iC-TL85 TO46-2L1

Infrared LED

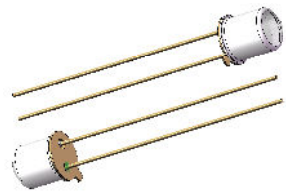
FEATURES

- Emission peak at 850 nm matched to silicon sensors
- Optimized irradiance pattern
- Temperature range -40 to 125 °C
- High optical output power
- Fast switching speed
- TO-46 package for high reliability
- ROHS conform

APPLICATIONS

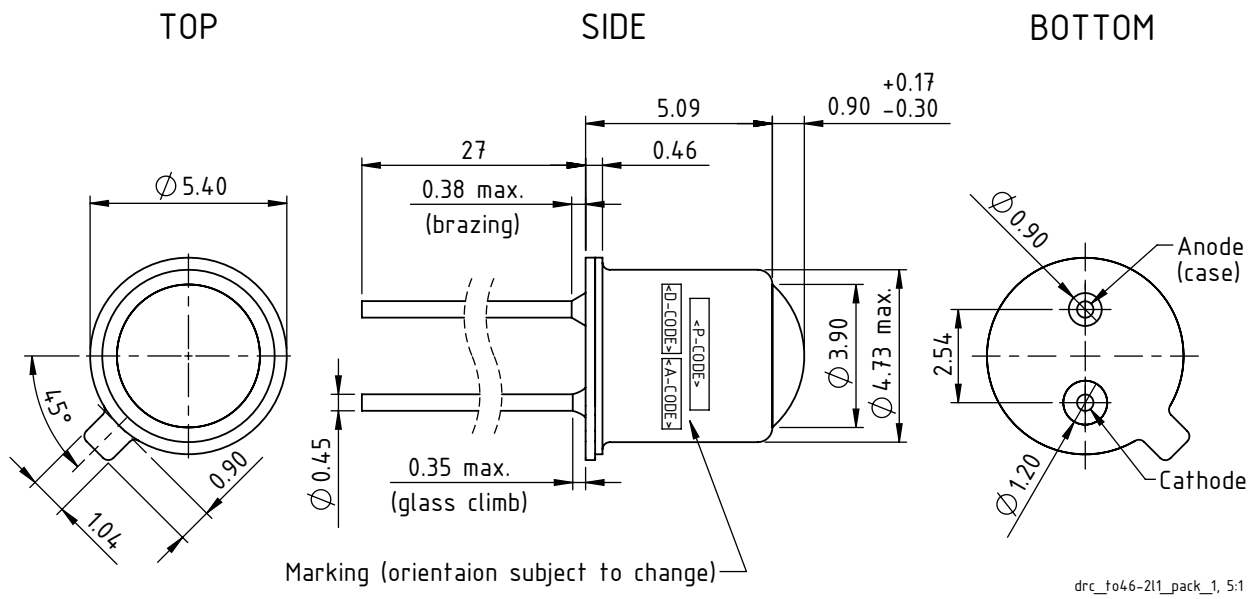
- Illumination for high resolution optical encoder
- Modulated light barriers

PACKAGES



TO46-2L1

DIMENSIONS [in mm, typical values]



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

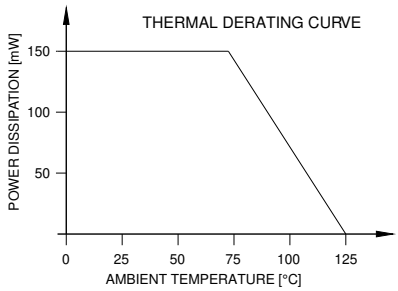


Figure 1: Maximum power dissipation with respect to temperature

ELECTRICAL CHARACTERISTICS

Tamb = 25°C, unless otherwise noted

Item No.	Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Electrical and Optical Characteristics							
001	VF	Forward voltage	IF = 20 mA		1.4	1.8	
002	VR	Reverse voltage	IR = 5 µA	5			V
003	Φ_e	Radiant power	IF = 20 mA	1.4	2.7		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
008	tr, tf	Switching time	IF = 100 mA, RL = 50 Ω		12		ns

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 must be avoided.

DESIGN REVIEW: Notes on chip characteristics

iC-TL85 / iC-TL85Z			
No.	Chip Design	Function, Parameter/Code	Description and Application Hints
1	iC-TL85	initial chip release	see datasheet revision A1
2	iC-TL85Z	Maximum Ratings G002 Electrical Characteristics 003	changed to 1.0 A min. / typ. values increased to 1.4 / 2.7 mW

Table 4: Notes on chip functions regarding iC-TL85 / iC-TL85Z

REVISION HISTORY

Rel.	Rel. Date*	Chapter	Modification	Page
C1	2019-04-29	DIMENSIONS [in mm, typical values]	Package dimensions revised w. respect to glass climb and brazing	1

* Release Date format: *YYYY-MM-DD*

ORDERING INFORMATION

Type	Package	Order Designation
iC-TL85	TO46-2L1 *(long lens cap)*	iC-TL85 TO46-2L1

Please send your purchase orders to our order handling team:

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