



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** 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:

PARAMETER	MODEL 755A-03			MODEL 755A-04			Units	
	Min.	Typical	Max.	Min.	Typical	Max.		
InGaAs APD Active Diameter	75	80	85	180	200	220	μm	
Sensitivity ($1.54\mu\text{m}$, 20ns pulse, 50% Pd, 0.1% FAR)	1.5	3	5	1.5	5	7	nW	
Sensitivity ($1.06\mu\text{m}$, 20ns pulse, 50% Pd, 0.1% FAR)	3	6	10	3	10	14	nW	
Low Gain Sensitivity ($1.54\mu\text{m}$ Optical, 50% Pd)	0.6	2.4	8	0.6	3	7	μW	
Time Programmed Gain (TPG)*	26	29	32	26	28	31	dB	
Target Separation (1:1 power ratio)*	-	22	25	-	22	25	m	
10mW Overload Recovery (1:1 power ratio)*	-	0.55	1	-	0.55	1	μS	
Output (TTL or CMOS compatible, negative logic) HI	2.4	3.3	4.5	2.4	3.3	4.5	V	
	LOW	0	0.5	0.6	0	0.5	0.6	
Supply Voltage	+4.85	+5.0	+12.6	+4.85	+5.0	+12.6	V	
Current Draw @ High Gain	11	13	15	11	13	15	mA	
Current Draw @ Low Gain	20	22	25	20	22	25	mA	
APD Bias Voltage (Pin 10)	40	70	82	40	70	82	V	
Bias Current into Pin 10 (see application note)	10	20	80	10	20	80	μA	
Operating Temperature	@ +5V	-40	-	+85	-40	-	+85	$^{\circ}\text{C}$
	@ +12V	-40	-	+71	-40	-	+71	$^{\circ}\text{C}$
Storage Temperature	-55	-	+100	-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)							

*See Application Note for details. All measurements made at 20°C

Specifications subject to change without notice.

APPLICATIONS:

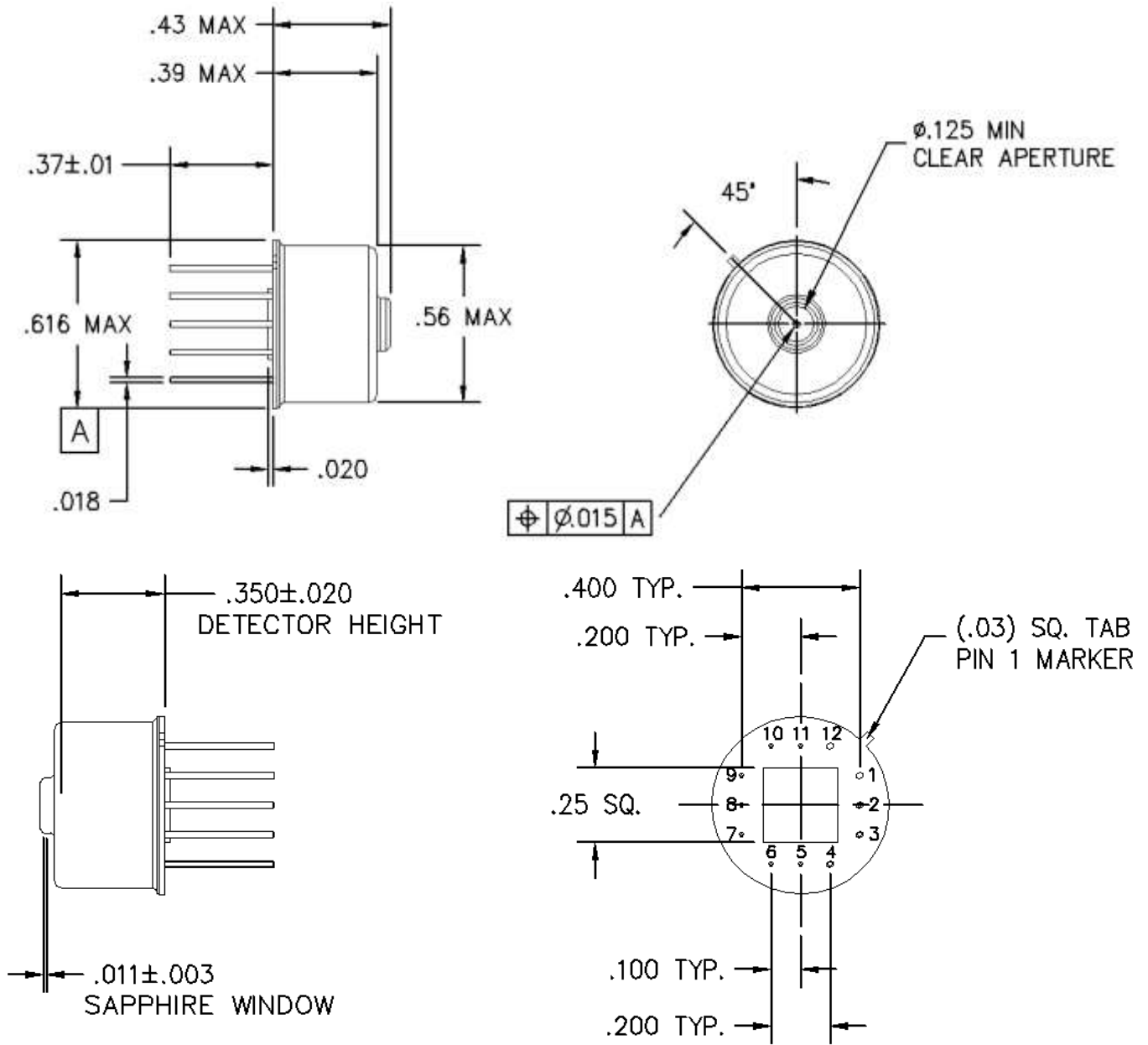
Laser Ranging and Surveying

"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.



UNITS: INCHES

TOLERANCES
.XX = ±.02
.XXX = ±.005

WINDOW REFRACTIVE INDEX: 1.746 @ 1.550um AND 1.754 @ 1.064um

8181TK.DWG