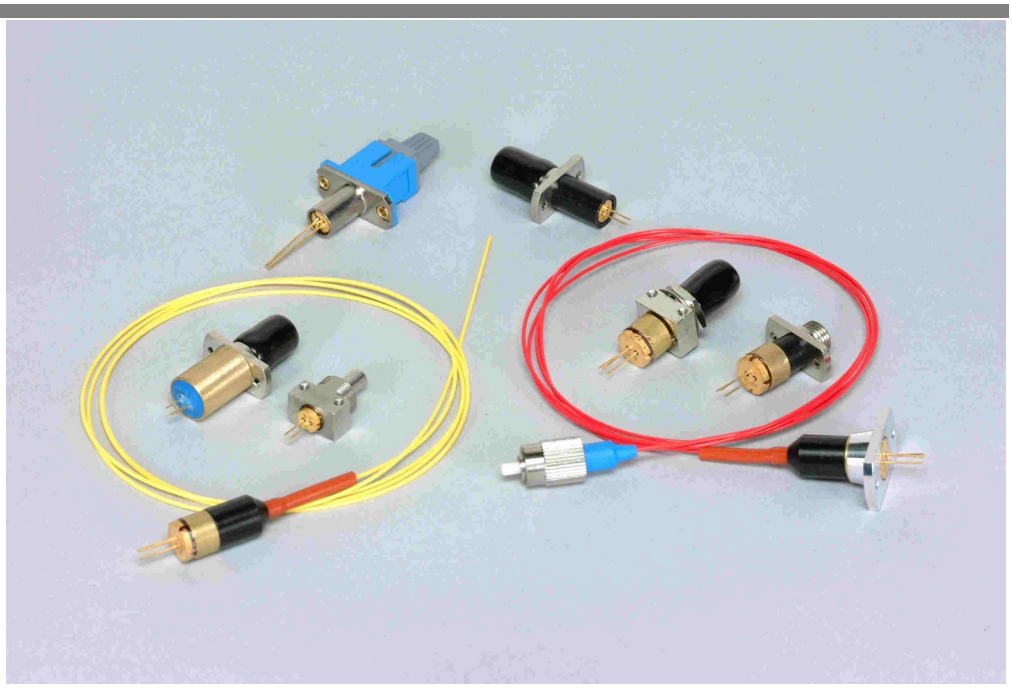
PD ▶ ▶ LD Inc.

PL52E Pigtailed 520nm Laser Diodes

PD-LD Inc. offers its' 520nm Series of visible laser diodes in convenient pcb mountable receptacle housings, or fiber pigtailed with the choice of MMF or SMF . These hermetically sealed laser diodes include an internal monitor photodiode and so may be operated in either the constant current mode or automatic power control method.

The highly reliable semiconductor laser is actively aligned with an optimal focusing lens resulting in high coupling efficiency into the optical fiber. These assemblies are rated for up to 45mW into 62.5um or 105um core MMF. Into 3.5um mode field diameter single mode fiber the power levels are in the 5 to 10mW range. A mechanically stable packaging design allows for operation from –20 to 60C .

Other packaging options are available such as FC, ST or SC style receptacles or other size MMF optical fiber pigtails such as 50um core, 105um core or larger size cores.



Features

- **Internal Monitor Photo Diode**
- **Compact, reliable, fiber-coupled package**
- **Available with MMF or SMF fiber coupling**
- **Available with ST, FC or SC fiber optic connectors**

Applications

- **Fiberoptic communications**
- **Fiberoptic test instrumentation**
- **Laser Markers**
- **Medical Applications**
- **Sensors**

PD-LD Part No.[1]	Wavelength (nm) Min.	Typ.	Max.	Min. Fiber Coupled Power (mW)	Fiber Type	Fiber Size	Pin-Out Style
Continuous Wavelength Lasers @ 25C into 62.5/125um							
PL52E0403FCA-0-0-01	515	520	530	40	MMF	62.5/125/900um	"N" style
PL52E008VFCA-0-0-01	515	520	530	8	SMF	3.5/125/900um	"N" style

PLWWWWPPPFCCB-0-V-LL

P = PD-LD Product	
L = Laser	
WWWW=Wavelength and Pin-out	**52E= 520nm FP Laser with PD**
PPP = Fiber-Coupled Power	**008 = 8mW**
	040 = 40mW
F = Fiber Type	**3 = 62.5/125/900um**
	V = 3.5/125/900um
	D = 105/125/900um
CC = Connector Type	**FC= FC/PC FR= 2.5mm Ceramic Ferrule**
B = Bracket Type	**A = None B = Panel Mount G = Board Mount**
O=Orientation	**0 = no bracket R = Standard Orientation (may be customer specified)**
V=Version	**0=Standard Unique Codes for specific requirements may be applied**
LL = Length in meters	**01 = 1 m long pigtail , .5= 0.5m long pigtail, .2= 0.2m long pigtail**

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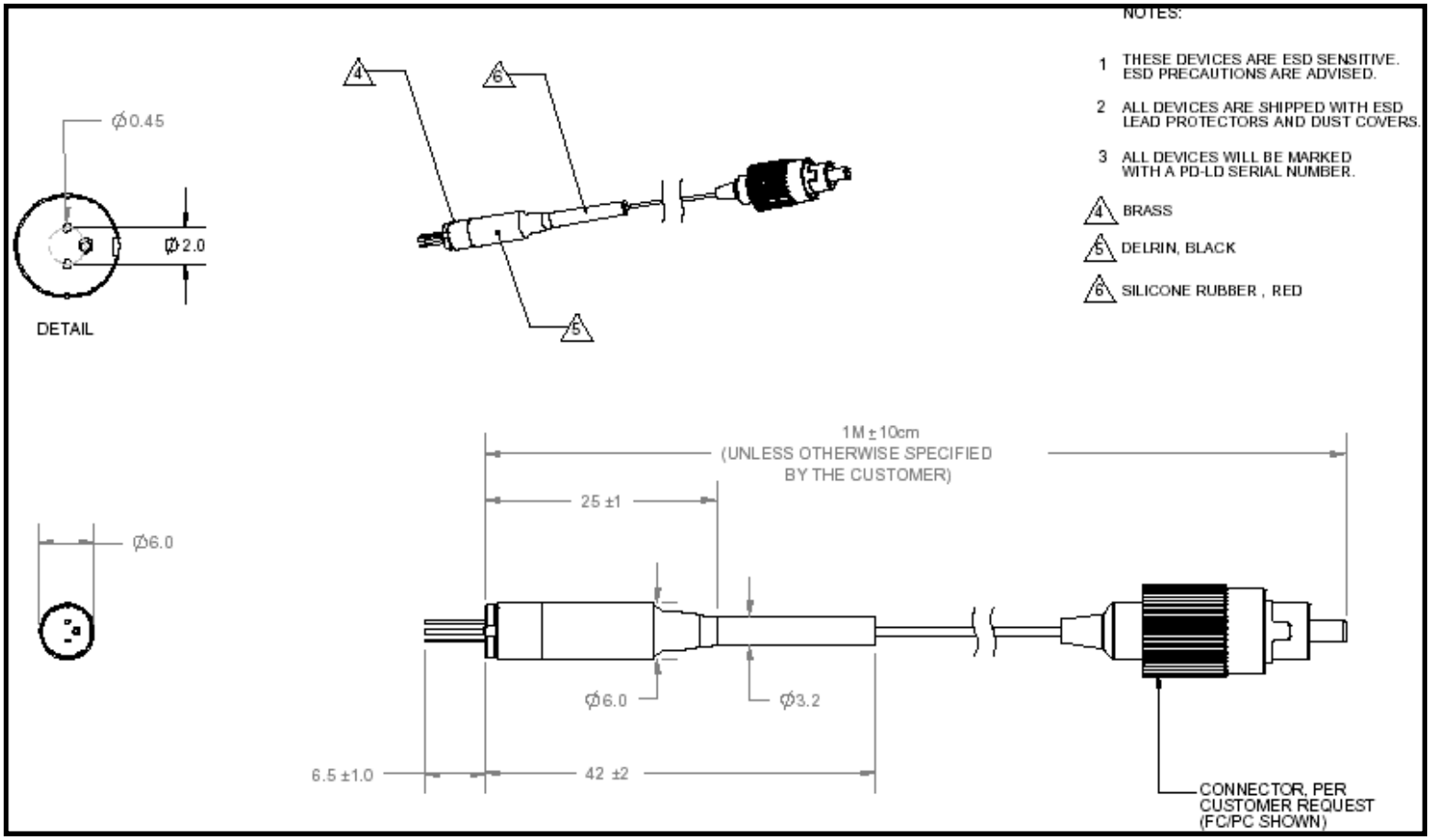
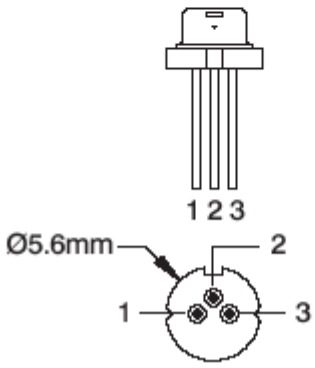
Physical Dimensions (mm) & Pin Connection



PL52E Series

PIN 1 LD Cathode
PIN 2 LD Anode, PD Cathode (case)
PIN 3 PD Anode



Mounting Instructions: In order to maintain the lifetime of the laser diode proper heat management is essential. Due to the design of the laser diode, heat is dissipated only through the base plate of the diodes body. A proper heat conducting interconnection between the diodes base plate and the heat sink is maintained. If long term continuous operation is required , active cooling may be required to maintain stable laser performance and ensure reliability. These lasers are also available from PD-LD mounted in the PLM series stabilized laser driver modules that include proper thermal management.

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Absolute Maximum Ratings (Tc=25°C)

Parameter	Symbol	Value	Unit
Optical Output Power	Po	80	mW
LD Reverse Voltage	V_{RLD}	2	V
LD Forward Current	I_{fl}	300	mA
Soldering Temperature 10 sec max.	T_{solder}	260	°C
Junction Temperature	T_J	120	°C
Operating Temperature	T_{OPR}	-20 to 60	°C
Storage Temperature	T_{STG}	-40 to 85	°C

Electro-Optical Characteristics (Tc= 25°C except as noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Lasing Threshold Current	Ith	CW		40	70	mA
Operating Current	Iop	CW		200	240	mA
Slope Efficiency 62.5um core fiber	n	20mW	0.15			mW/mA
Slope Efficiency 3.5um core fiber	n	10mW	0.10			mW/mA
LD Forward Voltage	Vf	If=150 mA		6.4	8.0	V
Optical Output Power 62.5um MMF	Po	Ith+ 150mA	40			mW
Optical Output Power 3.5um SMF	Po	Ith + 150mA	8			mW
Wavelength	λ	8 mW(SMF)	515	520	530	nm
Spectral Width FWHM	Δλ	2nm	—	2	—	nm
Rise Time	tr	20% to 80%	—	5.0	—	nsec
Fall Time	tf	80% to 20%	—	5.0	—	nsec
Thermal Resistance	R_{TH}		—	34	—	K/W
Monitor Current	I_m	V_R =5V, 10mW	—	110	—	uA

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