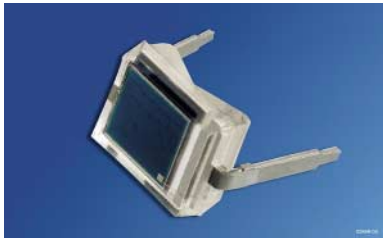
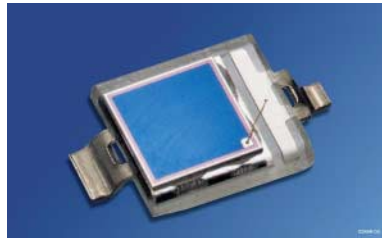


Silizium-PIN-Fotodiode; in SMT und als Reverse Gullwing
Silicon PIN Photodiode; in SMT and as Reverse Gullwing
Lead (Pb) Free Product - RoHS Compliant
BPW 34, BPW 34 S, BPW 34 SR



BPW 34



BPW 34 S



BPW 34 SR

Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 400 nm bis 1100 nm
- Kurze Schaltzeit (typ. 20 ns)
- DIL-Plastikbauform mit hoher Packungsdichte
- BPW 34 S/BPW 34 SR: geeignet für Reflow Löten

Anwendungen

- Lichtschranken für Gleich- und Wechsellichtbetrieb
- IR-Fernsteuerungen
- Industrieelektronik
- „Messen/Steuern/Regeln“

Features

- Especially suitable for applications from 400 nm to 1100 nm
- Short switching time (typ. 20 ns)
- DIL plastic package with high packing density
- BPW 34 S/BPW 34 SR: suitable for reflow soldering

Applications

- Photointerrupters
- IR remote controls
- Industrial electronics
- For control and drive circuits

| Typ Type | Bestellnummer Ordering Code | Fotostrom, $E_v=1000 \text{ lx}$, standard light A, $V_R = 5 \text{ V}$ Photocurrent $I_p (\mu\text{A})$ |
|-------------|--------------------------------|---|
| BPW 34 | Q62702P0073 | 80 (≥ 50) |
| BPW 34 S | Q65110A1209 | 80 (≥ 50) |
| BPW 34 SR | Q65110A2701 | 80 (≥ 50) |

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 |
| Sperrspannung Reverse voltage | V_R | 32 | V |
| Verlustleistung, $T_A = 25$ °C Total power dissipation | P_{tot} | 150 | mW |

Kennwerte ($T_A = 25$ °C, Normlicht A, $T = 2856$ K)
Characteristics ($T_A = 25$ °C, standard light A, $T = 2856$ K)

| Bezeichnung Parameter | Symbol Symbol | Wert Value | Einheit Unit |
|--|------------------------------|--------------------|----------------------------|
| Fotoempfindlichkeit, $V_R = 5$ V Spectral sensitivity | S | 80 (≥ 50) | nA/lx |
| Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity | $\lambda_{S\ max}$ | 850 | nm |
| Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von S_{max} Spectral range of sensitivity $S = 10\%$ of S_{max} | λ | 400 ... 1100 | nm |
| Bestrahlungsempfindliche Fläche Radiant sensitive area | A | 7.00 | mm ² |
| Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area | $L \times B$ $L \times W$ | 2.65 × 2.65 | mm × mm |
| Halbwinkel Half angle | φ | ±60 | Grad deg. |
| Dunkelstrom, $V_R = 10$ V Dark current | I_R | 2 (≤ 30) | nA |
| Spektrale Fotoempfindlichkeit, $\lambda = 850$ nm Spectral sensitivity | S_λ | 0.62 | A/W |
| Quantenausbeute, $\lambda = 850$ nm Quantum yield | η | 0.90 | <u>Electrons</u> Photon |
| Leerlaufspannung, $E_v = 1000$ lx Open-circuit voltage | V_O | 365 (≥ 300) | mV |

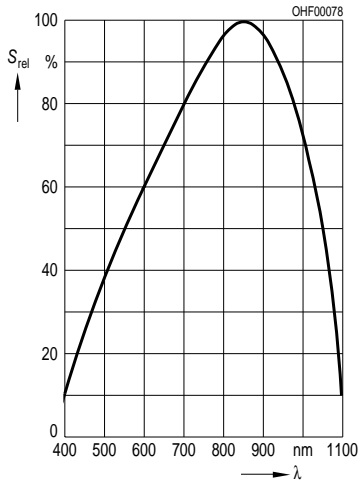
Kennwerte ($T_A = 25\text{ °C}$, Normlicht A, $T = 2856\text{ K}$)

Characteristics ($T_A = 25\text{ °C}$, standard light A, $T = 2856\text{ K}$) (cont'd)

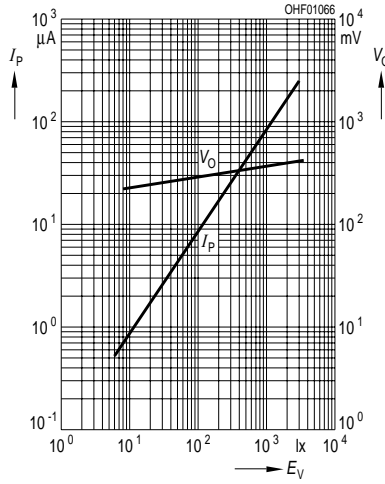
| Bezeichnung Parameter | Symbol Symbol | Wert Value | Einheit Unit |
|--|------------------|-----------------------|--|
| Kurzschlussstrom, $E_V = 1000\text{ lx}$ Short-circuit current | I_{SC} | 80 | μA |
| Anstiegs- und Abfallzeit des Fotostromes Rise and fall time of the photocurrent $R_L = 50\ \Omega$; $V_R = 5\text{ V}$; $\lambda = 850\text{ nm}$; $I_p = 800\ \mu\text{A}$ | t_r, t_f | 20 | ns |
| Durchlassspannung, $I_F = 100\text{ mA}$, $E = 0$ Forward voltage | V_F | 1.3 | V |
| Kapazität, $V_R = 0\text{ V}$, $f = 1\text{ MHz}$, $E = 0$ Capacitance | C_0 | 72 | pF |
| Temperaturkoeffizient von V_O Temperature coefficient of V_O | TC_V | - 2.6 | mV/K |
| Temperaturkoeffizient von I_{SC} Temperature coefficient of I_{SC} | TC_I | 0.18 | %/K |
| Rauschäquivalente Strahlungsleistung Noise equivalent power $V_R = 10\text{ V}$, $\lambda = 850\text{ nm}$ | NEP | 4.1×10^{-14} | $\frac{\text{W}}{\sqrt{\text{Hz}}}$ |
| Nachweisgrenze, $V_R = 10\text{ V}$, $\lambda = 850\text{ nm}$ Detection limit | D^* | 6.6×10^{12} | $\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$ |

Relative Spectral Sensitivity

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

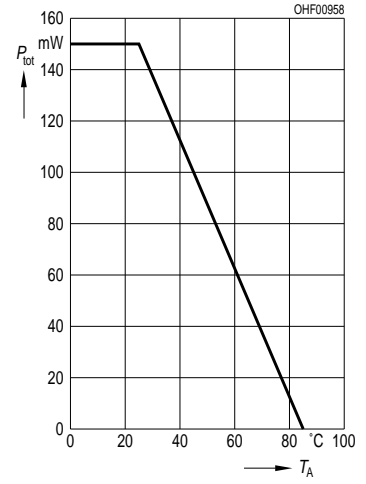


**Photocurrent $I_P = f(E_v)$, $V_R = 5 V$
Open-Circuit Voltage $V_O = f(E_v)$**



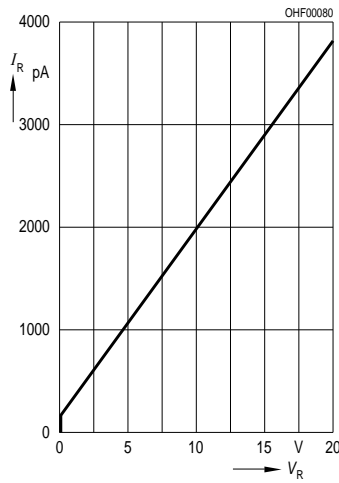
Total Power Dissipation

$P_{tot} = f(T_A)$



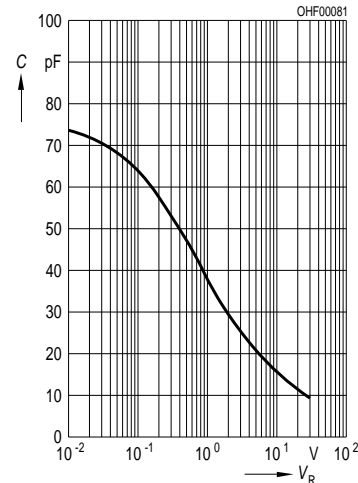
Dark Current

$I_R = f(V_R), E = 0$



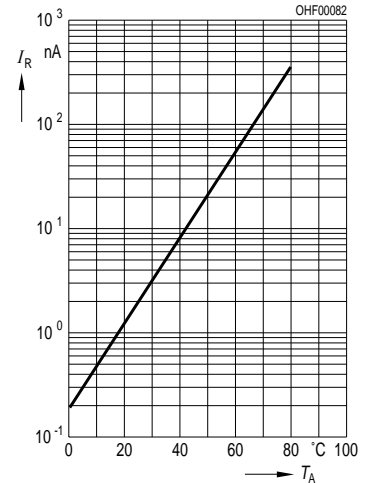
Capacitance

$C = f(V_R), f = 1 MHz, E = 0$



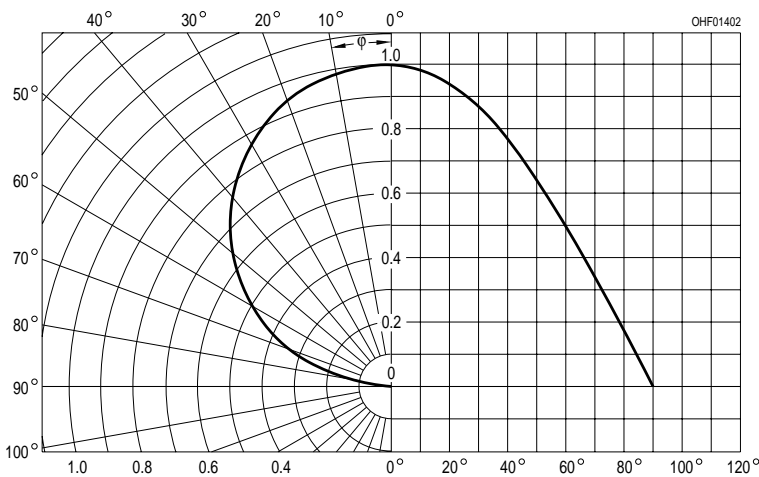
Dark Current

$I_R = f(T_A), V_R = 10 V, E = 0$

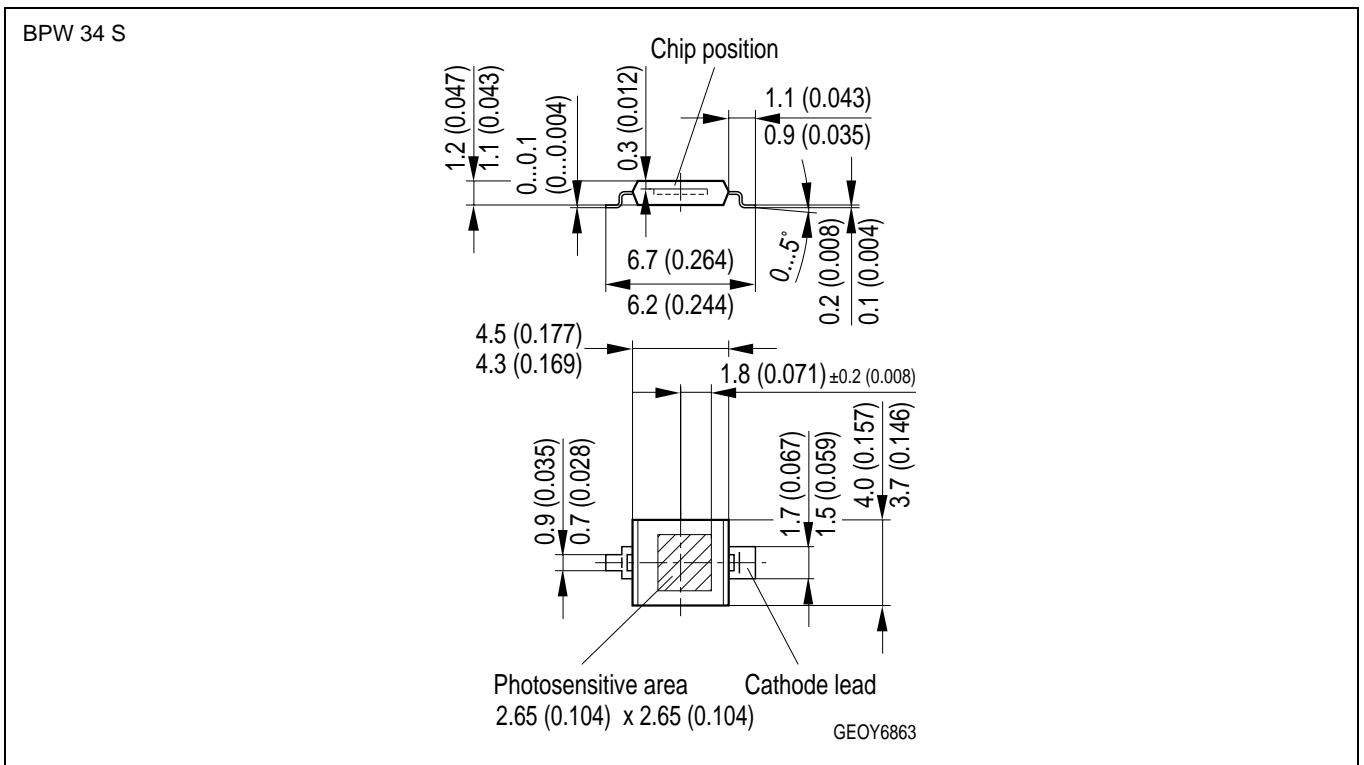
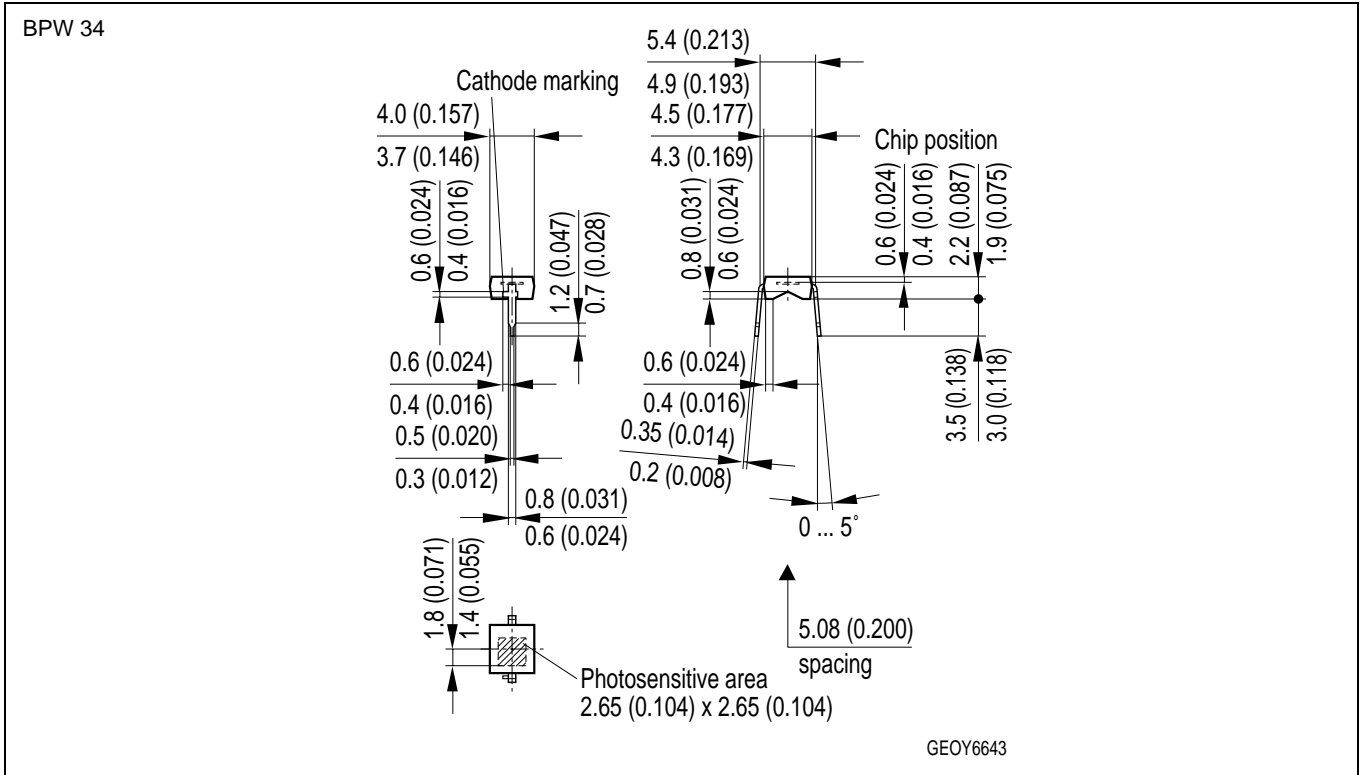


Directional Characteristics

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



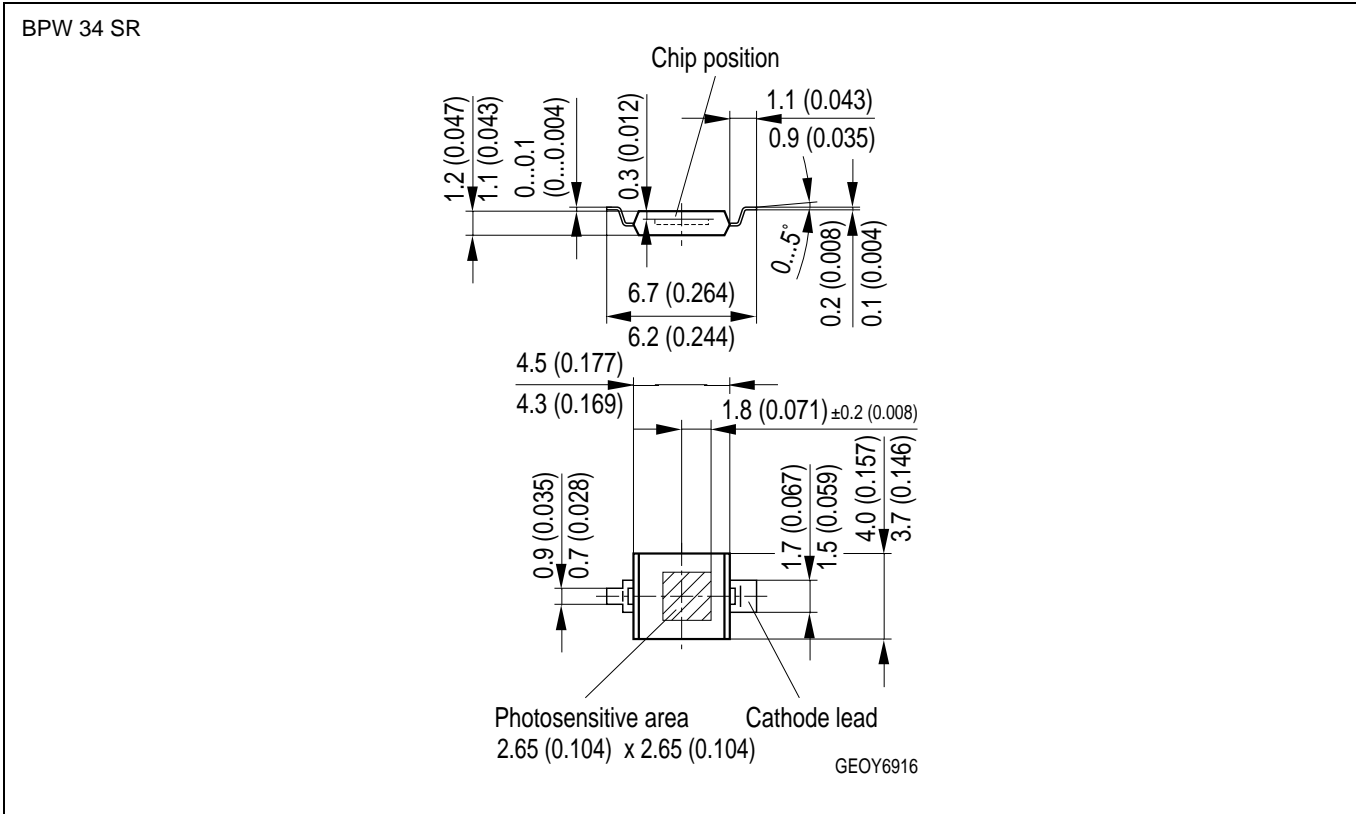
Maßzeichnung
Package Outlines



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

2007-05-23

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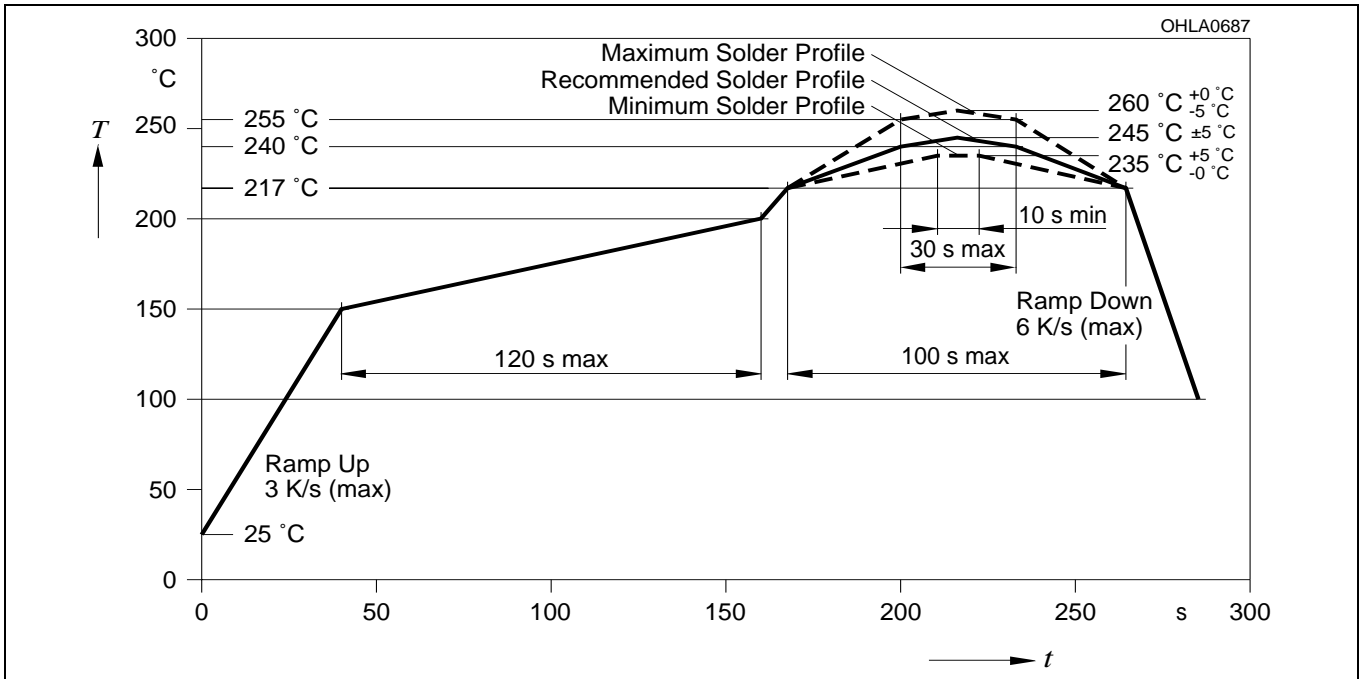
Maße in mm (inch) / Dimensions in mm (inch).

Lötbedingungen **BPW 34 S**
Soldering Conditions **BPW 34 SR**

Vorbehandlung nach JEDEC Level 4
 Preconditioning acc. to JEDEC Level 4

Reflow Lötprofil für bleifreies Löt
Reflow Soldering Profile for lead free soldering

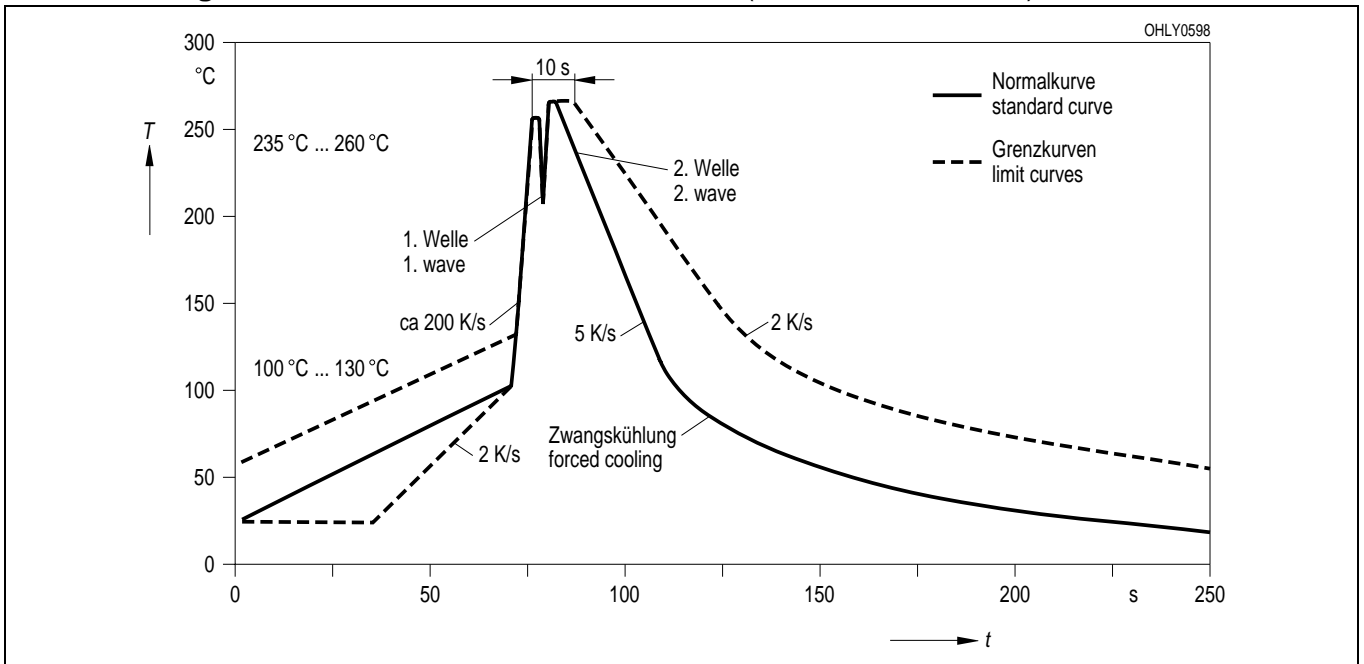
(nach J-STD-020C)
 (acc. to J-STD-020C)



Wellenlöt (TTW)
TTW Soldering

BPW 34

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



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