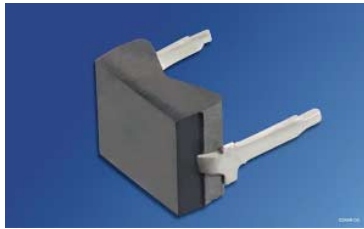
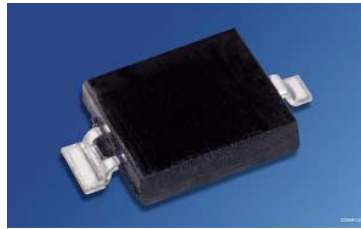


**Si-PIN-Fotodiode mit Tageslichtsperrfilter; in SMT und als Reverse Gullwing  
Silicon PIN Photodiode with Daylight Filter; in SMT and as Reverse Gullwing  
Lead (Pb) Free Product - RoHS Compliant**

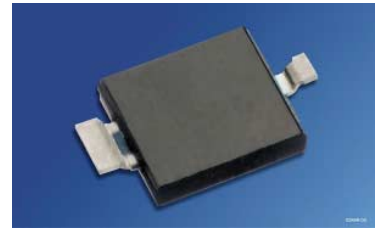
**BPW 34 FA, BPW 34 FAS, BPW 34 FASR**



BPW 34 FA



BPW 34 FAS



BPW 34 FASR

**Wesentliche Merkmale**

- Speziell geeignet für den Wellenlängenbereich von 730 nm bis 1100 nm
- Kurze Schaltzeit (typ. 20 ns)
- DIL-Plastikbauform mit hoher Packungsdichte
- BPW 34 FAS / FASR: geeignet für Reflow Lötten

**Anwendungen**

- Automotomobil (z.B. Regensensor, Headset)
- IR-Fernsteuerung von Fernseh- und Rundfunkgeräten, Videorecordern, Gerätefernsteuerung
- Lichtschranken

**Features**

- Especially suitable for the wavelength range of 730 nm to 1100 nm
- Short switching time (typ. 20 ns)
- DIL plastic package with high packing density
- BPW 34 FAS / FASR: Suitable for reflow soldering

**Applications**

- Automotive (eg rain sensor, headset)
- IR-remote control of hi-fi and TV sets, video tape recorders, remote controls of various equipment
- Photointerrupters

Typ Type	Bestellnummer Ordering Code	Fotostrom, $E_e=1 \text{ mW/cm}^2$ , $V_R = 5 \text{ V}$ , $\lambda = 870 \text{ nm}$ Photocurrent $I_p (\mu\text{A})$
BPW 34 FA	Q62702P1129	50 ( $\geq 40$ )
BPW 34 FAS	Q65110A3121	50 ( $\geq 40$ )
BPW 34 FASR	Q65110A2699	50 ( $\geq 40$ )

**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	$V_R$ $V_R (t < 2 \text{ min})$	16 32	V V
Verlustleistung, $T_A = 25 \text{ °C}$ Total power dissipation	$P_{tot}$	150	mW

**Kennwerte** ( $T_A = 25 \text{ °C}$ ,  $\lambda = 870 \text{ nm}$ )  
**Characteristics**

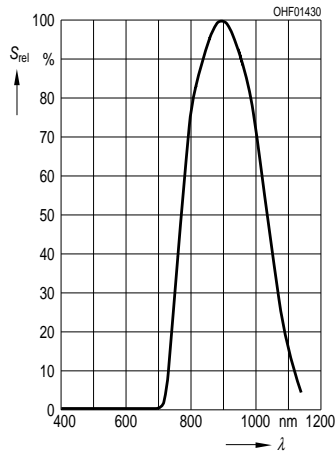
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Fotostrom Photocurrent $V_R = 5 \text{ V}$ , $E_e = 1 \text{ mW/cm}^2$	$I_p$	50 ( $\geq 40$ )	$\mu\text{A}$
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S \text{ max}}$	880	nm
Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von $S_{\text{max}}$ Spectral range of sensitivity $S = 10\%$ of $S_{\text{max}}$	$\lambda$	730 ... 1100	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	$A$	7.00	$\text{mm}^2$
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$	$2.65 \times 2.65$	mm × mm
Halbwinkel Half angle	$\varphi$	$\pm 60$	Grad deg.
Dunkelstrom, $V_R = 10 \text{ V}$ Dark current	$I_R$	2 ( $\leq 30$ )	nA
Spektrale Fotoempfindlichkeit Spectral sensitivity	$S_\lambda$	0.65	A/W
Quantenausbeute Quantum yield	$\eta$	0.93	<u>Electrons</u> Photon
Leerlaufspannung, $E_e = 0.5 \text{ mW/cm}^2$ Open-circuit voltage	$V_O$	320 ( $\geq 250$ )	mV

**Kennwerte** ( $T_A = 25\text{ °C}$ ,  $\lambda = 870\text{ nm}$ )  
**Characteristics** (cont'd)

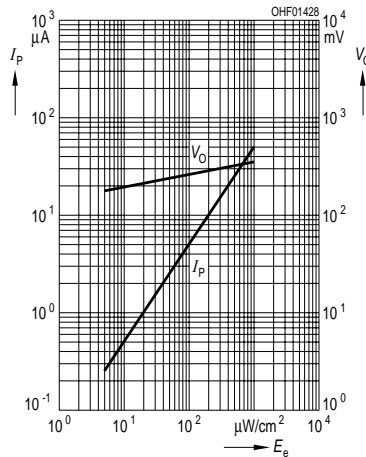
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kurzschlussstrom, $E_e = 0.5\text{ mW/cm}^2$ Short-circuit current	$I_{SC}$	23	$\mu\text{A}$
Anstiegs- und Abfallzeit des Fotostroms Rise and fall time of the photocurrent $R_L = 50\ \Omega$ ; $V_R = 5\text{ V}$ ; $\lambda = 850\text{ nm}$ ; $I_p = 800\ \mu\text{A}$	$t_r, t_f$	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 $I_{SC}$	$TC_I$	0.03	%/K
Rauschäquivalente Strahlungsleistung Noise equivalent power $V_R = 10\text{ V}$	$NEP$	$3.9 \times 10^{-14}$	$\frac{\text{W}}{\sqrt{\text{Hz}}}$
Nachweisgrenze, $V_R = 10\text{ V}$ , Detection limit	$D^*$	$6.8 \times 10^{12}$	$\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$

## Relative Spectral Sensitivity

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

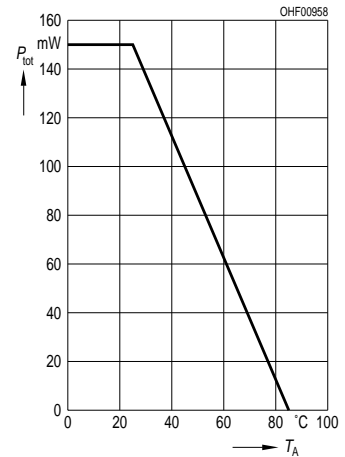


## Photocurrent $I_P = f(E_e)$ , $V_R = 5 V$ Open-Circuit Voltage $V_O = f(E_e)$



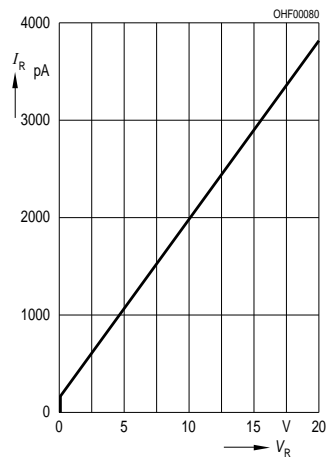
## Total Power Dissipation

$$P_{tot} = f(T_A)$$



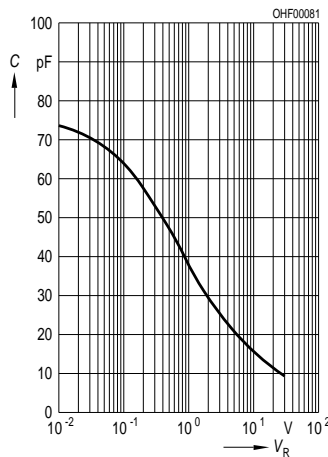
## Dark Current

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



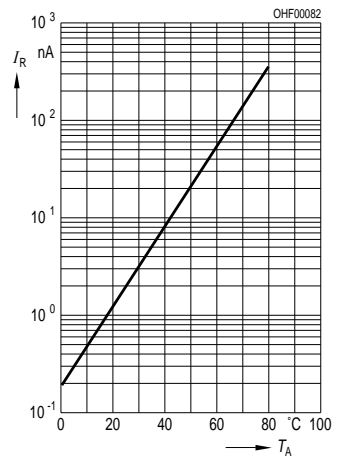
## Capacitance

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



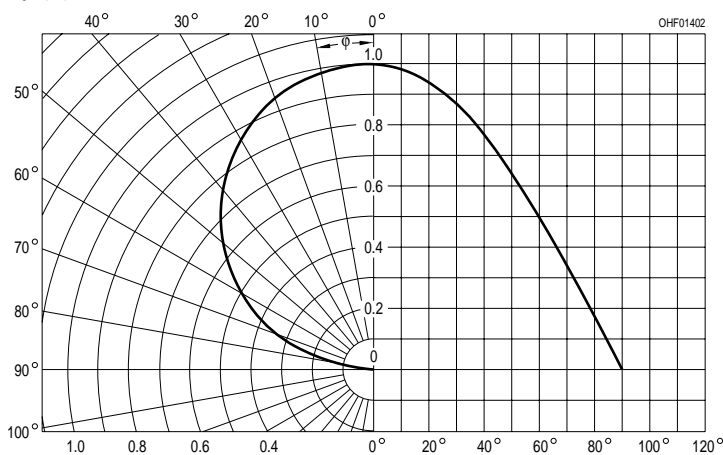
## Dark Current

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

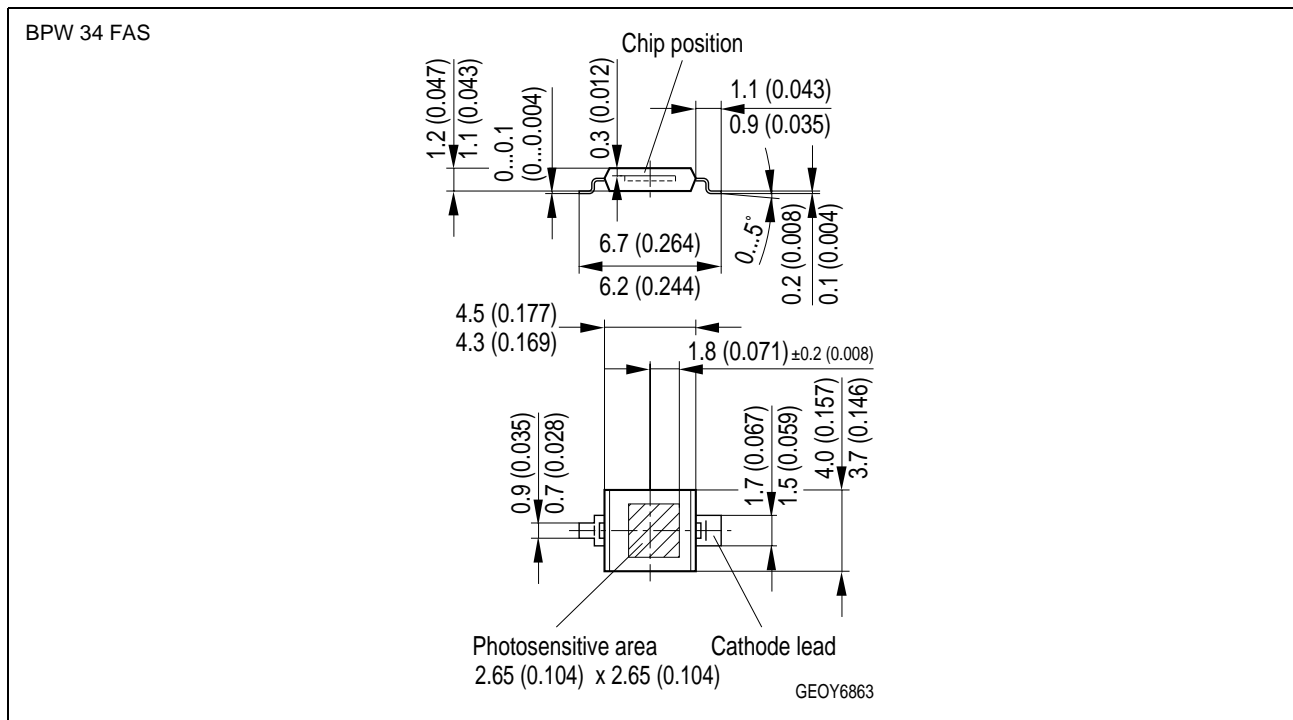
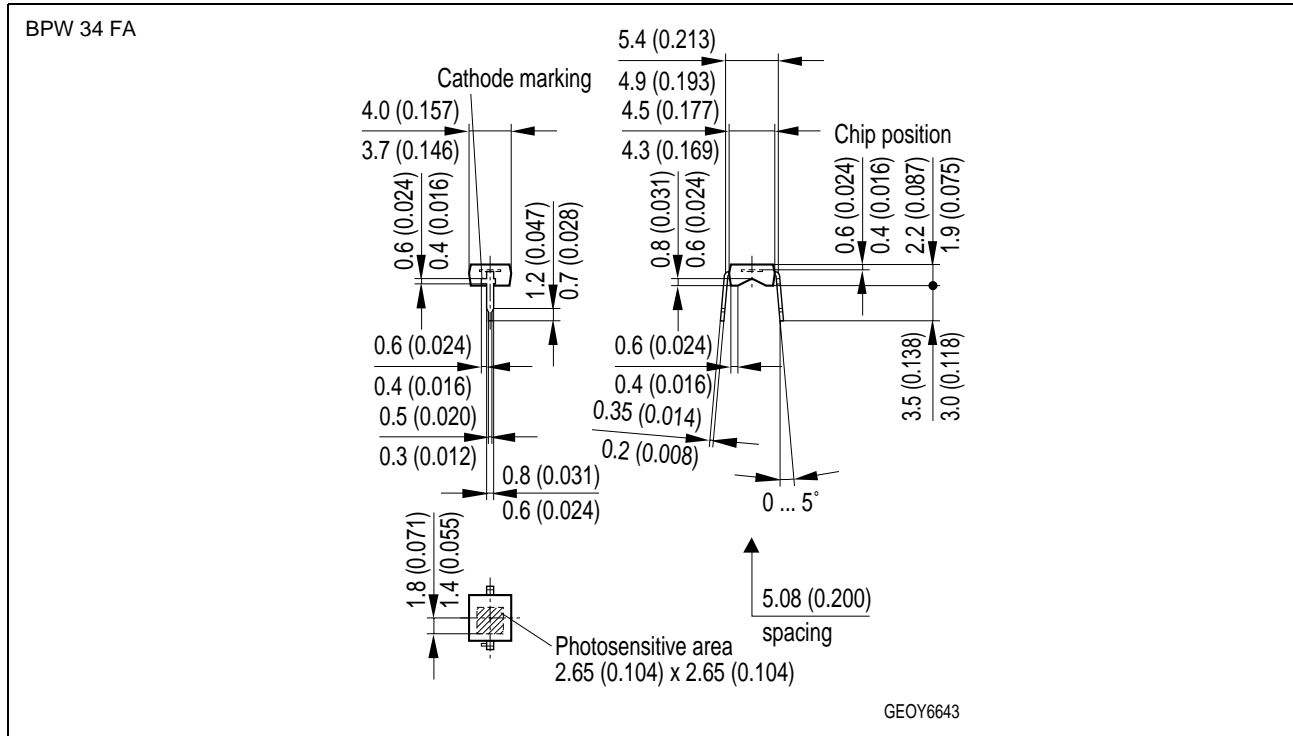


## Directional Characteristics

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

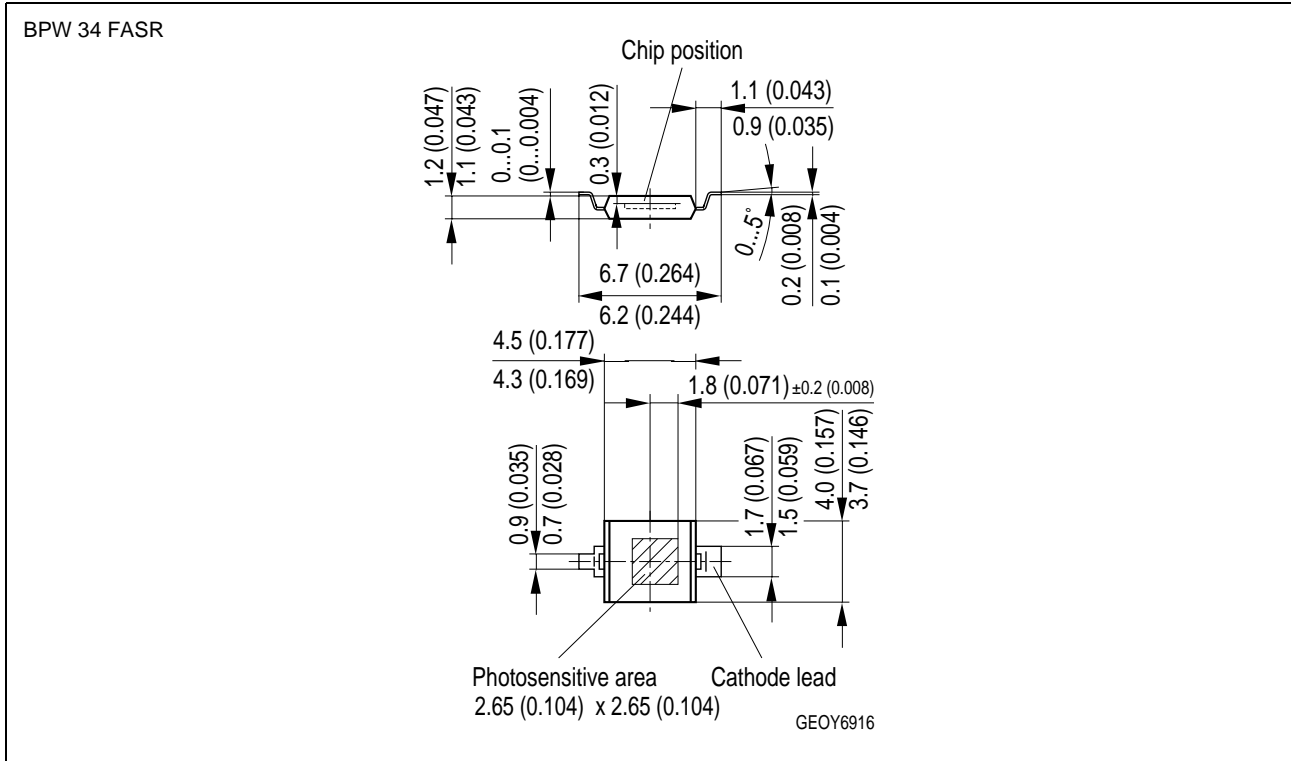


Maßzeichnung  
Package Outlines



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

# BPW 34 FA, BPW 34 FAS, BPW 34 FASR



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

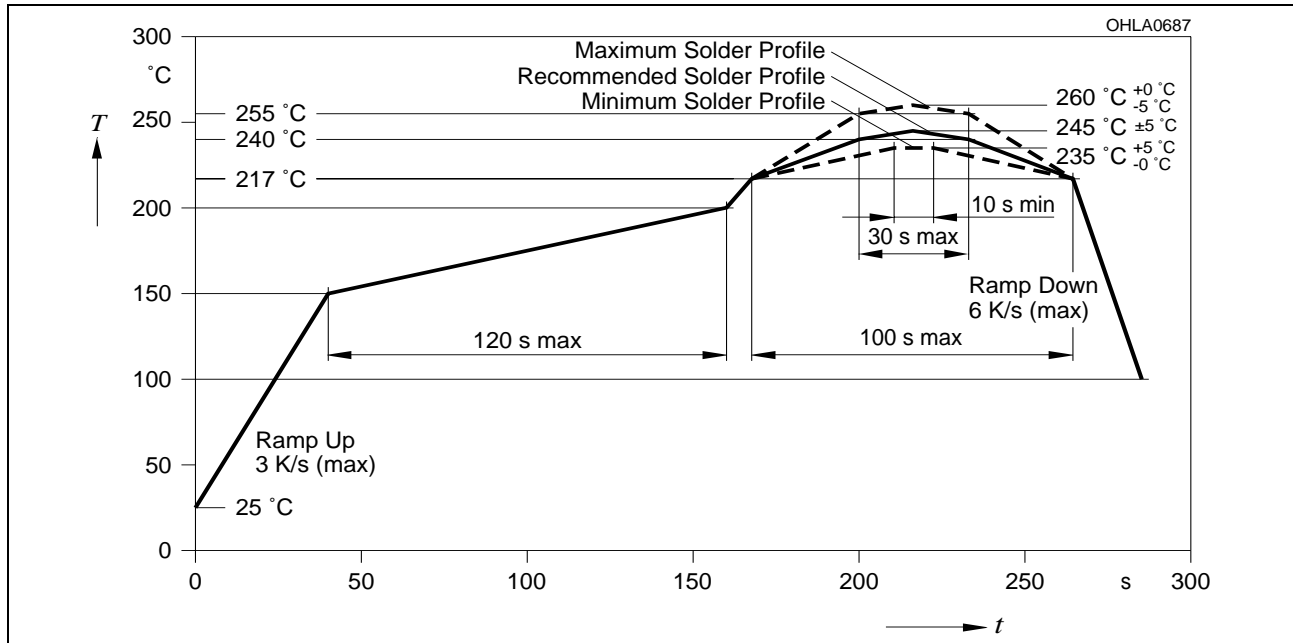
**Lötbedingungen**  
**Soldering Conditions**

**BPW 34 FAS**  
**BPW 34 FASR**

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

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

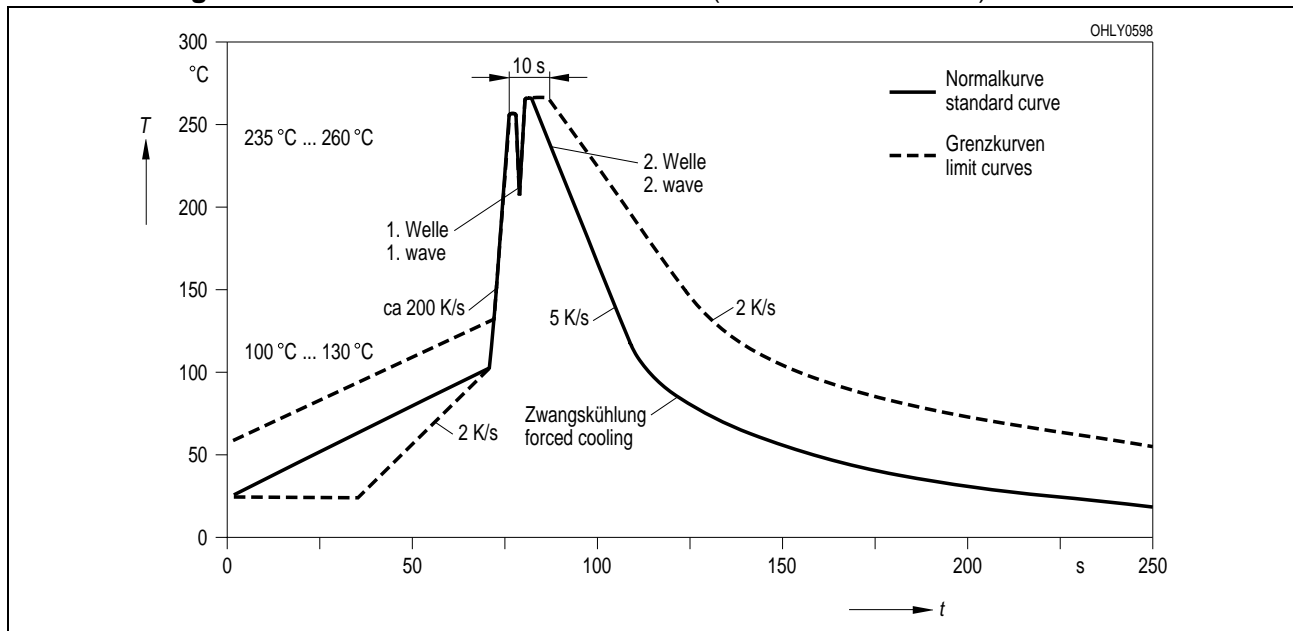
(nach J-STD-020C)  
(acc. to J-STD-020C)



**Wellenlötén (TTW)**  
**TTW Soldering**

**BPW 34 FA**

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



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