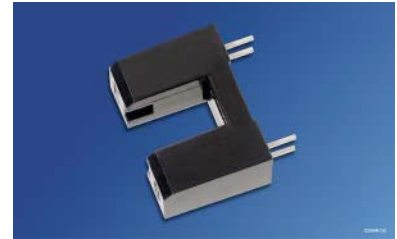




**THE DATASHEET OF
SFH 9315-Z**



Gabellichtschranke
Slotted Interrupter
Lead (Pb) Free Product - RoHS Compliant
SFH 9315



Wesentliche Merkmale

- Kompaktes Gehäuse
- GaAs-IR-Sendediode (950 nm)
- Si-Fototransistor mit Tageslichtsperrfilter

Features

- Compact type
- GaAs infrared emitter (950 nm)
- Silicon phototransistor detector with daylight-cutoff filter

Anwendungen

- Geschwindigkeitsüberwachung
- Motorsteuerung
- Überwachung des Papiervorschubs in Druckern, Kopier- und Faxgeräten
- Speicherlaufwerke
- Steuerung des Druckkopfes in Druckern
- Münzdetektion
- Optoelektronische Schalter

Applications

- Speed control
- Motor control
- Monitoring of paper feed in printers, copiers, facsimiles
- Disk drives
- Control of print head in printers
- Coin detection
- Optoelectronic switches

Typ Type	Bestellnummer Ordering Code	$I_{CE\ min.}$ [mA] ($I_F = 20\ mA$; $V_{CE} = 5\ V$)
SFH 9315	Q65110A1216	0.7

Grenzwerte $T_A = 25\text{ °C}$ **Maximum Ratings**

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
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Sender (GaAs-Diode)**Emitter** (GaAs Diode)

Sperrspannung Reverse voltage	V_R	5	V
Durchlaßstrom Forward current	$I_{F(DC)}$	40	mA
Verlustleistung Power dissipation	P_{tot}	65	mW
Wärmewiderstand Thermal resistance	R_{thJA}	280	K/W

Empfänger (Si-Fototransistor)**Detector** (Silicon Phototransistor)

Kollektor-Emitter-Spannung Collector-emitter voltage	V_{CE}	15	V
Kollektor-Emitter-Spannung, ($t \leq 2\text{ min}$) Collector-emitter voltage, ($t \leq 2\text{ min}$)	V_{CE}	30	
Emitter-Kollektor-Spannung Emitter-collector voltage	V_{EC}	7	
Kollektorstrom Collector current	I_C	15	mA
Verlustleistung Total power dissipation	P_{tot}	65	mW
Wärmewiderstand Thermal resistance	R_{thJA}	280	K/W

Gabellichtschranke**Slotted Interrupter**

Lagertemperatur Storage temperature range	T_{stg}	- 40 ... + 85	°C
Betriebstemperatur Operating temperature range	T_{op}	- 40 ... + 85	
Elektrostatische Entladung Electrostatic discharge	ESD	2	kV

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

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
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Sender (GaAs-Diode)**Emitter** (GaAs Diode)

Wellenlänge der Strahlung Wavelength of peak emission	λ_{peak}	950	nm
Durchlaßspannung Forward voltage $I_F = 20\text{ mA}$, $t_p = 20\text{ ms}$	V_F	1.2 (≤ 1.4)	V
Sperrstrom Reverse current $V_R = 5\text{ V}$	I_R	0.01 (≤ 1)	μA
Kapazität Capacitance $V_R = 0\text{ V}$, $f = 1\text{ MHz}$	C_0	16	pF

Empfänger (Si-Fototransistor)**Detector** (Silicon Phototransistor)

Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\text{ max}}$	920	nm
Spectr. Bereich der Fotoempfindlichkeit Spectral range of sensitivity $S = 10\%$ of S_{max}	λ	840 ... 1080	nm
Kapazität Capacitance $V_{CE} = 0\text{ V}$, $f = 1\text{ MHz}$, $E = 0$	C_{CE}	4.5	pF
Dunkelstrom Dark current $V_{CE} = 20\text{ V}$	I_{CEO}	2 (≤ 50)	nA

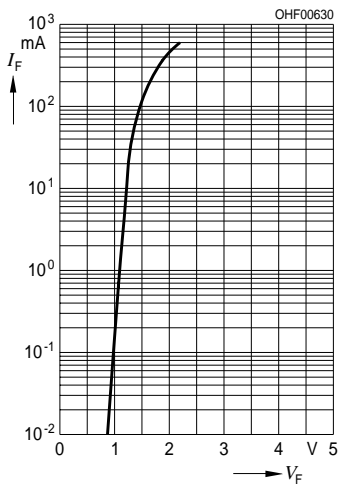
Kennwerte $T_A = 25\text{ °C}$
Characteristics (cont'd)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
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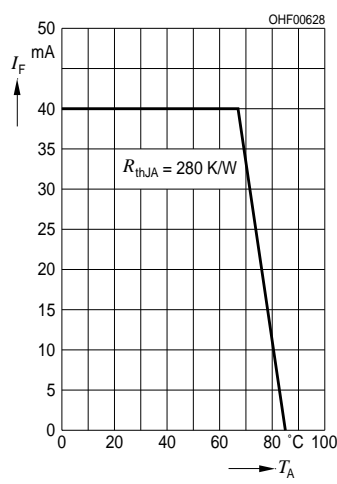
Gabellichtschranke
Slotted interrupter

Kollektor-Emitterstrom Collector-emitter current $I_F = 20\text{ mA}; V_{CE} = 5\text{ V}$	$I_{CE\text{ min.}}$	0.7	mA
Kollektor-Emitter-Sättigungsspannung Collector-emitter-saturation voltage $I_F = 20\text{ mA}; I_C = 0.2\text{ mA}$	$V_{CE\text{ sat}}$	≤ 0.4	V
Anstiegs- und Abfallzeit Rise and fall time $V_{CC} = 5\text{ V}, I_C = 1\text{ mA}, R_L = 1\text{ k}\Omega$	t_r t_f	13 17	μs μs

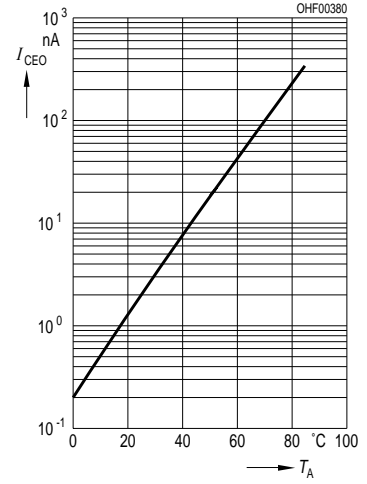
Forward Current $I_F = f(V_F)$
 Single pulse, $t_p = 20 \mu\text{s}$



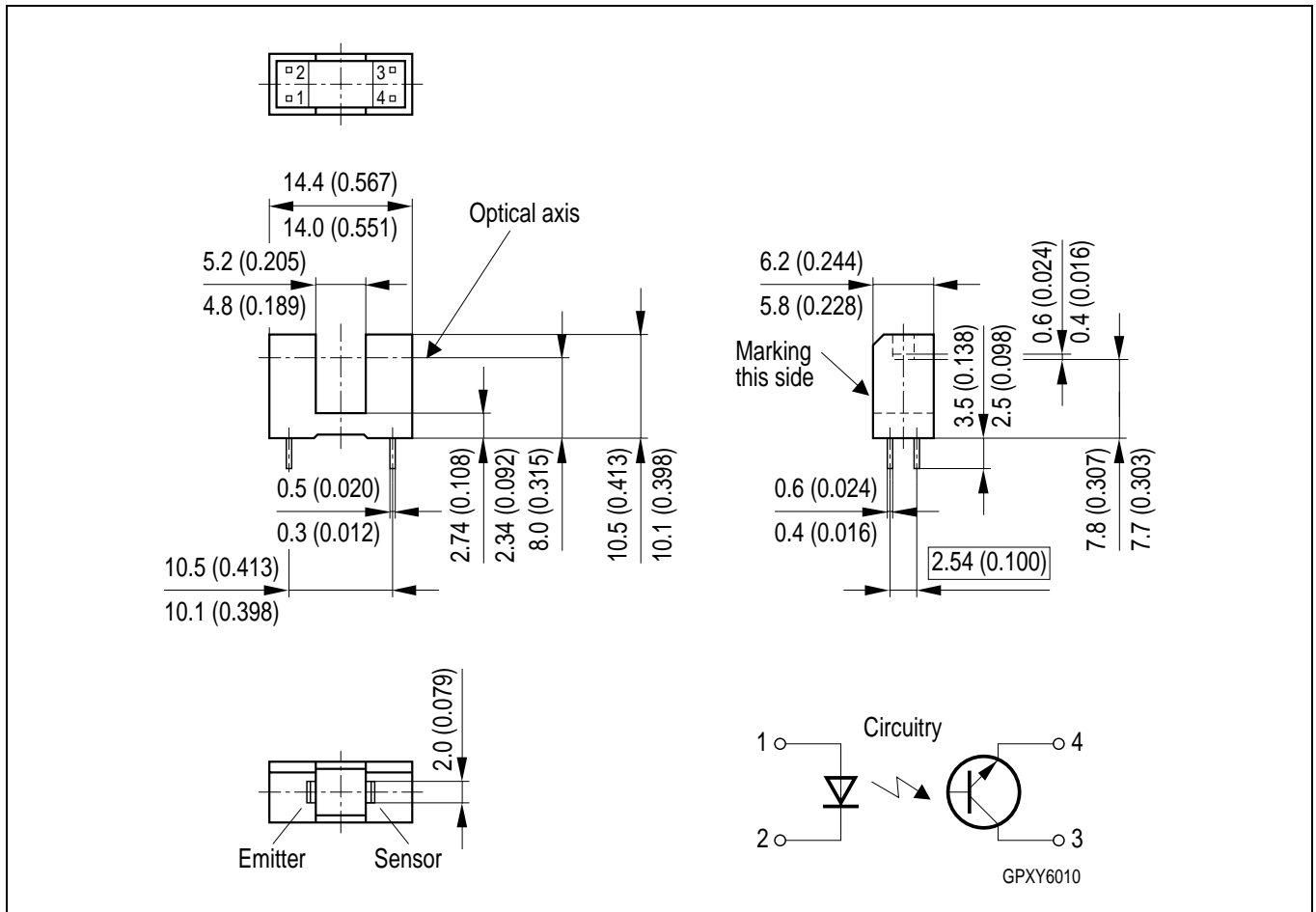
Max. Permissible Forward Current $I_F = f(T_A)$



Dark Current $I_{CEO} = f(T_A)$
 $V_{CE} = 20 \text{ V}, E = 0$



Maßzeichnung
Package Outlines



Maße in mm (inch) / Dimensions in mm (inch).

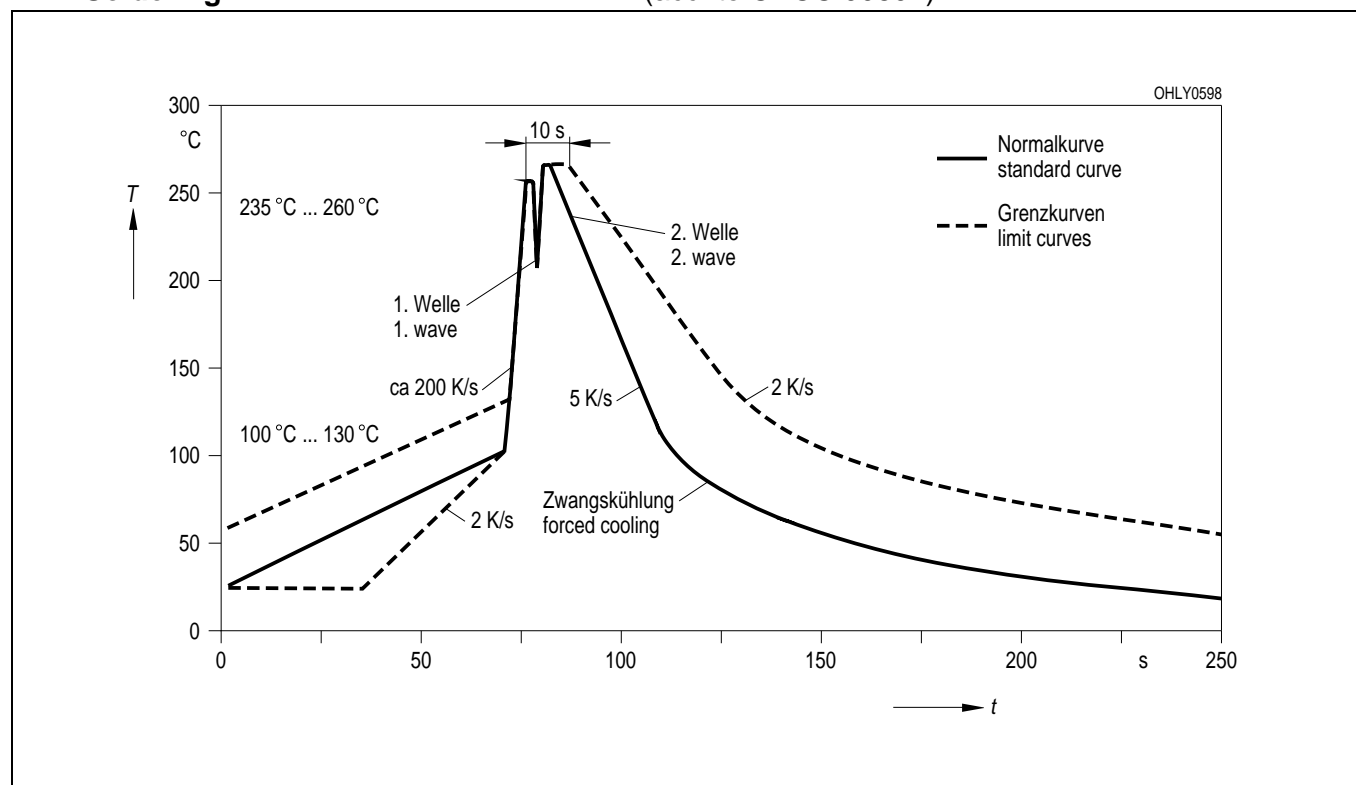
Löthinweise
Soldering Conditions

Bauform Type	Tauch-, Schwalllötung Dip, Wave Soldering		Reflowlötung Reflow Soldering		Kolbenlötung Iron Soldering (Iron temp.)
	Peak Temp. (solderbath)	Max. Time in Peak Zone	Peak Temp. (package temp.)	Max. Time in Peak Zone	
SFH 9315	260 °C	10 s	n. a.	–	300 °C < 5 s

Lötbedingungen
Soldering Conditions

Wellenlöt (TTW)
TTW Soldering

(nach CECC 00802)
(acc. to CECC 00802)



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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.

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EU RoHS and China RoHS compliant product





此产品符合欧盟 RoHS 指令的要求；

按照中国的相关法规和标准，不含有毒有害物质或元素。

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