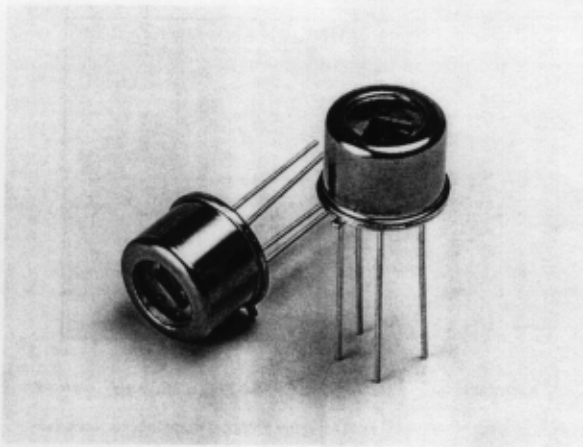
Two-color Detectors

Spectral Response Range: 0.19 to 1.8 µm

Broad spectral response range from UV to infrared



Two-color detectors have a sandwich structure in which an infrared-transmitting silicon photodiode is mounted over an infrared detector. This structure makes it possible to design instruments using the same optical path from UV to infrared range.

■Broad spectral response range

Two-color detectors cover a broad spectral response range, and are effectively used in such applications as spectrophotometers, etc.

Non-cooled Types

These types operate at room temperature, making them easy to use in a variety of applications.

One-stage TE-cooled Types

Thermoelectrically-cooled types maintain the built-in infrared detector at a constant temperature, enabling stable measurement with high accuracy.

■ACCESSORIES (Optional)

Heatsink for One-stage TE-cooled types	A3179-03
Temperature controller for TE-cooled types	C1103-04
Preamplifier for Ge photodiodes	C4159
Preamplifier for InGaAs PIN photodiodes	C4159-02
	C4159-03
Preamplifier for Si photodiodes	C2719

■SPECIFICATIONS (Common)

Package	TO-5 (non-cooled types)
	TO-8 (one-stage TE-cooled types)
Window Material	Borosilicate glass
Thermistor Allowable Dissipation	0.2 mW
Peltier Element Allowable Current	1.5 A
Operating Temperature	-30 to +50 °C
Storage Temperatur	-55 to +50 °C

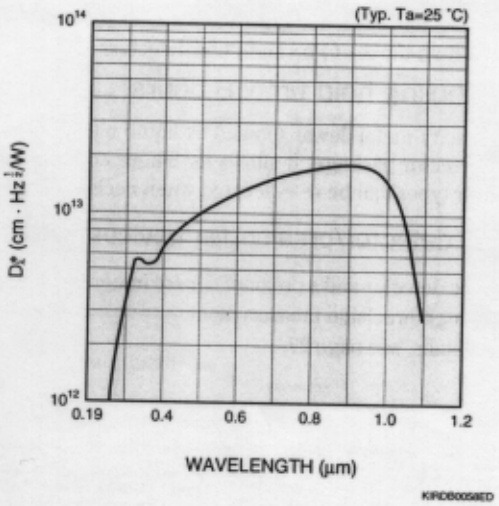
(Unless otherwise noted, Typ.)

Type No.	Outline No. (P. 36)	Detector Element	Active Area (mm)	Element Temperature (°C)	Peak Sensitivity Wavelength λp (µm)	Photo Sensitivity S λ=λp (A/W)	Shunt Resistance or Dark Resistance (MΩ)	D* λ=λp (cm • Hz$^{1/2}$/W)	NEP λ=λp (W/Hz$^{1/2}$)	Rise Time tr VR=0 V RL=1 kΩ 10 to 90 % (µs)	Maximum Reverse Voltage VR Max. (V)
■Non-cooled Types											
K1713-03	⑮	Si	2.4 × 2.4	25	0.94	0.45	300	1.4×10^{13}	1.7×10^{-14}	0.2 *1	5
		Ge	φ2		1.55	0.5	6×10^{-3}	5×10^{10}	2×10^{-12}	5	10
K1713-05		Si	2.4 × 2.4	25	0.94	0.45	300	1.4×10^{13}	1.7×10^{-14}	0.2 *1	5
		InGaAs	φ0.5		1.55	0.55	300	3.5×10^{12}	1.4×10^{-14}	1.5×10^{-3} *2	20
K1713-09		Si	2.4 × 2.4	25	0.94	0.45	300	1.4×10^{13}	1.7×10^{-14}	0.2 *1	5
		InGaAs	φ1		1.55	0.55	100	3.5×10^{12}	2.4×10^{-14}	7×10^{-3} *2	10
■One-stage TE-cooled Types											
K3413-03	⑮	Si	2.4 × 2.4	25	0.94	0.45	300	1.4×10^{13}	1.7×10^{-14}	0.2 *1	5
		Ge	φ2	-10	1.55	0.5	0.2	5×10^{11}	4×10^{-13}	5	10
K3413-05		Si	2.4 × 2.4	25	0.94	0.45	300	1.4×10^{13}	1.7×10^{-14}	0.2 *1	5
		InGaAs	φ0.5	-10	1.55	0.55	3×10^{3}	1.2×10^{13}	4.3×10^{-15}	1.5×10^{-3} *2	20
K3413-09		Si	2.4 × 2.4	25	0.94	0.45	300	1.4×10^{13}	1.7×10^{-14}	0.2 *1	5
		InGaAs	φ1	-10	1.55	0.55	1500	1.2×10^{13}	7.3×10^{-15}	7×10^{-3} *2	10

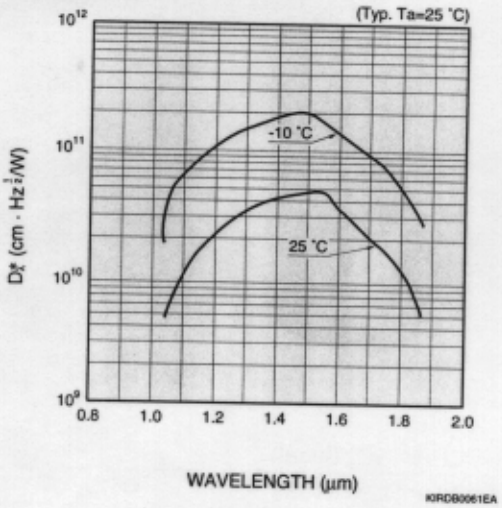
*1: λ=655 nm
*2: VR=5 V, RL=50 Ω

■Spectral Response

Si Photodiode



Ge Photodiode



InGaAs PIN Photodiode