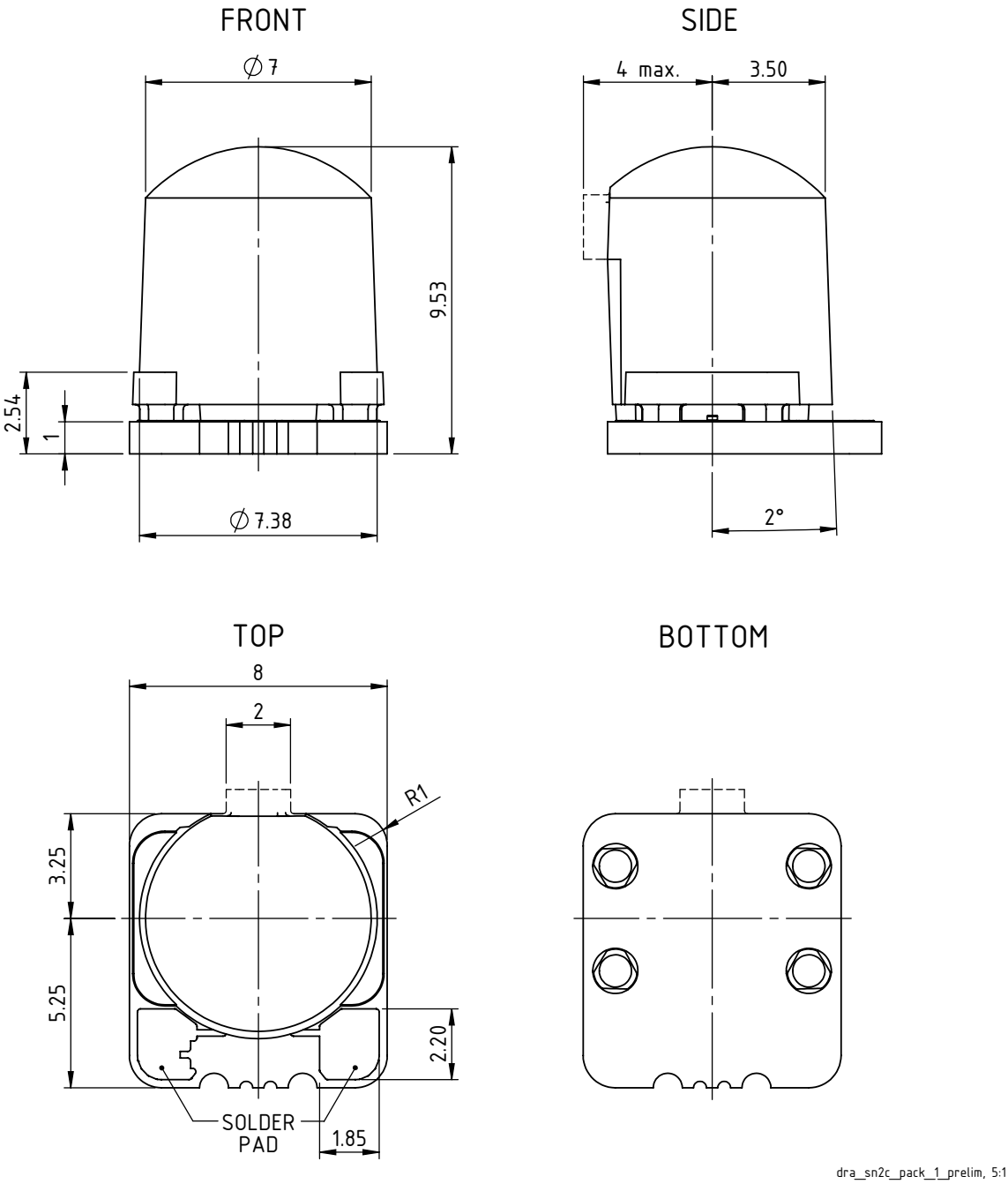


Figure 4: Package dimensions [mm

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.

DESIGN REVIEW: Notes on chip characteristics

iC-SN85 Z			
No.	Chip Design	Function, Parameter/Code	Description and Application Hints
1	iC-SN85z	initial chip release	

Table 4: Notes on chip characteristics regarding iC-SN85 Z

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ORDERING INFORMATION

Type	Package	Order Designation
iC-SN85	SN2C	iC-SN85 BLCC SN2C

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