

NPN-Si-Fototransistor mit V_λ Charakteristik
Silicon NPN Phototransistor with V_λ Characteristics
Lead (Pb) Free Product - RoHS Compliant

SFH 3410



Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 350 nm bis 970 nm
- Angepaßt an die Augenempfindlichkeit (V_λ)
- SMT-Bauform ohne Basisanschluß, geeignet für IR-Reflow-Löten
- Nur gegurtet lieferbar

Anwendungen

- Umgebungslicht-Detektor
- Beleuchtungsmesser
- Dimmungssensor für Hintergrundbeleuchtung
- „Messen/Steuern/Regeln“

Features

- Especially suitable for applications from 350 nm to 970 nm
- Adapted to human eye sensitivity (V_λ)
- SMT package without base connection, suitable for IR reflow soldering
- Only available on tape and reel

Applications

- Ambient light detector
- Exposure meter for daylight and artificial light
- Sensor for Backlight-Dimming
- For control and drive circuits

Typ Type	Bestellnummer Ordering Code	Fotostrom $E_v = 20 \text{ lx}$, Standard light A, $V_{CE} = 5 \text{ V}$ Photocurrent $I_{pce} (\mu\text{A})$
SFH 3410	Q65110A1211	>3.2
SFH 3410-1/2	Q65110A2653	3.2...10
SFH 3410-2/3	Q65110A2654	5...16
SFH 3410-3/4	Q65110A2655	8...25

Grenzwerte ($T_A = 25\text{ °C}$)**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}	5.5	V
Kollektorstrom Collector current	I_C	20	mA
Emitter-Kollektorspannung Emitter-collector voltage	V_{EC}	0.5	V

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

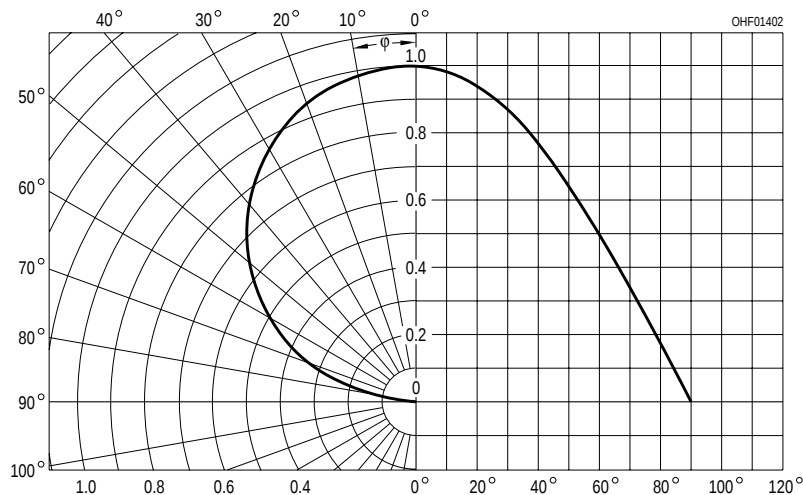
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	λ_{Smax}	570	nm
Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von S_{max} Spectral range of sensitivity $S = 10\%$ of S_{max}	λ	350 ... 970	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	0.29	mm ²
Abmessung der Chipfläche Dimensions of chip area	$L \times B$ $L \times W$	0.75×0.75	mm × mm
Halbwinkel Half angle	φ	± 60	Grad. deg.
Kapazität, $V_{CE} = 0\text{ V}$, $f = 1\text{ MHz}$, $E = 0$ Capacitance	C_{CE}	3.9	pF
Dunkelstrom Dark current $V_{CE} = 5\text{ V}$	I_{CEO}	3 (< 50)	nA
Fotostrom Photocurrent $E_v = 20\text{ lx}$, Normlicht/standard light A, $V_{CE} = 5\text{ V}$	I_{PCE}	>3.2	µA

Bezeichnung Parameter	Symbol Symbol	Wert Value				Einheit Unit
		-1	-2	-3	-4	
Fotostrom Photocurrent $E_V = 20 \text{ lx}$, Normlicht/standard light A $V_{CE} = 5 \text{ V}$	I_{PCE}	3.2...6.3	5...10	8...16	12.5...25	μA
Kollektor-Emitter-Sättigungsspannung Collector-emitter saturation voltage $I_C = I_{PCEmin}^{1)} \times 0.3$, $E_V = 20 \text{ lx}$	V_{CEsat}	100	100	100	100	mV

¹⁾ I_{PCEmin} ist der minimale Fotostrom der jeweiligen Gruppe

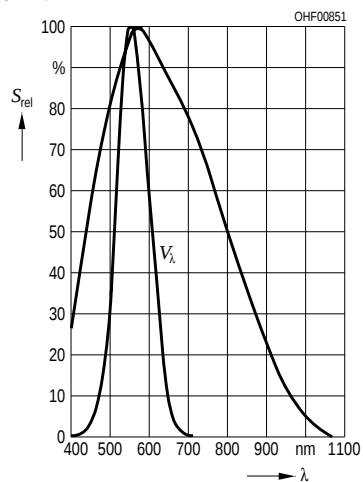
¹⁾ I_{PCEmin} is the min. photocurrent of the specified group

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

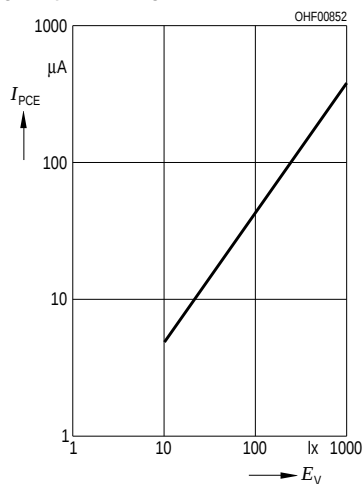


Relative Spectral Sensitivity

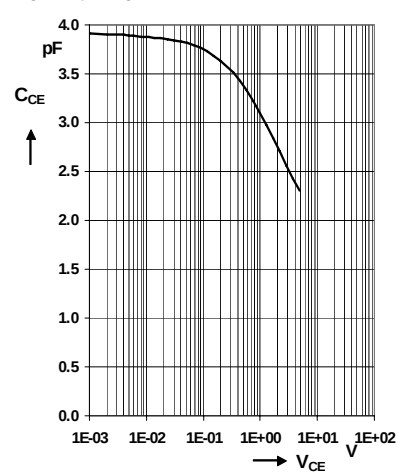
$$S_{\text{rel}} = f(\lambda)$$

**Photocurrent**

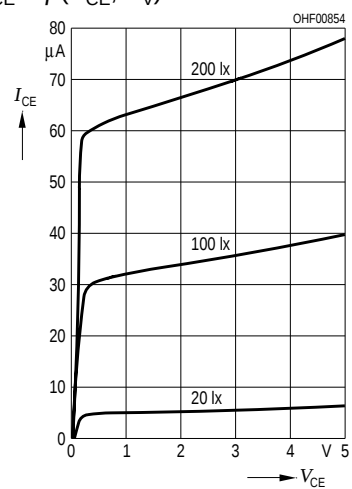
$$I_{\text{PCE}} = f(E_V), V_{\text{CE}} = 5 \text{ V}$$

**Collector-Emitter Capacitance**

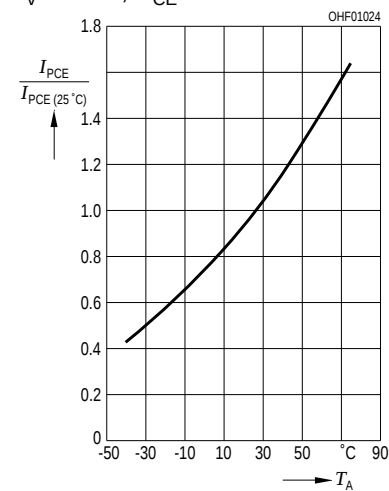
$$C_{\text{CE}} = f(V_{\text{CE}})$$

**Collector-Emitter Current**

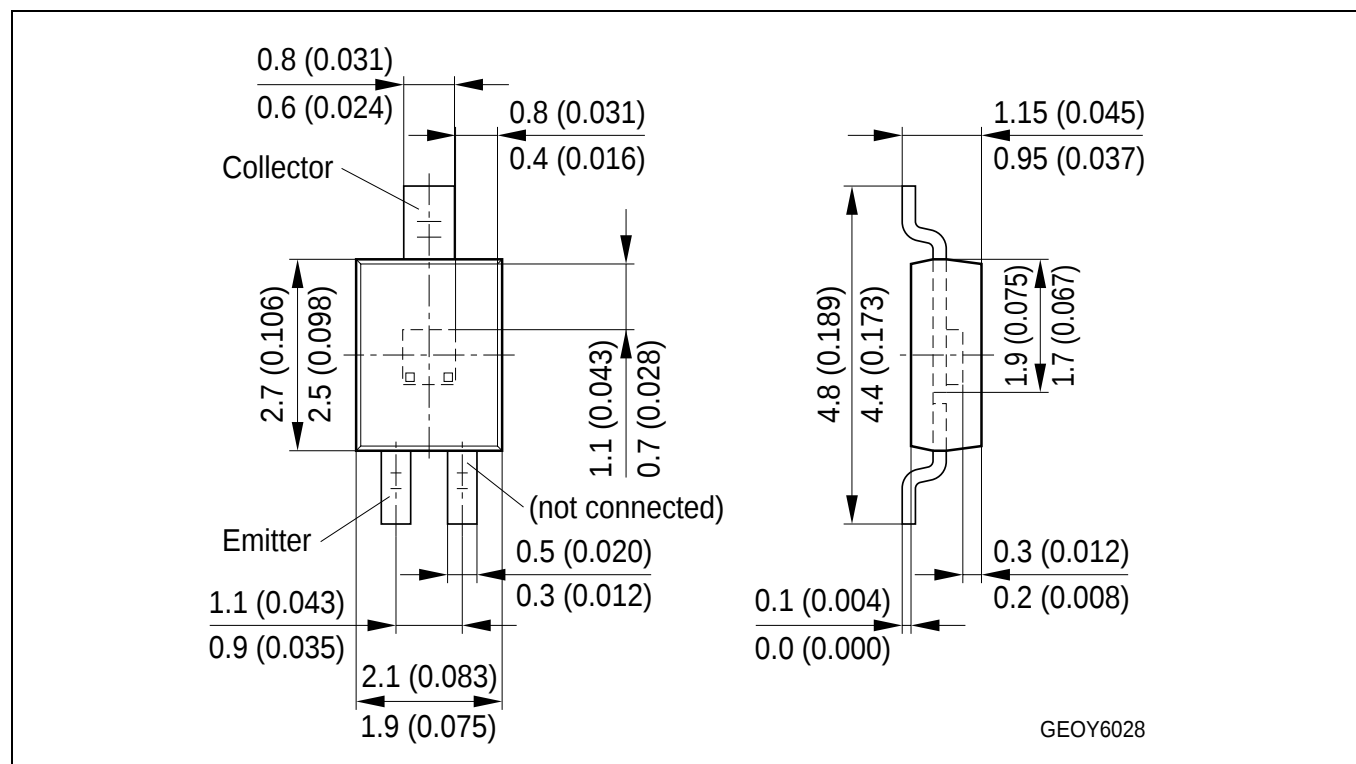
$$I_{\text{CE}} = f(V_{\text{CE}}, E_V)$$

**Photocurrent**

$$I_{\text{PCE}}/I_{\text{PCE}(25^\circ\text{C})} = f(T_A)$$



Maßzeichnung Package Outlines



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

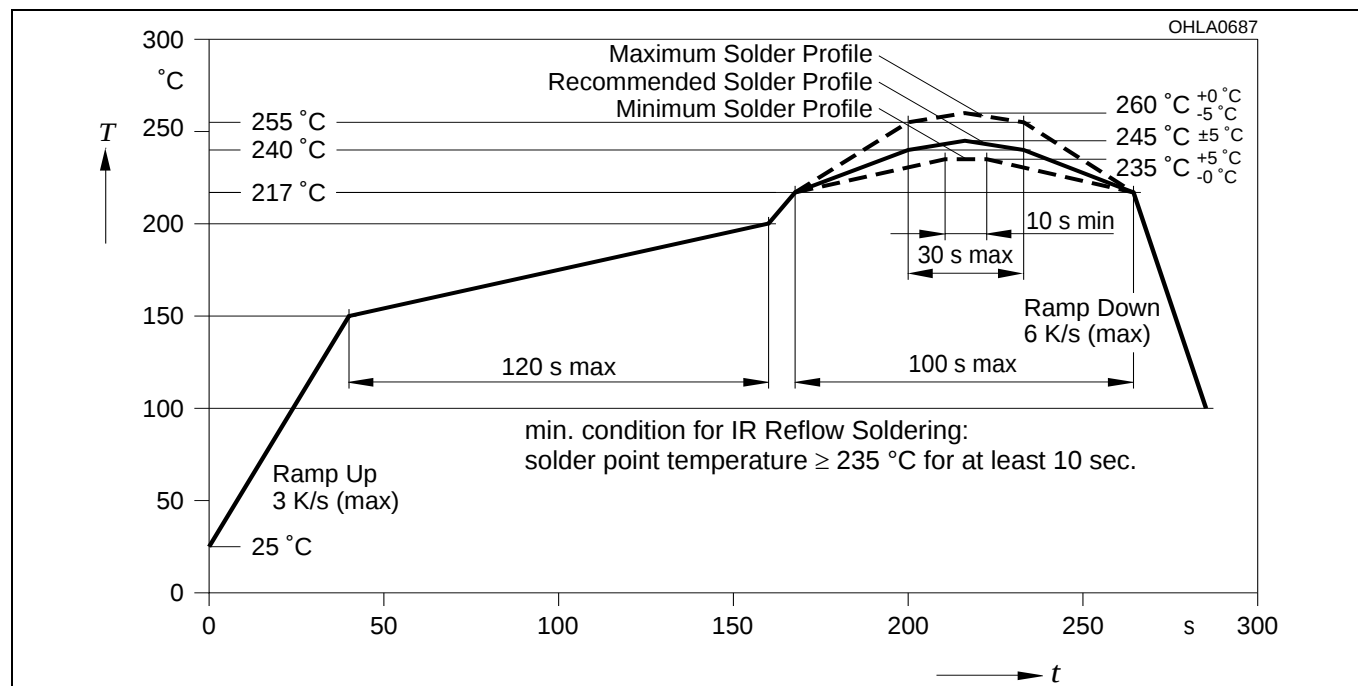
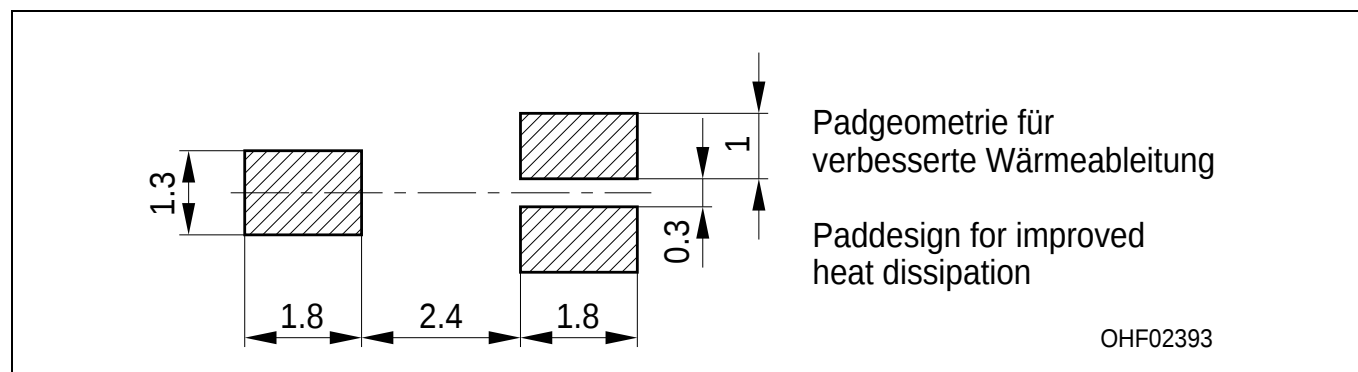
Lötbedingungen**Soldering Conditions****Reflow Lötprofil für bleifreies Löten****Reflow Soldering Profile for lead free soldering**

Vorbehandlung nach JEDEC Level 4

Preconditioning acc. to JEDEC Level 4

(nach J-STD-020C)

(acc. to J-STD-020C)

**Empfohlenes Lötpaddesign****Recommended Solderpad Design**

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

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