

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

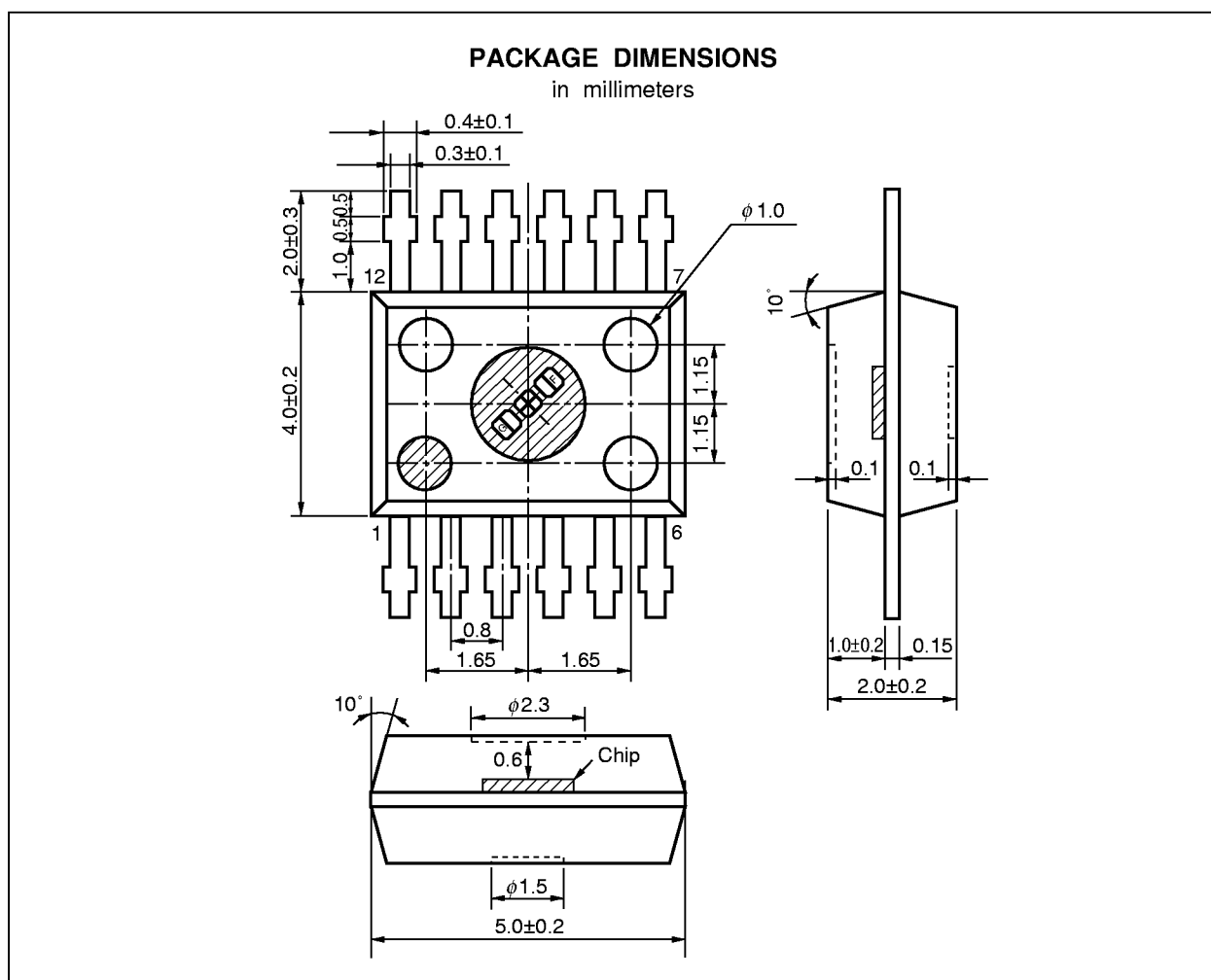
- High speed
- High sensitivity
- Wide operating temperature range
- Small package

Frequency Response $f = 27 \text{ MHz TYP.}$

Output Voltage $V_{OF} = 150 \text{ mV}, V_{OT} = 500 \text{ mV}$

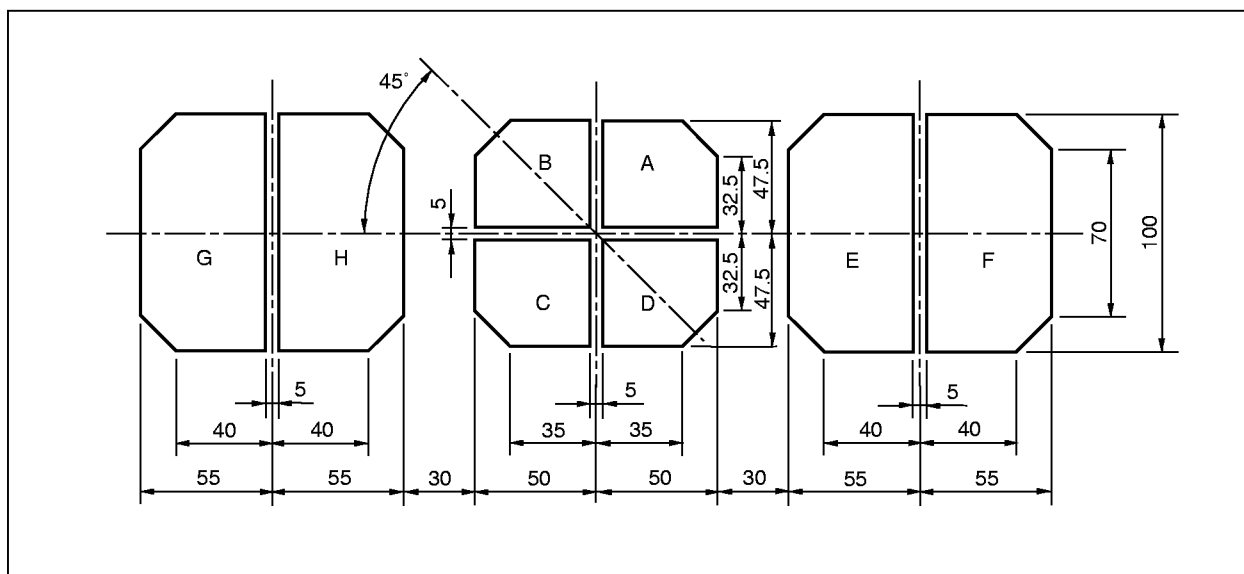
$T_A = -20 \text{ to } +70 \text{ }^\circ\text{C}$

$4.0 \times 5.0 \text{ mm}$

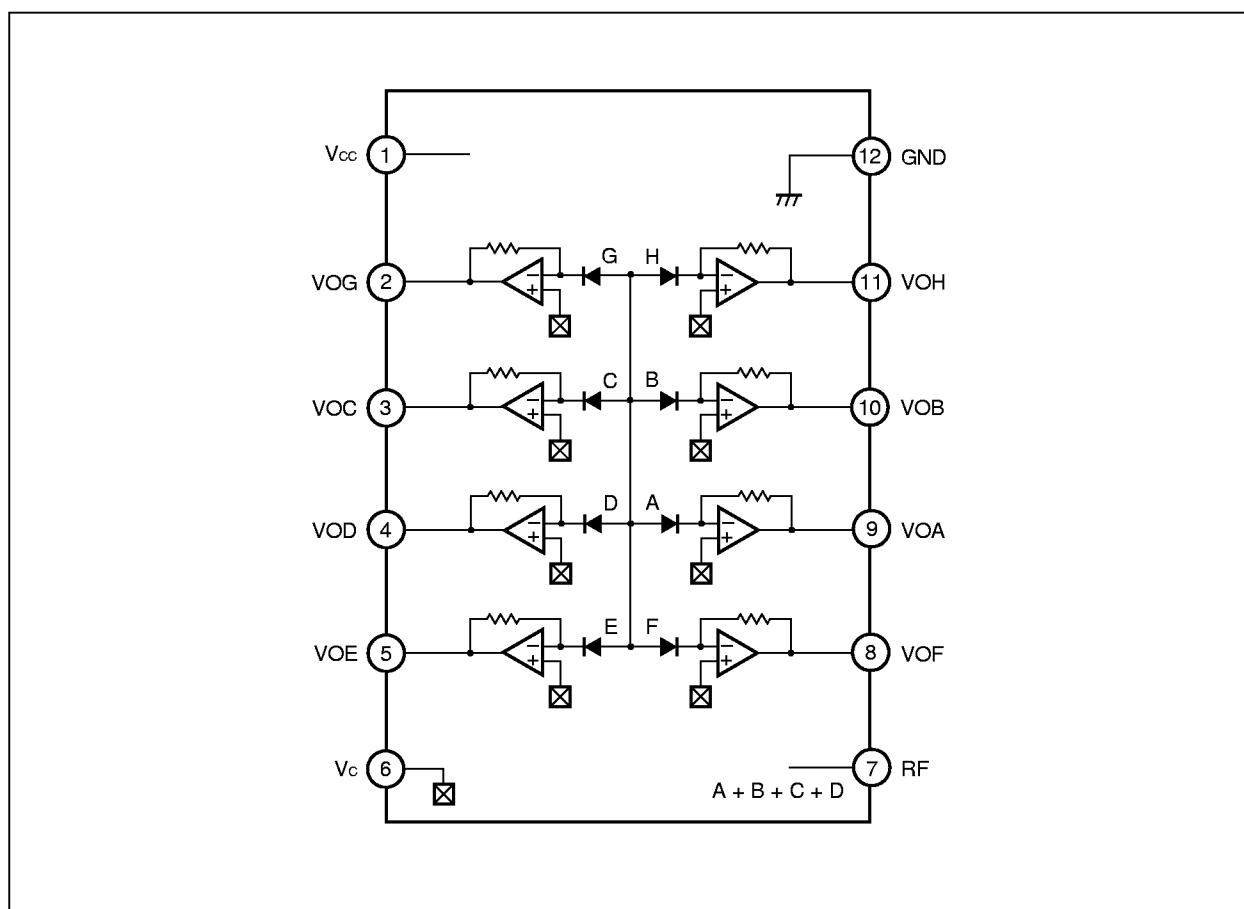


The information in this document is subject to change without notice.

CHIP PATTERN (Unit: μm)



PIN CONNECTIONS



ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Supply Voltage	V_{CC}	12	V
Power Dissipation	P_D	100	mW
Operating Ambient Temperature	T_A	-20 to +70	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-25 to +80	$^{\circ}\text{C}$

RECOMMENDED OPERATING CONDITIONS ($T_A = 25\text{ }^{\circ}\text{C}$)

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
Supply Voltage of V_C	V_C	1.3	2.5	$V_{CC}-1.3$	V
Supply Voltage	V_{CC}	4.5	5.0	6.0	V

ELECTRO-OPTICAL CHARACTERISTICS

($T_A = 25\text{ }^{\circ}\text{C}$, $V_{CC} = 5\text{ V}$, Tracking: $R_L = 10\text{ k}\Omega$, Focus: $R_L = 1\text{ k}\Omega$, RF: $R_L = 470\text{ }\Omega$, $C_L = 22\text{ pF}$)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Circuit Current	I_{CC}	Shield a light, $V_{CC} = 5\text{ V}$, A to H Open		10	15	mA
Focus Output Voltage ^{*1}	V_{OF}	$P_i = 10\text{ }\mu\text{W}$, $\lambda = 635\text{ nm}$, $V_{CC} = 5\text{ V}$, A to D	120	150	180	mV
Tracking Output Voltage ^{*1}	V_{OT}	$P_i = 10\text{ }\mu\text{W}$, $\lambda = 635\text{ nm}$, $V_{CC} = 5\text{ V}$, E to H		500		mV
RF Output Voltage ^{*1}		$P_i = 40\text{ }\mu\text{W}$, $(A+B+C+D) \times 2$		-1 200		mV
Offset Voltage ^{*2}	V_{off}	A to D	-10	0	10	mV
		E to H	-30	0	30	mV
		RF	-60	0	60	mV
Difference of Offset Voltage	ΔV_{off}	$A+B-C-D$, $A+C-B-D$, $A+D-B-C$	-10	0	10	mV
		$EF-GH$, $EG-GH$	-15	0	15	mV
Frequency Response	f	$\lambda = 635\text{ nm}$, f = 100 kHz reference, -3 dB, A to D	20	27		MHz
		$\lambda = 635\text{ nm}$, f = 100 kHz reference, -3 dB, E, F	0.5	2		MHz
		$\lambda = 635\text{ nm}$, f = 100 kHz reference, -3 dB, RF	18	24		MHz

*1 The reference voltage is V_{off} .

*2 The reference voltage is V_C .