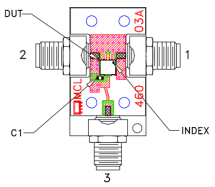
AC In: (50 Ω)

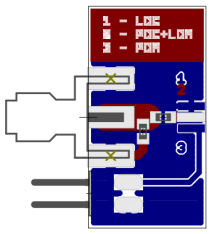
-13 dBm = 0.35 mA (VCSEL max)

-4 dBm = 3 mA (LD max)



TB–510+

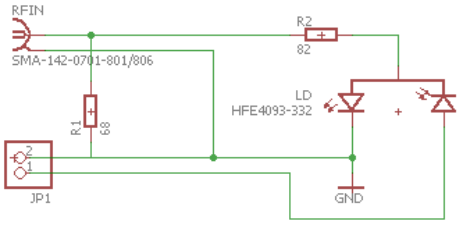
LDA/PDC (DC)

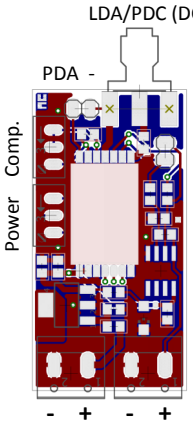


LDC (GND)

LDA+PDC

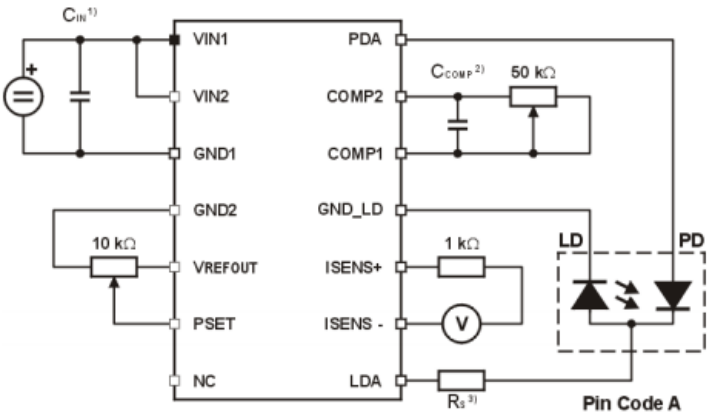
PDA



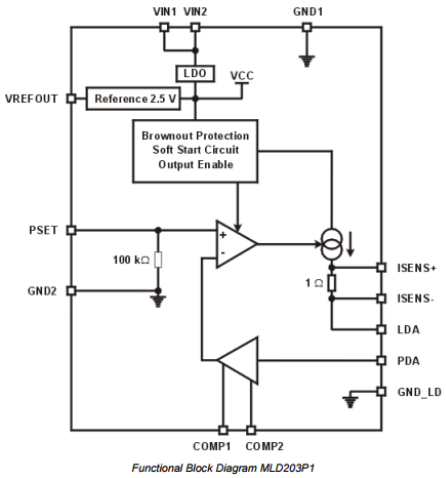


DC In I Mon

6 - 12 V 0.1V/mA

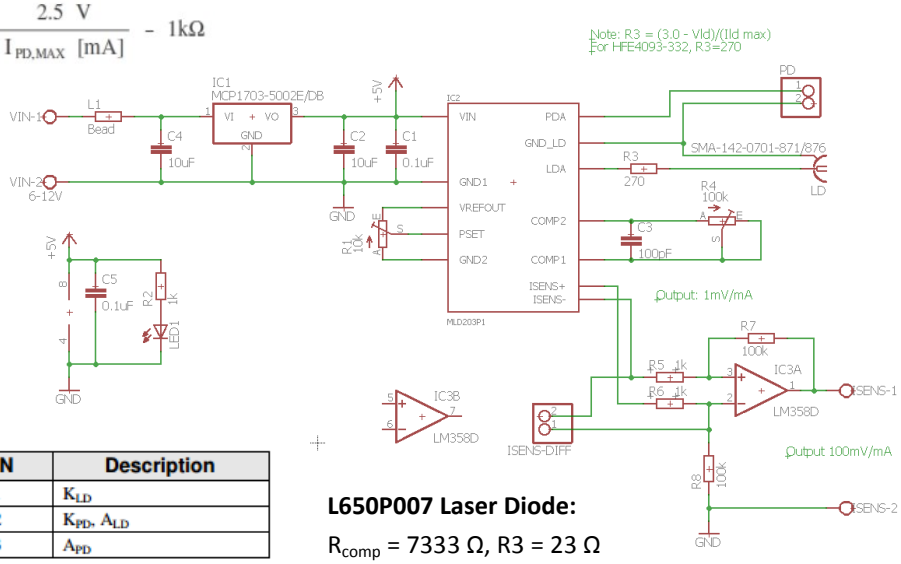


MLD203P1 Typical External Circuit



Functional Block Diagram MLD203P1

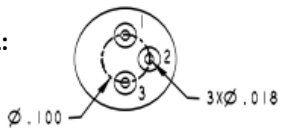
$$I_{PD,MAX}\ [mA] = \frac{2.5\ V}{(R_{COMP}\ [k\Omega] + 1k\Omega)} \qquad R_{COMP}\ [k\Omega] = \frac{2.5\ V}{I_{PD,MAX}\ [mA]} - 1k\Omega$$



HFE4093-332 VCSEL:

R_{comp} = 70428 Ω

R3 = 275 Ω

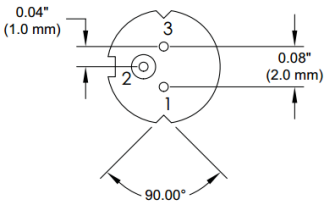


PIN	Description
1	K_{LD}
2	K_{PD}, A_{LD}
3	A_{PD}

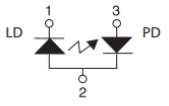
VCSEL Parameters	Test Condition	Symbol	Min.	Typ.	Max.	Units
Optical Power Output	I_F=4mA	Po	0.7	1		mW
Threshold Current		I_{TH}			1.5	mA
Threshold Current Temperature Variation	T_A = 0°C to 70°C	Δ I_{TH}	-1.5		1.5	mA
Slope Efficiency		η	0.25	0.35	0.6	mW/mA
Slope Efficiency Temperature variation	T_A = 0°C to 70°C	Δη /ΔT		-6000		PPM/°C
Peak Wavelength	I_F=4 mA	λ_P	835		870	nm
λ_P Temperature Variation	I_F=4 mA	$\Delta\lambda_P/\Delta T$		0.06		nm/°C
Laser Forward Voltage	I_F=4 mA	V_F		1.9	2.5	V
Laser Reverse Voltage	I_R=10 µA	BVR_{LD}		-10		V
Rise and Fall Times	Prebias Above Threshold, 20%-80%	t_r, t_f		150		ps
Series Resistance	I_F=4 mA	R_S	75	110	150	Ohms
Series Resistance Temperature Coefficient	I_F=4 mA, 0°C to 70°C	dR_s/dT		-2000		PPM/°C
Side Mode Suppression Ratio	I_F=4mA	SMSR	15	30		dB
Change in wavelength with current		$\Delta\lambda_P/\Delta I$		0.25		mA/nm
Beam Divergence		Θ_{FWHM}		11	20	Degrees
Photodiode Parameters	**Test Condition**	**Symbol**	**Min.**	**Typ.**	**Max.**	**Units**
Monitor Current	Po = 1mW	I_{PD}		0.035		mA
Monitor current Temperature Variation	Po = 1mW	$\Delta I_{PD}/\Delta T$		0.2		%/°C
Dark Current	Po =0mW, V_R=3V	I_D			20	nA
PD Reverse Voltage	Po =0mW, I_R=10 µA	BVR_{PD}	30	115		V
PD Capacitance	V_R=0V, Freq=1MHz V_R=3V, Freq=1MHz	C		75 40	100 55	pF

L650P007 Laser Diode:

R_{comp} = 7333 Ω, R3 = 23 Ω



Pin Code 5A



Pin Description

1 Laser Cathode
2 Case Common
3 Monitor Diode Anode

Specification	Symbol	Min	Typ	Max
Wavelength, nm	λ_p	640	650	660
Output Power, mW	P_o	-	7	10
Threshold Current, mA	I_{th}	-	20	25
Operation Current, mA	I_{op}	-	28	35
Operating Voltage, V	V_{op}	-	2.2	2.6
Beam Divergence, deg	$\theta_{//}$	5	9	12
	$\theta_{\perp}$	24	28	32
Slope Efficiency, mW/mA	η	0.6	1	1.3
Monitor Current, mA	I_m	-	0.12	0.3
Astigmatism, µm	A_s	-	-	15
Beam Angle Deviation, deg	$\theta_{//}$	-3	-	3
	$\theta_{\perp}$	-3	-	3
Emission Point Accuracy, µm	ΔX	-80		80
	ΔY	-80		80
	ΔZ	-80		80