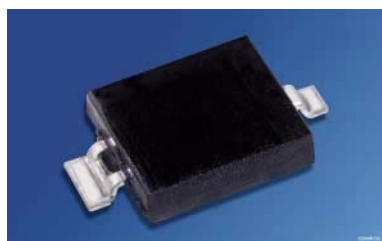


带日光过滤器的硅树脂 PIN 光电二极管，采用反向鸥翼式表面贴装封装
Silicon PIN Photodiode with Daylight Filter; in SMT and as Reverse Gullwing
 无铅设计，符合 RoHS 标准
Lead (Pb) Free Product - RoHS Compliant

BPW 34 FA, BPW 34 FAS, BPW 34 FASR



BPW 34 FA



BPW 34 FAS



BPW 34 FASR

特点

- 特别适用于 730 nm ~ 1100 nm 的波长范围
- 转换时间短（典型值 20 ns）
- 高堆叠密度的 DIL 塑料封装
- BPW 34 FAS / FASR: 适合回流焊接

应用

- 汽车（例如：雨水传感器、车头组件）
- 高保真音响、电视机和磁带录像机的红外遥控器，以及各种设备的遥控器
- 光斩波器

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

类型 Type	订购代码 Ordering Code	光电流 Photocurrent E _e =1 mW/cm ² , V _R = 5 V, λ = 870 nm I _p (μA)
BPW 34 FA	Q62702P1129	50 (≥40)
BPW 34 FAS	Q65110A3121	50 (≥40)
BPW 34 FASR	Q65110A2699	50 (≥40)

最大额定值

Maximum Ratings

参数 Parameter	符号 Symbol	值 Value	单位 Unit
工作和储存温度范围 Operating and storage temperature range	$T_{op}; T_{stg}$	- 40 ... + 100	°C
反向电压 Reverse voltage	V_R $V_R (t < 2 \text{ min})$	16 32	V V
总功率损耗 $T_A = 25 \text{ °C}$ Total power dissipation	P_{tot}	150	mW

特性

Characteristics

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

参数 Parameter	符号 Symbol	值 Value	单位 Unit
光电流 Photocurrent $V_R = 5 \text{ V}$, $E_e = 1 \text{ mW/cm}^2$	I_p	50 (≥ 40)	μA
最大敏感度的波长 Wavelength of max. sensitivity	$\lambda_{S \text{ max}}$	880	nm
光谱敏感范围 Spectral range of sensitivity $S = 10\% \text{ of } S_{\text{max}}$	λ	730 ... 1100	nm
辐射敏感区面积 Radiant sensitive area	A	7.00	mm^2
辐射敏感区尺寸 Dimensions of radiant sensitive area	$L \times B$ $L \times W$	2.65×2.65	$\text{mm} \times \text{mm}$
半角 Half angle	φ	± 60	度 deg.
暗电流 $V_R = 10 \text{ V}$ Dark current	I_R	2 (≤ 30)	nA
光谱敏感度 Spectral sensitivity	S_λ	0.65	A/W
量子效率 Quantum yield	η	0.93	<u>Electrons</u> Photon
空载电压 $E_e = 0.5 \text{ mW/cm}^2$ Open-circuit voltage	V_o	320 (≥ 250)	mV

特性 (续)

Characteristics (cont'd)

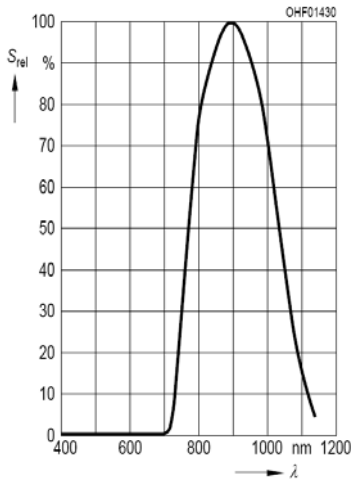
 $(T_A = 25\text{ }^\circ\text{C}, \lambda = 870\text{ nm})$

参数 Parameter	符号 Symbol	值 Value	单位 Unit
短路电流 $E_e = 0.5\text{ mW/cm}^2$ Short-circuit current	I_{SC}	23	μA
光电流的升降时间 Rise and fall time of the photocurrent $R_L = 50\ \Omega; V_R = 5\ \text{V}; \lambda = 850\ \text{nm}; I_p = 800\ \text{A}$	t_r, t_f	20	ns
正向电压 $I_F = 100\ \text{mA}, E = 0$ Forward voltage	V_F	1.3	V
电容 $V_R = 0\ \text{V}, f = 1\ \text{MHz}, E = 0$ Capacitance	C_0	72	pF
V_O 的温度系数 Temperature coefficient of V_O	TC_V	- 2.6	mV/K
I_{SC} 的温度系数 Temperature coefficient of I_{SC}	TC_I	0.03	%/K
噪音等效功率 Noise equivalent power $V_R = 10\ \text{V}$	NEP	3.9×10^{-14}	$\frac{\text{W}}{\sqrt{\text{Hz}}}$
检测限 $V_R = 10\ \text{V}$, Detection limit	D^*	6.8×10^{12}	$\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$

相对光谱敏感度

Relative Spectral Sensitivity

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

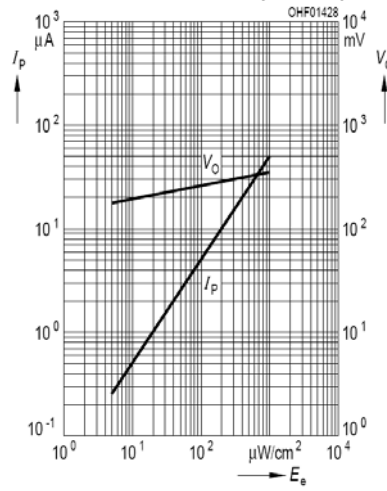


光电流

$$I_P = f(E_e), V_R = 5 V$$

空载电压

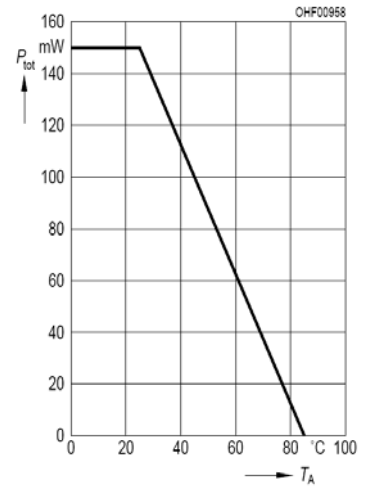
$$V_O = f(E_e)$$



总功率损耗

Total Power Dissipation

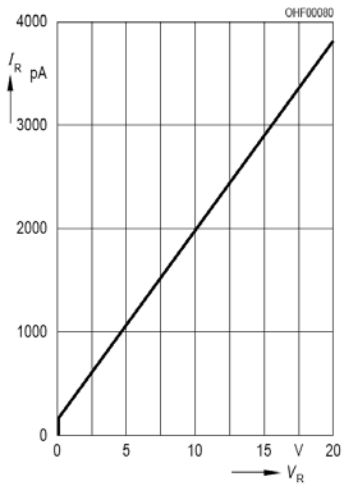
$$P_{tot} = f(T_A)$$



暗电流

Dark Current

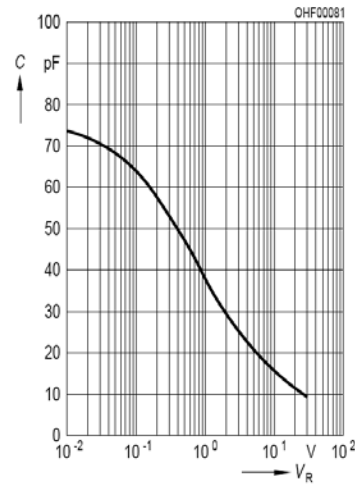
$$I_R = f(V_R), E = 0$$



电容

Capacitance

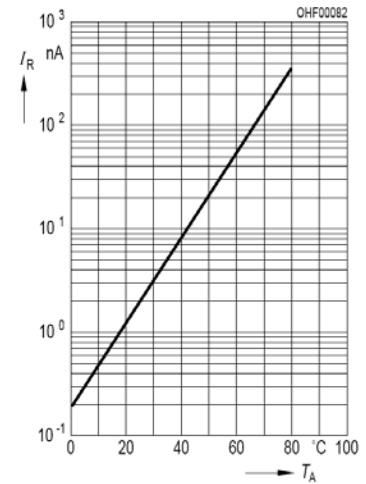
$$C = f(V_R), f = 1 MHz, E = 0$$



暗电流

Dark Current

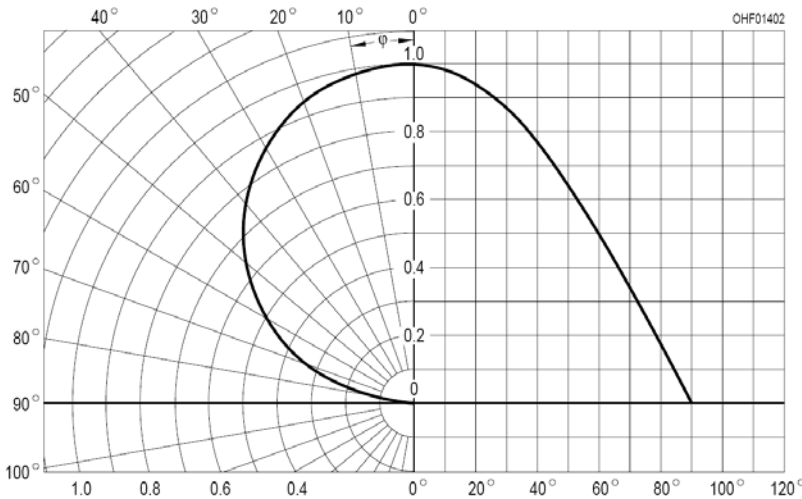
$$I_R = f(T_A), V_R = 10 V, E = 0$$



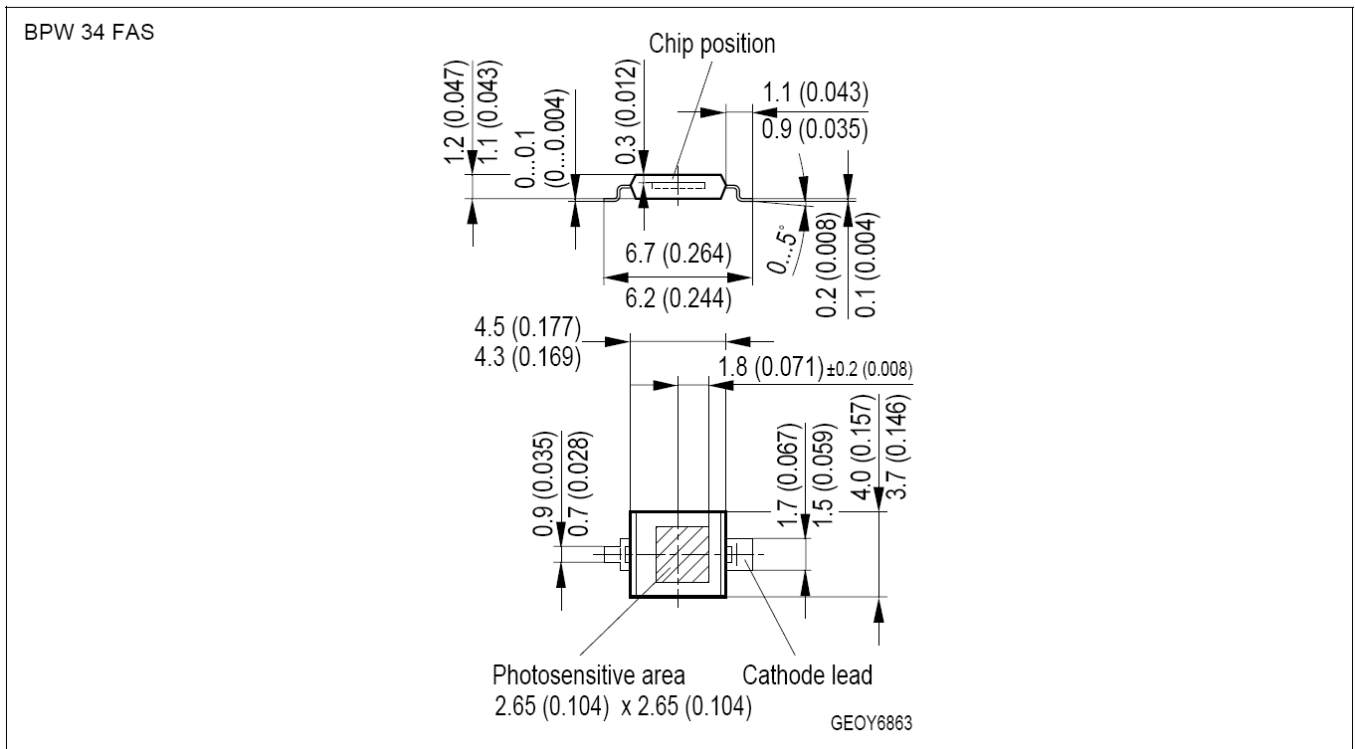
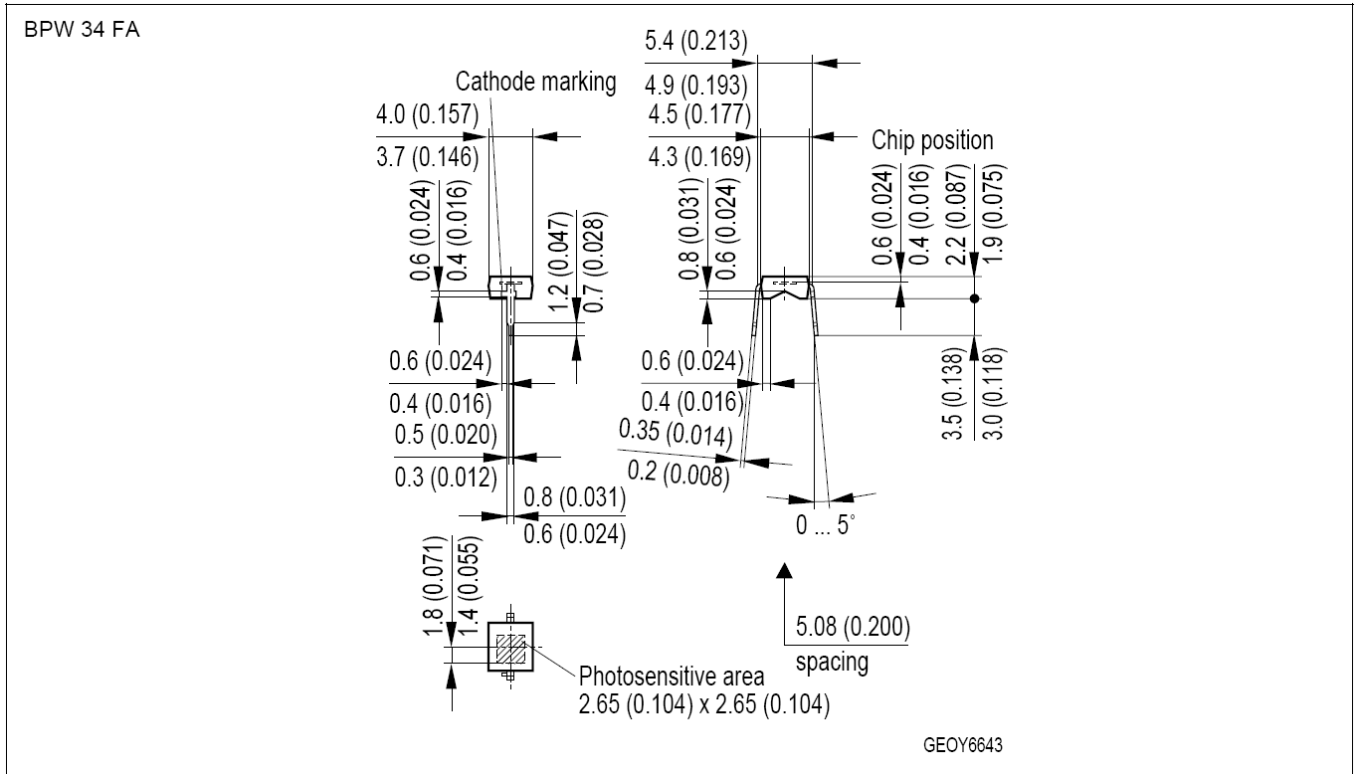
定向特性

Directional Characteristics

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

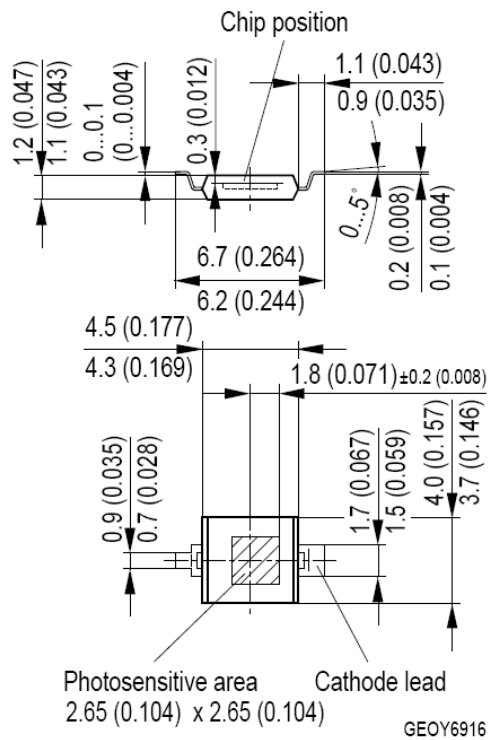


封装略图
Package Outlines



尺寸 (单位: mm (英寸)) / Dimensions in mm (inch)

BPW 34 FASR



尺寸 (单位: mm (英寸)) / Dimensions in mm (inch)

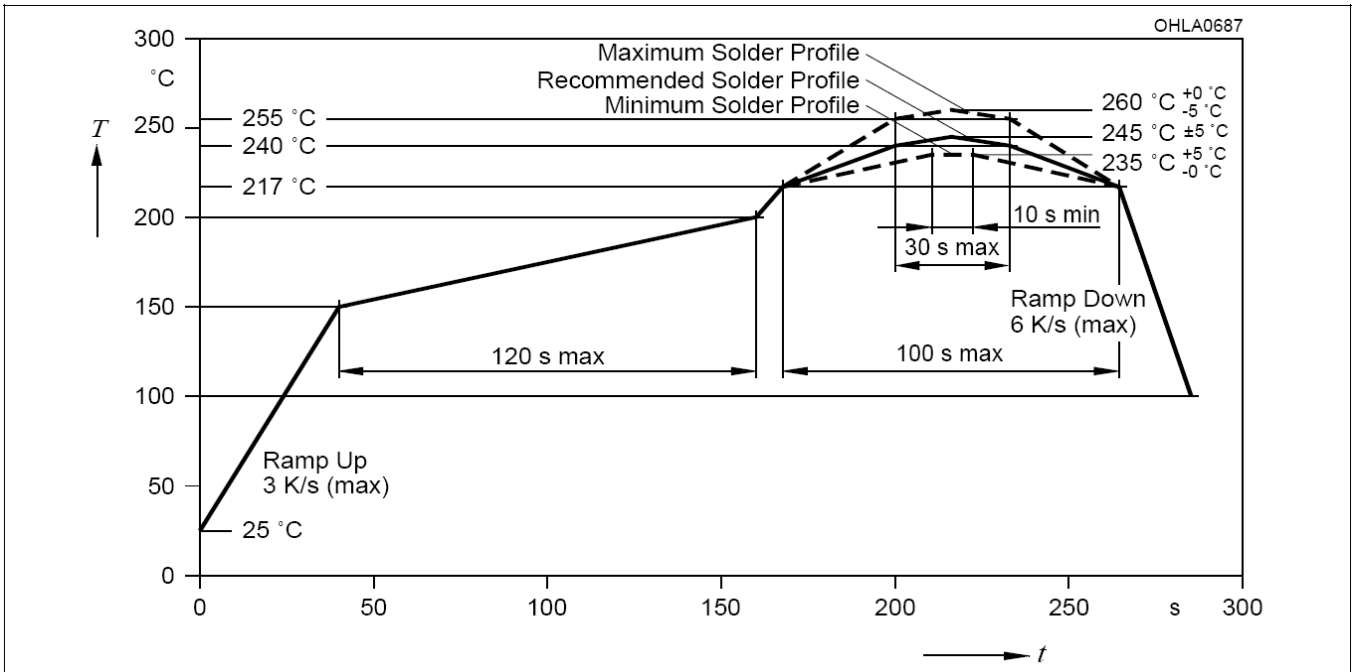
焊接条件
Soldering Conditions

BPW 34 FAS
BPW 34 FASR

预处理符合 JEDEC 4 级标准
Preconditioning acc. to JEDEC Level 4

无铅焊接的回流焊接温度曲线简图
Reflow Soldering Profile for lead free soldering

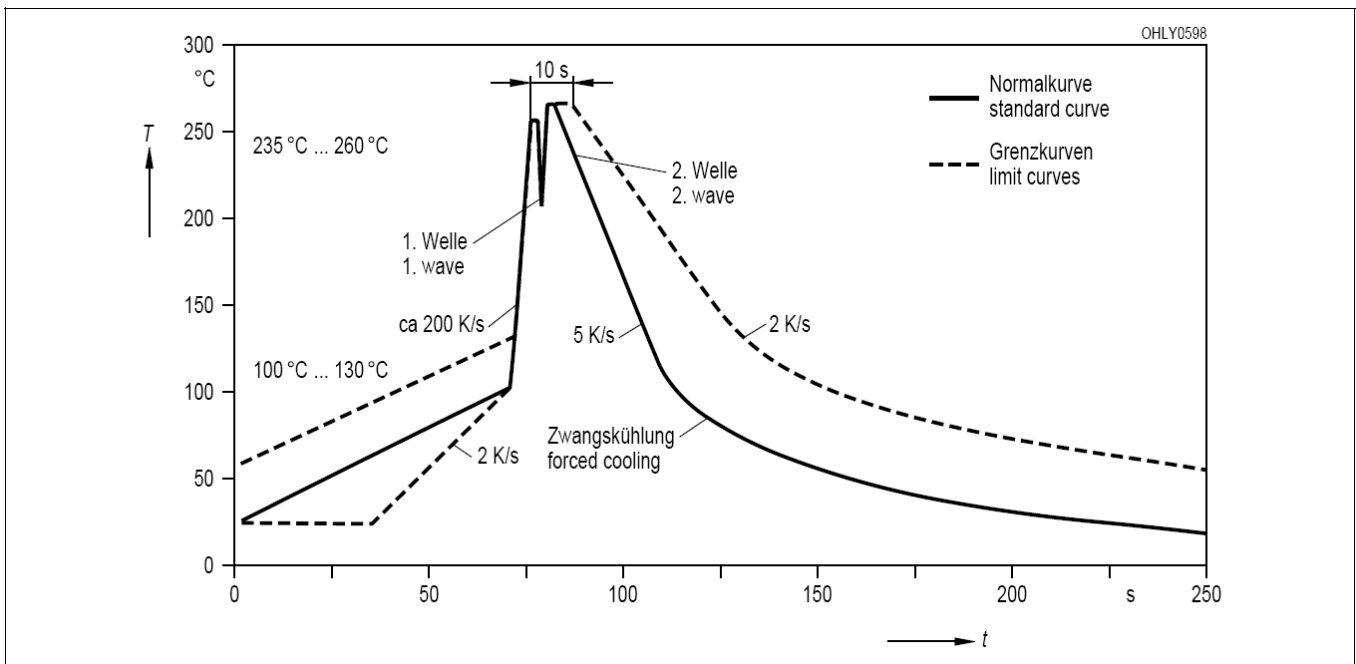
(符合 J-STD-020C 标准)
(acc. to CECC 00802)



TTW 焊接
TTW Soldering

BPW 34 FA

(符合 CECC 00802 标准)
(acc. to CECC 00802)



欧司朗光电半导体有限公司出版
德国雷根斯堡莱布尼茨大街 2 号 D-93049

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Published by
OSRAM Opto Semiconductors GmbH
Wernerwerkstrasse 2, D-93049 Regensburg
www.osram-os.com

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¹ 关键元件指用在生命支持装置或系统中、一旦发生故障即会引起装置或系统故障或影响其安全性或有效性的元件。

² 生命支持装置或系统拟用于 (a) 植入人体或 (b) 支持和/或维持人的生命。如果发生故障，即会威胁使用者的健康。

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Components used in life-support devices or systems must be expressly authorized for such purpose! Critical components¹, may only be used in life-support devices or systems² with the express written approval of OSRAM OS.

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.