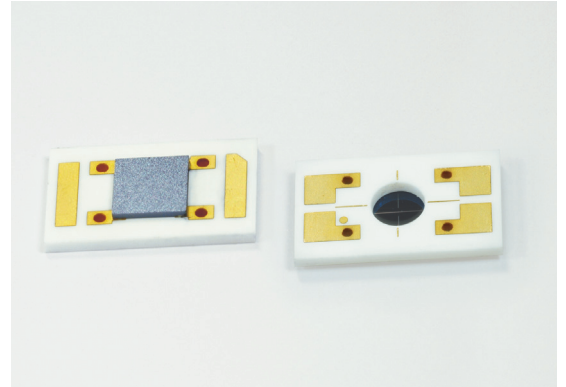


■ Applications

- Far-infrared spectroscopy
- Material analysis
- Nondestructive and non-contact inspection
- Structure inspection
- Security, etc.



■ Outlines

The spectral region between light and electrical waves is known as terahertz (THz) region from the viewpoint of its frequency. This far-infrared spectral region has recently attracted considerable attention for its potential applications in spectroscopy, imaging, telecommunications, medical analysis, and so on. THz photoconductive switch (sometimes called as photoconductive antenna) G12864 series is able to emit and/or detect THz wave by illuminating an ultrafast pulse laser. Small element size (6 mm x 10 mm) helps easy installation in a system.

■ Absolute maximum ratings

Limiting values that must not be exceeded even momentarily, and even any one of the ratings must not be exceeded.

Parameter	Symbol	Value	Unit
Applied voltage	V_{op}	± 10	V
Average input optical power ^{*1) *2)}	P_{ave}	10	mW
Operating temperature ^{*3) *4)}	$T_{op(c)}$	+5 to +40	°C
Storage temperature ^{*3) *4)}	T_{stg}	-20 to +60	°C

*1) The beam diameter on the chip surface should be larger than 10 μm ($1/e^2$).

*2) Use a femtosecond laser with repetition rate from 50 MHz to 150 MHz.

*3) No condensation.

*4) In the vacuum or non-activated gas atmosphere.

■ Electrical and optical characteristics ($T_{op(c)}=25\text{ }^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Dark resistance	R_t	20	-	-	$\text{M}\Omega$
Photoelectric current ^{*1)}	I	5	-	-	μA

*1) Factory inspection is performed using CW laser to measure the photoelectric current.

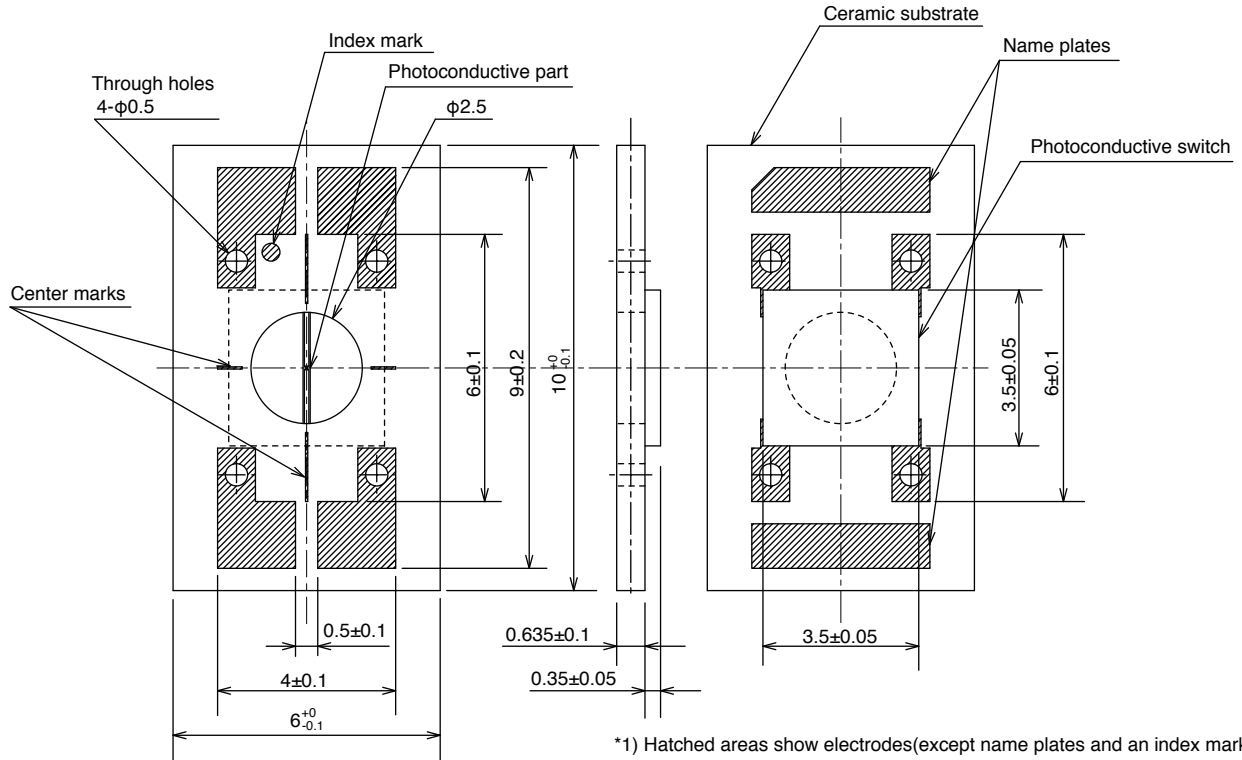
The conditions are, applied voltage of 10 V, input light power of 10 mW, and beam diameter of 10 μm to 20 μm ($1/e^2$).

Terahertz photoconductive switch G12864 series

Recommended conditions for mounting

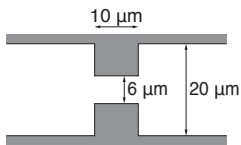
Temperature	Time	Environment
< 80 °C	Less than 2 hours	Inert gas atmosphere

Dimensional outline (Unit: mm)

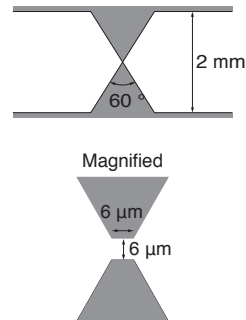


Prepared electrode patterns of photoconductive switch / schematic figure of photoconductive part

●Dipole
G12864-01



●Bow-tie
G12864-02



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