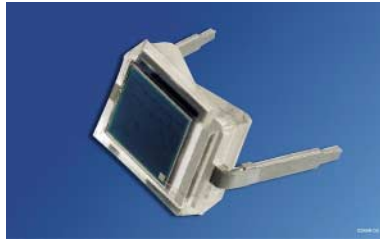
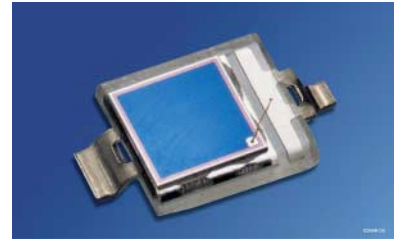


# Silizium-PIN-Fotodiode mit erhöhter Blauempfindlichkeit; in SMT Silicon PIN Photodiode with Enhanced Blue Sensitivity; in SMT Lead (Pb) Free Product - RoHS Compliant

**BPW 34 B**  
**BPW 34 BS**



BPW 34 B



BPW 34 BS

## Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 350 nm bis 1100 nm
- Kurze Schaltzeit (typ. 25 ns)
- DIL-Plastikbauform mit hoher Packungsdichte

## Anwendungen

- Lichtschranken für Gleich- und Wechsellichtbetrieb im sichtbaren Lichtbereich
- Industrieelektronik
- „Messen/Steuern/Regeln“

## Features

- Especially suitable for applications from 350 nm to 1100 nm
- Short switching time (typ. 25 ns)
- DIL plastic package with high packing density

## Applications

- Photointerrupters
- Industrial electronics
- For control and drive circuits

Typ Type	Bestellnummer Ordering Code
BPW 34 B	Q65110A3126
BPW 34 BS	Q65110A2625

**Grenzwerte**  
**Maximum Ratings**

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebs- und Lagertemperatur Operating and storage temperature range	$T_{op}; T_{stg}$	- 40 ... + 85	°C
Sperrspannung Reverse voltage	$V_R$	32	V
Verlustleistung, $T_A = 25\text{ °C}$ Total power dissipation	$P_{tot}$	150	mW

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

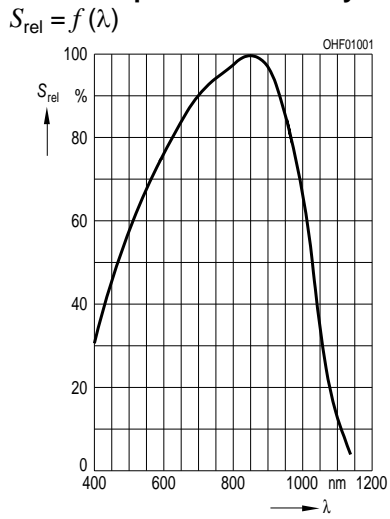
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Fotoempfindlichkeit, $V_R = 5\text{ V}$ Spectral sensitivity	$S$	75	nA/lx
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\text{ max}}$	850	nm
Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von $S_{\text{max}}$ Spectral range of sensitivity $S = 10\%$ of $S_{\text{max}}$	$\lambda$	350 ... 1100	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	$A$	7.45	mm <sup>2</sup>
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$	$2.73 \times 2.73$	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, $\lambda = 400\text{ nm}$ Spectral sensitivity	$S_\lambda$	0.2	A/W
Quantenausbeute, $\lambda = 400\text{ nm}$ Quantum yield	$\eta$	0.62	<u>Electrons</u> Photon
Leerlaufspannung, $E_v = 1000\text{ lx}$ Open-circuit voltage	$V_O$	390	mV

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

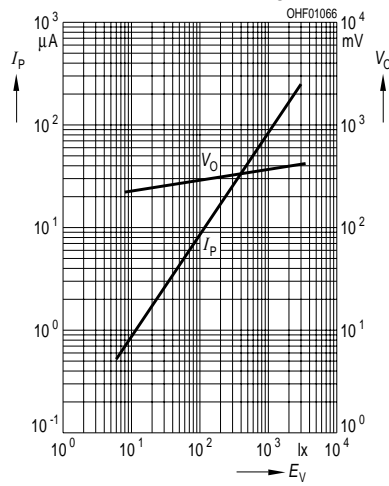
**Characteristics** ( $T_A = 25\text{ °C}$ , standard light A,  $T = 2856\text{ K}$ ) (cont'd)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kurzschlussstrom Short-circuit current $E_e = 0.5\text{ mW/cm}^2$ , $\lambda = 400\text{ nm}$	$I_{SC}$	7.4 ( $\geq 5.4$ )	$\mu\text{A}$
Anstiegs- und Abfallzeit des Fotostroms Rise and fall time of the photocurrent $R_L = 50\ \Omega$ ; $V_R = 5\text{ V}$ ; $\lambda = 850\text{ nm}$ ; $I_p = 800\ \mu\text{A}$	$t_r, t_f$	25	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 $V_R = 10\text{ V}$ , $\lambda = 400\text{ nm}$	$NEP$	$1.3 \times 10^{-13}$	$\frac{\text{W}}{\sqrt{\text{Hz}}}$
Nachweisgrenze, $V_R = 10\text{ V}$ , $\lambda = 400\text{ nm}$ Detection limit	$D^*$	$2.1 \times 10^{12}$	$\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$

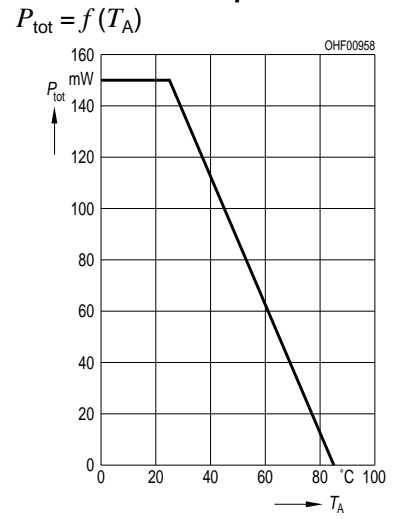
**Relative Spectral Sensitivity**



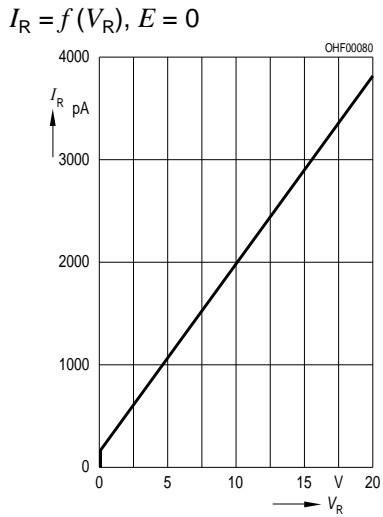
**Photocurrent  $I_P = f(E_V)$ ,  $V_R = 5 V$   
Open-Circuit Voltage  $V_O = f(E_V)$**



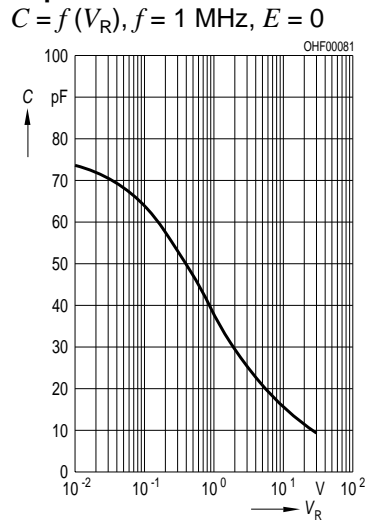
**Total Power Dissipation**



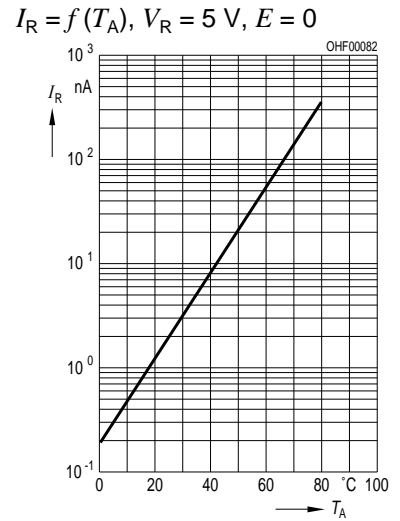
**Dark Current**



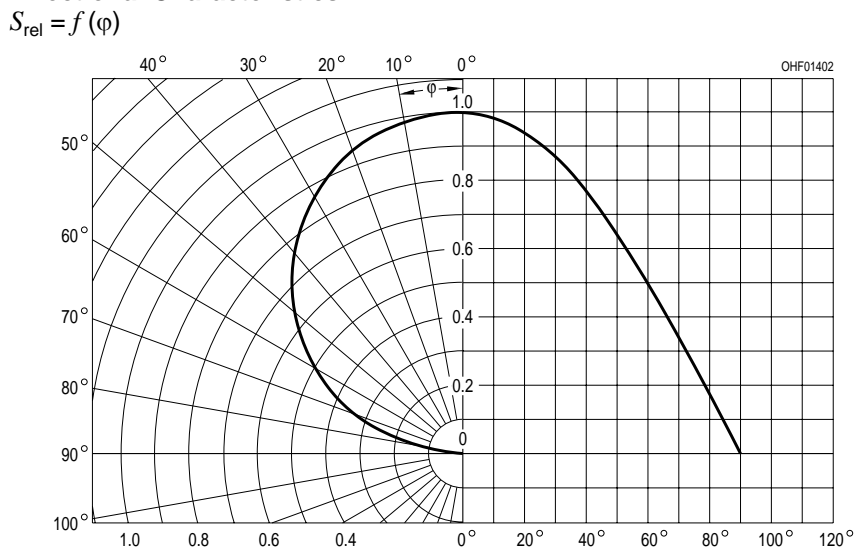
**Capacitance**



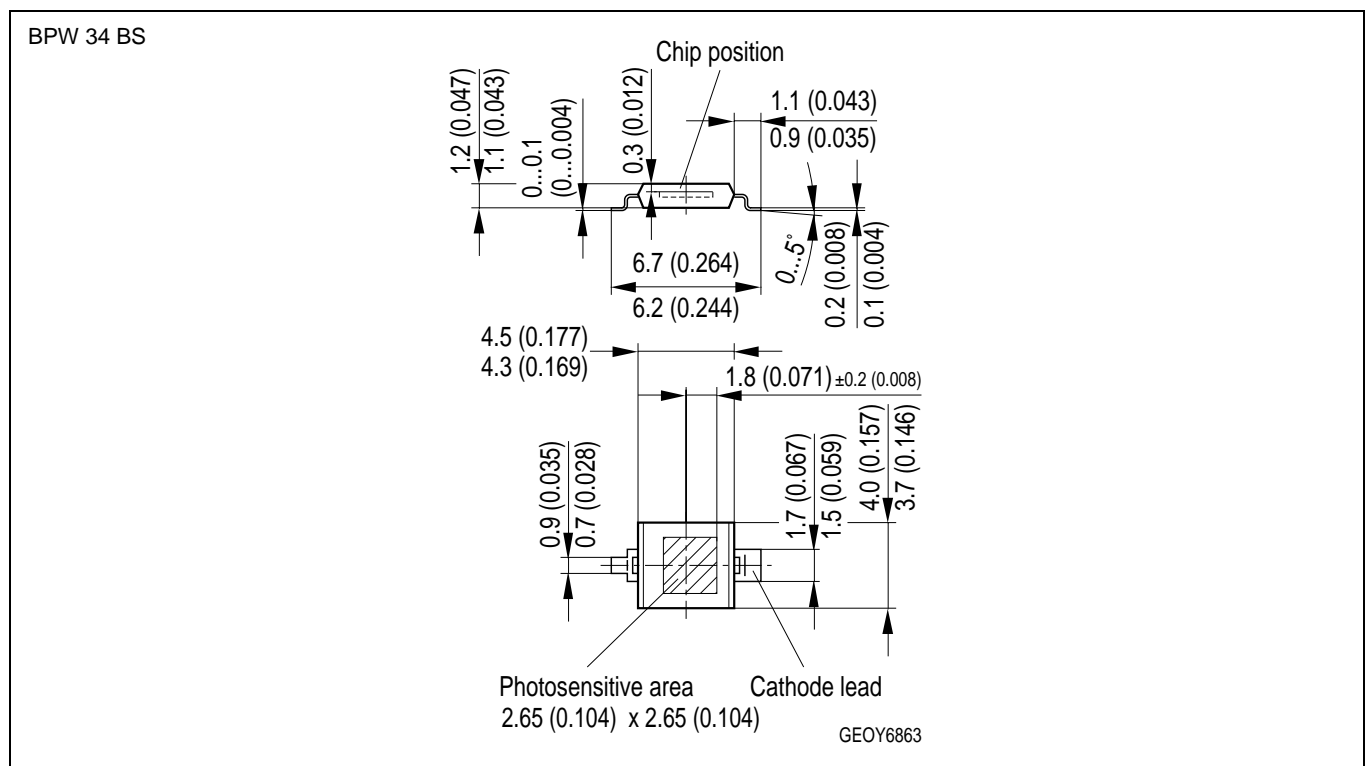
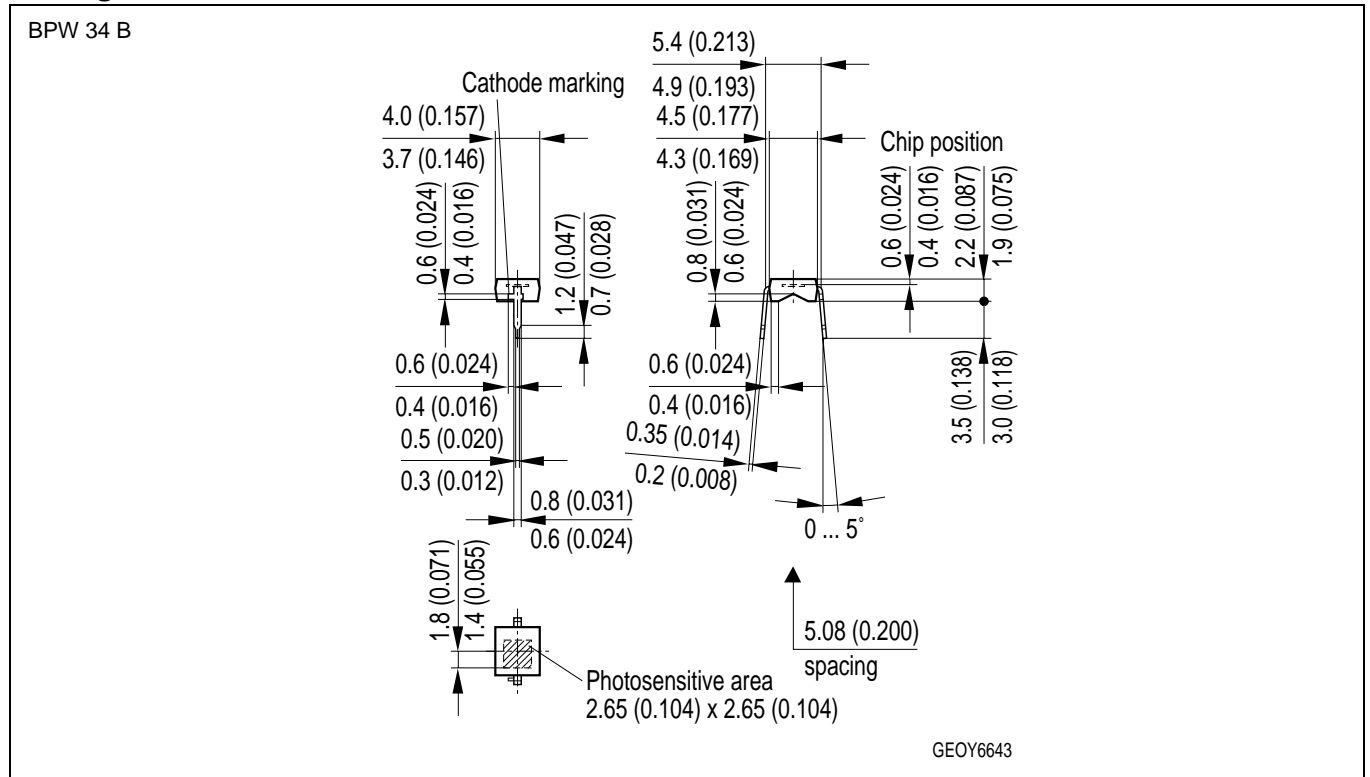
**Dark Current**



**Directional Characteristics**



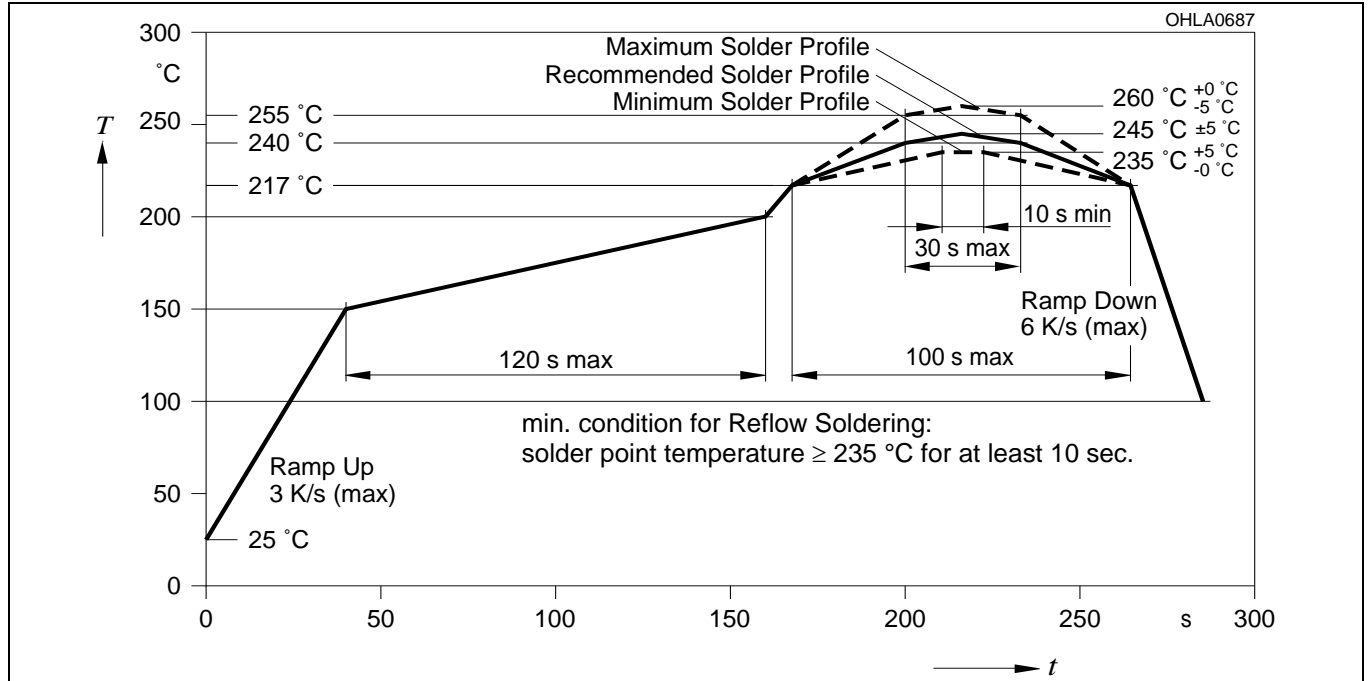
Maßzeichnung  
Package Outlines



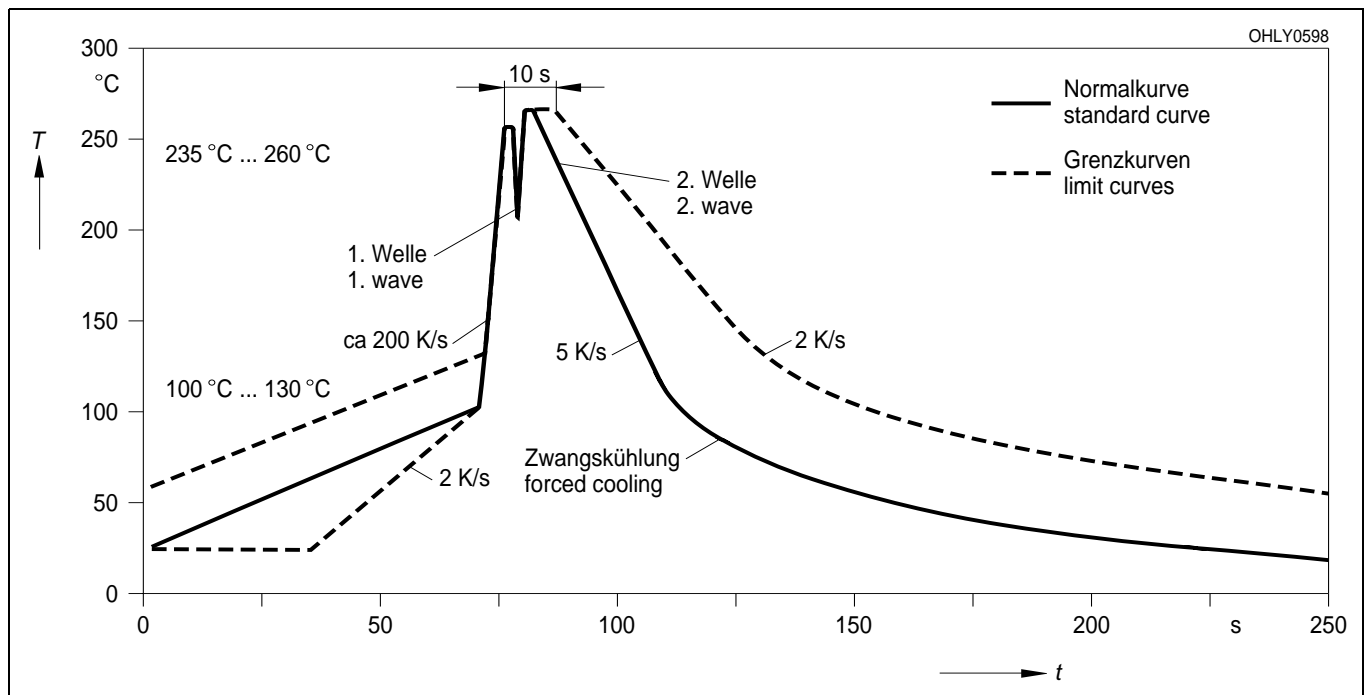
Maße in mm (inch) / Dimensions in mm (inch).

**Lötbedingungen** **BPW 34 BS**  
**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)



**Wellenlöten (TTW)** **BPW 34 B** (nach CECC 00802)  
**TTW Soldering** (acc. to CECC 00802)



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<sup>2</sup> 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.

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