



Electro Optical Components, Inc.

5460 Skylane Boulevard, Santa Rosa, CA 95403

Toll Free: 855-EOC-6300

www.eoc-inc.com | info@eoc-inc.com



EOC-GDL-1653.7-TO

Specifications

1653.7 nm, 3mW DFB TO-Can, Ball Lens

A. PRODUCT DESCRIPTION

The EOC-GDL-1653.7-TO is an InGaAsP based and cooled distributed feedback laser in a T0-60 package, with a collimated ball lens, optimized for OTDR and photonic sensing applications.

B. FEATURES

- Optical output power min. 3mW
- Lasing wavelength of 1653.7nm
- Typical SMSR >35dB

C. APPLICATIONS

- Test & Measurement (OTDR)
- Photonic Sensing (gas)
- Biomedical Sensing

Toll Free: 855-EOC-6300

www.eoc-inc.com | info@eoc-inc.com

D. ABSOLUTE MAXIMUM RATINGS

Operation beyond the absolute maximum ratings can cause degradation in device performance leading to permanent damage to the device.

Parameter	Symbol	Test Conditions	Min	Max	Unit
Reverse voltage	V_R	CW	-	2	V
Forward Current	I_F	CW	-	100	mA
Forward Voltage	V_F	CW	-	2	V
Chip Submount Temperature	T_{sub}	CW	5	45	°C
Case Temperature	T_{case}	-	-20	65	°C
TEC Current	I_{TEC}	-	-	0.7	A
TEC Voltage	V_{TEC}	-	-	3.5	V
Storage temperature	T_{stg}	Unbiased	-40	85	°C
Electro static discharge (ESD)	V_{ESD}	Human body model	□	500	V
Lead Soldering Temperature	S_{temp}	-	□	220	°C
Lead Soldering Time	S_{time}	-	□	10	s

E. ELECTRO-OPTICAL CHARACTERISTICS

(at T_{sub} of 25°C and CW, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Optical output power	P_O	-	3	-	-	mW
Threshold current	I_{th}	-	-	11	26	mA
Operating current	I_{op}	P_{0min}	30	40	55	mA
Forward voltage	V_{op}	P_{0min}	-	1.6	2.0	V
Slope efficiency	η	P_{0min}	0.1	0.15	-	mW/mA
Peak wavelength	λ_p	$I_{op} = 35mA$	1651.7	1653.7	1655.7	nm
Side mode suppression ratio	SMSR	$I_{op} = 35mA$	35	40	-	dB
Wavelength Temperature Tuning Coefficient	\otimes_L / \otimes_T	$I_{op} = 35mA$	-	0.1	-	nm/°C
Wavelength Current Tuning Coefficient	\otimes_L / \otimes_I	$I_{op} = 35mA$ to 55mA	-	0.03	-	nm/mA
Monitor current	I_m	P_{0min}	0.02	-	-	mA
Thermistor Resistance	R_T	-	-	10	-	k Ω
Thermistor B-value	B	-	-	3930	-	K
Beam divergence (FWHM) perpendicular	FFV	P_{0min}	-	-	2	°
Beam divergence (FWHM) parallel	FFH	P_{0min}	-	-	2	°

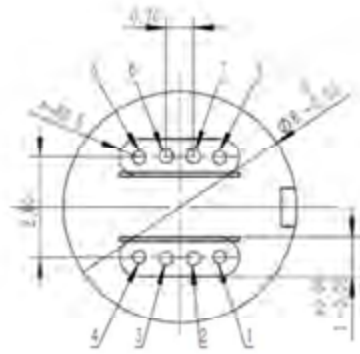
Note: T_{sub} is measured by a thermistor soldered on the submount where the laser diode chip is soldered on to.

F. PHYSICAL DIMENSIONS AND MECHANICAL SPECIFICATION

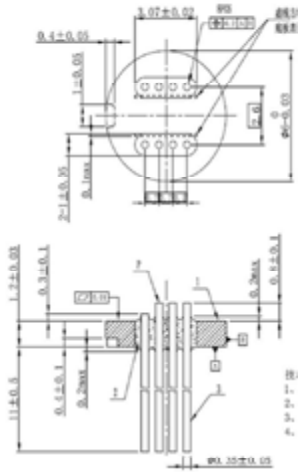
Bottom view pin out

Pin Assignment	Type R	Type S
1	TEC-	TEC-
2	TM+	TM+
3	TM-	LD+
4	PD-	PD-
5	PD+	PD+
6	LD-	LD-
7	LD+	TM-
8	TEC+	TEC+

Bottom View



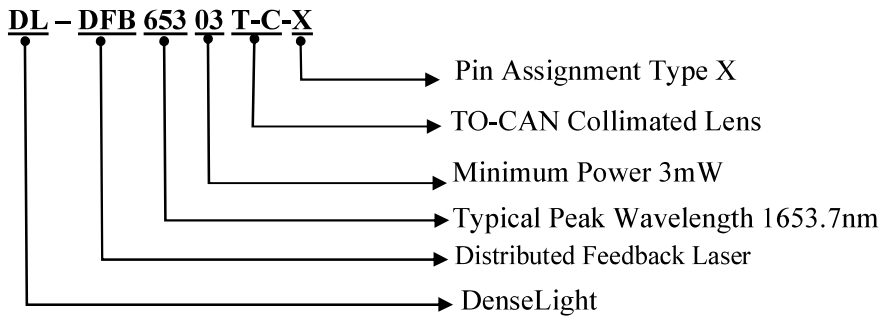
TO-60 Drawing



G. DISCLAIMER FOR CUSTOMER SPECIFIC APPLICATIONS

This product is not intended for use other than stated on the application note or as defined in the product specification. The performance of the product should always be tested in the actual application conditions. As our products are used in conditions beyond our control, we cannot assume any liability for damage caused through their use. Users of our products are solely responsible to thoroughly test and qualify their system and/or application for their intended application and have determined such at their sole discretion. We cannot assume any liability for the use of our products in conjunction with others. Customer assumes the sole risk and liability of the product performance other than specified by the product specific data sheet or application notes without our specific written consent. We reserve the right to change prices, features, functions, specification, capabilities and release schedules as per notifications to the customer.

H. PRODUCT NAMING



To order TO60 with TEC Type-R 8pins out, please order DL-DFB65303T-C-R

To order TO60 with TEC Type-S 8pins out, please order DL-DFB65303T-C-S