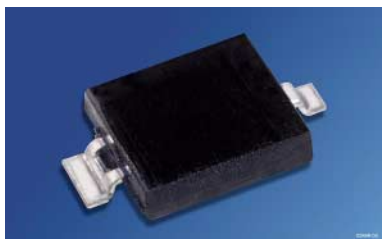


**Si-PIN-Fotodiode mit Tageslichtsperrfilter; in SMT und als Reverse Gullwing
Silicon PIN Photodiode with Daylight Filter; in SMT and as Reverse Gullwing
Lead (Pb) Free Product - RoHS Compliant**

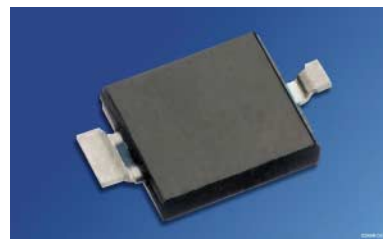
BPW 34 F, BPW 34 FS, BPW 34 FS (R18R)



BPW 34 F



BPW 34 FS



BPW 34 FS (R18R)

Wesentliche Merkmale

- Speziell geeignet für Anwendungen bei 950 nm
- Kurze Schaltzeit (typ. 20 ns)
- DIL-Plastikbauform mit hoher Packungsdichte
- BPW 34 FS/(R18R); geeignet für Vapor-Phase Löten und IR-Reflow Löten

Anwendungen

- IR-Fernsteuerung von Fernseh- und Rundfunkgeräten, Videorecordern, Gerätefernsteuerungen
- Lichtschranken für Gleich- und Wechsellichtbetrieb

Features

- Especially suitable for applications of 950 nm
- Short switching time (typ. 20 ns)
- DIL plastic package with high packing density
- BPW 34 FS/(R18R); suitable for vapor-phase and IR-reflow soldering

Applications

- IR remote control of hi-fi and TV sets, video tape recorders, remote controls of various equipment
- Photointerrupters

2005-05-10

Typ Type	Bestellnummer Ordering Code
BPW 34 F	Q62702P0929
BPW 34 FS	Q65110A2700
BPW 34 FS (R18R)	Q65110A2740

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 ($T_A = 25 \text{ °C}$, $\lambda = 950 \text{ nm}$)
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 (≥ 40)	μA
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S \text{ max}}$	950	nm
Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von S_{max} Spectral range of sensitivity $S = 10\%$ of S_{max}	λ	780 ... 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	$\text{mm} \times \text{mm}$
Halbwinkel Half angle	φ	± 60	Grad deg.
Dunkelstrom, $V_R = 10 \text{ V}$ Dark current	I_R	2 (≤ 30)	nA
Spektrale Fotoempfindlichkeit Spectral sensitivity	S_λ	0.59	A/W
Quantenausbeute Quantum yield	η	0.77	<u>Electrons</u> Photon
Leerlaufspannung, $E_e = 0.5 \text{ mW/cm}^2$ Open-circuit voltage	V_O	330 (≥ 275)	mV

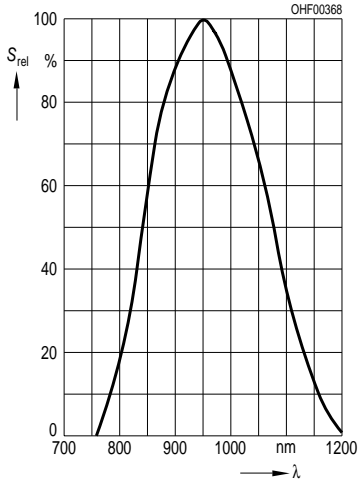
Kennwerte ($T_A = 25\text{ °C}$, $\lambda = 950\text{ nm}$)

Characteristics (cont'd)

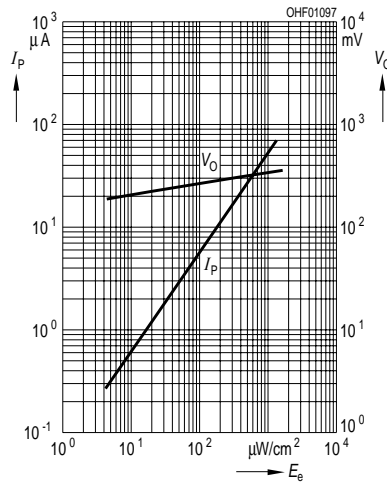
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kurzschlussstrom, $E_e = 0.5\text{ mW/cm}^2$ Short-circuit current	I_{SC}	25	μA
Anstiegs- und Abfallzeit des Fotostromes Rise and fall time of the photocurrent $R_L = 50\ \Omega$; $V_R = 5\text{ V}$; $\lambda = 850\text{ nm}$; $I_p = 800\ \mu\text{A}$	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 $V_R = 10\text{ V}$	NEP	4.3×10^{-14}	$\frac{\text{W}}{\sqrt{\text{Hz}}}$
Nachweisgrenze, $V_R = 10\text{ V}$ Detection limit	D^*	6.2×10^{12}	$\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$

Relative Spectral Sensitivity

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

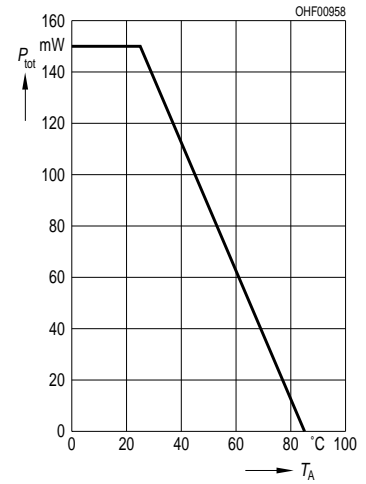


**Photocurrent $I_P = f(E_e)$, $V_R = 5\text{ V}$
Open-Circuit Voltage $V_O = f(E_e)$**



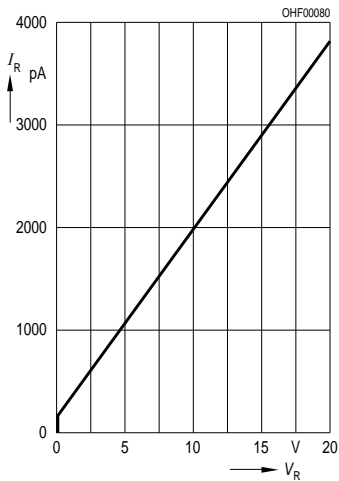
Total Power Dissipation

$P_{tot} = f(T_A)$



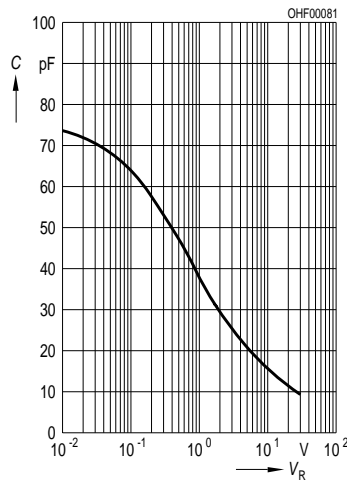
Dark Current

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



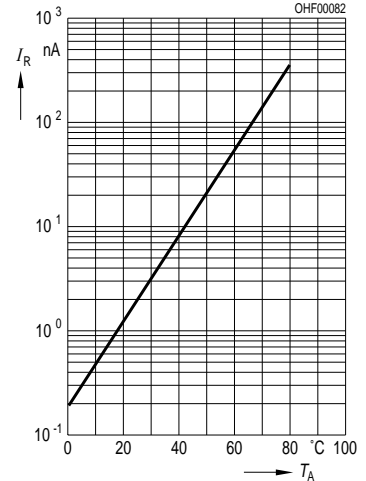
Capacitance

$C = f(V_R), f = 1\text{ MHz}, E = 0$



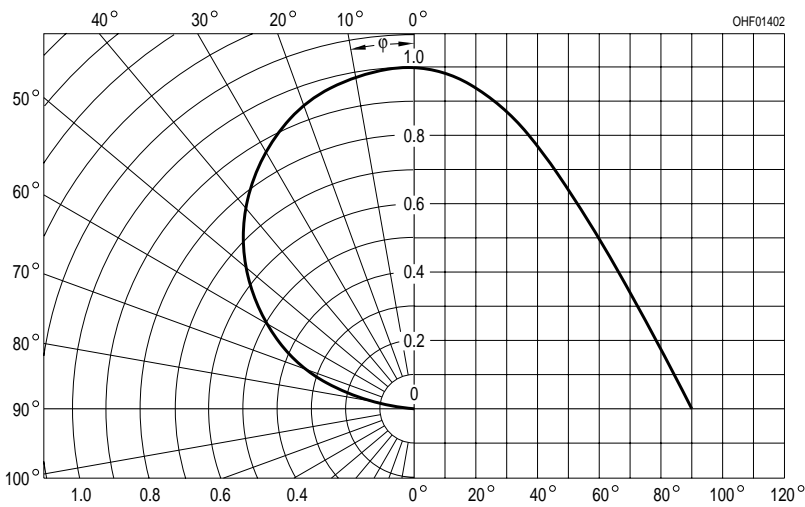
Dark Current

$I_R = f(T_A), V_R = 10\text{ V}, E = 0$

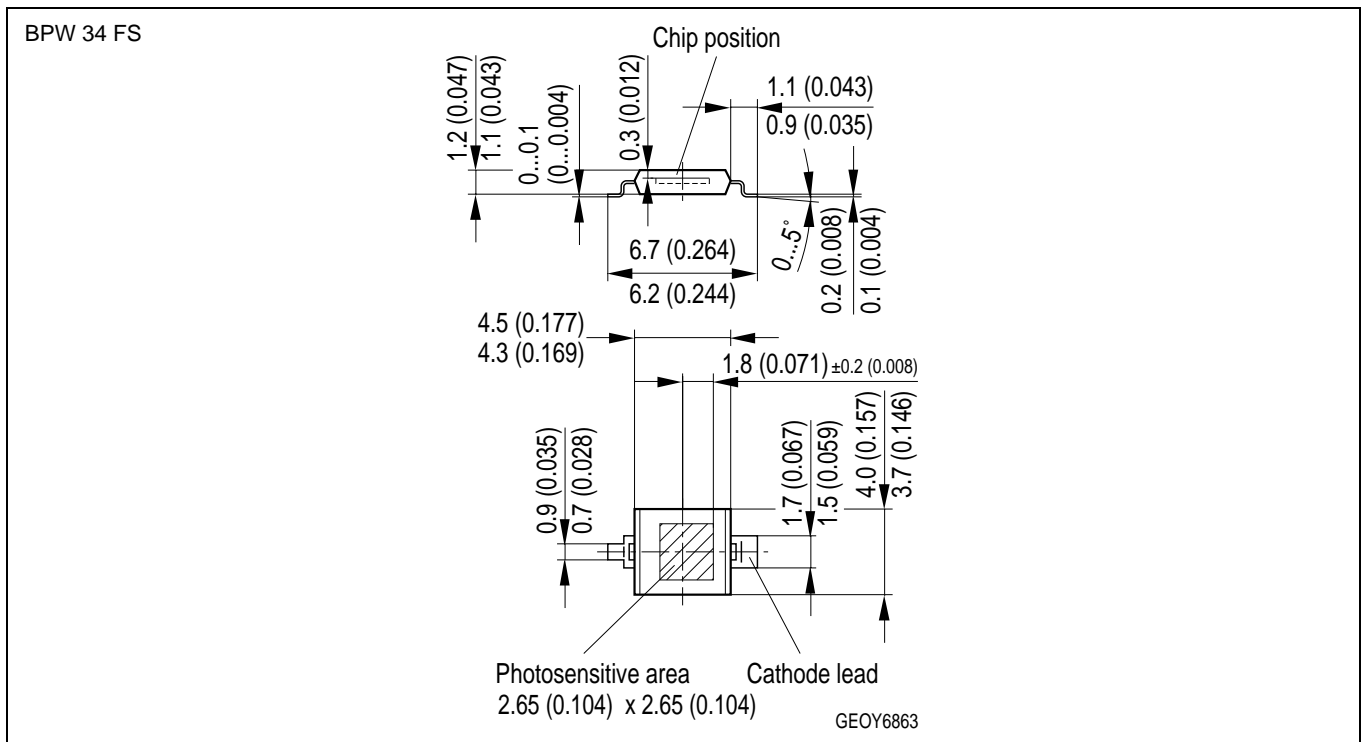
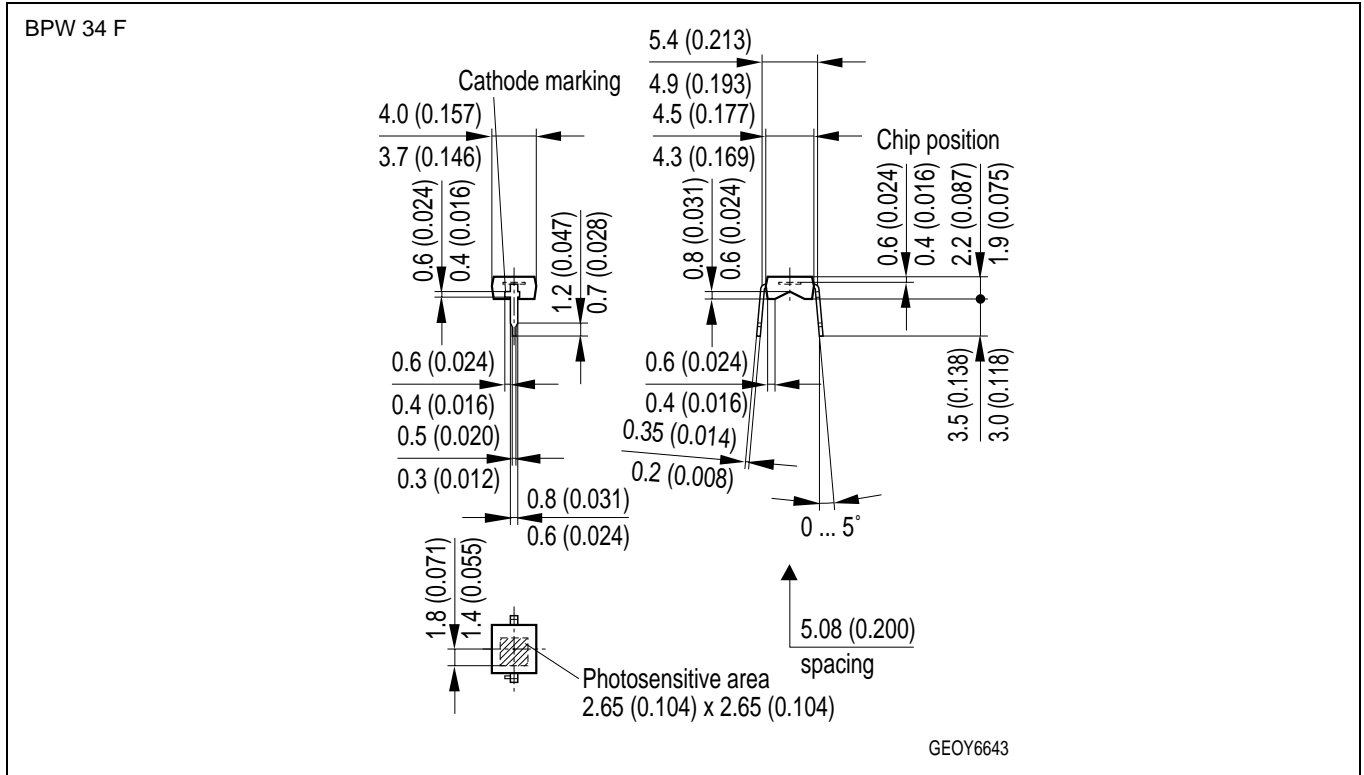


Directional Characteristics

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

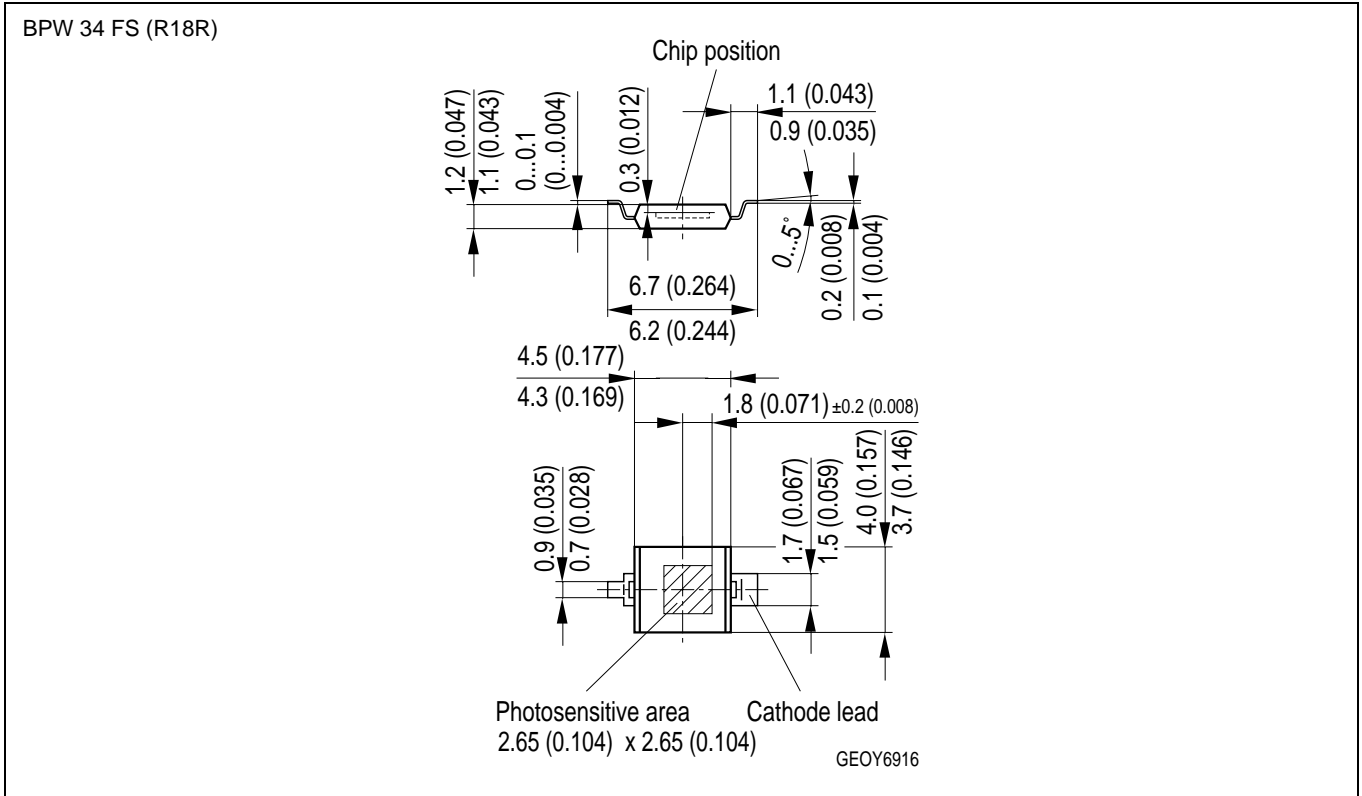


Maßzeichnung
Package Outlines



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

BPW 34 F, BPW 34 FS, BPW 34 FS (R18R)



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

BPW 34 F, BPW 34 FS, BPW 34 FS (R18R)

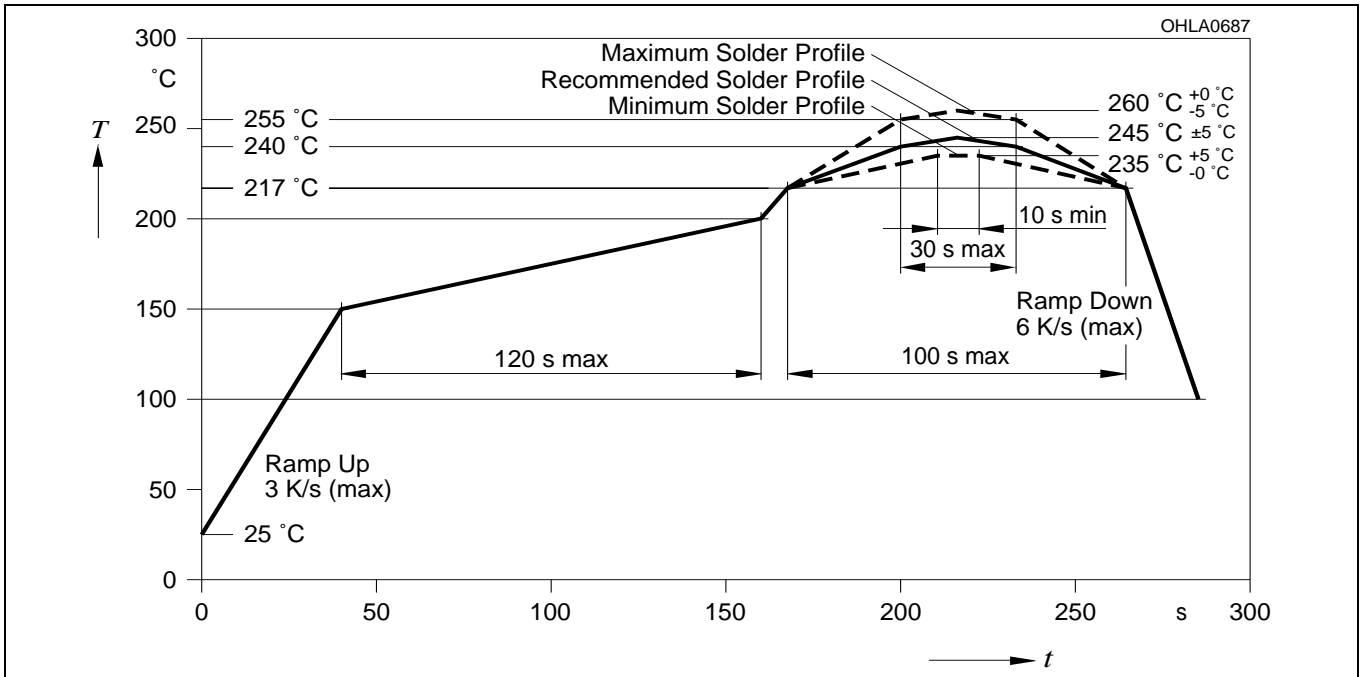
Lötbedingungen
Soldering Conditions

BPW 34 FS
BPW 34 FS (R18R)

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

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

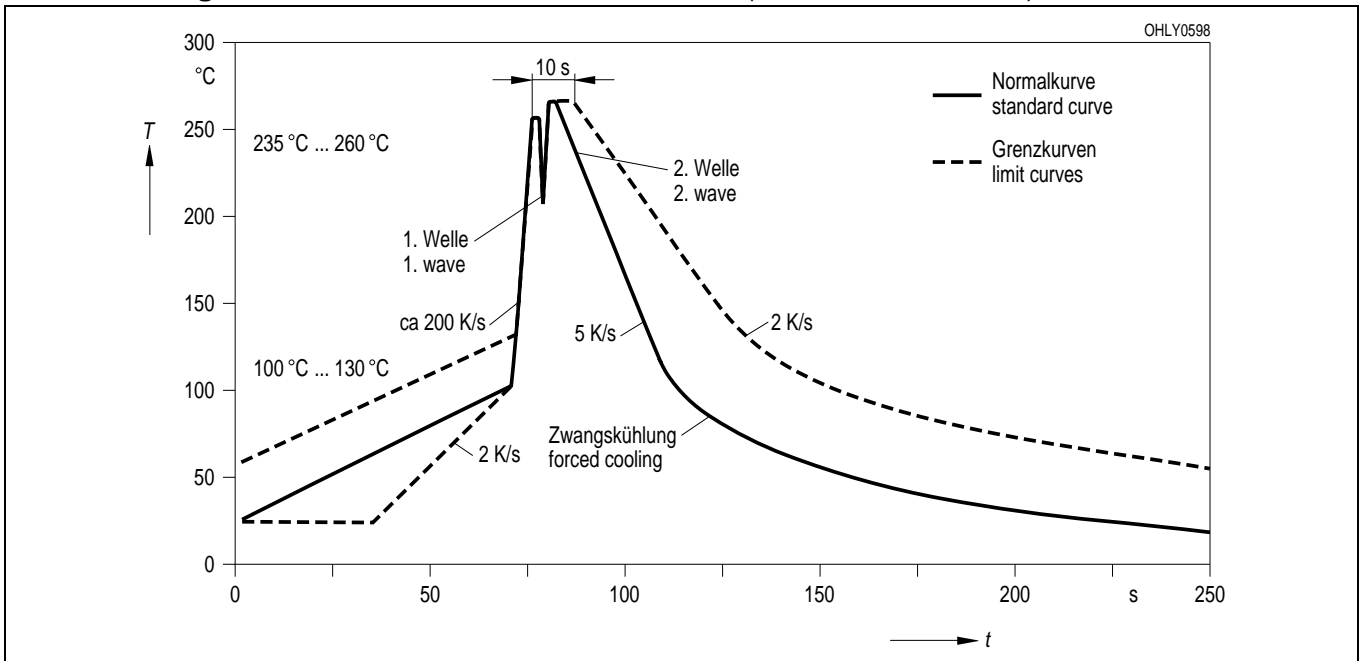
(nach J-STD-020B)
(acc. to J-STD-020B)



Wellenlöt (TTW)
TTW Soldering

BPW 34 F

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



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¹ A critical component is a component used in a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or effectiveness of that device or system.

² Life support devices or systems are intended (a) to be implanted in the human body, or (b) to support and/or maintain and sustain human life. If they fail, it is reasonable to assume that the health of the user may be endangered.