



## RC650-TO46FW

- Red Resonant Cavity Light Emitting Diode
- 650 nm, 1 mW
- No Threshold
- TO-46 Can
- Flat window cap



### Description

**RC650-TO46FW** is a Resonant Cavity Light Emitting Diode, emitting at typically 650 nm with rated output power of 1 mW cw, mounted into a standard TO-46 package and sealed with a flat window cap.

### Maximum Ratings

Parameter	Symbol	Values		Unit
		Min.	Max.	
Forward Current	$I_F$		30	mA
Reverse Voltage (@ 10 $\mu$ A)	$V_F$		5	V
Operating Temperature	$T_{CASE}$	- 20	+ 70	$^{\circ}$ C
Storage Temperature	$T_{STG}$	- 40	+ 100	$^{\circ}$ C
Lead Solder Temperature *	$T_{SLD}$		+ 260	$^{\circ}$ C

\* must be completed within 10 seconds

### Laser Characteristics ( $T_{CASE}=25^{\circ}$ C)

Parameter	Symbol	Min.	Values	Max.	Unit
			Typ.		
Emission Wavelength	$\lambda_{Peak}$	640	650	660	nm
Spectral Width	$\Delta\lambda$		7		nm
Radiant Power	$\Phi_E$		1.0	1.5	mW
Radiant Intensity	$I_E$	0.2	0.3		mW/sr
Forward Current	$I_F$		20		mA
Forward Voltage	$V_F$		2.0	2.2	V
Beam Divergence	$\Theta$		90		deg
Rise Time	$t_R$		3		ns
Fall Time	$t_F$		3		ns
Data Rate	$T_{DATA}$		155		Mbps

### Thermal Characteristics

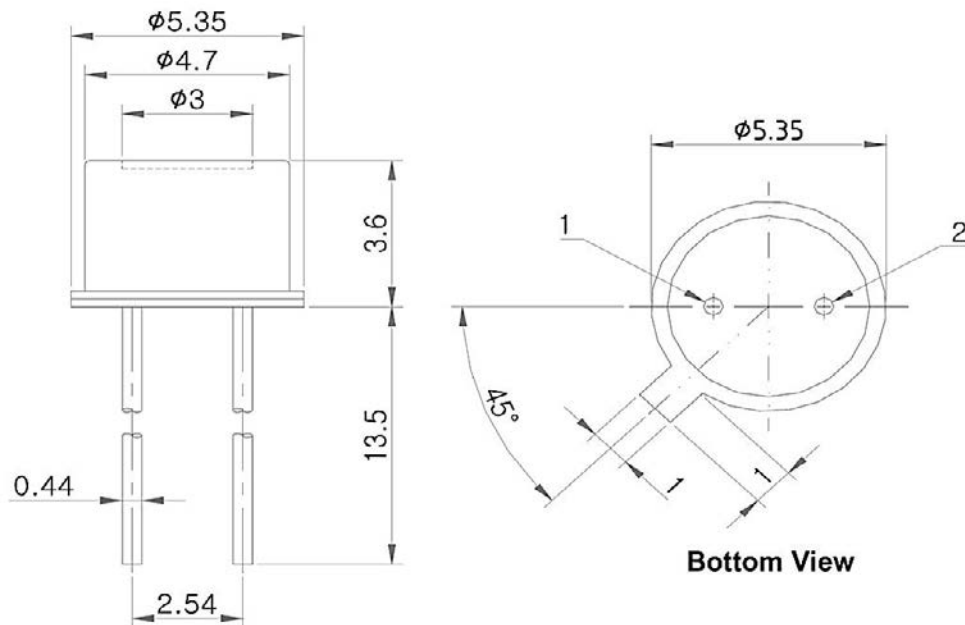
Parameter	Symbol	Min.	Values	Max.	Test Conditions	Unit
			Typ.			
P <sub>O</sub> Temperature Variation	$\Delta P_O / \Delta T$		-0.6		T <sub>C</sub> =-20 to 70 $^{\circ}$ C,20mA	%/ $^{\circ}$ C
$\lambda_P$ Temperature Variation	$\Delta\lambda / \Delta T$		0.07		T <sub>C</sub> =-20 to 70 $^{\circ}$ C,20mA	nm/ $^{\circ}$ C



## Outline Dimensions

TO46FW

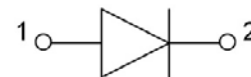
TO-46 with flat window



All Dimensions in mm

## Electrical Connection

Lead	Description
Pin 1	RCLED Anode
Pin 2	RCLED Cathode





## Precautions

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### Static Electricity:

RCLEDs are **sensitive to electrostatic discharge (ESD)**. Precautions against ESD must be taken when handling or operating these RCLEDs. Surge voltage or electrostatic discharge can result in complete failure of the device.



### Safety Advice:

This RCLED emits concentrated red light which can be **hazardous to the human eye and skin**.

### Operation:

**Do *only* operate RCLEDs with a current source.**

Running these LEDs from a voltage source will result in complete failure of the device.

Current of a LED is an exponential function of the voltage across it. Usage of current regulated drive circuits is mandatory.