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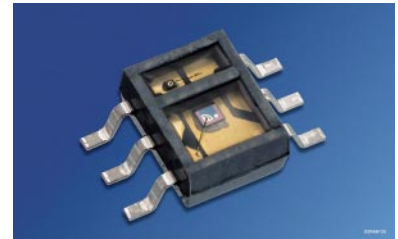
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Reflexlichtschranke mit 660 nm - Emitter und Fototransistor - Detektor Reflective Interrupter with 660 nm - Emitter and Phototransistor - Detector

SFH 9260



Wesentliche Merkmale

- Roter Emitter (660 nm)
- Silizium Fototransistor
- Geringe Sättigungsspannung
- Emitter und Detektor galvanisch getrennt

Anwendungen

- Anzeige kombiniert mit Lichtschranken Anwendungen
- Positionsmelder
- Endabschalter
- Drehzahlüberwachung
- Bewegungssensor

Features

- Red emitter (660 nm)
- Silicon phototransistor
- Low saturation voltage
- Emitter and detector electrically isolated

Applications

- Display combined with interrupter applications
- Position reporting
- End position switch
- Speed monitoring and regulating
- Motion transmitter

Typ Type	Bestellnummer Ordering Code
SFH 9260	on request

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

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Sender (AlGaAs-Diode) Emitter (AlGaAs Diode)			
Sperrspannung Reverse voltage	V_R	3	V
Durchlaßstrom Forward current	$I_{F(DC)}$	30	mA
Verlustleistung Power dissipation	P_{tot}	80	mW
Wärmewiderstand Thermal resistance	R_{thJA}	400	K/W

Empfänger (Si-Fototransistor)
Detector (Silicon Phototransistor)

Kollektor-Emitter-Spannung Collector-emitter voltage	V_{CE}	16	V
Kollektor-Emitter-Spannung, ($t \leq 1\text{ min}$) Collector-emitter voltage	V_{CE}	30	V
Emitter-Kollektor-Spannung Emitter-collector voltage	V_{EC}	7	V
Kollektorstrom Collector current	I_C	10	mA
Verlustleistung Total power dissipation	P_{tot}	100	mW
Wärmewiderstand Thermal resistance	R_{thJA}	400	K/W

Reflexlichtschranke
Reflective Interrupter

Lagertemperatur Storage temperature range	T_{stg}	- 40 ... + 85	°C
Betriebstemperatur Operating temperature range	T_{op}	- 40 ... + 85	°C
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 (AlGaAs-Diode)**Emitter** (AlGaAs Diode)

Wellenlänge der Strahlung Wavelength of peak emission	λ_{peak}	660	nm
Dominantwellenlänge (typ.) Dominant wavelength (typ.) $I_F = 10\text{ mA}$	λ_{dom}	645	nm
Spektrale Bandbreite bei 50% $I_{\text{rel max}}$ (typ.) Spectral bandwidth at 50% $I_{\text{rel max}}$ (typ.) $I_F = 10\text{ mA}$	$\Delta\lambda$	22	nm
Durchlaßspannung Forward voltage $I_F = 20\text{ mA}$, $t_p = 20\text{ ms}$	V_F	1.85 (≤ 2.1)	V
Sperrstrom Reverse current $V_R = 5\text{ V}$	I_R	0.01 (≤ 10)	μA
Kapazität Capacitance $V_R = 0\text{ V}$, $f = 1\text{ MHz}$	C_0	25	pF

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

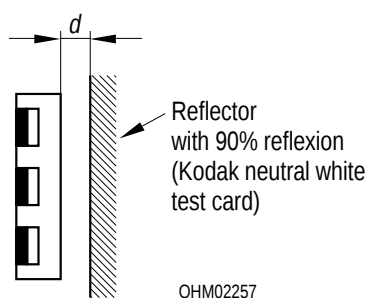
Kapazität Capacitance $V_{CE} = 0\text{ V}$, $f = 1\text{ MHz}$, $E = 0$	C_{CE}	5	pF
Dunkelstrom, $V_{CE} = 20\text{ V}$ Dark current	I_{CEO}	1 (≤ 50)	nA
Fotostrom (Fremdlichtempfindlichkeit) Photocurrent (outside light density) $V_{CE} = 5\text{ V}$, $E_V = 1000\text{ Lx}$	I_P	1.5	mA

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

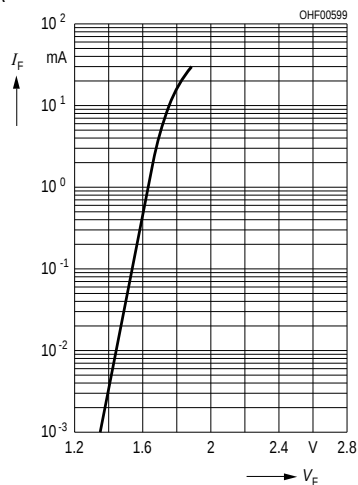
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
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Reflexlichtschranke
Reflective Interrupter

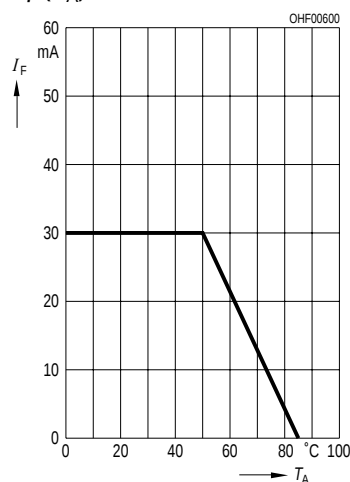
Kollektor-Emitterstrom Collector-emitter current Kodak neutral white test card, 90% Reflexion $I_F = 10\text{ mA}$; $V_{CE} = 5\text{ V}$; $d = 1\text{ mm}$	$I_{CE\text{ min.}}$ $I_{CE\text{ typ.}}$	250 700	μA μA
Kollektor-Emitter-Sättigungsspannung Collector-emitter saturation voltage Kodak neutral white test card, 90% Reflexion $I_F = 10\text{ mA}$; $d = 1\text{ mm}$; $I_C = 80\text{ }\mu\text{A}$	$V_{CE\text{ sat}}$	≤ 0.4	V



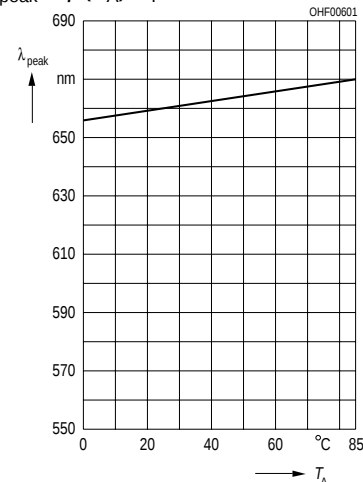
Forward Current $I_F = f(V_F)$
 $T_A = 25\text{ °C}$



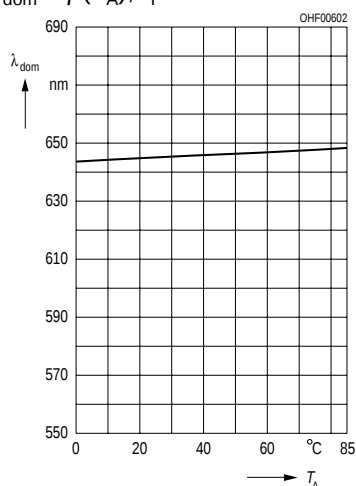
Max. Permissible Forward Current $I_F = f(T_A)$



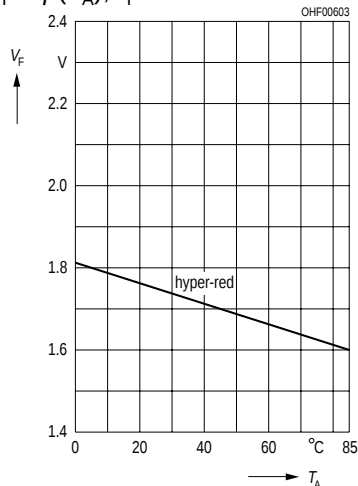
Wavelength at Peak Emission $\lambda_{\text{peak}} = f(T_A, I_F = 10\text{ mA})$



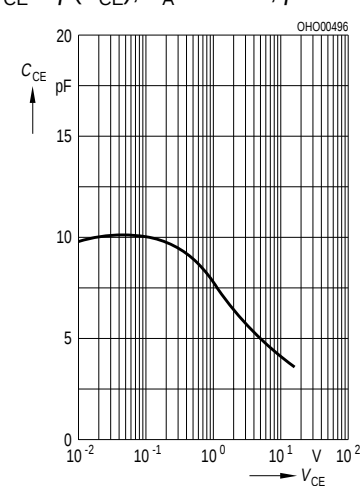
Dominant Wavelength $\lambda_{\text{dom}} = f(T_A, I_F = 10\text{ mA})$



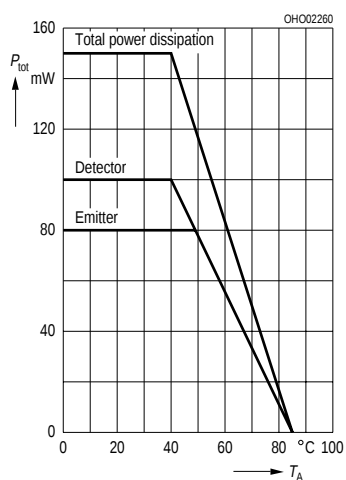
Forward Voltage $V_F = f(T_A, I_F = 10\text{ mA})$



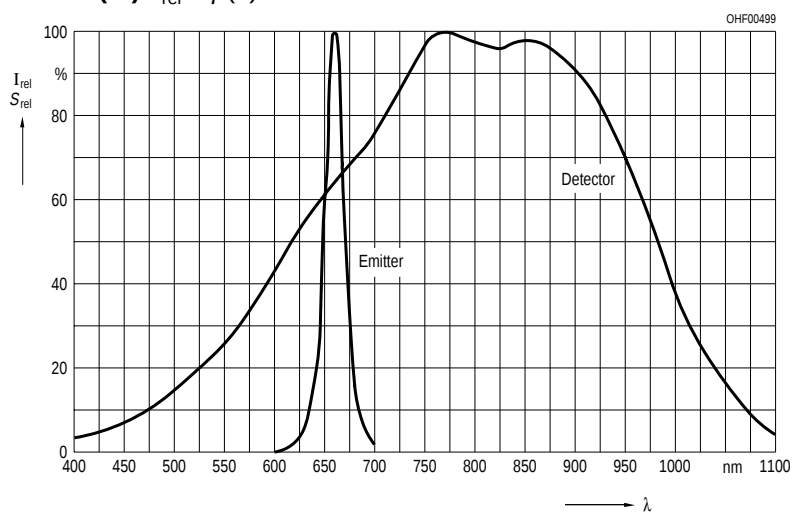
Transistor Capacitance (typ.) $C_{CE} = f(V_{CE}, T_A = 25\text{ °C}, f = 1\text{ MHz})$



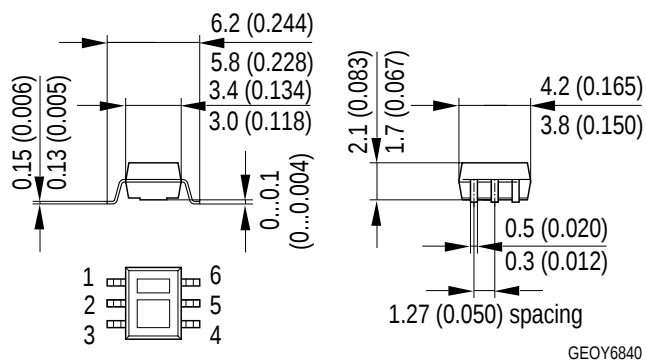
Permissible Power Dissipation for Diode and Transistor $P_{\text{tot}} = f(T_A)$



Relative Spectral Emission of Emitter (AlGaAs) $I_{\text{rel}} = f(\lambda)$ and Detector (Si) $S_{\text{rel}} = f(\lambda)$



Maßzeichnung Package Outlines



Type	1	2	3	4	5	6
SFH 9260	Anode	—	Emitter	Collector	—	Cathode

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

Löthinweise
Soldering Conditions

Bauform Type	Tauch-, Schwallötung Dip, Wave Soldering		Reflowlötung Reflow Soldering		Kolbenlötung Iron Soldering
	Peak Temp. (solderbath)	Max. Time in peak zone	Peak Temp. (package temp.)	Max. Time in Peak Zone	(Iron temp.)
SFH 9260	n. a.	—	245 °C	10 s	n. a.

Bitte Verarbeitungshinweise für SMT-Bauelemente beachten!
Please observe the handling guidelines for SMT devices!