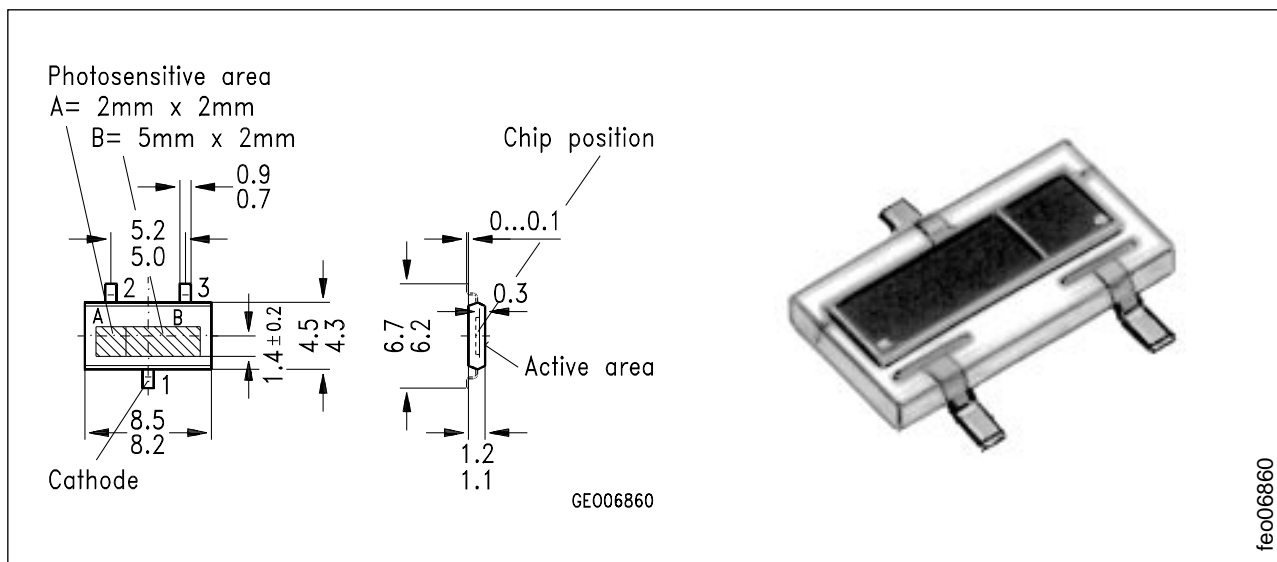


**NEU: 2fach-Silizium-PIN-Fotodiode in SMT**  
**NEW: 2-Chip Silicon PIN Photodiode in SMT**

**KOM 2125**



Maße in mm, wenn nicht anders angegeben/Dimensions in mm, unless otherwise specified.

### Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 400 nm bis 1100 nm
- Kurze Schaltzeit (typ. 25 ns)
- geeignet für Vapor-Phase Löten und IR-Reflow-Löten
- SMT-fähig

### Anwendungen

- Nachlaufsteuerungen
- Kantenführung
- Industrieelektronik
- "Messen/Steuern/Regeln"

### Features

- Especially suitable for applications from 400 nm to 1100 nm
- Short switching time (typ. 25 ns)
- Suitable for vapor-phase and IR-reflow soldering
- Suitable for SMT

### Applications

- Follow-up controls
- Edge drives
- Industrial electronics
- For control and drive circuits

| Typ<br>Type | Bestellnummer<br>Ordering Code |
|-------------|--------------------------------|
| KOM 2125    | Q62702-K0047                   |

## Grenzwerte Maximum Ratings

| Bezeichnung<br>Description   | Symbol<br>Symbol  | Wert<br>Value | Einheit<br>Unit |
|--|-------------------|---------------|-----------------|
| Betriebs- und Lagertemperatur<br>Operating and storage temperature range | $T_{op}; T_{stg}$ | - 40 ... + 80 | °C              |
| Sperrspannung<br>Reverse voltage   | $V_R$             | 60            | V               |
| Verlustleistung, $T_A = 25\text{ °C}$<br>Total power dissipation         | $P_{tot}$         | 150           | mW              |

## Kennwerte ( $T_A = 25\text{ °C}$ , Normlicht A, 2856 K) Characteristics ( $T_A = 25\text{ °C}$ , standard light A, 2856 K)

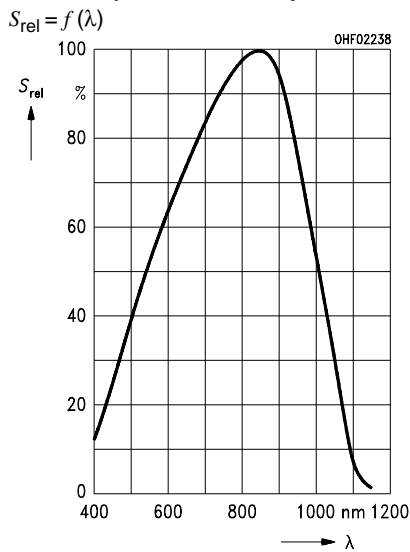
| Bezeichnung<br>Description   | Symbol<br>Symbol             | Wert<br>Value                         | Einheit<br>Unit            |
|--|------------------------------|---------------------------------------|----------------------------|
| Fotoempfindlichkeit, $V_R = 5\text{ V}$ ;<br>Spectral sensitivity  | Diode A<br>Diode B<br>$S$    | 40 ( $\geq 30$ )<br>100 ( $\geq 75$ ) | nA/lx                      |
| Wellenlänge der max. Fotoempfindlichkeit<br>Wavelength of max. sensitivity   | $\lambda_{S\max}$            | 850                                   | nm                         |
| Spektraler Bereich der Fotoempfindlichkeit<br>$S = 10\%$ von $S_{\max}$<br>Spectral range of sensitivity<br>$S = 10\%$ of $S_{\max}$ | $\lambda$                    | 400 ... 1100                          | nm                         |
| Bestrahlungsempfindliche Fläche<br>Radiant sensitive area  | Diode A<br>Diode B<br>$A$    | 4<br>10                               | mm <sup>2</sup>            |
| Abmessung der bestrahlungsempfindlichen Fläche<br>Dimensions of radiant sensitive area   | $L \times B$<br>$L \times W$ | $2 \times 2, 2 \times 5$              | mm × mm                    |
| Abstand Chipoberfläche zu Vergußoberfläche<br>Distance chip front to case seal   | $H$                          | 0.3                                   | mm                         |
| Halbwinkel<br>Half angle   | $\varphi$                    | $\pm 60$                              | Grad<br>deg.               |
| Dunkelstrom, $V_R = 10\text{ V}$<br>Dark current   | Diode A<br>Diode B<br>$I_R$  | 5 ( $\leq 30$ )<br>10 ( $\leq 30$ )   | nA                         |
| Spektrale Fotoempfindlichkeit<br>Spectral sensitivity  | $S_\lambda$                  | 0.62                                  | A/W                        |
| Quantenausbeute<br>Quantum yield   | $\eta$                       | 0.90                                  | <u>Electrons</u><br>Photon |

**Kennwerte** ( $T_A = 25\text{ °C}$ , Normlicht A, 2856 K)

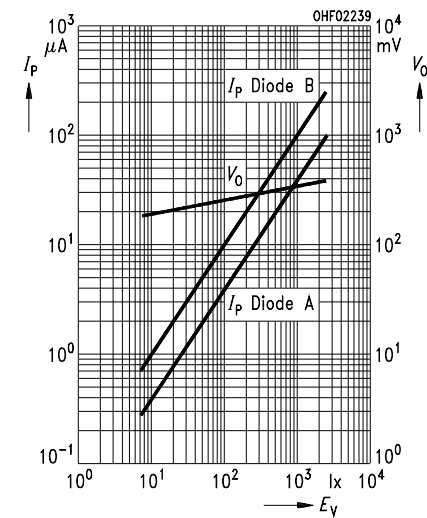
**Characteristics** ( $T_A = 25\text{ °C}$ , standard light A, 2856 K) (cont'd)

| Bezeichnung<br>Description   | Symbol<br>Symbol                 | Wert<br>Value                                  | Einheit<br>Unit                                     |
|--|----------------------------------|--|---|
| Leerlaufspannung, $E_V = 1000\text{ lx}$<br>Open-circuit voltage   | $V_O$                            | 350 ( $\geq 300$ )                             | mV  |
| Kurzschlußstrom, $E_V = 1000\text{ lx}$<br>Short-circuit current   | Diode A<br>Diode B<br>$I_{SC}$   | 38<br>95                                       | $\mu\text{A}$                                       |
| Anstiegszeit/Abfallzeit<br>Rise and fall time<br>$R_L = 50\ \Omega$ ; $V_R = 5\text{ V}$ ;<br>$\lambda = 850\text{ nm}$ ; $I_p = 800\ \mu\text{A}$ | Diode A<br>Diode B<br>$t_r, t_f$ | 18<br>25                                       | ns  |
| Durchlaßspannung, $I_F = 100\text{ mA}$ ; $E = 0$<br>Forward voltage   | $V_F$                            | 1.0  | V   |
| Kapazität<br>Capacitance<br>$V_R = 0\text{ V}$ ; $f = 1\text{ MHz}$ ; $E = 0$  | Diode A<br>Diode B<br>$C_0$      | 40<br>100                                      | pF  |
| Temperaturkoeffizient von $V_O$<br>Temperature coefficient of $V_O$  | $TC_V$                           | -2.6   | mV/K  |
| Temperaturkoeffizient von $I_p$<br>Temperature coefficient of $I_p$  | $TC_I$                           | 0.18   | %/K   |
| Rauschäquivalente<br>Strahlungsleistung<br>Noise equivalent power<br>$V_R = 10\text{ V}$   | Diode A<br>Diode B<br>$NEP$      | $6.4 \times 10^{-14}$<br>$9.1 \times 10^{-14}$ | $\frac{\text{W}}{\sqrt{\text{Hz}}}$                 |
| Nachweisgrenze, $V_R = 10\text{ V}$<br>Detection limit   | Diode A<br>Diode B<br>$D^*$      | $3.1 \times 10^{12}$<br>$3.5 \times 10^{12}$   | $\frac{\text{cm} \cdot \sqrt{\text{Hz}}}{\text{W}}$ |

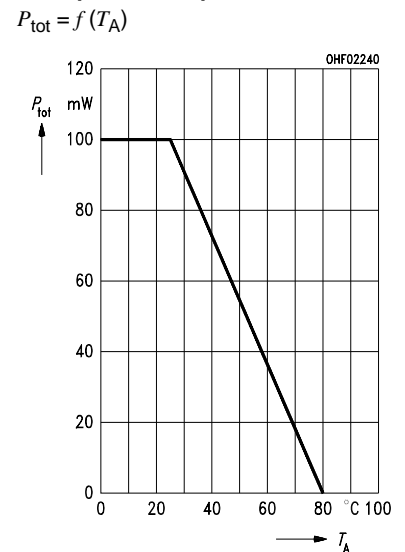
### Relative spectral sensitivity



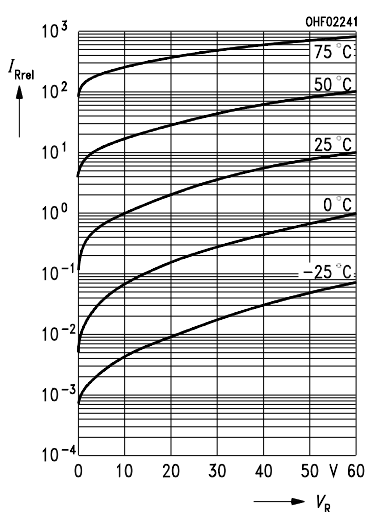
### Photocurrent $I_P = f(E_V)$ , $V_R = 5\text{ V}$ Open-circuit voltage $V_O = f(E_V)$



### Total power dissipation

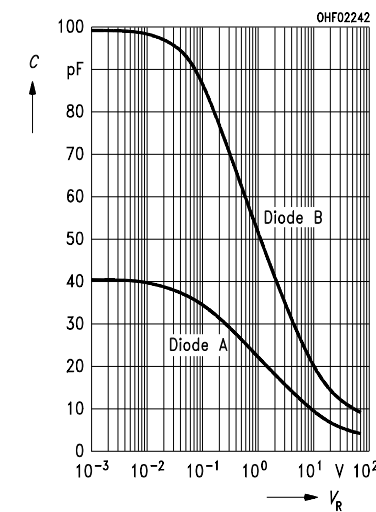


### Dark current, $I_R = f(V_R)$ , $E = 0$ normalized to 10 V/25 degrees Celsius



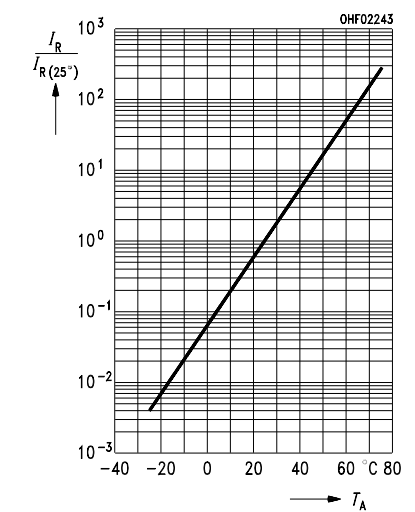
### Capacitance

$C = f(V_R)$ ,  $f = 1\text{ MHz}$ ,  $E = 0$



### Dark current $I_R = f(T_A)$ ,

$V_R = 10\text{ V}$ ,  $E = 0$ , normalized to  $T_A = 25\text{ degrees Celsius}$



### Directional characteristics $S_{rel} = f(\varphi)$

