Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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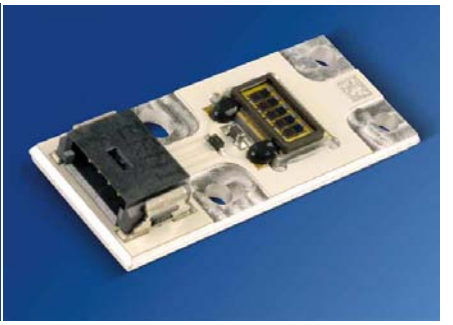
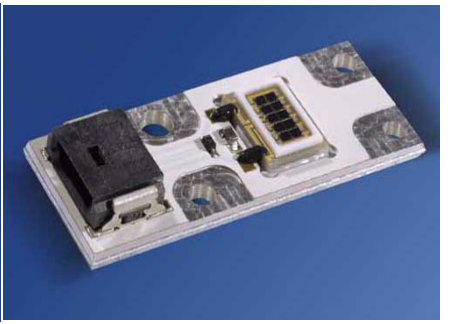
Ostar Observation

Lead (Pb) Free Product - RoHS Compliant

SFH 4730, SFH 4740



SFH 4730



SFH 4740

SFH 4730

- Schwarzer Rahmen zur Streulichtminimierung
- 3 W optische Leistung

SFH 4740

- Weißer Rahmen für hohe Lichtleistung
- 3.6 W optische Leistung

Wesentliche Merkmale

- Aktive Chipfläche 2.1 x 5.4 mm^2
- max. Gleichstrom 1 A
- niedriger Wärmewiderstand (2.8 K/W)
- Emissionswellenlänge 850 nm
- ESD-sicher bis 2 kV nach JESD22-A114-B
- Augensicherheitsrichtlinien der IEC-Normen 60825-1 und 62471 müssen beachtet werden.

Anwendungen

- Infrarotbeleuchtung für CMOS Kameras
- Überwachungssysteme
- IR-Datenübertragung
- Fahrer-Assistenz Systeme

SFH 4730

- Black frame to minimize scattered light
- 3 W optical power

SFH 4740

- White frame to achieve high optical power
- 3.6 W optical power

Features

- Active chip area 2.1 x 5.4 mm^2
- max. DC-current 1 A
- Low thermal resistance (2.8 K/W)
- Spectral emission at 850 nm
- ESD save up to 2 kV acc. to JESD22-A114-B
- Eye safety precautions given in IEC 60825-1 and IEC 62471 have to be followed.

Applications

- Infrared Illumination for CMOS cameras
- Surveillance systems
- IR Data Transmission
- Driver assistance systems

Typ Type	Bestellnummer Ordering Code	Strahlstärke[1] (I_F = 1A, t_p = 20 ms) Radiant intensity[1] I_e (mW/sr)
SFH 4730	Q65110A5452	typ.1000
SFH 4740	Q65110A6190	typ.1200

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

Grenzwerte
Maximum Ratings

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebs- und Lagertemperatur Operating and storage temperature range	$T_{B, op}$, $T_{B, stg}$	– 40 … + 125	°C
Sperrschichttemperatur Junction temperature	T_J	+ 145	°C
Sperrspannung Reverse voltage	V_R	0.5	V
Vorwärtsgleichstrom, T_B[1] ≤ 85 °C Forward current	I_F	1	A
Stoßstrom, t_p < 1 ms, D = 0.2, T_B ≤ 85 °C Surge current	I_{FSM}	2	A
Leistungsaufnahme, T_B ≤ 85 °C Power consumption	P_{tot}	24	W
Thermische Verlustleistung, T_B ≤ 85 °C Thermal power-dissipation	P_{th}	21	W
Wärmewiderstand Sperrschicht / Bodenplatte Thermal resistance Junction / Base plate	R_{thJB}	2.8	K/W

[1] T_B = Temperatur auf der Rückseite der Metallkernplatine / Temperature at the backside of the base plate.

Kennwerte (T_B = 25 °C)
Characteristics

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der Strahlung Wavelength at peak emission I_F = 1 A, t_p = 10 ms	λ_{peak}	850	nm
Schwerpunkts-Wellenlänge der Strahlung Centroid wavelength I_F = 1 A, t_p = 10 ms	$\lambda_{centroid}$	845	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max} I_F = 1 A, t_p = 10 ms	$\Delta\lambda$	40	nm
Abstrahlwinkel Half angle	φ	± 60	Grad deg.
Abmessungen der aktiven Chipfläche[1)] Dimension of the active chip area	$L \times B$ $L \times W$	2.1 × 5.4	mm²
Schaltzeiten, I_e von 10% auf 90% und von 90% auf 10%, I_F = 1 A, R_L = 50 Ω Switching times, I_e from 10% to 90% and from 90% to 10%, I_F = 1 A, R_L = 50 Ω	t_r, t_f	10	ns
Durchlassspannung Forward voltage I_F = 1 A, t_p = 100 µs	V_F	18 (≤ 24)	V
Gesamtstrahlungsfluss Total radiant flux I_F = 1 A, t_p = 100 µs SFH 4730 SFH 4740	 Φ_e Φ_e	 3 3.6	 W W
Temperaturkoeffizient von I_e bzw. Φ_e Temperature coefficient of I_e or Φ_e I_F = 1 A, t_p = 10 ms	TC_I	– 0.5	%/K
Temperaturkoeffizient von V_F Temperature coefficient of V_F I_F = 1 A, t_p = 10 ms	TC_V	– 2	mV/K
Temperaturkoeffizient von λ Temperature coefficient of λ I_F = 1 A, t_p = 10 ms	$TC_{\lambda,centroid}$	+ 0.2	nm/K

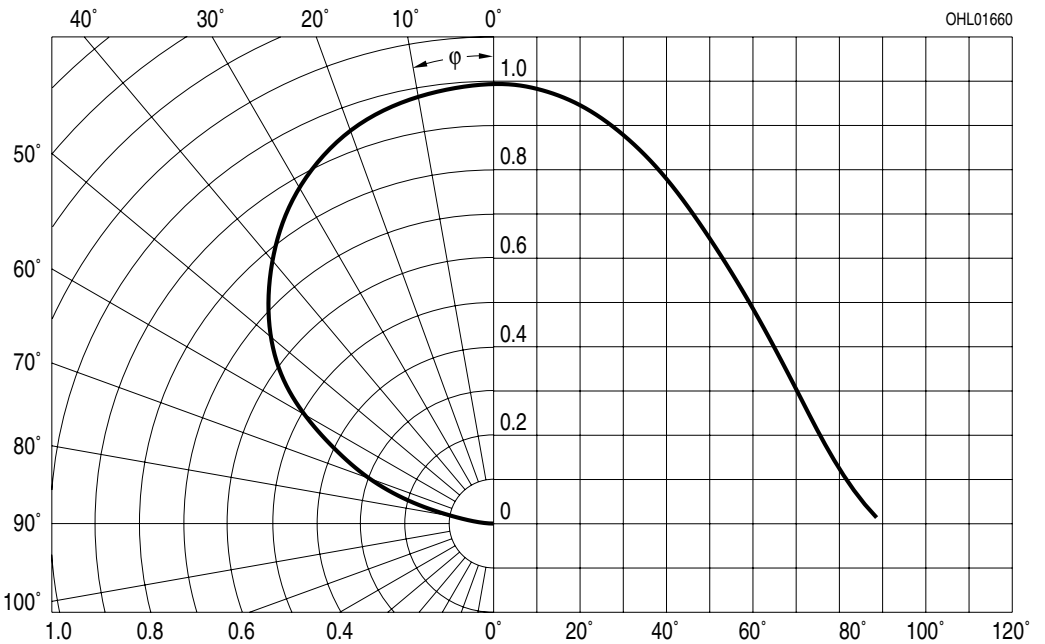
[1)] Die aktive Chipfläche besteht aus 10 einzelnen Chips mit je 1 x 1 mm².
The active chip area consists of 10 single chips with 1 x 1 mm² each.

Strahlstärke[1] I_e
Radiant Intensity[1] I_e

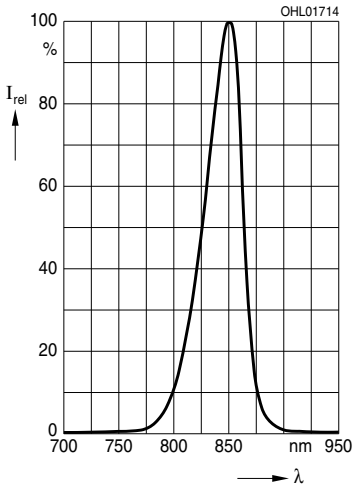
Bezeichnung Parameter	Symbol	Werte Values				Einheit Unit
		SFH 4730-EA	SFH 4730-EB	SFH 4740-EB	SFH 4740-FA	
Strahlstärke Radiant Intensity I_F = 1 A, t_p = 20 ms	$I_{e\ min}$ $I_{e\ max}$	630 1000	800 1250	800 1250	1000 1600	mW/sr mW/sr

[1] Nur eine Gruppe in einer Verpackungseinheit (Streuung kleiner 1.6:1)
Only one group in one packing unit (variation lower 1.6:1)

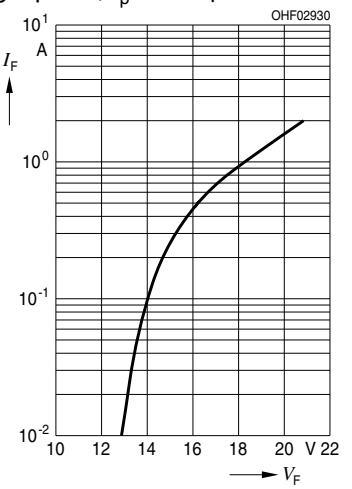
Abstrahlcharakteristik
Radiation Characteristics $I_{rel} = f(\varphi)$



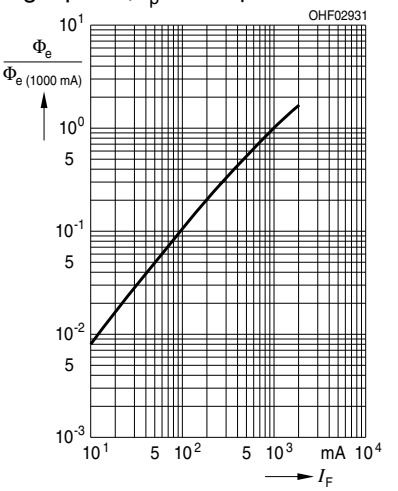
Relative spektrale Emission
Relative Spectral Emission
$I_{rel} = f(\lambda)$, $T_B = 25$ °C



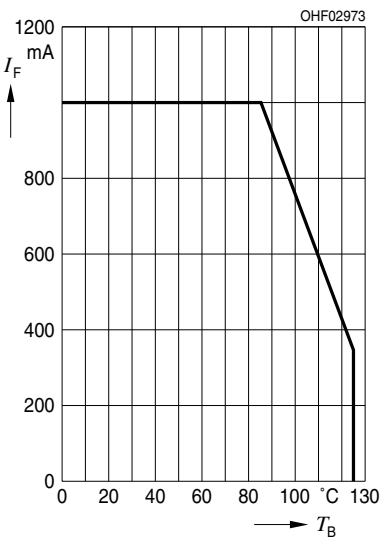
Durchlassstrom
Forward Current
$I_F = f(V_F)$, $T_B = 25$ °C,
Single pulse, $t_p = 100$ µs



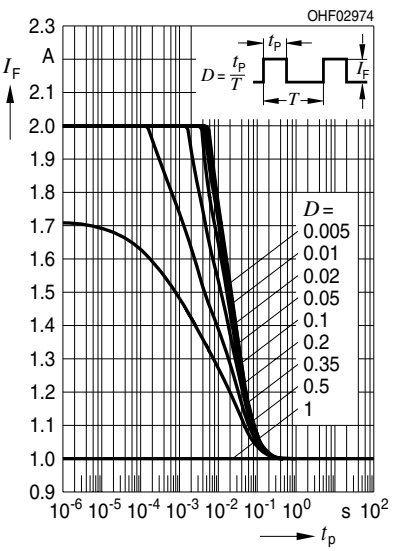
Relativer Gesamtstrahlungsfluss
Relative Total Radiant Flux
$\Phi_e/\Phi_e(1000mA) = f(I_F)$, $T_B = 25$ °C,
Single pulse, $t_p = 100$ µs



Max. zulässiger Durchlassstrom
Max. Permissible Forward Current
$I_F = f(T_B)$, $R_{thJB} = 2.8$ K/W



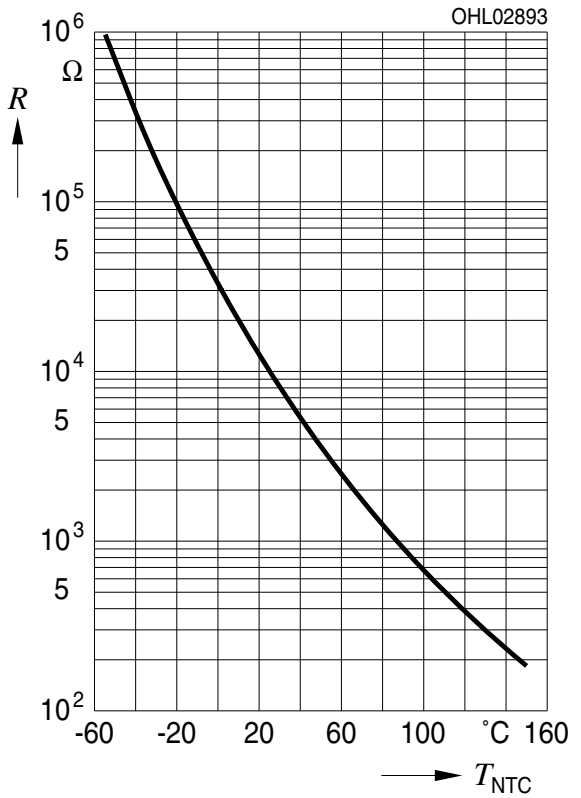
Zulässige Impulsbelastbarkeit
Permissible Pulse Handling Capability $I_F = f(t_p)$, $T_B \leq 85$ °C,
Duty cycle D = parameter



SMD NTC Thermistor mit Nickel Barrier Termination, Typ 0603
SMD NTC Thermistor with Nickel Barrier Termination, Type 0603

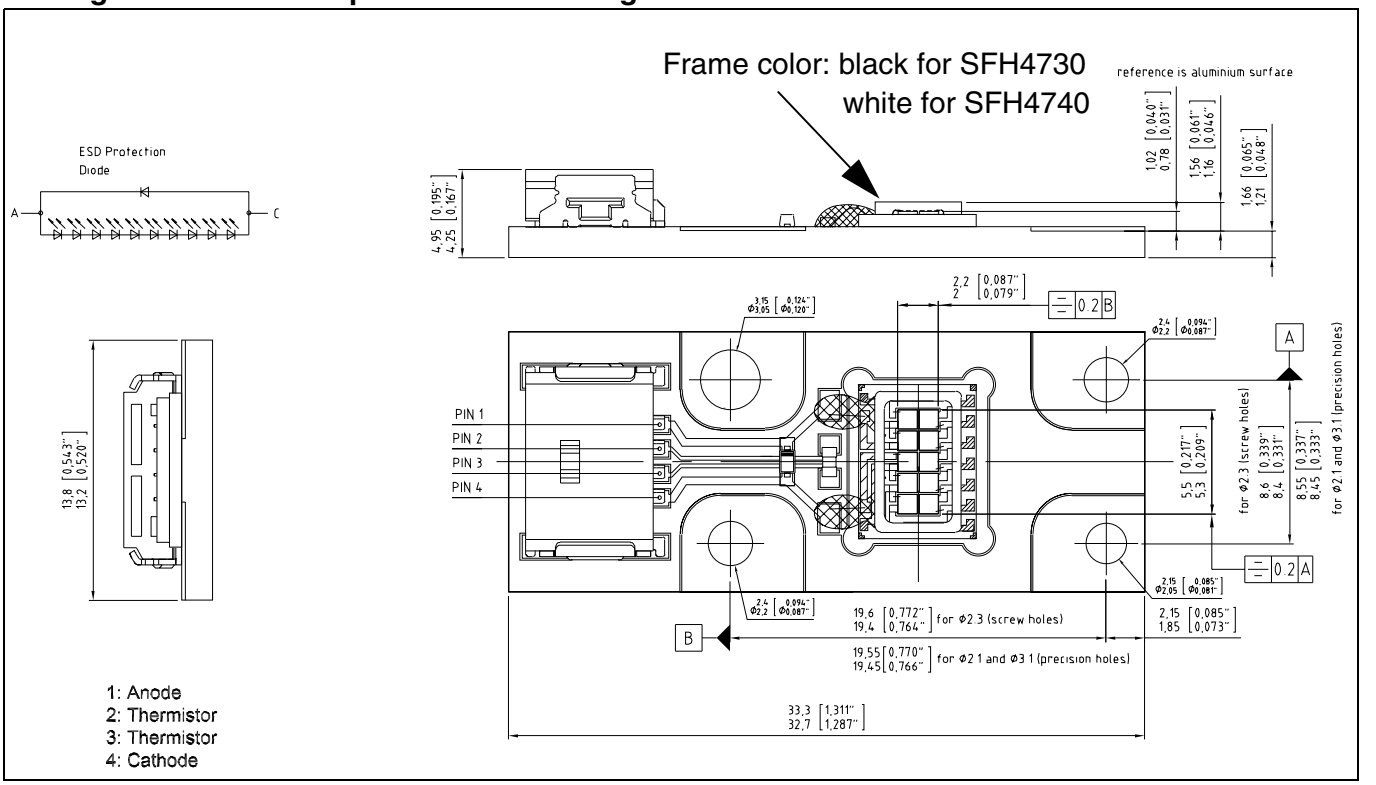
No. of R/T characteristics	R_{25} [Ω]	$B_{25/50}$ [K]	$B_{25/85}$ [K]	$B_{25/100}$ [K]
EPCOS 8502 / A01	10k ± 5%	3940	3980	4000

Typische Thermistor Kennlinie
Typical Thermistor Graph



(www.epcos.com)

Maßzeichnung und Ersatzschaltbild
Package Outlines and equivalent circuit diagram



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

Verwendeter Stecker / Used male connector on board:
ERNI male connector SMD 214012, 4-pins (www.erni.com)

Empfohlene Gegenstecker / Recommended female connector for power supply:
ERNI female connector SMD 214025, 4-pins (www.erni.com)

Published by OSRAM Opto Semiconductors GmbH
Wernerwerkstrasse 2, D-93049 Regensburg
www.osram-os.com

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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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[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.