GaAs-IR-Lumineszenzdiode (Mini Sidelooker)
GaAs Infrared Emitter (Mini Sidelooker)
Lead (Pb) Free Product - RoHS Compliant

SFH 4110

Wesentliche Merkmale

- Wellenlänge der Strahlung 950 nm
- Enger Abstrahlwinkel
- Hohe Strahlstärke
- Geringe Außenabmessungen
- Gehäusegleich mit Fototransistor SFH 3100 F
- Hoher Koppelfaktor in Lichtschranken in Verbindung mit SFH 3100 F
- Hohe Zuverlässigkeit

Features

- Peak wavelength of 950 nm
- Narrow half angle
- High radiant intensity
- Small outline dimensions
- Same package as phototransistor SFH 3100 F
- High coupling factor in light barriers with SFH 3100 F
- High reliability

Anwendungen

- Sender für Lichtschranken
- Bandende Erkennung (z.B. Videorecorder)
- Datenübertragung
- Positionsüberwachung
- Barcode-Leser
- „Messen/Steuern/Regeln“
- Münzzähler

Applications

- Emitter in photointerrupter
- Tape end detection (VCR e.g.)
- Data transmission
- Position sensing
- Barcode reader
- For control and drive circuits
- Coin counters

Typ **Type**	**Bestellnummer** **Ordering Code**	**Strahlstärke** [1] (I_F = 20mA, t_p = 20 ms) **Radiant intensity** [1] I_e (mW/sr)
SFH 4110	Q62702P5072	$\geq$ 2.5

[1] gemessen bei einem Raumwinkel Ω = 0.01sr
measured at a solid angle of Ω = 0.01 sr

Grenzwerte (T_A = 25 °C)
Maximum Ratings

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebs- und Lagertemperatur Operating and storage temperature range	T_{op}; T_{stg}	– 40 … + 85	°C
Sperrspannung Reverse voltage	V_R	5	V
Durchlaßstrom Forward current	I_F (DC)	60	mA
Stoßstrom, t_p = 10 µs, D = 0 Surge current	I_{FSM}	1	A
Verlustleistung Power dissipation	P_{tot}	100	mW
Wärmewiderstand Sperrschicht - Umgebung Thermal resistance junction - ambient	R_{thJA}	280	K/W

Kennwerte (T_A = 25 °C)
Characteristics

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der Strahlung Wavelength at peak emission	λ_{peak}	950	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max}	$\Delta\lambda$	55	nm
Abstrahlwinkel Half angle	φ	± 9	Grad deg.
Aktive Chipfläche Active chip area	A	0.0625	mm^2
Abmessungen der aktiven Chipfläche Dimensions of the active chip area	$L \times B$ $L \times W$	0.25 × 0.25	mm
Schaltzeiten, I_e von 10% auf 90% und von 90% auf 10%, bei I_F = 20 mA, R_L = 50 Ω Switching times, I_e from 10% to 90% and from 90% to 10%, I_F = 20 mA, R_L = 50 Ω	t_r, t_f	450/360	ns
Kapazität, Capacitance V_R = 0 V, f = 1 MHz	C_o	16	pF

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

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Durchlaßspannung, Forward voltage I_F = 20 mA, t_p = 20 ms	V_F	1.2 (≤ 1.4)	V
Sperrstrom, Reverse current V_R = 3 V	I_R	0.01 (≤ 1.0)	µA
Gesamtstrahlungsfluß, Total radiant flux I_F = 20 mA, t_p = 20 ms	Φ_e	2	mW
Temperaturkoeffizient von I_e bzw. Φ_e, I_F = 20 mA Temperature coefficient of I_e or Φ_e, I_F = 20 mA	TC_I	– 0.55	%/K
Temperaturkoeffizient von V_F, I_F = 20 mA Temperature coefficient of V_F, I_F = 20 mA	TC_V	– 1.8	mV/K
Temperaturkoeffizient von λ, I_F = 20 mA Temperature coefficient of λ, I_F = 20 mA	TC_λ	+ 0.3	nm/K

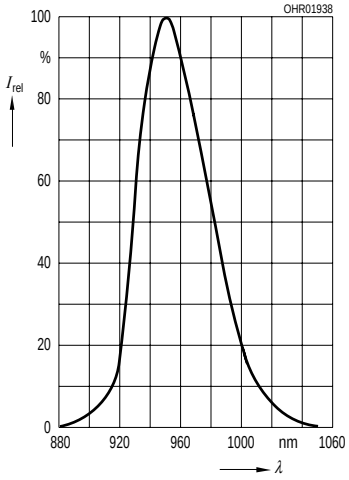
Strahlstärke I_e in Achsrichtung
gemessen bei einem Raumwinkel Ω = 0.01 sr
Radiant Intensity I_e in Axial Direction
at a solid angle of Ω = 0.01 sr

Bezeichnung **Parameter**	**Symbol**	**Werte** **Values**	**Einheit** **Unit**
Strahlstärke[1)] Radiant intensity[1)] I_F = 20 mA, t_p = 20 ms	$I_{e\ min}$	2.5	mW/sr

[1)] Sonderselektion auf Anfrage.

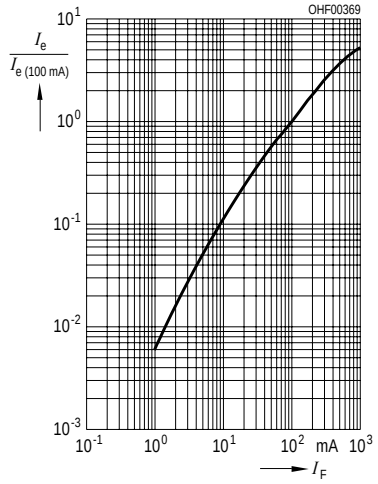
[1)] Special bin selection on request.

Relative Spectral Emission
$I_{rel} = f(\lambda)$

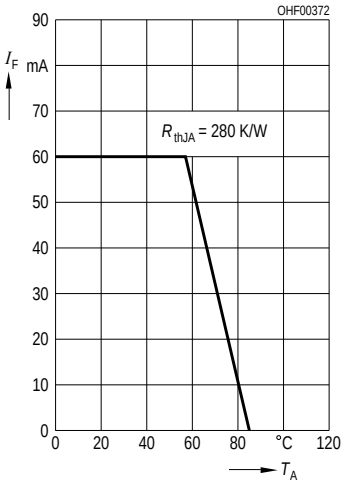


Radiant Intensity $\frac{I_e}{I_e\ 100\ mA} = f(I_F)$

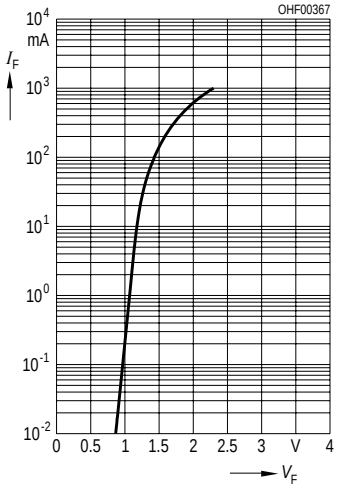
Single pulse, t_p = 20 µs



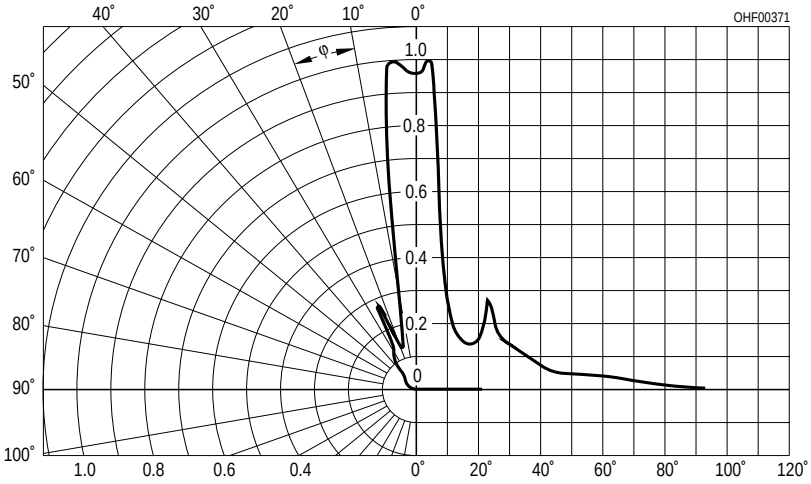
Max. Permissible Forward Current
$I_F = f(T_A)$



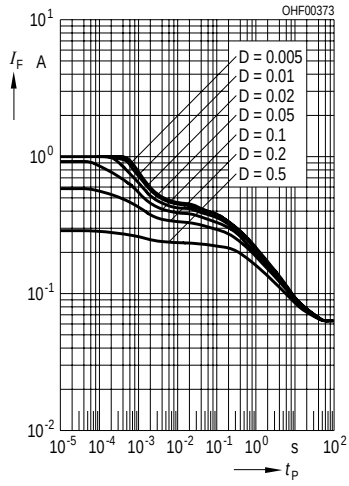
Forward Current
$I_F = f(V_F)$, Single pulse, t_p = 20 µs



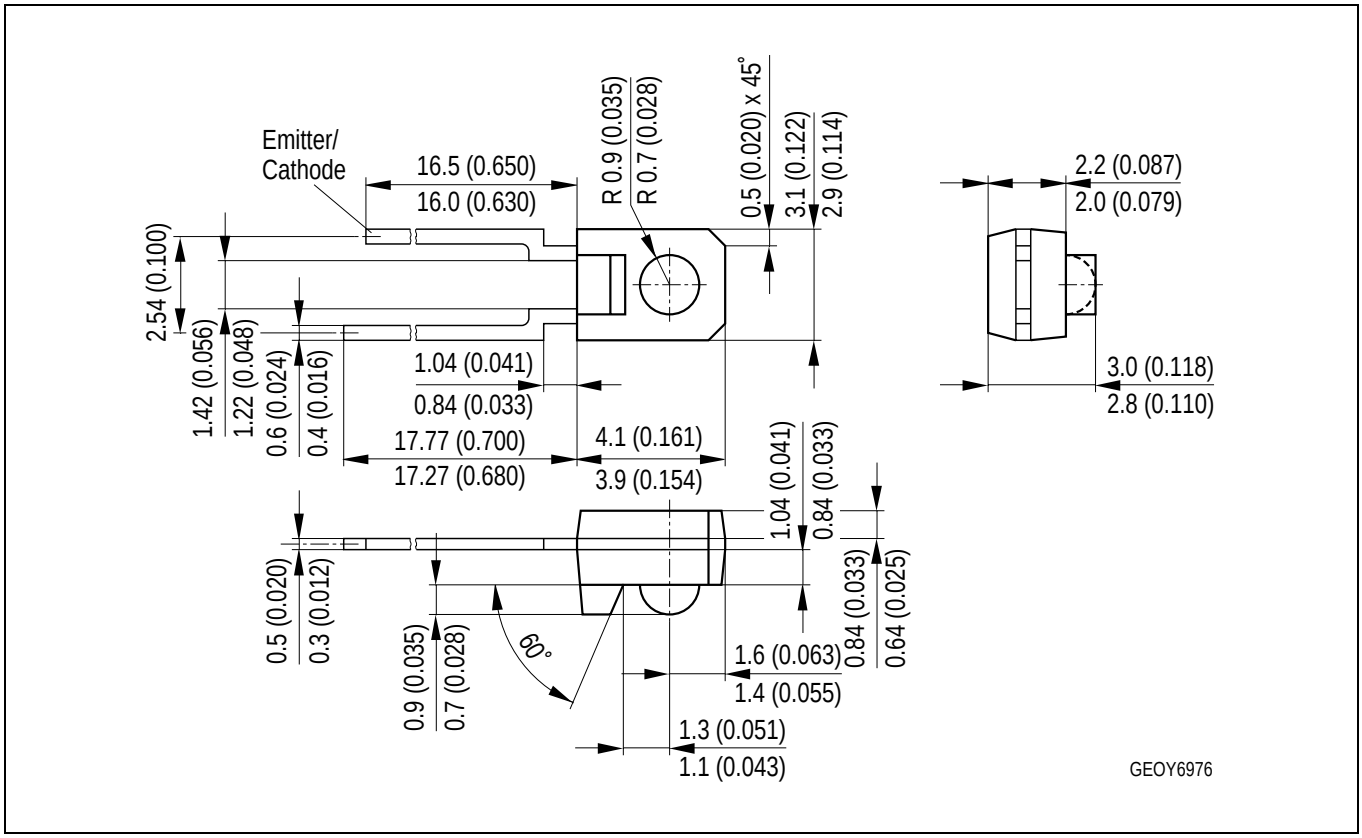
Radiation Characteristics
$I_{rel} = f(\varphi)$



Permissible Pulse Power ,
Duty cycle D = parameter, T_A = 25 °C



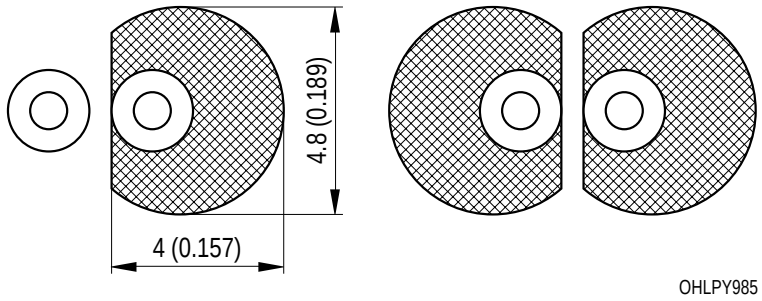
Maßzeichnung
Package Outlines



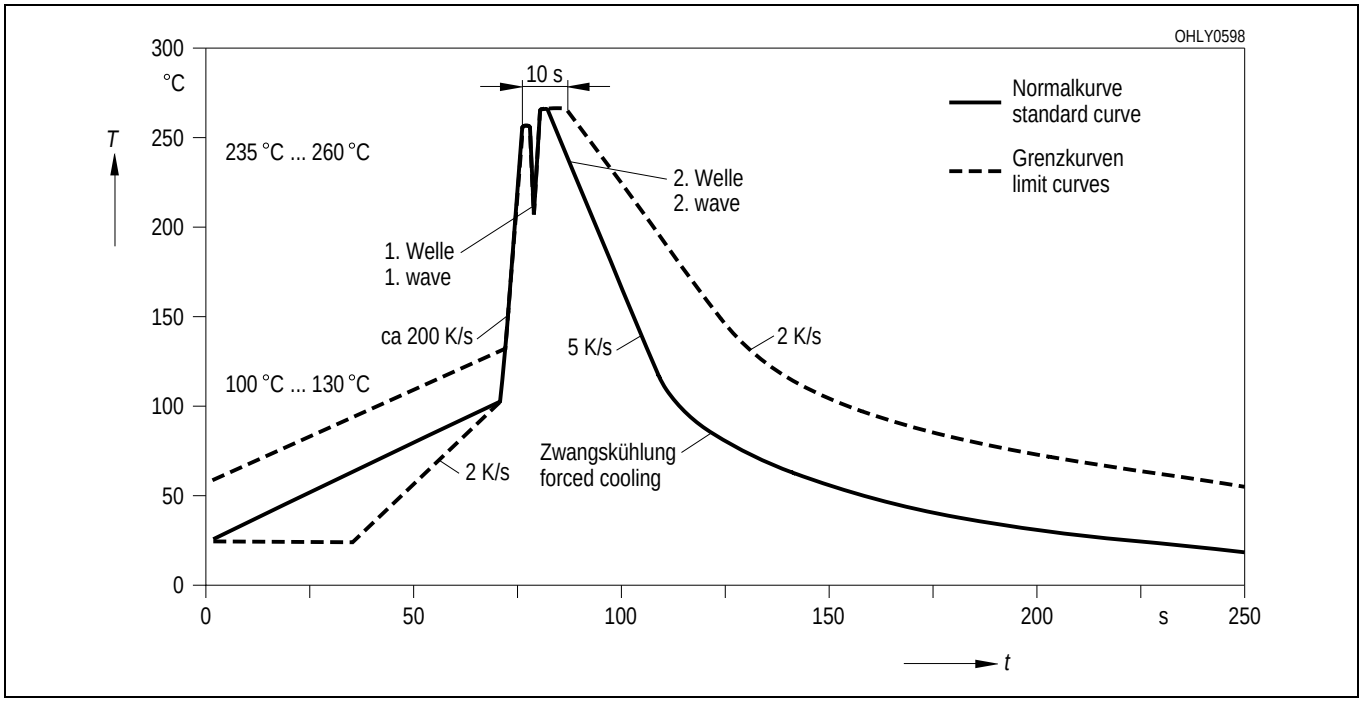
Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

Empfohlenes Lötpaddesign
Recommended Solder Pad

Wellenlöten (TTW)
TTW Soldering



Lötbedingungen
Soldering Conditions
Wellenlöten (TTW) **(**nach CECC 00802)
TTW Soldering (acc. to CECC 00802)



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