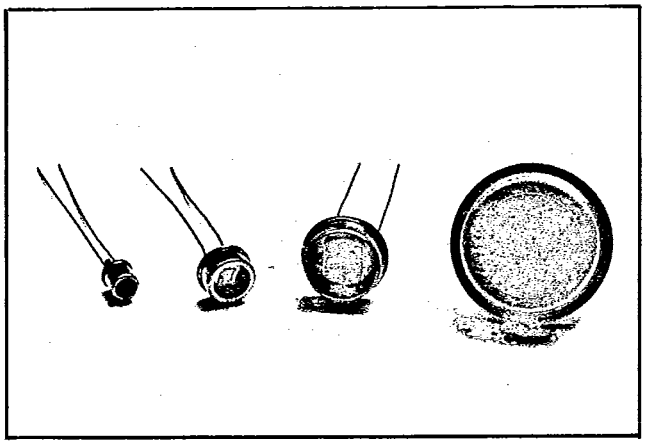
FAST RESPONSE SILICON PLANAR DIFFUSED PHOTODIODES

Specifications subject to change without notice for product revisions and improvements.

Fast Response Silicon Planar Diffused Photodiodes

Planar diffused fast response photodiodes are designed for fast risetime applications and offer the electro-optics design engineer the optimized performance of a silicon response with linearity over a wide incident power range. These devices are designed to be used in photovoltaic and photoconductive operations with fiber optics or as instrument detectors where less than 50 ns risetime is required in conjunction with low dark current.



Applications

- Fiber Optics
- Process Control Instrumentation
- Point of Sale Terminals
- Optical Encoders
- Defect Analysis
- Optical Character Recognition
- Photocopiers
- Flash Detection

Features

- Hermetic Packaging
- Linear Response
- High Speed Response
- High Reliability

Military Applications

Advanced Detector Corporation has extensive experience in supplying detectors for military and aerospace applications. The ADC Quality Assurance Program has been developed to meet the requirements of MIL Q-9858A. ADC enjoys a reputation in the military/aerospace community as a high quality and reliable supplier. A copy of ASEC 91-6064 Quality Assurance Program Document which delineates the quality assurance policies implemented on all products to assure compliance with specifications is available upon request.

ELECTRICAL CHARACTERISTICS

Type No.	Outlines	Effective Photosensor Surface cm²	Dark Reverse Current I_{DR} @ −1V nA	Dark Reverse Current I_{DR} @ −10V* nA	Reverse Breakdown Voltage V_{BR} Typ Volts	Reverse Breakdown Voltage V_{BR} Min Volts	Source Impedance R_{SO} Typ MΩ	Junction Capacitance C_J @ −10 Volts pf	Typical RC Rise Time 10-90% (ns) 50 ohm load @ 10V	Typical Noise Equiv. Power (NEP) (W/Hz½)
11PS18M	TO18	.0094	.5	1.0	160	125	200	5	2	2×10^{-14}
22PS18M	TO18	.0230	.9	2.5	120	80	100	13	3	3×10^{-14}
33PS05M	TO5	.0510	3.0	7.0	70	50	60	25	5	4×10^{-14}
44PS05M	TO5	.1700	8.0	18.0	30	20	30	100	10	5×10^{-14}
68PS08M	TO8	.4090	35.0	70.0	15	10	10	250	25	8×10^{-14}
110PS9M	TO9	.9030	75.0	150.0	7	5	5	400	45	1×10^{-14}

Minimum responsivity @ 950 nm = .56 A/W. Allow 8% reduction for transmission through glass.
*Reverse Voltage: Use −10V or $V_{BR}/_2$ where applicable.

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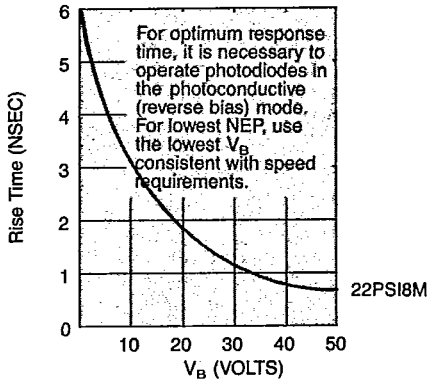
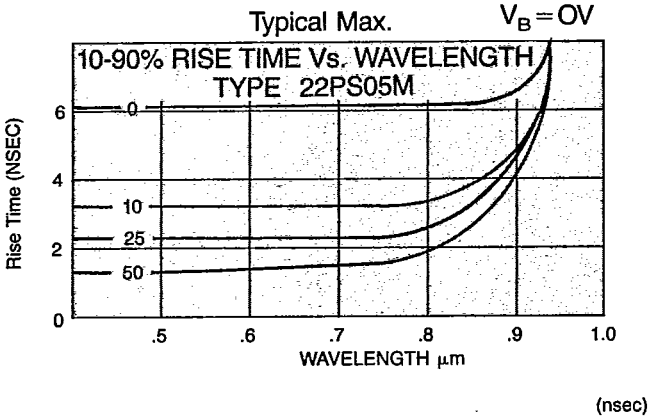
Typical Performance Curves

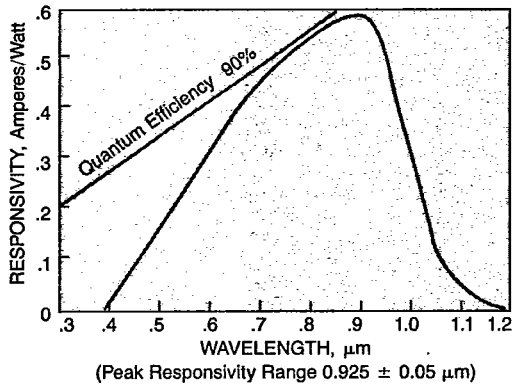
Typical
10-90% Rise Time vs.
Reverse Bias @ λ = 633nm



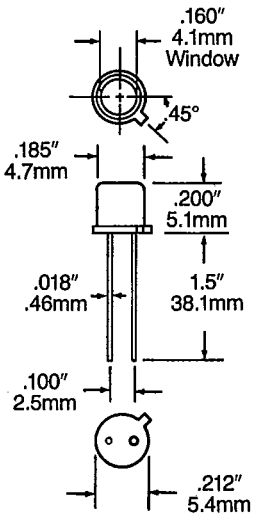


(nsec)

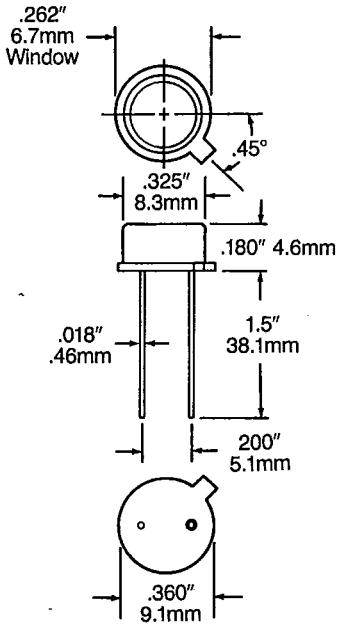
Typical Responsivity Curve @ −10V



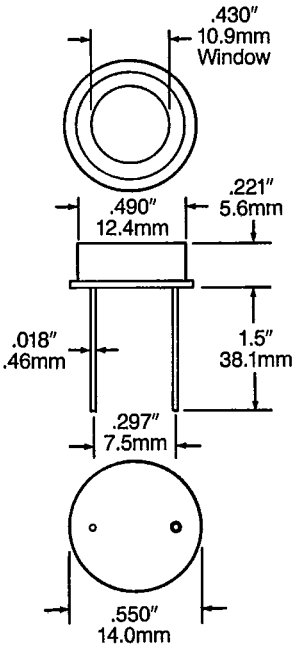
(Peak Responsivity Range 0.925 ± 0.05 μm)



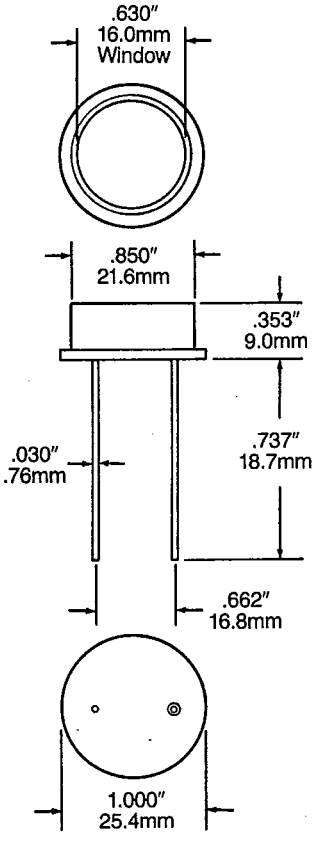
T018



T05



T08



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