**PMT Protection Circuit for Optical Stimulus Delivery Ver. Gamma 1a**

(74ACT Logic, TimerBlox delay for shutter closing, analog stim switch)

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| --- | --- | --- | --- | --- | --- |
| **Name** | **Value** | **Package** | **Description** | **Part Number** | **Notes** |
| C1, C2, C3, | .1u | C-USC0805K |  | 0805 | IC bypass caps |
| C4 | 1 uF | CPOL-USE2.5-5 |  | E2,5-5 |  |
| C5 | 2.2 uF | CPOL-USE2.5-5 | [478-1870-ND](http://www.digikey.com/product-detail/en/avx-corporation/TAP225K025SCS/478-1870-ND/563973) | E2,5-5 |  |
| D1 | 1N4004 | 1N4004 |  | DO41-10 | DIODE |
|  |  |  |  |  |  |
| R1, R2 | 50 | R-US\_R0805 |  | R0805 | Coax series resistor |
| R3, R4, R7 | 500 |  |  |  | LED current limit |
| R5, R6 |  |  |  |  | 1% or better |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| RSET |  | 0805 |  |  | .5% precision metal or thin film. 1% thick film may be used for cost. |
| RN1 | 10k | G04R | [4605X-101-103LF-ND](http://www.digikey.com/product-detail/en/bourns-inc/4605X-101-103LF/4605X-101-103LF-ND/3593670) | SIL5 | Resistor Array |
|  |  |  |  |  |  |
| IC1 | 74ACT00 | 14-SOIC | Quad 2-input NAND |  |  |
| IC2 | 74ACT04 | 14-SOIC | Hex Inverter |  |  |
| U1 | ADG453BRZ | SO16 | Analog Devices ADG453 SPST Switches | [ADG453BRZ](http://www.digikey.com/product-detail/en/analog-devices-inc/ADG453BRZ/ADG453BRZ-ND/820079) |  |
| U2 |  |  | LT TimerBlox | LTC6994-1 | Rising edge delay, Pol = 0 |
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| JP1 |  | PINHD-1X3 |  | 1X03 | PIN HEADER |
| J1 |  | SMT/TH Combo |  |  | Power Jack |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| SW1, SW2 |  |  | SP3T switch wired up for 3-way | [100DP6T1B1M1RE-ND](https://www.digikey.com/product-detail/en/e-switch/100DP6T1B1M1RE/100DP6T1B1M1RE-ND/3777875) | E-switch, series 100 |
| SW1, SW2 |  |  | SP3T switch wired up for 3-way | [360-2074-ND](https://www.digikey.com/product-detail/en/nkk-switches/M2024SS1W03/360-2074-ND/1007131) | NKK M2024 |
| S1 |  | EG1218S | [679-1887-ND](http://www.digikey.com/product-detail/en/apem-inc/25136NAH/679-1887-ND/1798376) | EG1218 | SPDT Sliding Switch |
|  |  | BNC RA Double | [ARF2111-ND](http://www.digikey.com/product-detail/en/amphenol-rf-division/031-6575/ARF2111-ND/4037241) | BNC\_RIGHT\_ANGLE |  |
| U$1 | V\_REG\_MIC5209 | V\_REG\_MIC5209 | [576-1276-ND](http://www.digikey.com/product-detail/en/microchip-technology/MIC5209-5.0YS/576-1276-ND/771745) | SOT-223 |  |
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