

# iC-TL85 TO46-2F1

Infrared LED



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## FEATURES

- ◆ Emission peak at 850 nm matched to silicon sensors
- ◆ Temperature range -40 to 125 °C
- ◆ High optical output power
- ◆ Fast switching speed
- ◆ TO-46 package with flat window for high reliability
- ◆ Short TO-cap
- ◆ ROHS compliant

## APPLICATIONS

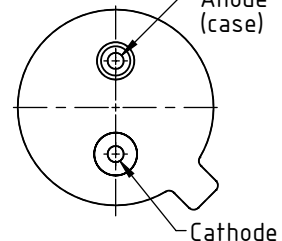
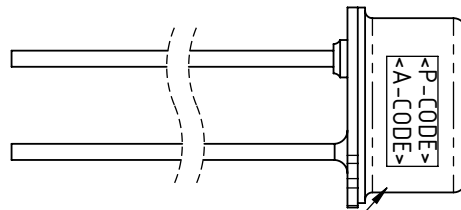
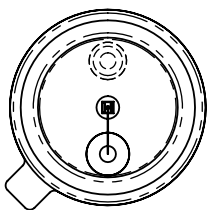
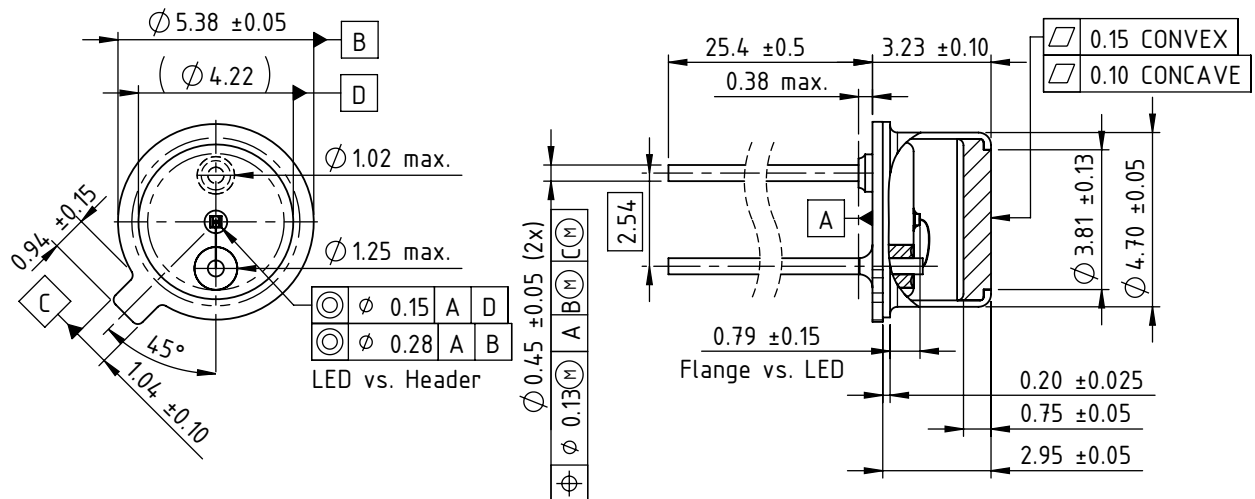
- ◆ Illumination for high resolution optical encoder
- ◆ Modulated light barriers

## PACKAGES



TO46-2F1

## DIMENSIONS



Marking (orientation subject to change)

drf\_to46-2f1\_tl85\_z\_pack\_1\_5:1

# iC-TL85 TO46-2F1

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### 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 ≤ 10μs, 5 % duty cycle		1000	mA
G003	VR	Reverse voltage			5	V
G004	P	Power dissipation			150	mW
G005	Tj	Junction temperature		-40	125	°C

### 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, 3 mm from case			260	°C
T04	Rthja	Thermal Resistance Junction To Ambient			350		K/W

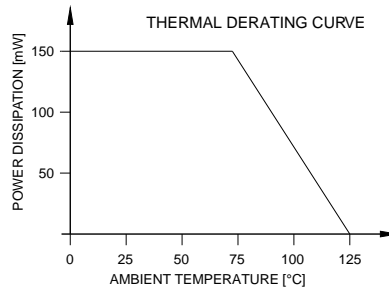


Figure 1: Maximum power dissipation with respect to temperature

### ELECTRICAL CHARACTERISTICS

Tamb = 25°C, unless otherwise noted

Item No.	Symbol	Parameter	Conditions				Unit
				Min.	Typ.	Max.	
<b>Electrical and Optical Characteristics</b>							
001	VF	Forward voltage	IF = 20 mA		1.4	1.8	
002	VR	Reverse voltage	IR = 5 μA	5			V
003	φe	Radiant power	IF = 20 mA*1)measured with iC-Haus equipment	2.2	4.5		mW
004	TK(φe)	Temperature coefficient of radiant power	IF = 20 mA, Tj = 25°C...125°C		-0.6		%/K
005	λp	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

\*1) Measured with a PD 0.7 x 0.7 mm<sup>2</sup> located 6.5 mm from LED emitting area and converted into a light level based on a golden device.

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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 glass surface or to the sealed cap must be avoided.

## DESIGN REVIEW: Notes on chip characteristics

iC-TL85z		
No.	Function, Parameter/Code	Description and Application Hints
1	initial chip release	see datasheet revision A1

Table 4: Notes on chip functions regarding iC-TL85z

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## ORDERING INFORMATION

Type	Package	Options	Order Designation
iC-TL85	TO46-2F1 RoHS compliant		iC-TL85 TO46-2F1

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

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