



PPA Series – 650nm Dot Laser Diode Modules

Plastic Housing, Dia. 6.5mm



Overview

The Lasermate PPA series laser diode module is designed for OEM applications with lowest cost, plastic housing, and miniature size.

Features

- Lowest cost 650nm laser diode module
- Dimensions: Dia. 6.5mm x L 14.5mm
- Automatic Power Control (APC) IC inside
- High quality plastic collimating lens
- Low current consumption of APC circuit
- Plastic housing
- Good laser beam profile

Applications

- Pointing
- Leveling
- Sensing

Product Overview

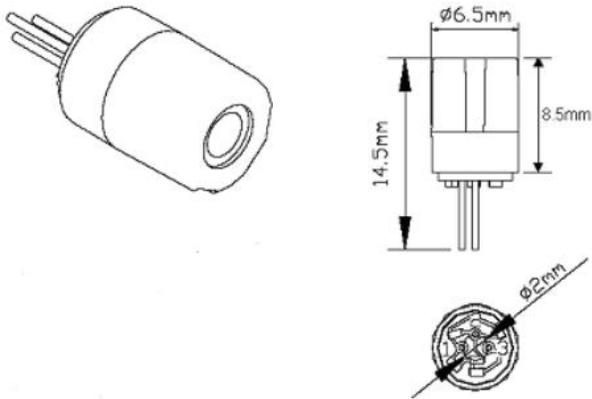
Part Number	Wavelength (nm)	Optical output power (mW)	Laser class	Operating current typical (mA)	Operating voltage typical (VDC)	Operating temperature (°C)
PPA6501F3PA	650	<1	II	26	3	0 to 40
PPA6503F3PA	650	<5	IIIa	26	3	0 to 40

Specifications of PPA Series Laser Diode Modules

Absolute Maximum Ratings			
Parameter	Symbol	Rating	Unit
Power supply voltage	V_{CC}	3.3	V
Laser module optical output power	P_O	<3	mW
Operation temperature	T_{opr}	0 to 40	°C
Storage temperature	T_{stg}	0 to 60	°C

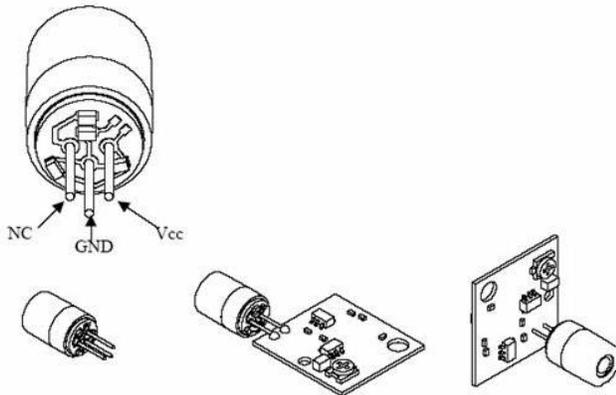
Electrical and Optical Characteristics ($T_c = 25^\circ\text{C}$)								
Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions	
Wavelength		λ	645	655	660	nm	$P_o = <3\text{mW}$	
Output power	PPA6501F3PA	P_{out}	0.4	0.6	0.9	mW	$V_{CC} = 3\text{V}$	
	PPA6503F3PA		2.2	-	3.0	mW	$V_{CC} = 3\text{V}$	
Operation current		I_{op}	-	26	35	mA	$P_o = 2.5\text{mW}, V_{CC} = 3\text{V}$	
Operation voltage		V_{op}	2.5	3	3.3	V		
Laser beam spot size at 10m							<10mm	
Divergence angle							1.1mrad	
Mean time to failure (MTTF) @ 3mW, 25°C							>10,000hrs	

Outline Dimensions of PPA Series Laser Diode Modules (unit: mm)

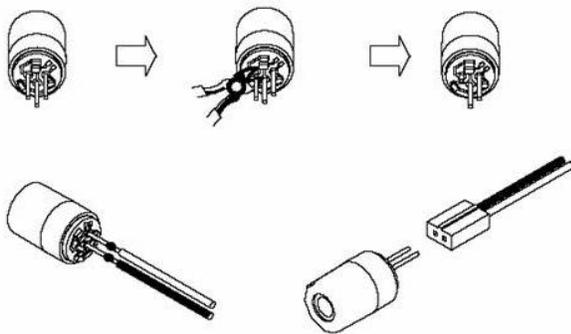


Instruction Manual for PPA Series Laser Diode Modules

DC Power connection mode 1



DC Power connection mode 2



Laser Safety Precautions

1. Do not look directly into the laser beam. The laser beam may cause severe damage to the human eye.
2. Do not contaminate the lens by soiling, oil, or chemicals.

Additional Notes

- The PPA series laser modules are designated solely as OEM components for incorporation into the customer's end products. Therefore, it is the customer's responsibility to comply with the appropriate requirements of FDA 21CFR, section 1040.10 and 1040.11 for complete laser products. For the code of FDA regulations, please refer to [FDA Performance Standards for Light-Emitting Products](#) for detailed information.
- Specifications are subject to change without notice.



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