

Project	PCAL		LIGO Laboratory California Institute of Technology Massachusetts Institute of Technology National Science Foundation	
Sheet Title	Photodiode Head			
Size:	B	DCC D2100733	Rev: 1	
Date:	3/18/2022	Time: 10:07:55 AM	Sheet: 1 of 1	DrawnBy: Peter King
File:	D2100733-v1.SchDoc			

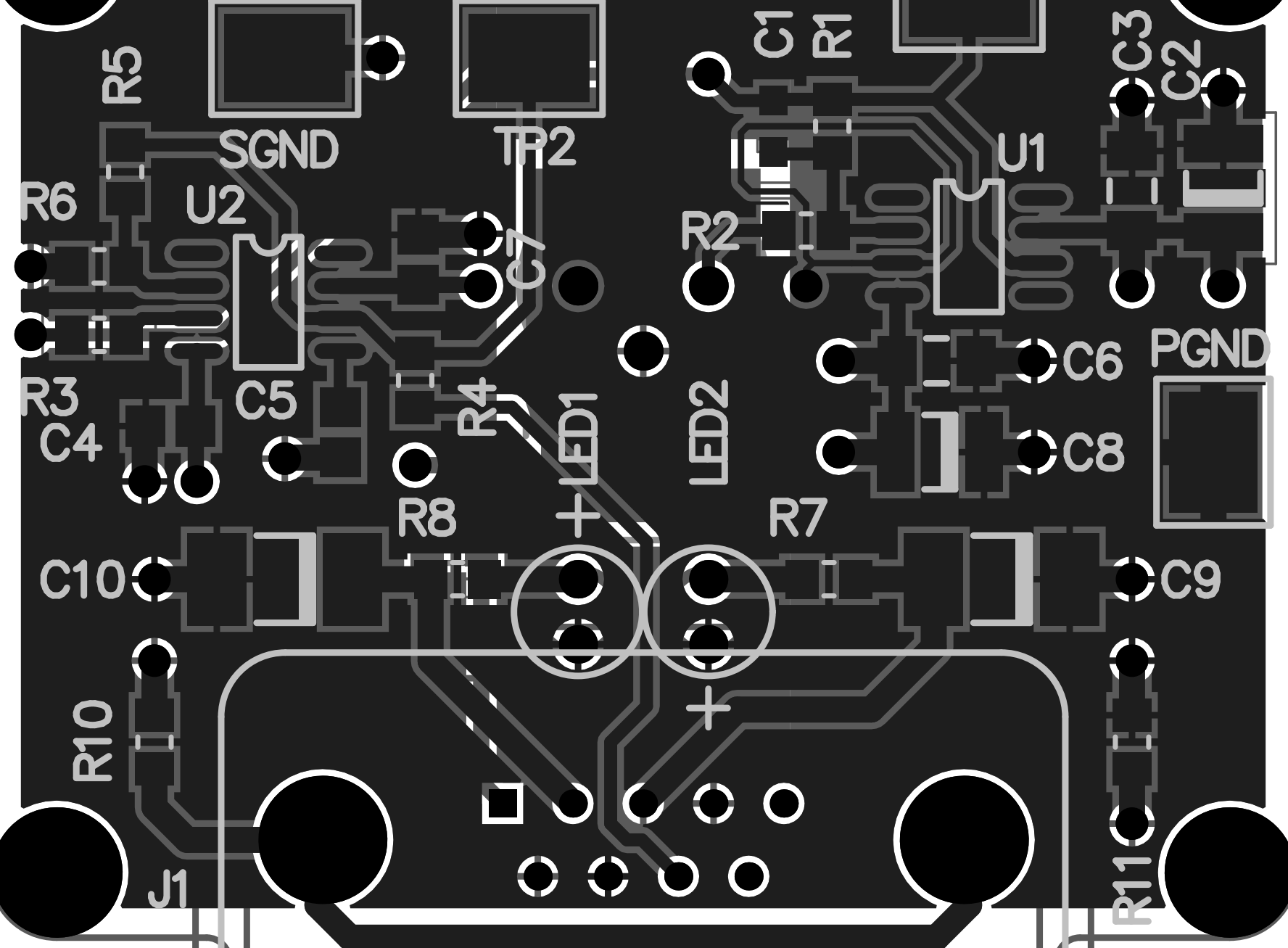




LIGO

D2100733
Pcal TIA v1

TP1



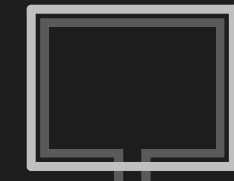
R5

SGND



C1

R1



C3

C2

U2

TP2

R2

U1

PGND

R6

R3

C4

C5

R8

R4

+LED1

LED2

R7

C6

C8

C9

C10

R10

J1

R11

Line #	Name	Description	Designator	Quantity	Manufacturer 1	Manufacturer Part Number 1	Manufacturer Lifecycle 1	Supplier 1	Supplier Part Number 1	Supplier Unit Price 1	Supplier Subtotal 1
	3mm LED		LED1, LED2	2					NS		
	GROUND TEST POINT		TP3, TP4	2	Keystone Electronics	5018	Unknown	Digi-Key	36-5018CT-ND	0.39	0.78
	0.1 uF	0.1 uF, +/- 1% U2J ceramic chip capacitor	C3, C6	2	KEMET	C1206C104F5JAC7800	Unknown	Digi-Key	399-16900-1-ND	2.6	5.2
	0.1 uF	0.1 uF, +/- 5% X7R ceramic chip capacitor	C4, C7	2				Digi-Key	08055C104JAT2A		
	AD590MF	2 terminal IC temperature transducer	U3	1					NS		
	2.00k	2.00k ohm, +/- 0.05% thin film chip resistor	R5	1	Vishay Dale	TNPW08052K00BYEN	Not Recommended for New Design	Digi-Key	541-4418-1-ND		
	2.00k	2.00k ohm, +/- 0.05% thin film chip resistor	R7, R8	2	Vishay Dale	TNPW08052K00BYEN	Not Recommended for New Design	Digi-Key	541-4418-1-ND		
	12 pF	2.7 pF, +/- 0.1 pF COG ceramic chip capacitor	C1	1	Yageo	CC0805FRNPO9BN120	Volume Production	Digi-Key	311-4162-1-ND	0.3	0.3
	C30665GH	3 mm InGaAs photodiode	PD1	1					NS		
	10.0k	10.0k ohm, +/- 0.05% thin film chip resistor	R9	1	Stackpole Electronics	RNCF0805DTE10K0	Volume Production	Digi-Key	RNCF0805DTE10K0CT-ND	0.14	0.14
	13.0k	20.0k ohm, +/- 0.05% thin film chip resistor	R1	1	Panasonic	ERA6ARW133V	Volume Production	Digi-Key	P13KBSCT-ND	0.87	0.87
	3 pF	68 pF, +/- 1% COG ceramic chip capacitor	C5	1	Johanson	251R15S3R0AV4E	Unknown	Digi-Key	712-1706-1-ND		
	ZERO	1206 zero ohm jumper	R2, R3, R4, R10, R11	5	Yageo	RC0805JR-7W0RL	Unknown	Digi-Key	13-RC0805JR-7W0RLCT-ND	0.1	0.5
	221	1206 zero ohm jumper	R6	1	TE Connectivity	RP73PF2A221RBTDF	Volume Production	Digi-Key	A110480CT-ND	0.64	0.64
	Dsub 9 male	Dsub 9 male, vertical	J1	1					NS		
	AD829ARZ	high speed, low noise video op amp	U2	1	Analog Devices	AD829ARZ	Volume Production	Digi-Key	AD829ARZ-ND		
	THS4631D	high voltage, high slew rate, wideband FET input operational amplifier	U1	1	Texas Instruments	THS4631D	Volume Production	Digi-Key	296-17626-5-ND	8.76	8.76
	3.3 uF	SMD chip tantalum capacitor	C2, C8	2	KEMET	T491B335K035AT	Volume Production	Digi-Key	399-10145-1-ND	0.82	1.64
	10 uF	SMD chip tantalum capacitor	C9, C10	2	KEMET	T491C106K035AT	Volume Production	Digi-Key	399-8333-1-ND	1.03	2.06
	TEST POINT	test point	TP1, TP2	2	Keystone Electronics	5018	Unknown	Digi-Key	36-5018CT-ND	0.39	0.78