



HYBRID EYESAFE LASER RANGEFINDER RECEIVER

- HIGH SENSITIVITY
- HERMETIC TO-8 PACKAGE, 0.1 CU INCH
- FAST RECOVERY – LOW MINIMUM RANGE
- DUAL WAVELENGTH InGaAs APD DETECTOR
- SINGLE SUPPLY, ONLY 85mW
- LOW COST



DESCRIPTION:

The **Model 755A-04** hybrid eyesafe laser rangefinder receiver is designed for laser ranging/surveying equipment. Because of the compact construction (Modified TO-8 header) and the PCB mounting capability, it is ideal for miniature applications. Fast recovery from T_o overload allows ranging to close objects without compromising long range performance. The incorporation of an InGaAs APD gives very high sensitivity with time programmed gain to minimize false targets. Operation at both $1.06\mu\text{m}$ and $1.54\mu\text{m}$ is possible over a wide range of pulsewidths.

SPECIFICATIONS:

All measurements made at 20°C

| PARAMETER | Min. | Typical | Max. | Units | |
|---|--------|---------------------------|-------|------------------|------------------|
| InGaAs APD Active Diameter | 180 | 200 | 220 | μm | |
| Sensitivity ($1.54\mu\text{m}$, 20ns pulse, 50% Pd, 0.1% FAR) | 1.5 | 5 | 7 | nW | |
| Sensitivity ($1.06\mu\text{m}$, 20ns pulse, 50% Pd, 0.1% FAR) | 3 | 10 | 14 | nW | |
| Low Gain Sensitivity ($1.54\mu\text{m}$ Optical, 50% Pd) | 0.6 | 3 | 7 | μW | |
| Time Programmed Gain (TPG) (see application note) | 26 | 28 | 31 | dB | |
| Target Separation (1:1 power ratio see application note) | - | 22 | 25 | m | |
| 10mW Overload Recovery (1:1 power ratio see application note) | - | 0.55 | 1 | μS | |
| Output (TTL or CMOS compatible, negative logic) | HI | 3.3 | 4.5 | V | |
| | LOW | 0 | 0.6 | V | |
| Supply Voltage | +4.85 | +5.0 | +12.6 | V | |
| Current Draw @ High Gain | 11 | 13 | 15 | mA | |
| Current Draw @ Low Gain | 20 | 22 | 25 | mA | |
| APD Bias Voltage (Pin 10) | 40 | 70 | 82 | V | |
| Bias Current into Pin 10 (see application note) | 10 | 20 | 80 | μA | |
| Operating Temperature | @ +5V | -40 | - | +85 | $^\circ\text{C}$ |
| | @ +12V | -40 | - | +71 | $^\circ\text{C}$ |
| Storage Temperature | -55 | - | +100 | $^\circ\text{C}$ | |
| MTBF (Ground benign at 55°C per Telcordia SR-332) | | 150,000 | | Hours | |
| Size | | 0.6 \varnothing x 0.425 | | Inches | |
| Weight | | 0.14 oz (4.1 grams) | | | |

Specifications subject to change without notice.

APPLICATIONS:

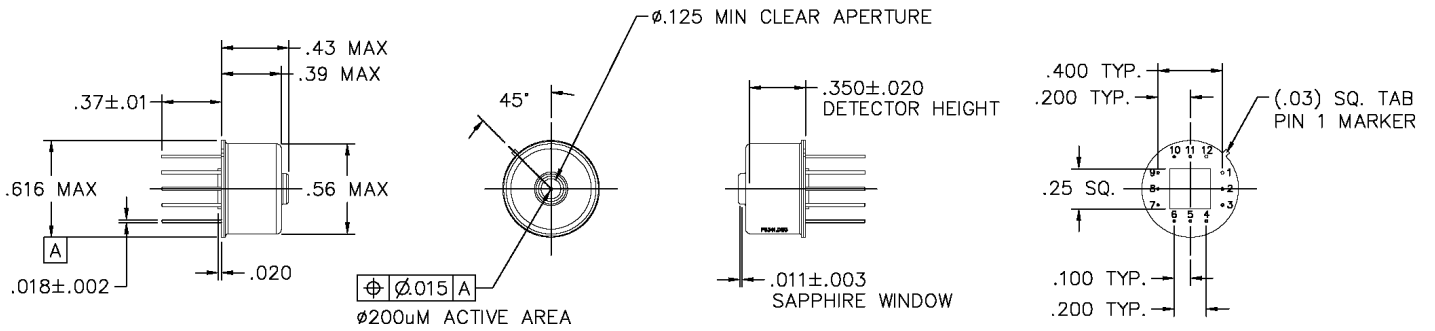
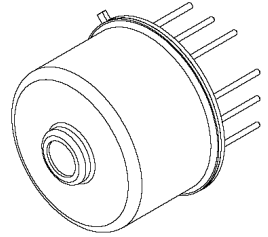
Laser Ranging and Surveying

"In the event this commodity will be transferred to a "foreign person" as defined in 22 CFR 120.16, either outside or within the United States, a validated US State Department license is required."



OPERATING NOTES:

See application notes for detailed operating information.



P8341A

Refractive Index of Window = 1.746 at $1.550 \mu\text{m}$ and 1.754 at $1.064 \mu\text{m}$