GaAs-IR-Lumineszenzdiode
GaAs Infrared Emitter

SFH 495 P
SFH 4552

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Wesentliche Merkmale

- Stimulierter Emitter mit sehr hohem Wirkungsgrad
- Laserdiode in diffusem Gehäuse
- Besonders geeignet für Impulsbetrieb bei hohen Strömen
- Hohe Zuverlässigkeit
- Gegurtet lieferbar

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

Anwendungen

- Datenübertragung
- Fernsteuerungen
- „Messen, Steuern, Regeln“

Applications

- Data transfer
- Remote controls
- For drive and control circuits

Typ Type	Bestellnummer Ordering Code	Gehäuse Package
SFH 495 P	Q62703-Q2891	5-mm-LED-Gehäuse (T 1 3/4), plan, schwarz eingefärbt, 2.54-mm-Raster, Kathodenkennzeichnung: kürzerer Anschluß 5 mm LED package (T 1 3/4), flat, black colored, spacing 2.54 mm, cathode marking: short lead.
SFH 4552	Q62702-P5054	5-mm-LED-Gehäuse (T 1 3/4), weiß diffus eingefärbt, 2.54-mm-Raster, Kathodenkennzeichnung: kürzerer Anschluß 5 mm LED package (T 1 3/4), white diffuse colored, spacing 2.54 mm, cathode marking: short lead.

Grenzwerte (T_A = 25 °C)
Maximum Ratings

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Betriebs- und Lagertemperatur Operating and storage temperature range	T_{stg} T_{op}	– 40 … + 85 0 … + 85	°C
Sperrspannung Reverse voltage	V_R	1	V
Stoßstrom, t_p = 200 µs, D = 0 Surge current	I_{FSM}	1	A
Verlustleistung Power dissipation	P_{tot}	160	mW
Wärmewiderstand Thermal resistance	R_{thJA}	350	K/W

Kennwerte (T_A = 25 °C)
Characteristics

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Wellenlänge der Strahlung Wavelength at peak emission I_F = 200 mA, t_p = 20 ms	λ_{peak}	940	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max} I_F = 200 mA	$\Delta\lambda$	4	nm
Abstrahlwinkel Half angle SFH 495 P SFH 4552	φ	 ± 30 ± 50	Grad deg.
Schaltzeiten, I_e von 10% auf 90% und von 90% auf 10%, bei I_F = 200 mA, R_L = 50 Ω Switching times, I_e from 10% to 90% and from 90% to 10%, I_F = 200 mA, R_L = 50 Ω	t_r, t_f	1	ns
Kapazität Capacitance V_R = 0 V, f = 1 MHz	C_o	90	pF
Durchlaßspannung Forward voltage I_F = 1 A, t_p = 100 µs	V_F	2.1	V

Kennwerte (T_A = 25 °C)
Characteristics (cont'd)

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Schwellenstrom[1)] Threshold current [1)]	I_{th}	< 150	mA
Gesamtstrahlungsfluß Total radiant flux I_F = 1 A, t_p = 10 µs	Φ_e	700	mW
Strahlstärke Radiant intensity I_F = 1 A, t_p = 10 µs SFH 495 P SFH 4552	I_e	 400 200	mW/sr

[1)] **Remark:** This IRED works efficiently at forward currents higher than I_{th}.

Warning:

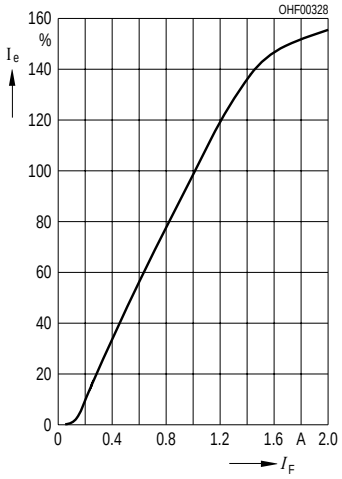
This data sheet refers to high power infrared emitting semiconductors.

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.

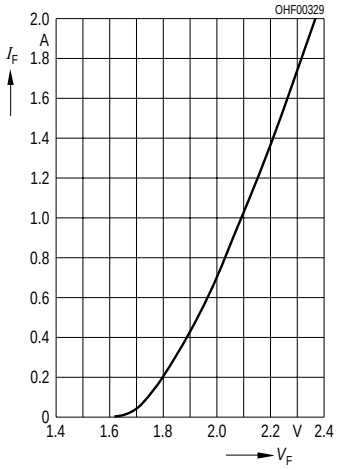
When operating powerful emitters, care should be taken to comply with IEC 825.1 to minimize any possible eye hazard:

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

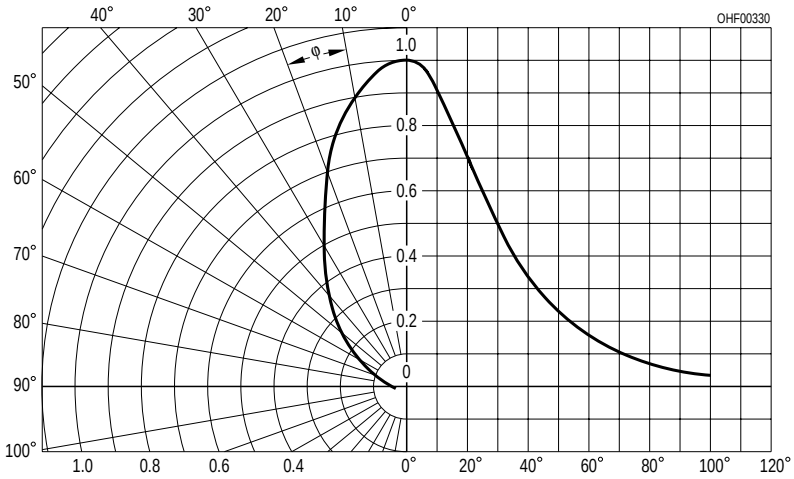
Radiant Intensity
$I_e = f(I_F)$



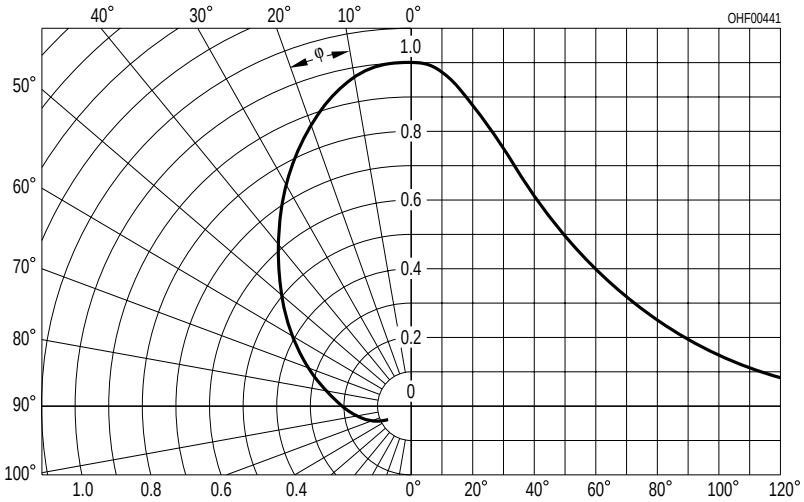
Forward Current
$I_F = f(V_F)$



Radiation Characteristics
SFH 495 P $I_{rel} = f(\varphi)$

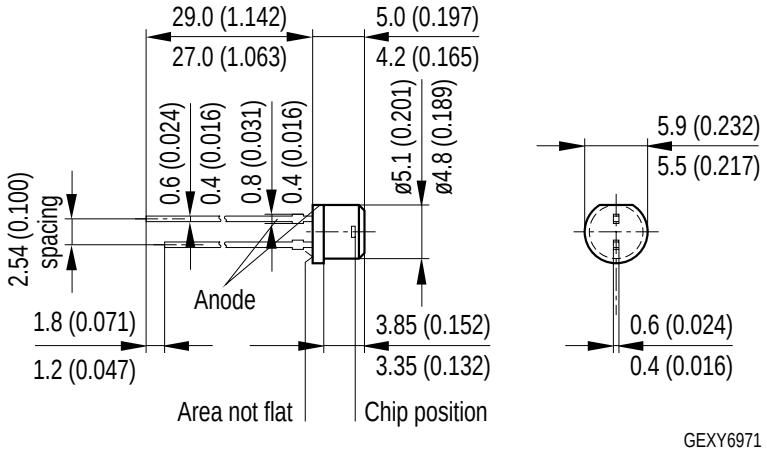


Radiation Characteristics
SFH 4552 $I_{rel} = f(\varphi)$

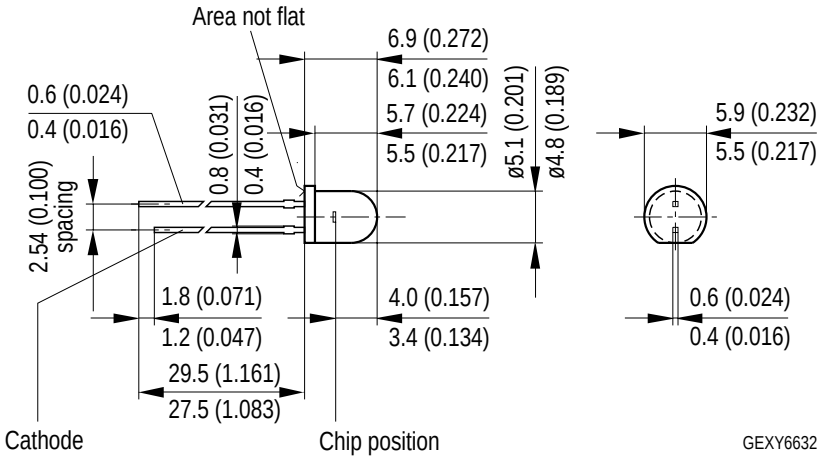


Maßzeichnung
Package Outlines

SFH 495 P



SFH 4552



Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

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Attention please!
The information describes the type of component and shall not be considered as assured characteristics.
Terms of delivery and rights to change design reserved. Due to technical requirements components may contain dangerous substances. For information on the types in question please contact our Sales Organization.
Packing
Please use the recycling operators known to you. We can also help you – get in touch with your nearest sales office. By agreement we will take packing material back, if it is sorted. You must bear the costs of transport. For packing material that is returned to us unsorted or which we are not obliged to accept, we shall have to invoice you for any costs incurred.
Components used in life-support devices or systems must be expressly authorized for such purpose! Critical components [1] , may only be used in life-support devices or systems [2] with the express written approval of OSRAM OS.
[1] A critical component is a component usedin a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or effectiveness of that device or system.
[2] Life support devices or systems are intended (a) to be implanted in the human body, or (b) to support and/or maintain and sustain human life. If they fail, it is reasonable to assume that the health of the user may be endangered.