

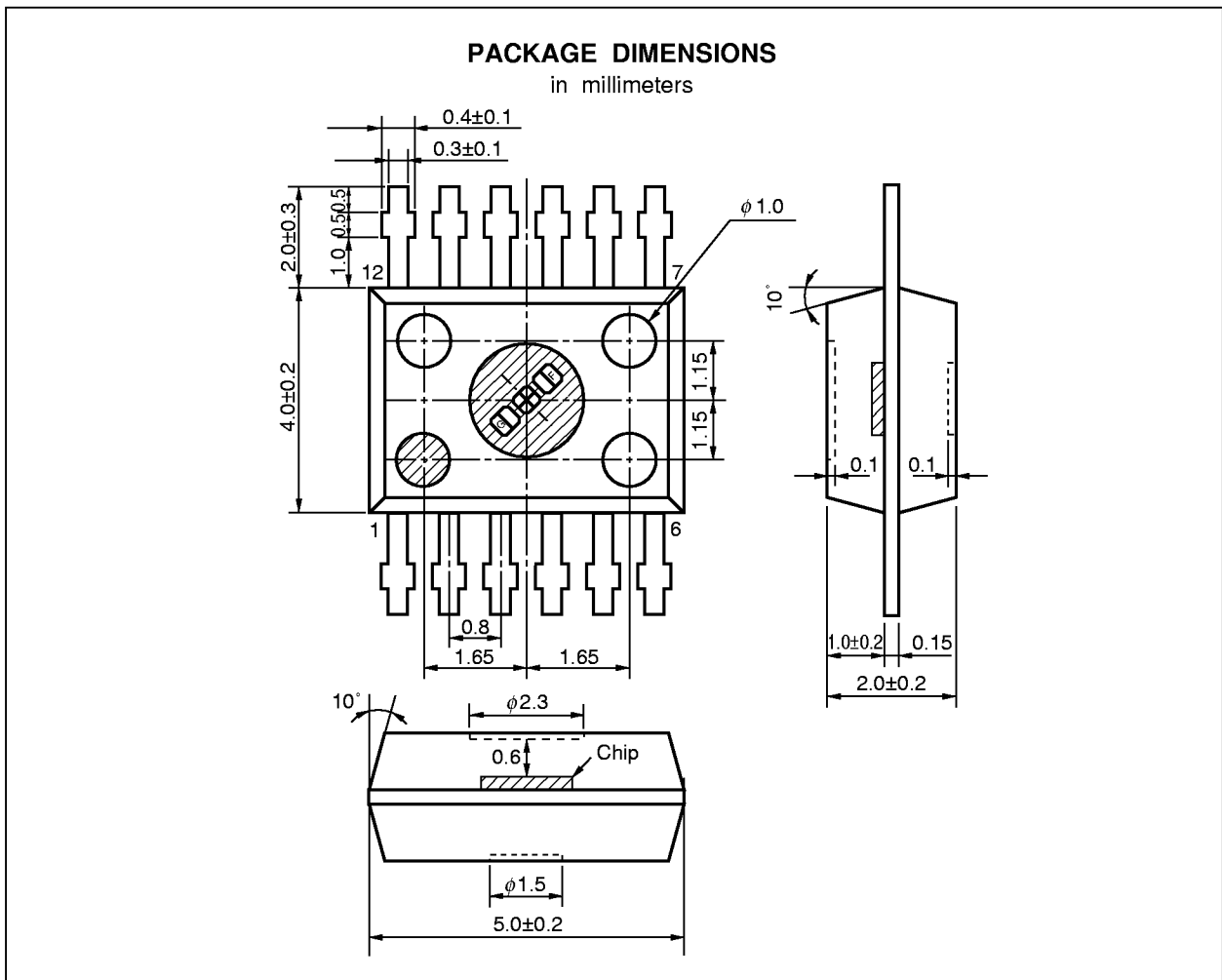
**HIGH SPEED, HIGH SENSITIVITY PHOTO DIODE  
INTERNAL I/V AMPLIFIER DETECTOR FOR DVD, DVD-ROM, DVD-RAM**

**DESCRIPTION**

The PH561 is 8 elements photo diode built in I/V amplifiers for DVD, DVD-ROM, DVD-RAM. It is easy to adjust the center of beam spot by using the Focus and Tracking input terminal, and possible to obtain high speed and high sensitivity.

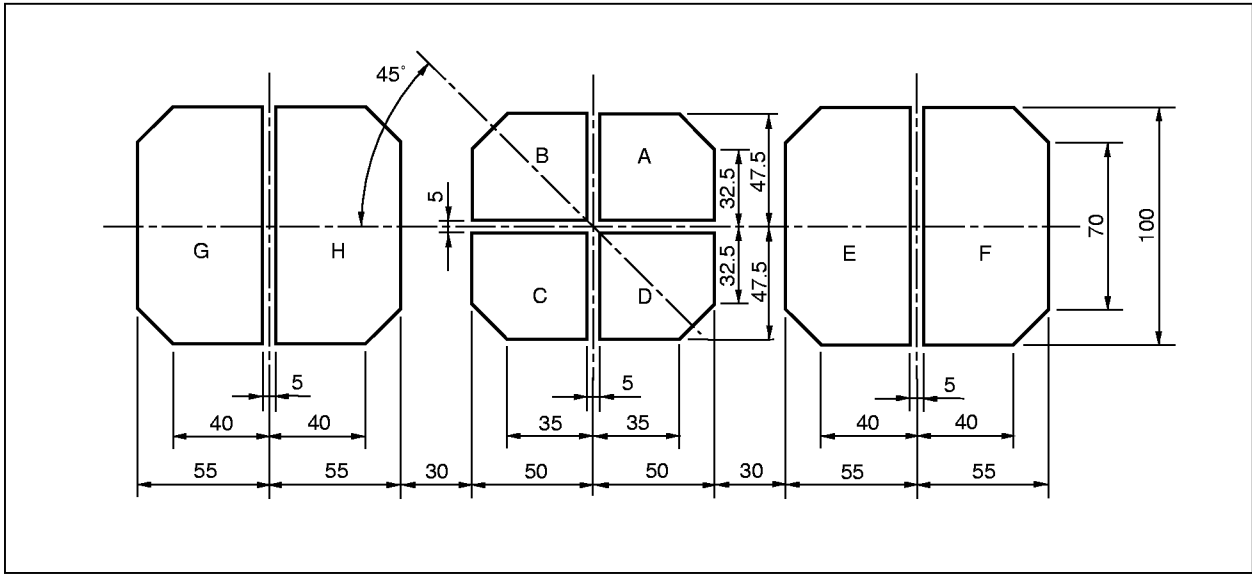
**FEATURES**

- |                                    |  |   |
|------------------------------------|--|---|
| • High speed                       | Frequency Response                                 | $f = 27 \text{ MHz TYP.}$                           |
| • High sensitivity                 | Output Voltage                                     | $V_{OF} = 150 \text{ mV, } V_{OT} = 500 \text{ mV}$ |
| • Wide operating temperature range | $T_A = -20 \text{ to } +70 \text{ }^\circ\text{C}$ |   |
| • Small package                    | $4.0 \times 5.0 \text{ mm}$                        |   |

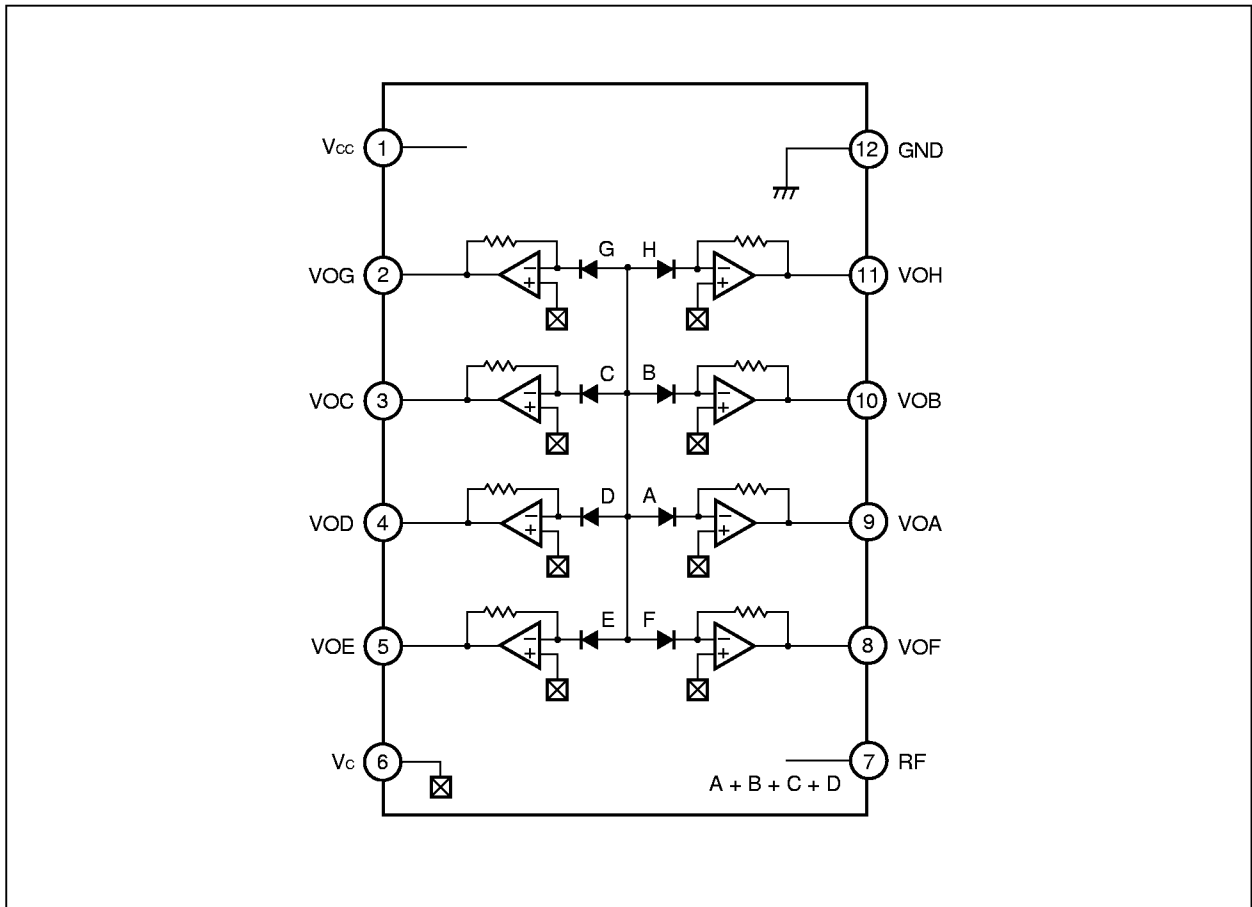


The information in this document is subject to change without notice.

CHIP PATTERN (Unit:  $\mu\text{m}$ )



PIN CONNECTIONS



**ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25 °C, unless otherwise specified)**

Parameter	Symbol	Ratings	Unit
Supply Voltage	V <sub>cc</sub>	12	V
Power Dissipation	P <sub>D</sub>	100	mW
Operating Ambient Temperature	T <sub>A</sub>	-20 to +70	°C
Storage Temperature	T <sub>stg</sub>	-25 to +80	°C

**RECOMMENDED OPERATING CONDITIONS (T<sub>A</sub> = 25 °C)**

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
Supply Voltage of V <sub>c</sub>	V <sub>c</sub>	1.3	2.5	V <sub>cc</sub> -1.3	V
Supply Voltage	V <sub>cc</sub>	4.5	5.0	6.0	V

**ELECTRO-OPTICAL CHARACTERISTICS**

(T<sub>A</sub> = 25 °C, V<sub>cc</sub> = 5 V, Tracking: R<sub>L</sub> = 10 kΩ, Focus: R<sub>L</sub> = 1 kΩ, RF: R<sub>L</sub> = 470 Ω, C<sub>L</sub> = 22 pF)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Circuit Current	I <sub>cc</sub>	Shield a light, V <sub>cc</sub> = 5 V, A to H Open		10	15	mA
Focus Output Voltage <sup>*1</sup>	V <sub>of</sub>	P <sub>i</sub> = 10 μW, λ = 635 nm, V <sub>cc</sub> = 5V, A to D	120	150	180	mV
Tracking Output Voltage <sup>*1</sup>	V <sub>ot</sub>	P <sub>i</sub> = 10 μW, λ = 635 nm, V <sub>cc</sub> = 5V, E to H		500		mV
RF Output Voltage <sup>*1</sup>		P <sub>i</sub> = 40 μW, (A+B+C+D) × 2		-1 200		mV
Offset Voltage <sup>*2</sup>	V <sub>off</sub>	A to D	-10	0	10	mV
		E to H	-30	0	30	mV
		RF	-60	0	60	mV
Difference of Offset Voltage	ΔV <sub>off</sub>	A+B-C-D, A+C-B-D, A+D-B-C	-10	0	10	mV
		EF-GH, EG-GH	-15	0	15	mV
Frequency Response	f	λ = 635 nm, f = 100 kHz reference, -3 dB, A to D	20	27		MHz
		λ = 635 nm, f = 100 kHz reference, -3 dB, E, F	0.5	2		MHz
		λ = 635 nm, f = 100 kHz reference, -3 dB, RF	18	24		MHz

\*1 The reference voltage is V<sub>off</sub>.

\*2 The reference voltage is V<sub>c</sub>.