

# YAG Series

## Features

- Planar Diffused
- Large Area
- Wide Dynamic Range
- >50% DC Quantum Efficiency at 1064 nm
- Pulse Quantum Efficiency at 1064 nm >38% at 20 nS Pulse Width
- Oxide Passivated
- Wide Spectral Range
- >90% DC Quantum Efficiency at 900 nm
- Peak Responsivity: 0.7 A/W at 1000 nm

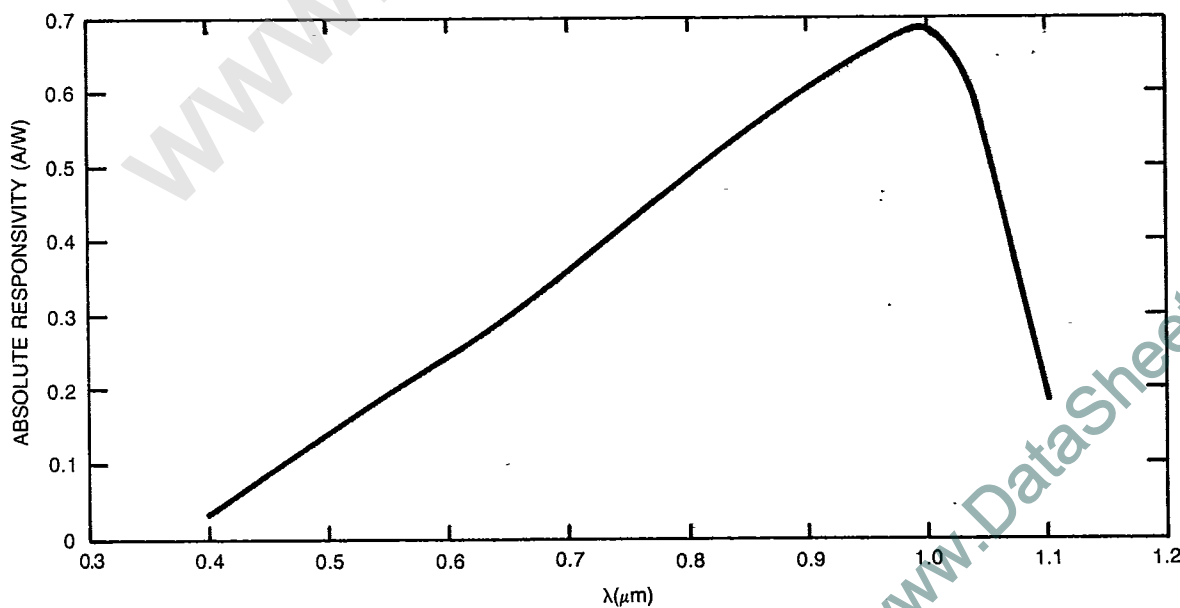
## Operating Data and Specifications at 23°C: Typical Performance at 180 V Bias

Characteristic	YAG-040B	YAG-100A	YAG-200	YAG-444	Units
Active Area	0.81	5.1	20.0	100	Sq. mm
Spectral Range	← 400-1150 →				nm
Responsivity	0.7	0.7	0.7	0.7	A/W at 1000 nm
Bandwidth	45	60	60	60	MHz into 50 ohms
Rise Time	8	5	5	5	nS into 50 ohms
Operating Voltage	0-180	0-180	0-180	0-180	V
Breakdown Voltage <sup>1</sup>	>200	>200	>200	>200	V
Capacitance	0.7	2.5	6.0	35	pF
Dark Current	<3	<20	<100	<200	nA
Channel Resistance	>1.0	>1.0	>1.0	>1.0	Megohms
Series Resistance	5000	1000	375	80	ohms
Noise Current	3	8	18	30	10 <sup>-14</sup> A/Hz <sup>1/2</sup>
NEP (1000, 10 MHz, 1)	4	12	25	42	10 <sup>-14</sup> W/Hz <sup>1/2</sup>
Response Linearity	← <1% →				Over 7 decades
Operating Temperature	← -55 to +125 →				°C
Package Style	TO-46	TO-5	TO-8	TO-36	

### Notes

1. Breakdown voltage measured at 100 microamps dark current.

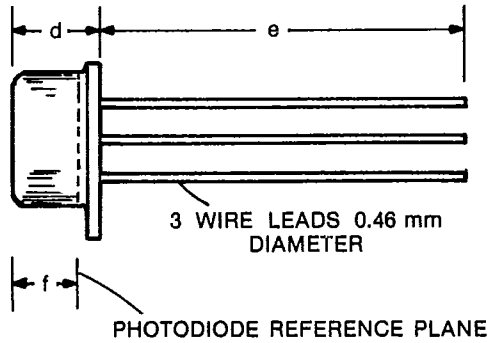
## Typical Spectral Response



# 1064 NM Enhanced

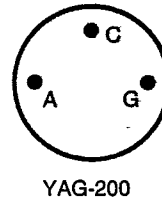
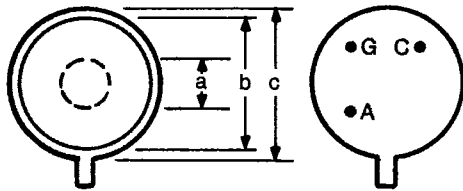
## Mechanical Data and Pin Configurations

### YAG-040, 100, 200 Series



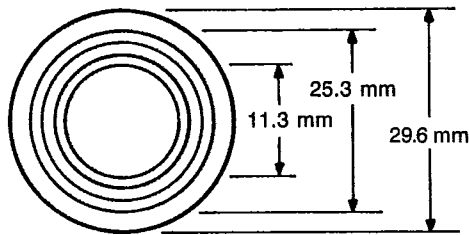
Dimension (mm)	YAG-040B	YAG-100A	YAG-200
a (Active Dia.)	1.0	2.5	5.08
b	4.6	8.4	12.6
c	6.2	9.1	14.6
d	5.1	4.2	5.9
e	>19.0	>19.0	>19.0
f	3.7	2.3	3.5
Pin Circle Radius	1.3	2.5	5.3
Window Thickness	0.9	1.3	1.3
Window Diameter	3.5	6.1	9.65

Gold plated Kovar leads, base and cap.  
Window — Corning 7052 glass.



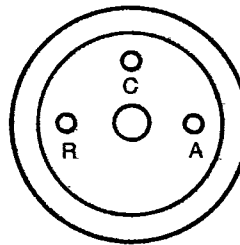
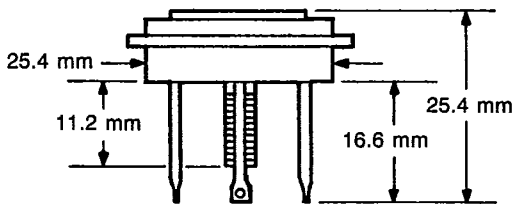
**NOTE:**  
YAG-200 Package Does Not Have a Tab.

### YAG-444



**Package:** Goldplated copper base and cap.  
Goldplate steel pins.  
Pin radius 8.76 mm  
No. 10-32 Stud and case electrically isolated

**Window Aperture:** 11.6 mm dia., 1.0 mm thick, quartz  
Distance, outer window to active surface: 3.56 mm nominal.



**YAG-444 Pin Location**  
C - Common Anode  
A - Active Cathode  
R - Guard Ring Cathode

## Guaranteed Environmental Performance

Document	Inspection	Method	Test Condition
MIL-STD-750B	Vibration	2056	20 g Amplitude
	Shock	2016	1500 g Half Sinusoidal
	Thermal-Temp Cycling	1056.1 B	0°C to 100°C, 5 Cycles
	Constant Acceleration	2006	5000 g
MIL-STD-202D	Moisture Resistance	106	25-65°C; 90-98% RH