NPN-Silizium-Fototransistor
Silicon NPN Phototransistor
Lead (Pb) Free Product - RoHS Compliant

SFH 3204

Wesentliche Merkmale

- Sehr kleines Sidelooker SMT-Gehäuse
- Speziell geeignet für Anwendungen im Bereich von 420 nm bis 1100 nm
- Großer Empfangswinkel ±60°

Features

- Very small sidelooker SMT package
- Especially suitable for applications from 420 nm to 1100 nm
- Large viewing angle ±60°

Anwendungen

- Miniaturlichtschranken
- Sensorik (z.B. Handy)
- „Messen/Steuern/Regeln“

Applications

- Miniature photointerrupters
- Sensor technology (eg mobile phone)
- For control and drive circuits

Typ Type	Bestellnummer Ordering Code
SFH 3204	Q65110A2506

Grenzwerte
Maximum Ratings

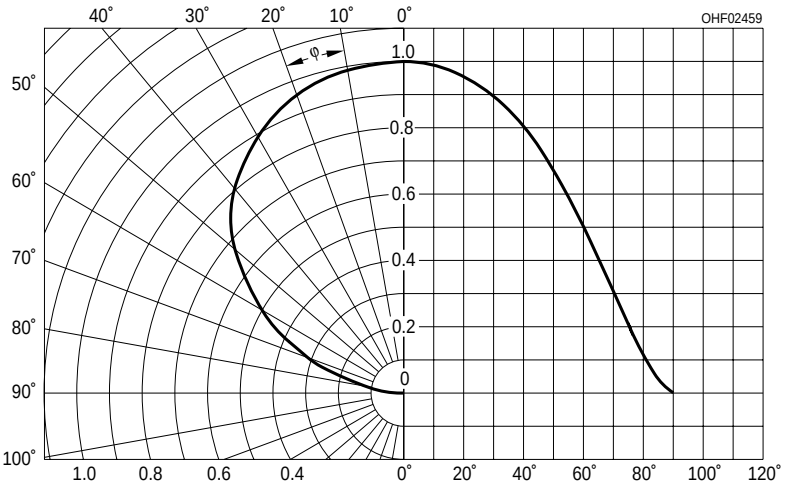
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebs- und Lagertemperatur Operating and storage temperature range	T_{op}; T_{stg}	– 40 …+ 100	°C
Kollektor-Emitterspannung Collector-emitter voltage	V_{CE} V_{CE} (t < 2 min)	15 30	V
Kollektorstrom Collector current	I_C	15	mA
Kollektorspitzenstrom, τ < 10 µs Collector surge current	I_{CS}	75	mA
Emitter-Kollektorspannung Emitter-collector voltage	V_{EC}	7	V

Kennwerte (T_A = 25 °C, λ = 950 nm)
Characteristics

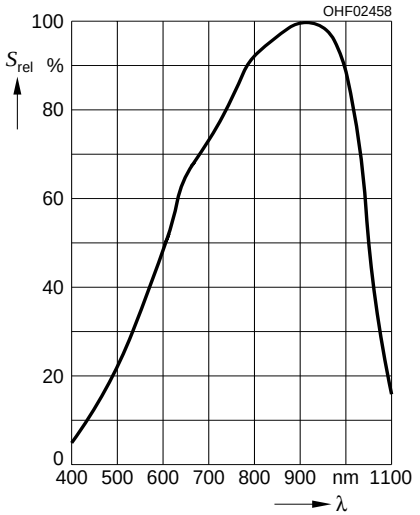
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\ max}$	920	nm
Spektraler Bereich der Fotoempfindlichkeit S = 10% von S_{max} Spectral range of sensitivity S = 10% of S_{max}	λ	450 …1120	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	0.04	mm^2
Abmessungen der Chipfläche Dimensions of chip area	$L \times B$ $L \times W$	0.35 × 0.35	mm × mm
Halbwinkel Half angle	φ	± 60	Grad deg.
Kapazität Capacitance V_{CE} = 5 V, f = 1 MHz, E = 0	C_{CE}	1.3	pF
Dunkelstrom Dark current V_{CE} = 20 V, E = 0	I_{CEO}	2 (< 50)	nA
Fotostrom Photocurrent E_e = 0.1 mW/cm², V_{CE} = 5 V	I_{PCE}	>32	µA
Anstiegszeit/Abfallzeit Rise and fall time I_C = 1 mA, V_{CC} = 5 V, R_L = 1 kΩ	t_r, t_f	7	µs
Kollektrr-Emitter-Sättigungsspannung Collector-emitter saturation voltage I_C = 10µA E_e = 0.1 mW/cm², λ = 950 nm	V_{CEsat}	140	mV

Directional Characteristics

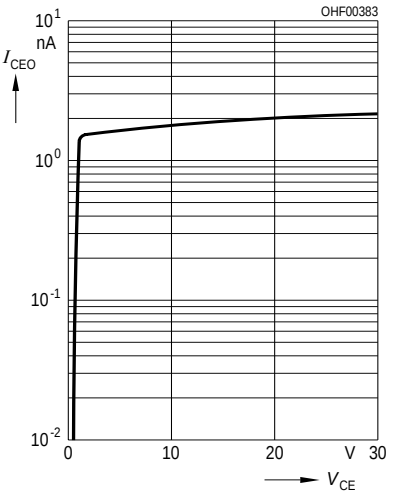
$S_{rel} = f(\varphi)$



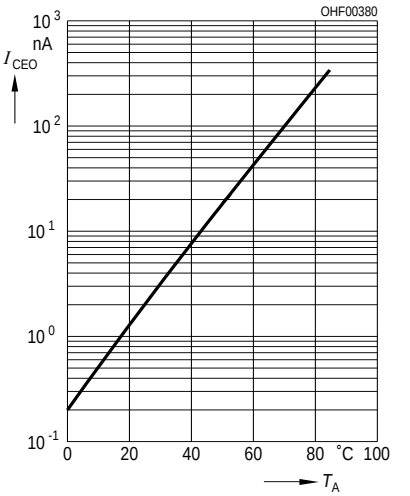
Rel. Spectral Sensitivity,
$S_{rel} = f(\lambda)$



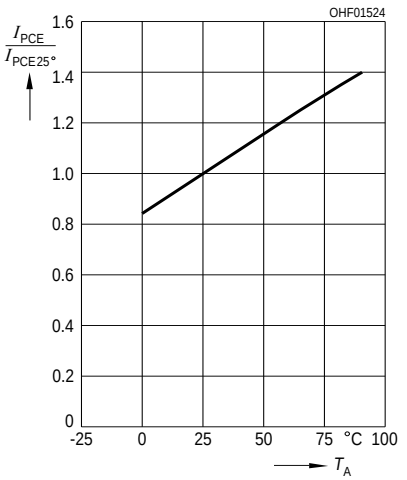
Dark Current
$I_{CEO} = f(V_{CE})$, $E = (0)$



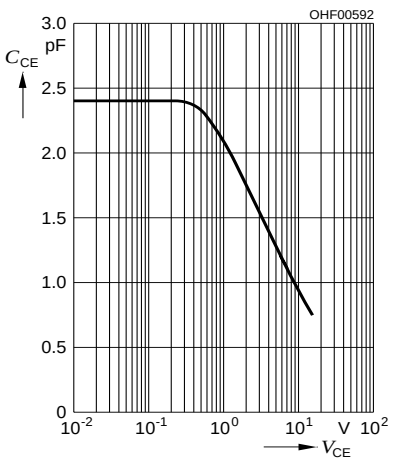
Dark Current
$I_{CEO} = f(T_A)$, V_{CE} = 20 V, $E = (0)$



Photocurrent $I_{PCE} = f(T_A)$,
V_{CE} = 5 V, normalized to 25 °C



Collector-Emitter Capacitance
$C_{CE} = f(V_{CE})$, f = 1 MHz



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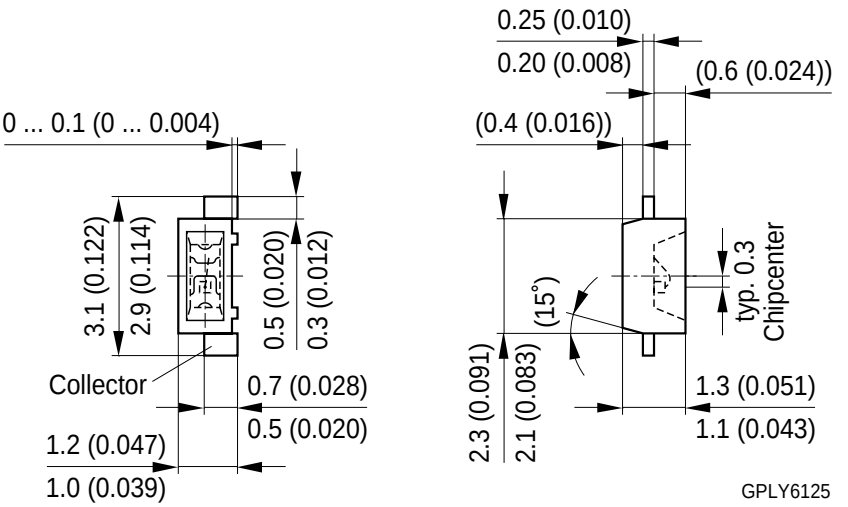
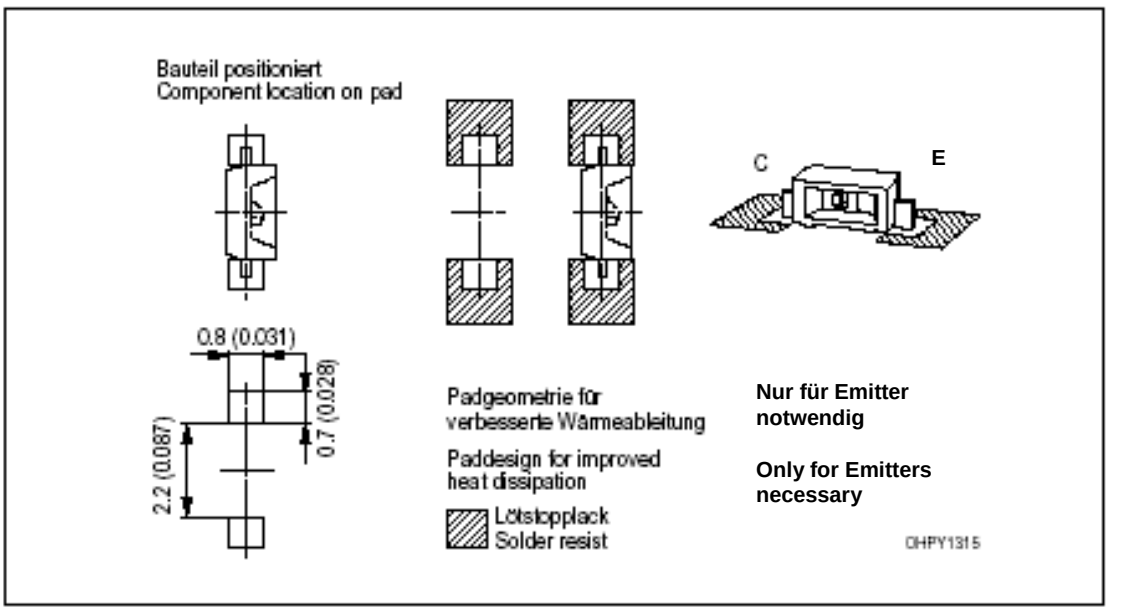
Maßzeichnung
Package Outlines



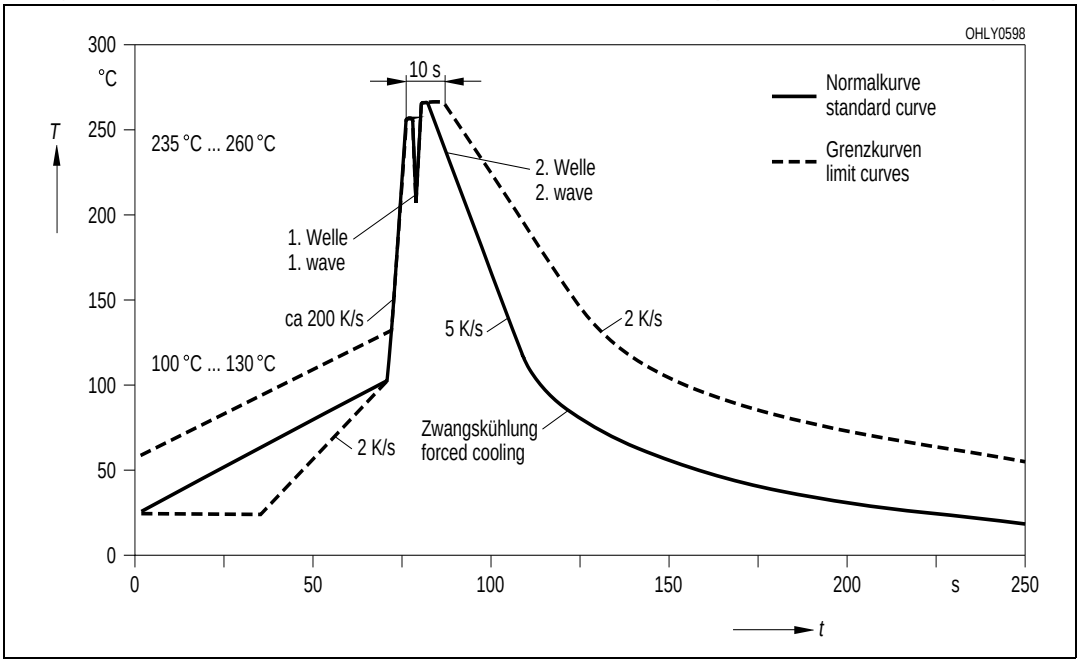
Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

Empfohlenes Lötpaddesign IR Reflow Löten
Recommended Solder Pad IR Reflow Soldering



Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).
Gehäuse hält TTW-Lothitze aus / Package able to withstand TTW-soldering heat

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



Lötbedingungen Vorbehandlung nach JEDEC Level 2
Soldering Conditions Preconditioning acc. to JEDEC Level 2
IR-Reflow Lötprofil für bleifreies Löten (nach J-STD-020B)
IR Reflow Soldering Profile for lead free soldering (acc. to J-STD-020B)
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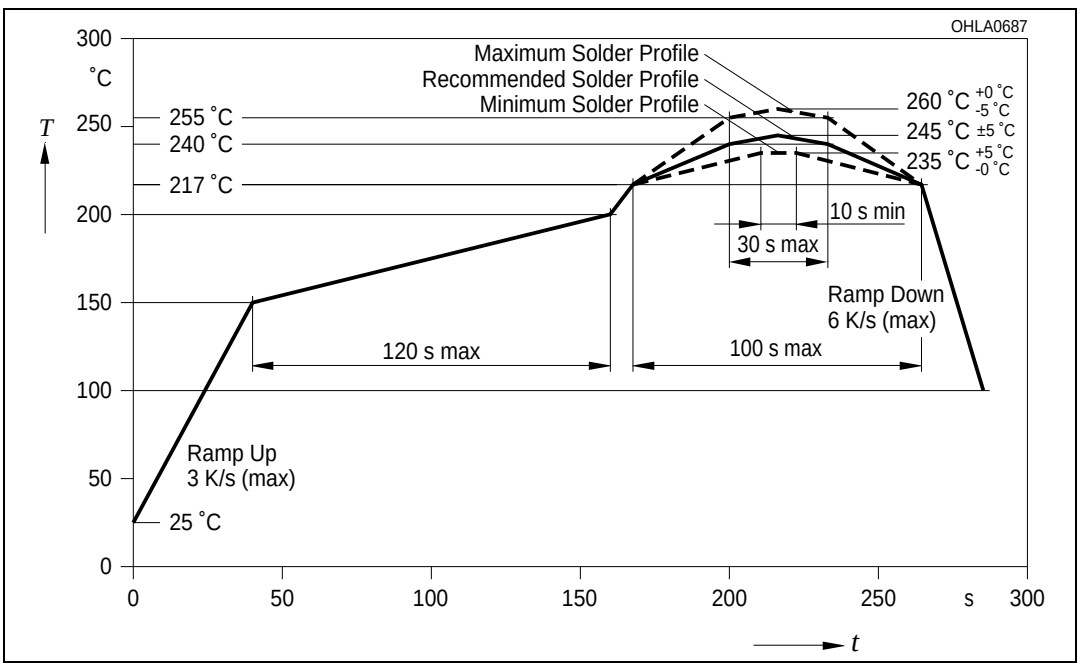

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