

Thermal stabilized laser modules Dual-In-Line-(DIL) and Butterfly-packages

Thermal stabilized laser modules are used in applications where stable operation conditions are required. Working at constant operating temperature avoids the drift of emission wavelength and minimize the probability of mode hopping. Stable operating conditions are realized by mounting the laser diode in a metal package together with a thermoelectric cooler and a monitoring thermistor. Widely used are 14-pin Dual-In-Line (DIL)- and Butterfly-packages. These devices will be delivered as pigtailed versions. OECA is using two different types of DIL and Butterfly-packages named DIL1, DIL2 and BF1, BF2 where the mechanical size is the main difference.

Applications for such modules with coupled multimode- or singlemode-fiber are

- communication systems
- measurement equipments
- sensor devices

Absolute Maximum Ratings ^{Note 1}

$T_C = 25^\circ\text{C} \pm 2^\circ\text{C}$

Parameter	Symbol	min.	max.	Unit
Operating Temperature	$T_{OP} = T_C$	-15	+65	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40	+85	$^\circ\text{C}$

Note 1 see measuring data - outgoing

Thermal Characteristics

$R_N = 10.0 \text{ k}\Omega$

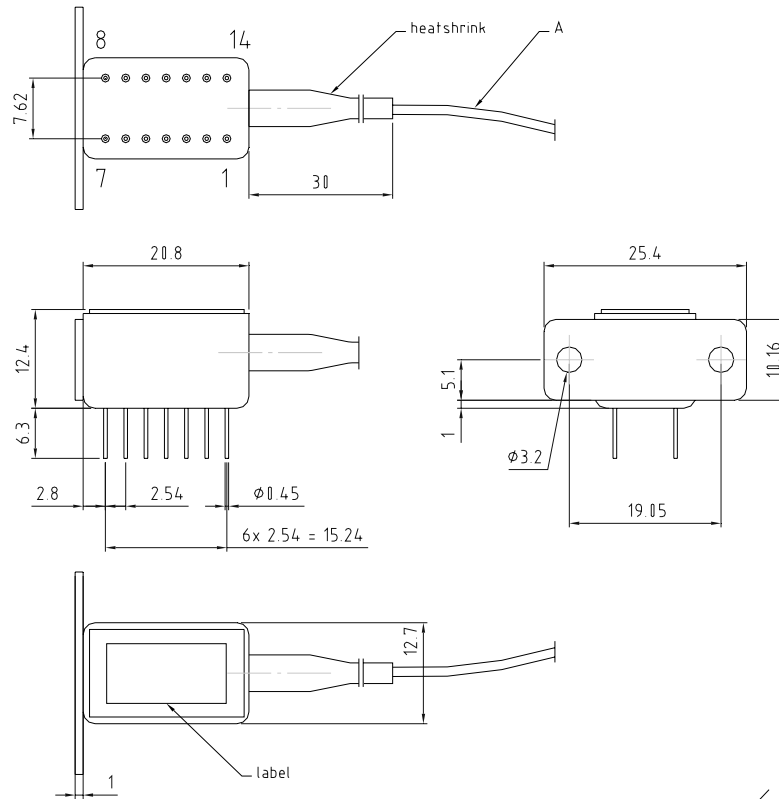
Parameter	Symbol	Condition	min.	typ.	max.	Unit
Thermistor Resistance	R_T	$T_{LD} = 25^\circ\text{C}$	9.9	10	10.1	$\text{k}\Omega$
Thermistor B Value	B			3892		
Drive Voltage	V_{TEC}	$\Delta T = 40\text{K}$ $T_{LD} = 25^\circ\text{C}$			3.87	V
Drive Current	I_{TEC}	$\Delta T = 40\text{K}$ $T_{LD} = 25^\circ\text{C}$			1.8	A

$A = 1.129241 \cdot 10^{-3}$; $B = 2.341077 \cdot 10^{-4}$; $C = 8.775488 \cdot 10^{-8}$

Optical and Electrical Characteristics

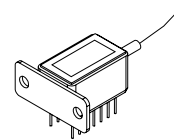
For individual parameters please see individuell datasheet and measuring data-outgoing.

Package DIL1



A - optical fiber acc. to specification, typical length: 1m

pinout acc. to specification
tolerances acc. to DIN ISO 2768mH
all dimensions in mm

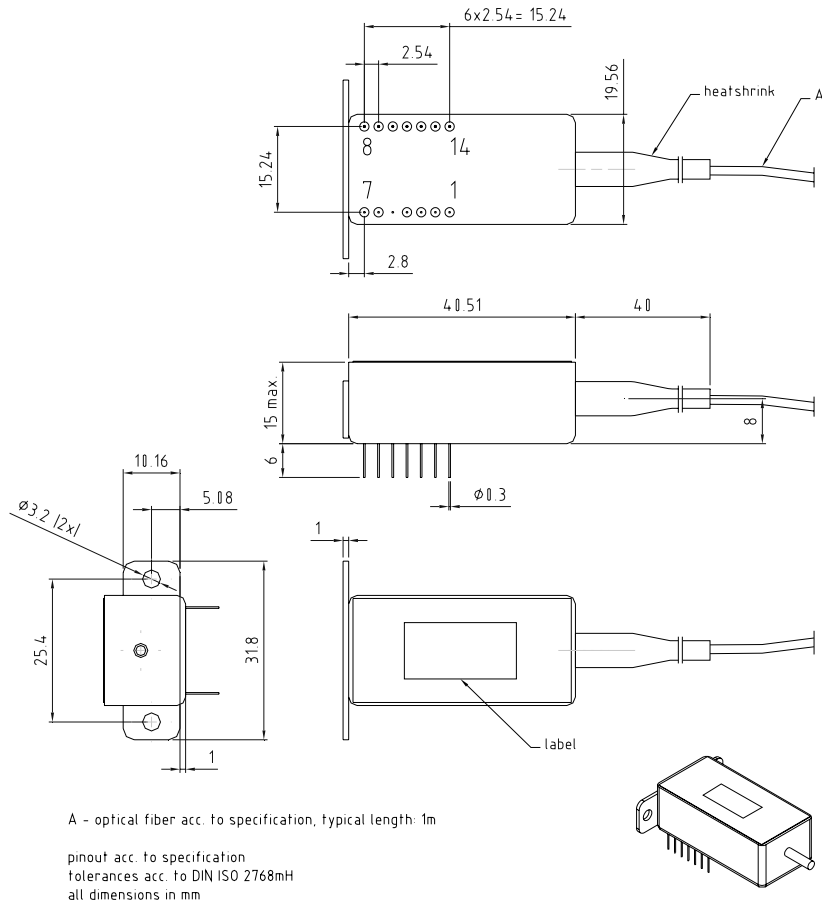


Pin out (DIL1)

Pin		Pin	
1	TEC anode (+)	8*	Photodiode anode
2	not connected	9*	Laserdiode cathode
3	not connected	10*	Laserdiode anode / case
4	not connected	11	thermistor
5	case	12	thermistor
6	not connected	13	not connected
7*	Photodiode cathode	14	TEC cathode (-)

*additional connections are possible caused by internal pin-out of the used laserdiode

Package DIL2

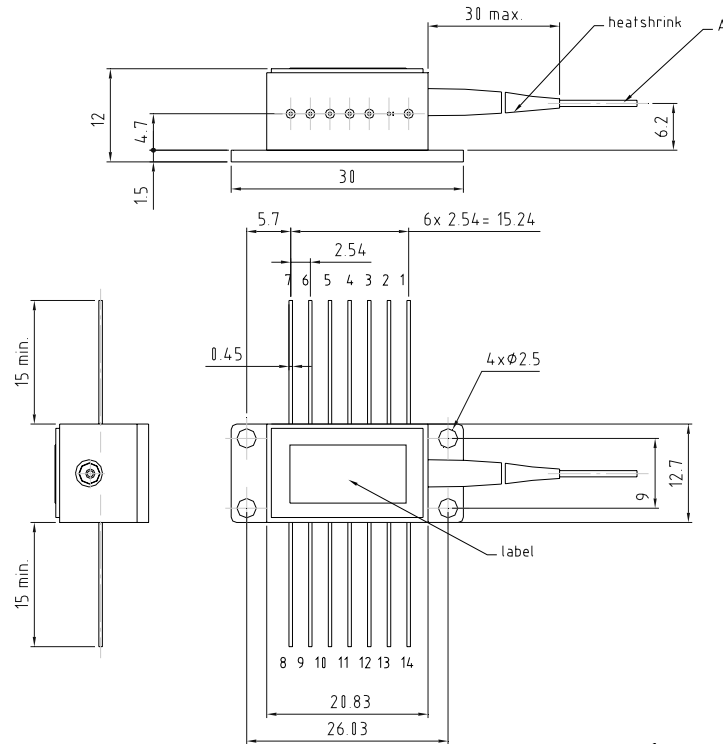


Pin out (DIL2)

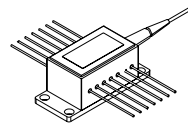
Pin		Pin	
1	TEC anode (+)	8*	Photodiode anode
2	not connected	9*	Laserdiode cathode
3	not connected	10*	Laserdiode anode / case
4	not connected	11	thermistor
5	case	12	thermistor
6	not connected	13	not connected
7*	Photodiode cathode	14	TEC cathode (-)

*additional connections are possible caused by internal pin-out of the used laserdiode

Package BF1



A - optical fiber acc. to specification, typical length: 1m
pinout acc. to specification
tolerances acc. to DIN ISO 2768mH
all dimensions in mm

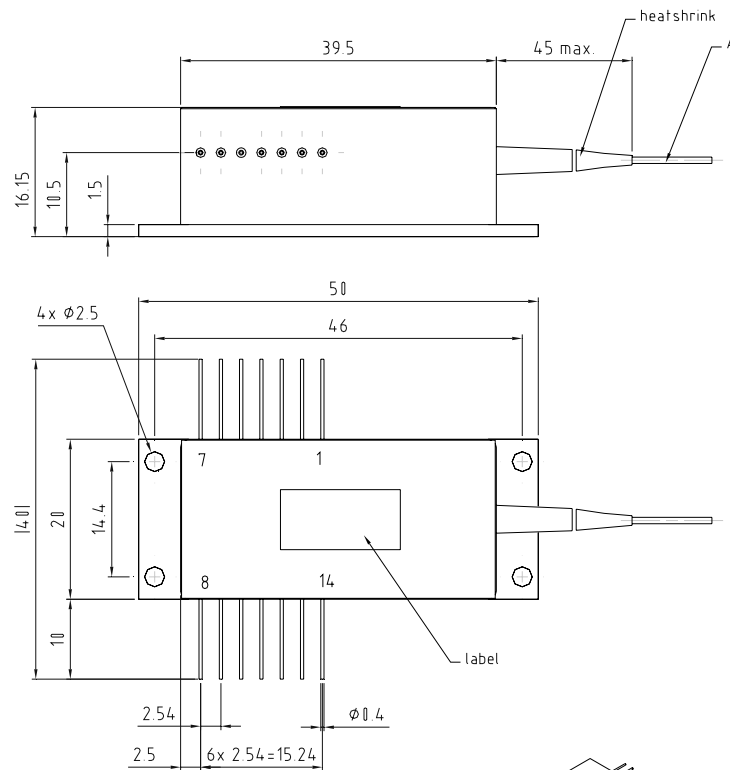


Pin out (BF1)

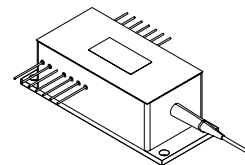
Pin		Pin	
1	TEC anode (+)	8	not connected
2	thermistor	9	not connected
3*	Photodiode anode	10*	Laserdiode anode
4*	Photodiode cathode	11*	Laserdiode cathode
5	thermistor	12	not connected
6	not connected	13	case
7	not connected	14	TEC cathode (-)

*additional connections are possible caused by internal pin-out of the used laserdiode

Package BF2



A - optical fiber acc. to specification, typical length: 1m
pinout acc. to specification
tolerances acc. to DIN ISO 2768mH
all dimensions in mm



Pin out (BF2)

Pin		Pin	
1	TEC anode (+)	8*	Photodiode anode
2	not connected	9*	Laserdiode cathode
3	not connected	10*	Laserdiode anode / case
4	not connected	11	thermistor
5	case	12	thermistor
6	not connected	13	not connected
7*	Photodiode cathode	14	TEC cathode (-)

*additional connections are possible caused by internal pin out of the used laserdiode

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