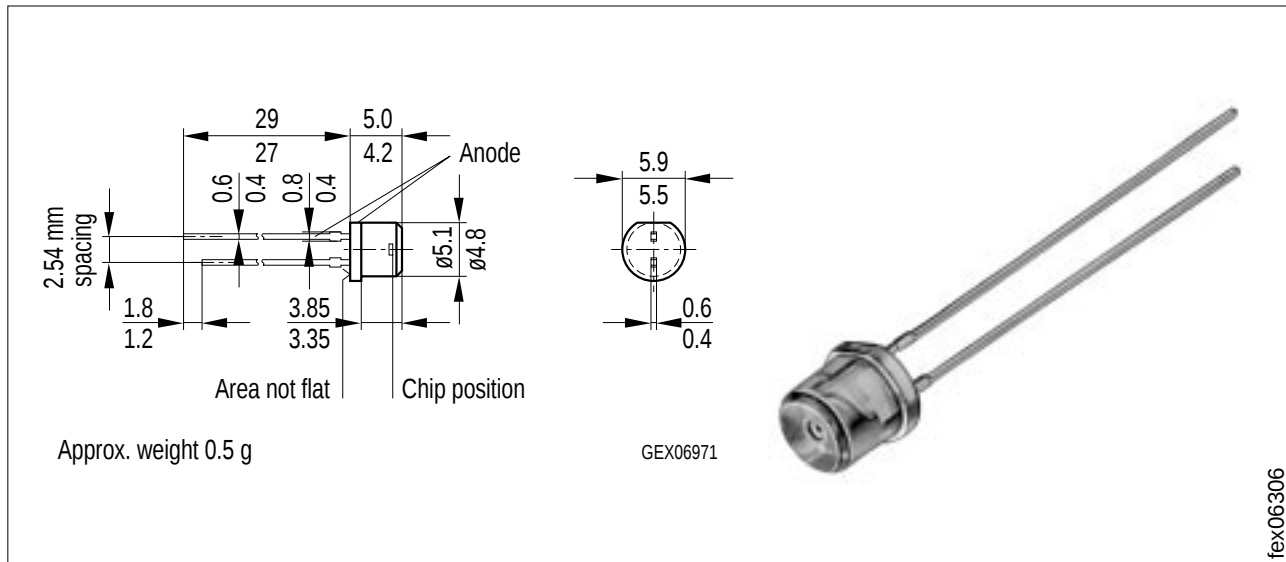


## GaAs-IR-Lumineszenzdiode GaAs Infrared Emitter

SFH 495 P

### Vorläufige Daten / Preliminary Data



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

### Wesentliche Merkmale

- Stimulierter Emmitter mit sehr hohem Wirkungsgrad
- Laserdiode in diffusem Gehäuse
- Besonders geeignet für Impulsbetrieb bei hohen Strömen
- Hohe Zuverlässigkeit
- Gegurtet lieferbar
- Gehäuse ähnlich SFH 485P, SFH 217

### Anwendungen

- Datenübertragung, INFRA link
- Fernsteuerungen
- "Messen, Steuern, Regeln"

### Features

- Stimulated emitter with high efficiency
- Laser diode in diffuse package
- Suitable esp. for pulse operation at high current
- High reliability
- Available on tape and reel
- Package similar to SFH 485P, SFH 217

### Applications

- INFRA link
- Remote controls
- For drive and control circuits

| Typ<br>Type | Bestellnummer<br>Ordering Code | Gehäuse<br>Package                                                                                                                                                                                                                                                 |
|-------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFH 495 P   | on request                     | 5-mm-LED-Gehäuse (T 1 <sup>3</sup> / <sub>4</sub> ), plan, schwarz eingefärbt, 2.54-mm-Raster, Kathodenkennzeichnung: kürzerer Anschluß<br>5 mm LED package (T 1 <sup>3</sup> / <sub>4</sub> ), flat, black colored, spacing 2.54 mm, cathode marking: short lead. |

## Grenzwerte ( $T_A = 25\text{ °C}$ )

### Maximum Ratings

| Bezeichnung<br>Description                                               | Symbol<br>Symbol                    | Wert<br>Value               | Einheit<br>Unit |
|--------------------------------------------------------------------------|-------------------------------------|-----------------------------|-----------------|
| Betriebs- und Lagertemperatur<br>Operating and storage temperature range | $T_{\text{stg}}$<br>$T_{\text{op}}$ | – 40 ... + 80<br>0 ... + 80 | °C              |
| Sperrschichttemperatur<br>Junction temperature                           | $T_j$                               | 100                         | °C              |
| Sperrspannung<br>Reverse voltage                                         | $V_R$                               | 3                           | V               |
| Stoßstrom, $\tau \leq 1\text{ }\mu\text{s}$ , $D = 0$<br>Surge current   | $I_{\text{FSM}}$                    | 1                           | A               |
| Verlustleistung<br>Power dissipation                                     | $P_{\text{tot}}$                    | 160                         | mW              |
| Wärmewiderstand<br>Thermal resistance                                    | $R_{\text{thJA}}$                   | 450                         | K/W             |

## Kennwerte ( $T_A = 25\text{ °C}$ )

### Characteristics

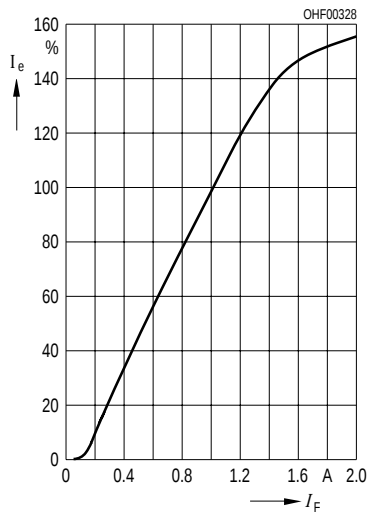
| Bezeichnung<br>Description                                                                                                                                                                                                            | Symbol<br>Symbol        | Wert<br>Value     | Einheit<br>Unit |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------|-----------------|
| Wellenlänge der Strahlung<br>Wavelength at peak emission<br>$I_F = 100\text{ mA}$ , $t_p = 20\text{ ms}$                                                                                                                              | $\lambda_{\text{peak}}$ | 945               | nm              |
| Spektrale Bandbreite bei 50 % von $I_{\text{max}}$<br>Spectral bandwidth at 50 % of $I_{\text{max}}$<br>$I_F = 100\text{ mA}$                                                                                                         | $\Delta\lambda$         | 4                 | nm              |
| Abstrahlwinkel<br>Half angle                                                                                                                                                                                                          | $\varphi$               | $\pm 35 / \pm 25$ | Grad<br>deg.    |
| Schaltzeiten, $I_e$ von 10 % auf 90 % und von 90 % auf 10 %, bei $I_F = 100\text{ mA}$ , $R_L = 50\text{ }\Omega$<br>Switching times, $I_e$ from 10 % to 90 % and from 90 % to 10 %, $I_F = 100\text{ mA}$ , $R_L = 50\text{ }\Omega$ | $t_r$ , $t_f$           | 7                 | ns              |
| Kapazität<br>Capacitance<br>$V_R = 0\text{ V}$ , $f = 1\text{ MHz}$                                                                                                                                                                   | $C_o$                   | 90                | pF              |
| Durchlaßspannung<br>Forward voltage<br>$I_F = 1\text{ A}$ , $t_p = 100\text{ }\mu\text{s}$                                                                                                                                            | $V_F$                   | 2.1               | V               |

**Kennwerte ( $T_A = 25\text{ °C}$ )**  
**Characteristics**

| Bezeichnung<br>Description                                                                       | Symbol<br>Symbol | Wert<br>Value | Einheit<br>Unit |
|--------------------------------------------------------------------------------------------------|------------------|---------------|-----------------|
| Gesamtstrahlungsfluß<br>Total radiant flux<br>$I_F = 1\text{ A}$ , $t_p = 10\text{ }\mu\text{s}$ | $\Phi_e$         | 700           | mW              |
| Strahlstärke<br>Radiant intensity<br>$I_F = 1\text{ A}$ , $t_p = 10\text{ }\mu\text{s}$          | $I_e$            | 200           | mW/sr           |

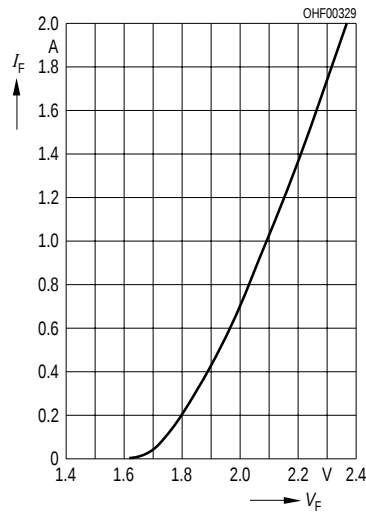
## Radiant intensity

$$I_e = f(I_F)$$

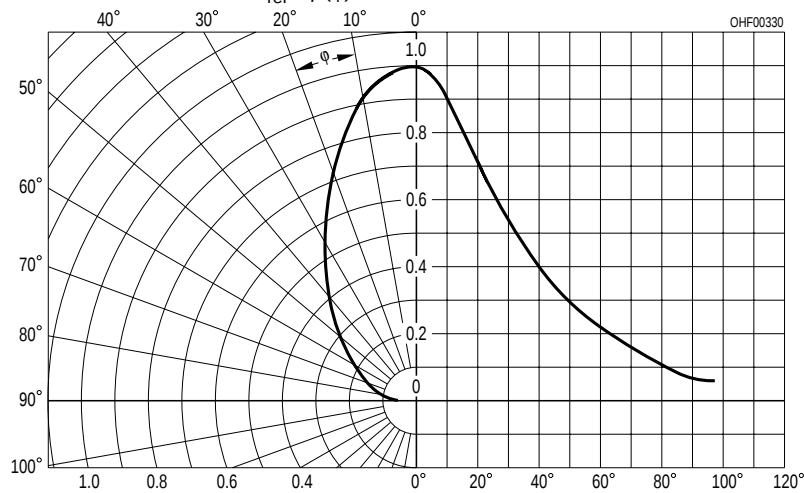


## Forward current

$$I_F = f(V_F)$$



## Radiation characteristics $I_{rel} = f(\varphi)$



## Warning:

This data sheet refers to high power infrared emitting semiconductors.

Depending on operating conditions (drive current, pulse duration, optics, etc.) they may emit luminance/radiance levels considered harmful to the human eye, acc. to IEC 825.1.

When operating powerful emitters, care should be taken to comply with IEC 825.1 to minimize any possible eye hazard:

- Use lowest possible drive level
- Use diffusing optics where possible
- Avoid staring into powerful emitters or connected fibers