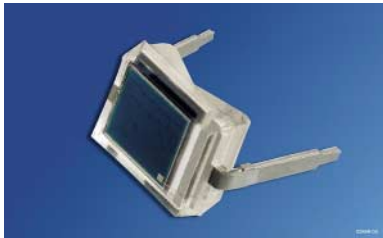
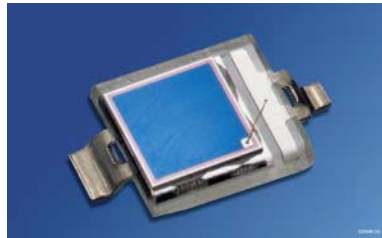


**Silizium-PIN-Fotodiode; in SMT und als Reverse Gullwing**  
**Silicon PIN Photodiode; in SMT and as Reverse Gullwing**  
**Lead (Pb) Free Product - RoHS Compliant**  
**BPW 34, BPW 34 S, BPW 34 SR**



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

**Grenzwerte**  
**Maximum Ratings**

| Bezeichnung<br>Parameter   | Symbol<br>Symbol  | Wert<br>Value  | Einheit<br>Unit |
|--|-------------------|----------------|-----------------|
| Betriebs- und Lagertemperatur<br>Operating and storage temperature range | $T_{op}; T_{stg}$ | - 40 ... + 100 | °C              |
| Sperrspannung<br>Reverse voltage   | $V_R$             | 32             | V               |
| Verlustleistung, $T_A = 25$ °C<br>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<br>Parameter   | Symbol<br>Symbol             | Wert<br>Value      | Einheit<br>Unit            |
|--|------------------------------|--------------------|----------------------------|
| Fotoempfindlichkeit, $V_R = 5$ V<br>Spectral sensitivity   | $S$                          | 80 ( $\geq 50$ )   | nA/lx                      |
| Wellenlänge der max. Fotoempfindlichkeit<br>Wavelength of max. sensitivity   | $\lambda_{S\ max}$           | 850                | nm                         |
| Spektraler Bereich der Fotoempfindlichkeit<br>$S = 10\%$ von $S_{max}$<br>Spectral range of sensitivity<br>$S = 10\%$ of $S_{max}$ | $\lambda$                    | 400 ... 1100       | nm                         |
| Bestrahlungsempfindliche Fläche<br>Radiant sensitive area  | $A$                          | 7.00               | mm <sup>2</sup>            |
| Abmessung der bestrahlungsempfindlichen Fläche<br>Dimensions of radiant sensitive area   | $L \times B$<br>$L \times W$ | 2.65 × 2.65        | mm × mm                    |
| Halbwinkel<br>Half angle   | $\varphi$                    | ±60                | Grad<br>deg.               |
| Dunkelstrom, $V_R = 10$ V<br>Dark current  | $I_R$                        | 2 ( $\leq 30$ )    | nA                         |
| Spektrale Fotoempfindlichkeit, $\lambda = 850$ nm<br>Spectral sensitivity  | $S_\lambda$                  | 0.62               | A/W                        |
| Quantenausbeute, $\lambda = 850$ nm<br>Quantum yield   | $\eta$                       | 0.90               | <u>Electrons</u><br>Photon |
| Leerlaufspannung, $E_v = 1000$ lx<br>Open-circuit voltage  | $V_O$                        | 365 ( $\geq 300$ ) | mV                         |

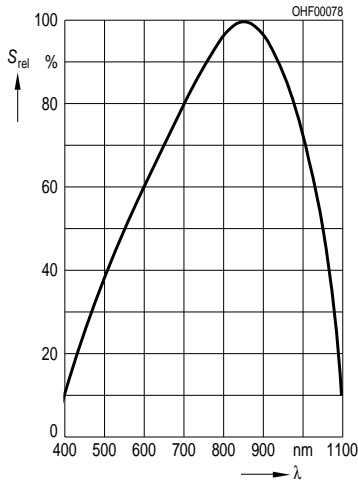
**Kennwerte** ( $T_A = 25\text{ °C}$ , Normlicht A,  $T = 2856\text{ K}$ )

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

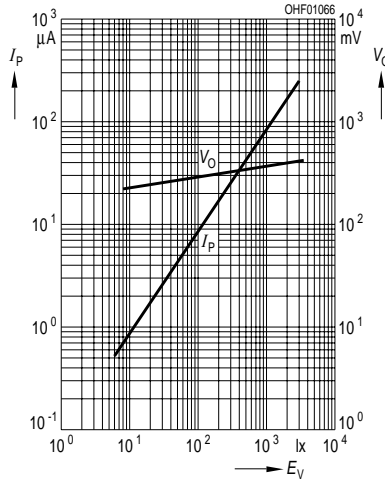
| Bezeichnung<br>Parameter   | Symbol<br>Symbol | Wert<br>Value         | Einheit<br>Unit                                      |
|--|------------------|-----------------------|--|
| Kurzschlussstrom, $E_V = 1000\text{ lx}$<br>Short-circuit current  | $I_{SC}$         | 80                    | $\mu\text{A}$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

**Relative Spectral Sensitivity**

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

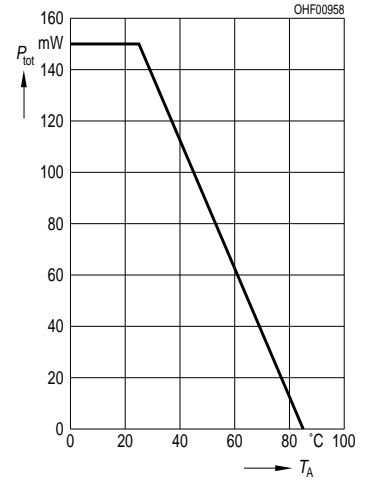


**Photocurrent  $I_P = f(E_v)$ ,  $V_R = 5 V$   
Open-Circuit Voltage  $V_O = f(E_v)$**



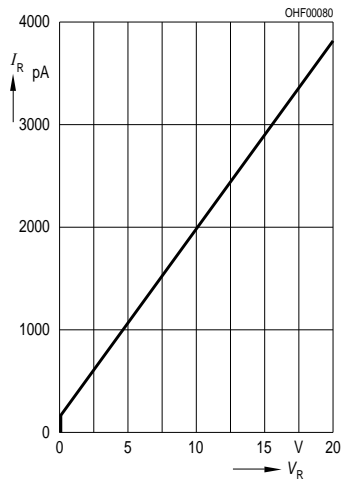
**Total Power Dissipation**

$P_{tot} = f(T_A)$



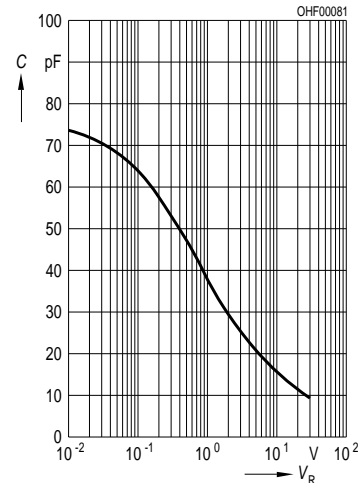
**Dark Current**

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



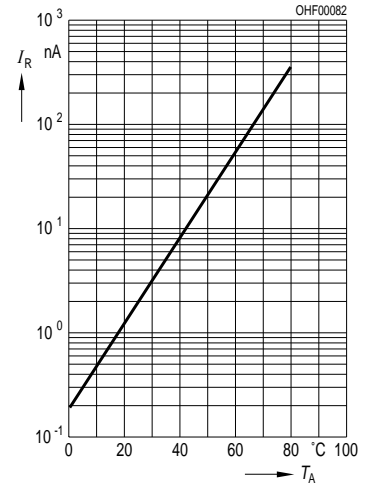
**Capacitance**

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



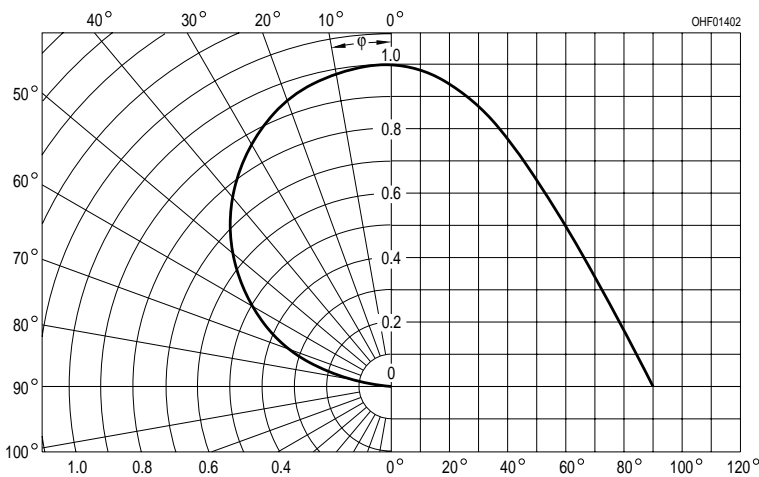
**Dark Current**

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

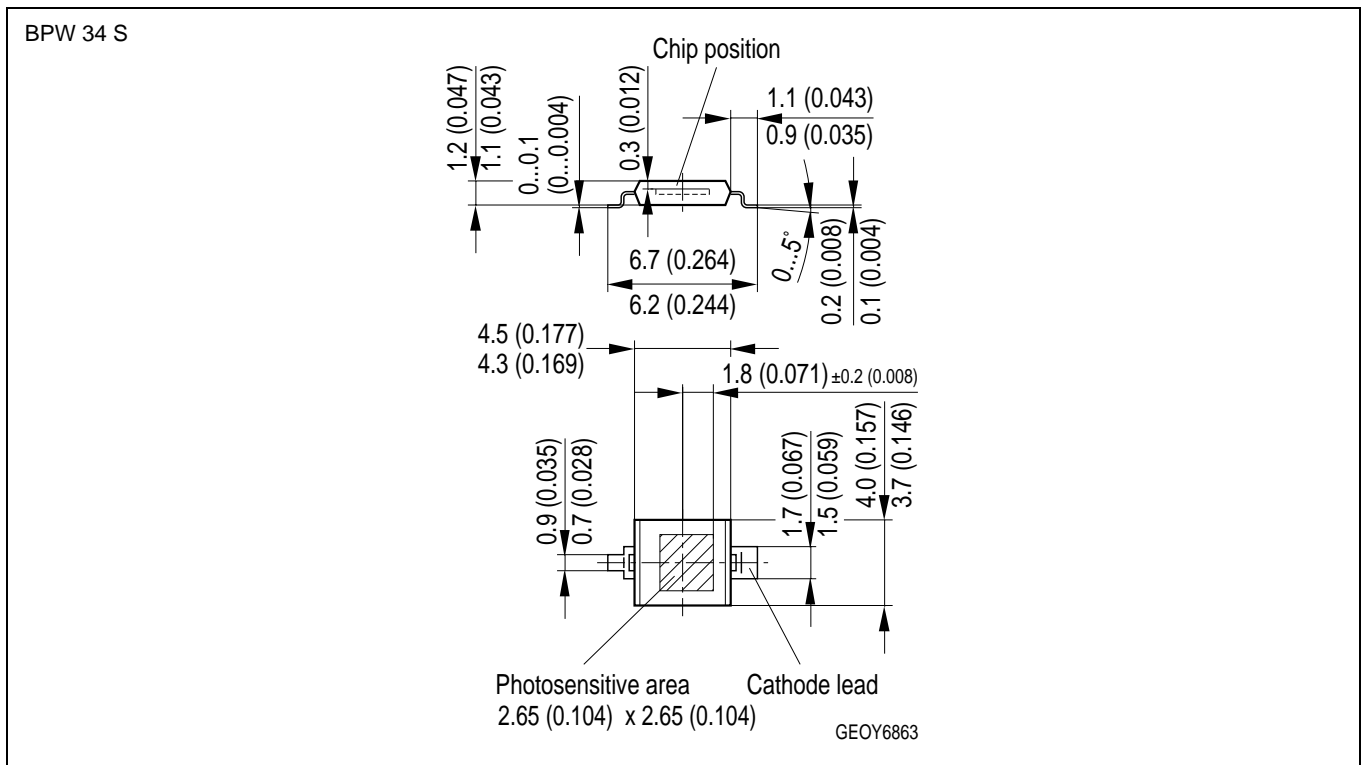
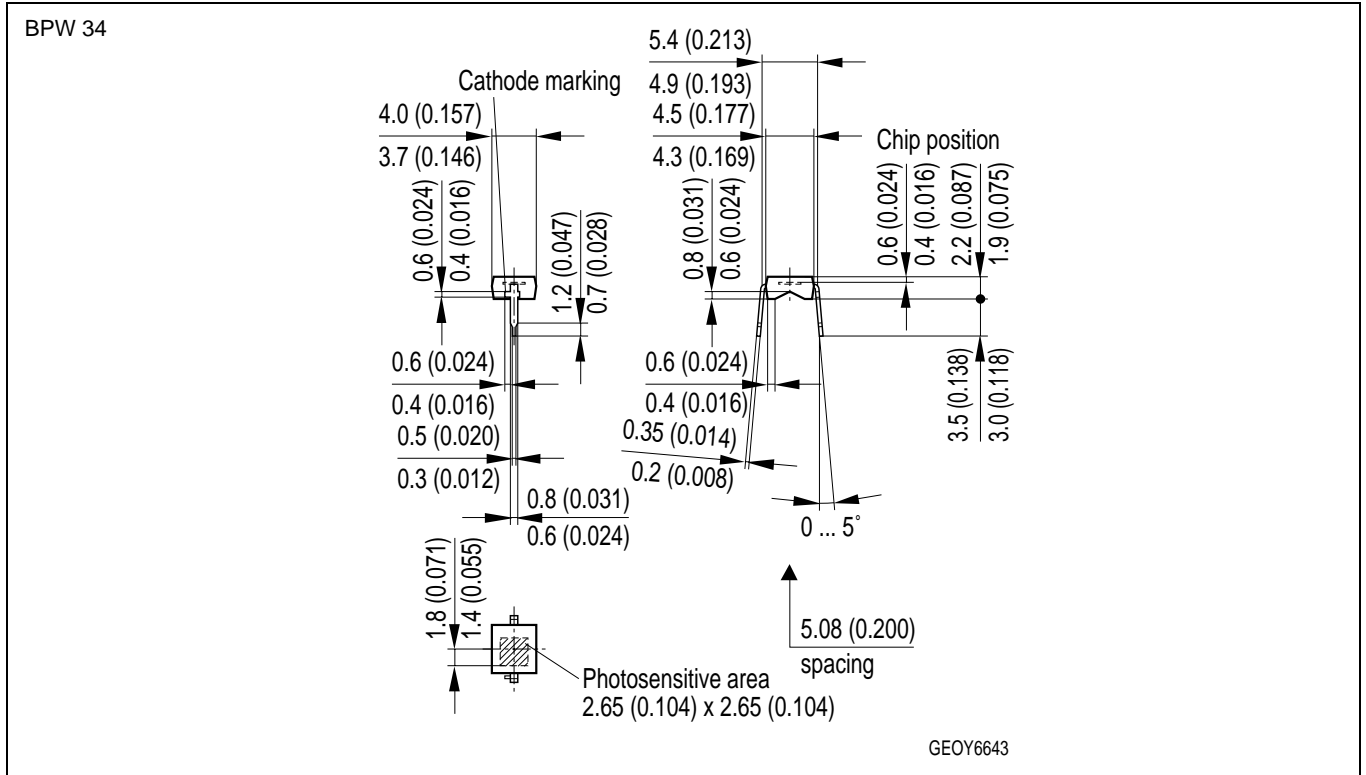


**Directional Characteristics**

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

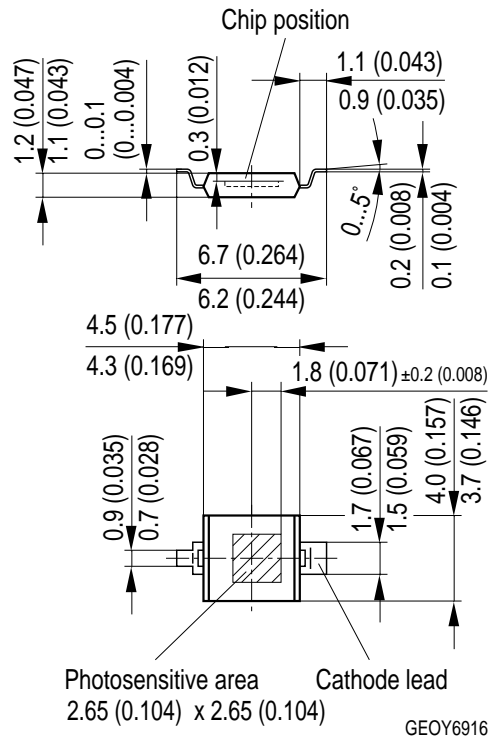


Maßzeichnung  
Package Outlines



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

BPW 34 SR



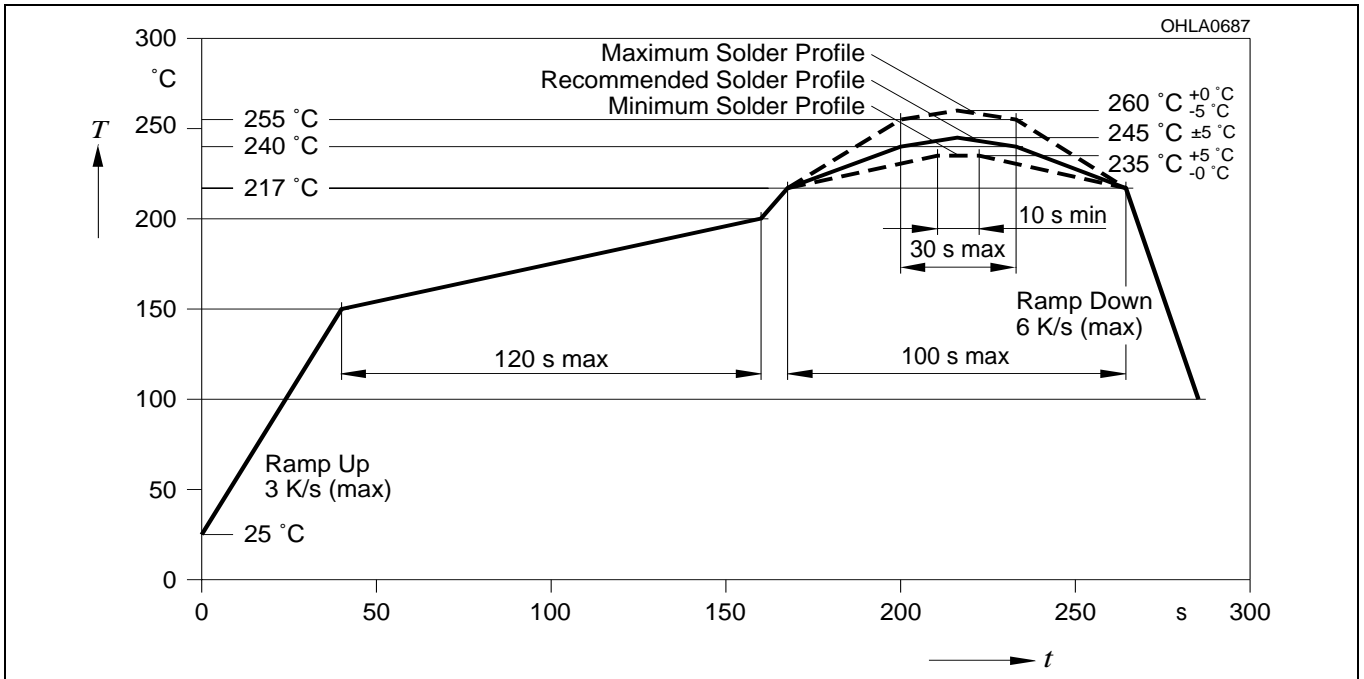
Maße in mm (inch) / Dimensions in mm (inch).

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

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

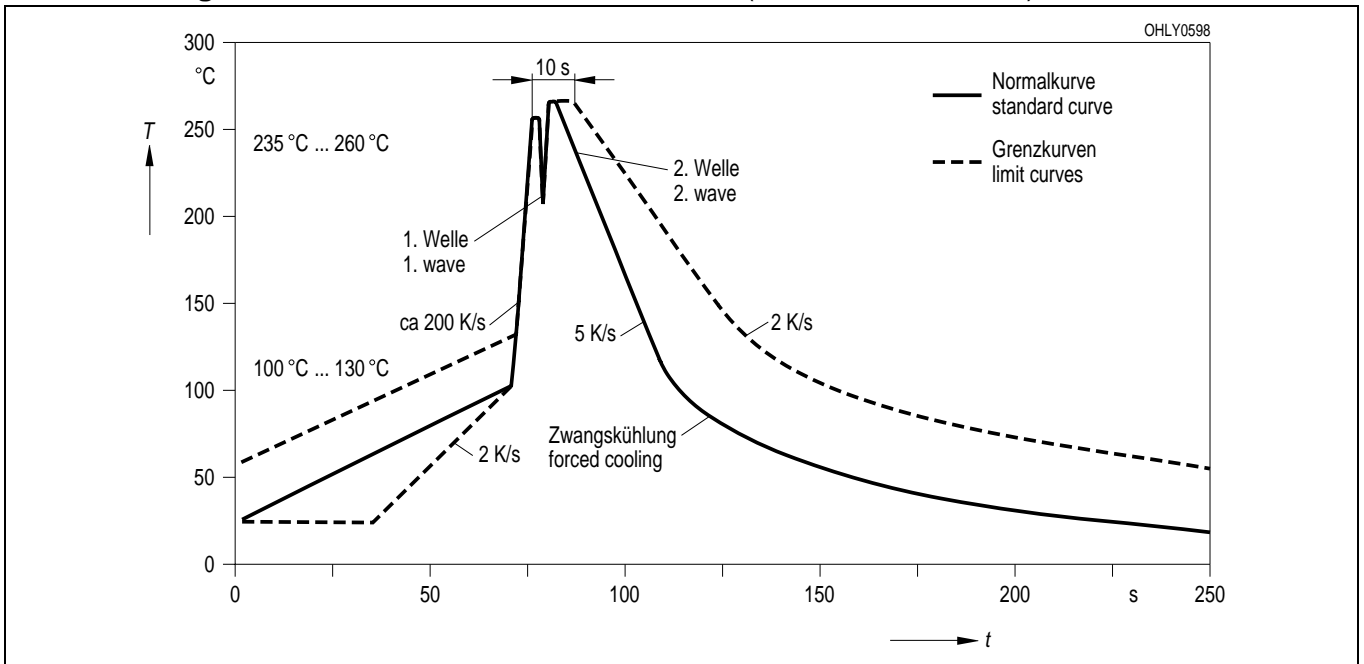
**Reflow Lötprofil für bleifreies Löt**  
**Reflow Soldering Profile for lead free soldering**

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



**Wellenlöt (TTW)**      **BPW 34**  
**TTW Soldering**

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



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