

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 <sub>e</sub> =1 mW/cm <sup>2</sup> , V <sub>R</sub> = 5 V, λ = 870 nm I <sub>p</sub> (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 ( $\geq 40$ )	$\mu\text{A}$
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 $S = 10\% \text{ of } S_{\text{max}}$	$\lambda$	730 ... 1100	nm
辐射敏感区面积 Radiant sensitive area	$A$	7.00	$\text{mm}^2$
辐射敏感区尺寸 Dimensions of radiant sensitive area	$L \times B$ $L \times W$	$2.65 \times 2.65$	$\text{mm} \times \text{mm}$
半角 Half angle	$\varphi$	$\pm 60$	度 deg.
暗电流 $V_R = 10 \text{ V}$ Dark current	$I_R$	2 ( $\leq 30$ )	nA
光谱敏感度 Spectral sensitivity	$S_\lambda$	0.65	A/W
量子效率 Quantum yield	$\eta$	0.93	<u>Electrons</u> Photon
空载电压 $E_e = 0.5 \text{ mW/cm}^2$ Open-circuit voltage	$V_o$	320 ( $\geq 250$ )	mV

特性 (续)

Characteristics (cont'd)

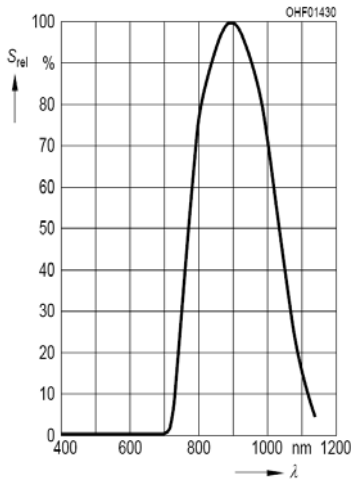
 $(T_A = 25\text{ }^\circ\text{C}, \lambda = 870\text{ nm})$ 

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	$\mu\text{A}$
光电流的升降时间 Rise and fall time of the photocurrent $R_L = 50\ \Omega; V_R = 5\text{ V}; \lambda = 850\text{ nm}; I_p = 800\ \mu\text{A}$	$t_r, t_f$	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	$3.9 \times 10^{-14}$	$\frac{\text{W}}{\sqrt{\text{Hz}}}$
检测限 $V_R = 10\text{ V},$ Detection limit	$D^*$	$6.8 \times 10^{12}$	$\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$

## 相对光谱敏感度

### Relative Spectral Sensitivity

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

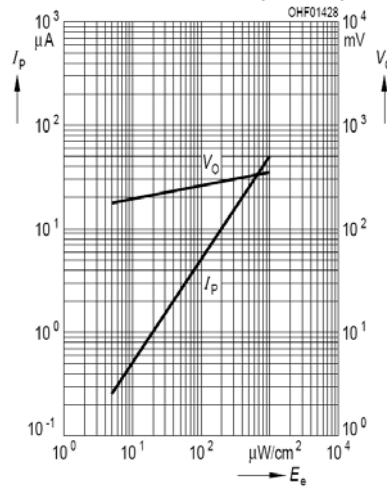


## 光电流

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

### 空载电压

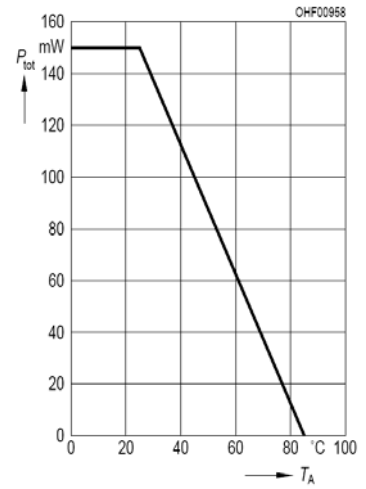
$$V_O = f(E_e)$$



## 总功率损耗

### Total Power Dissipation

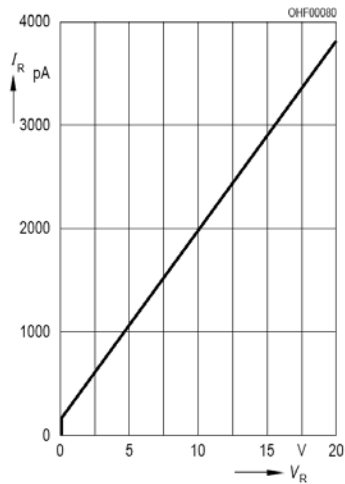
$$P_{tot} = f(T_A)$$



## 暗电流

### Dark Current

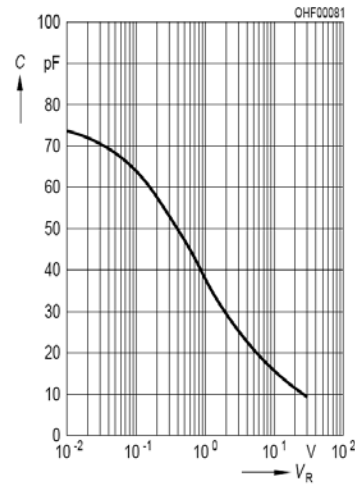
$$I_R = f(V_R), E = 0$$



## 电容

### Capacitance

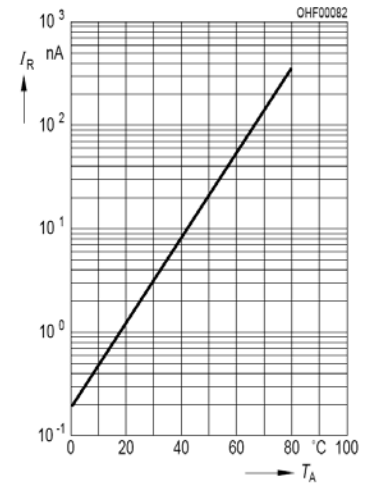
$$C = f(V_R), f = 1 \text{ MHz}, E = 0$$



## 暗电流

### Dark Current

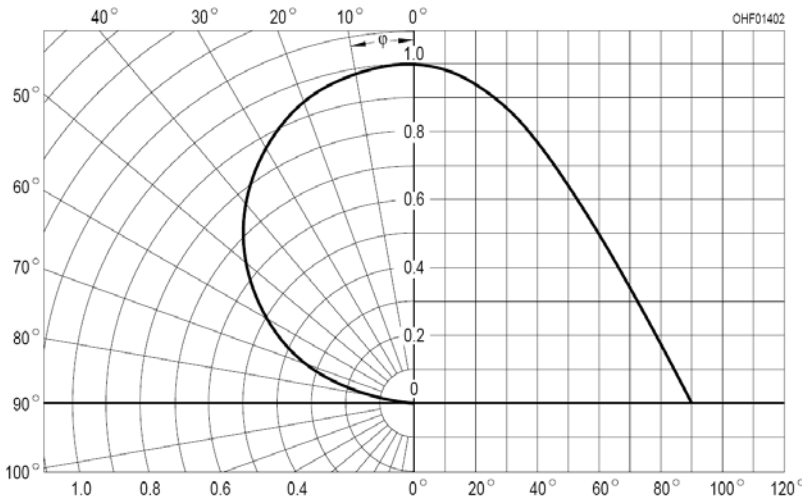
$$I_R = f(T_A), V_R = 10 V, E = 0$$



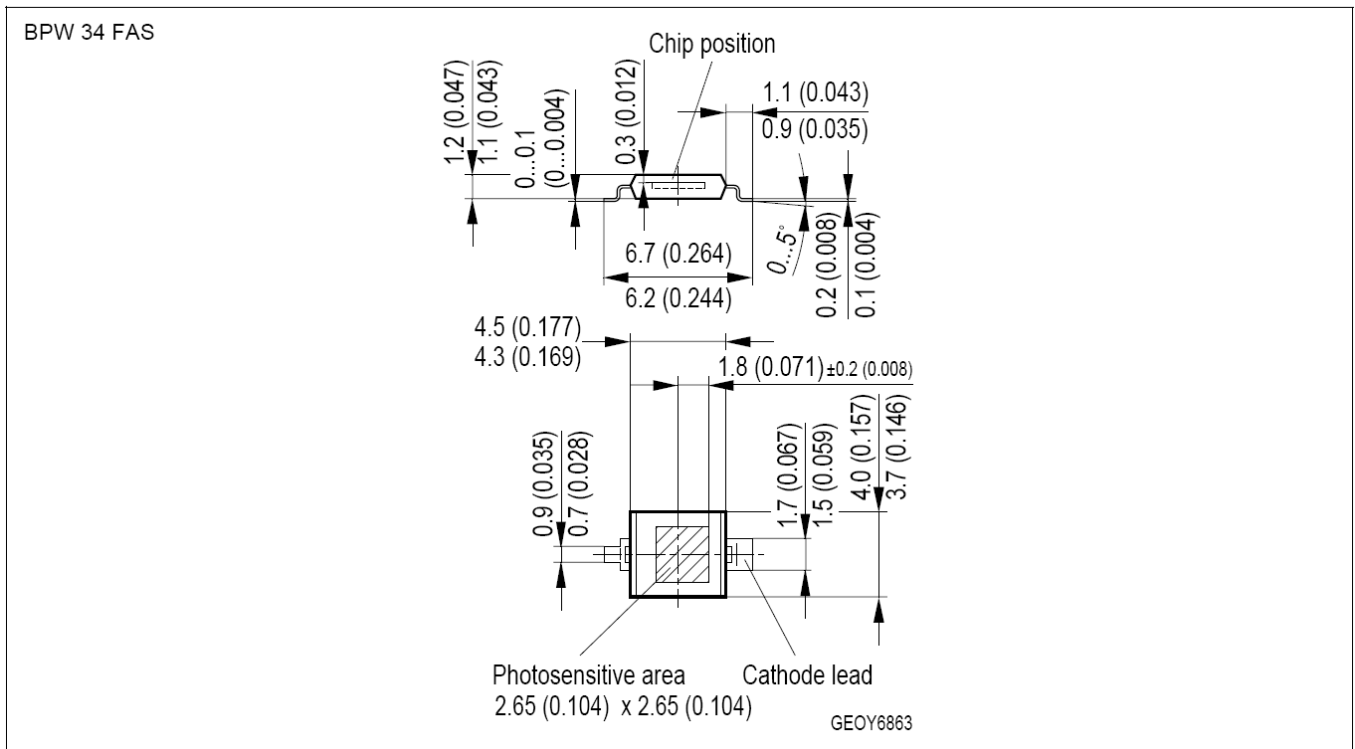
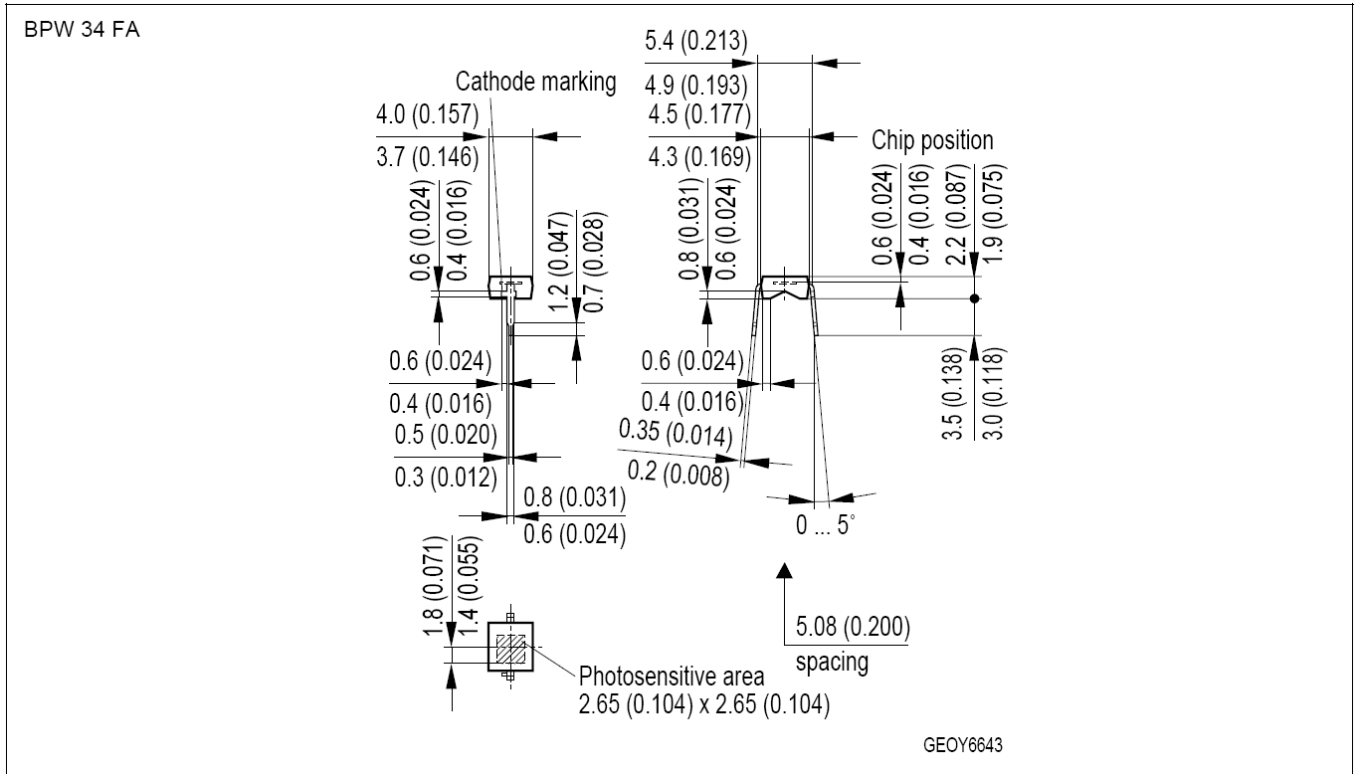
## 定向特性

### Directional Characteristics

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

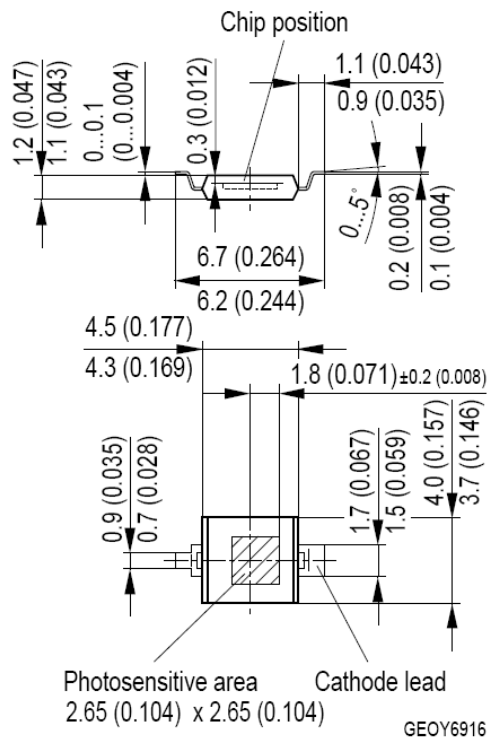


封装略图  
Package Outlines



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)

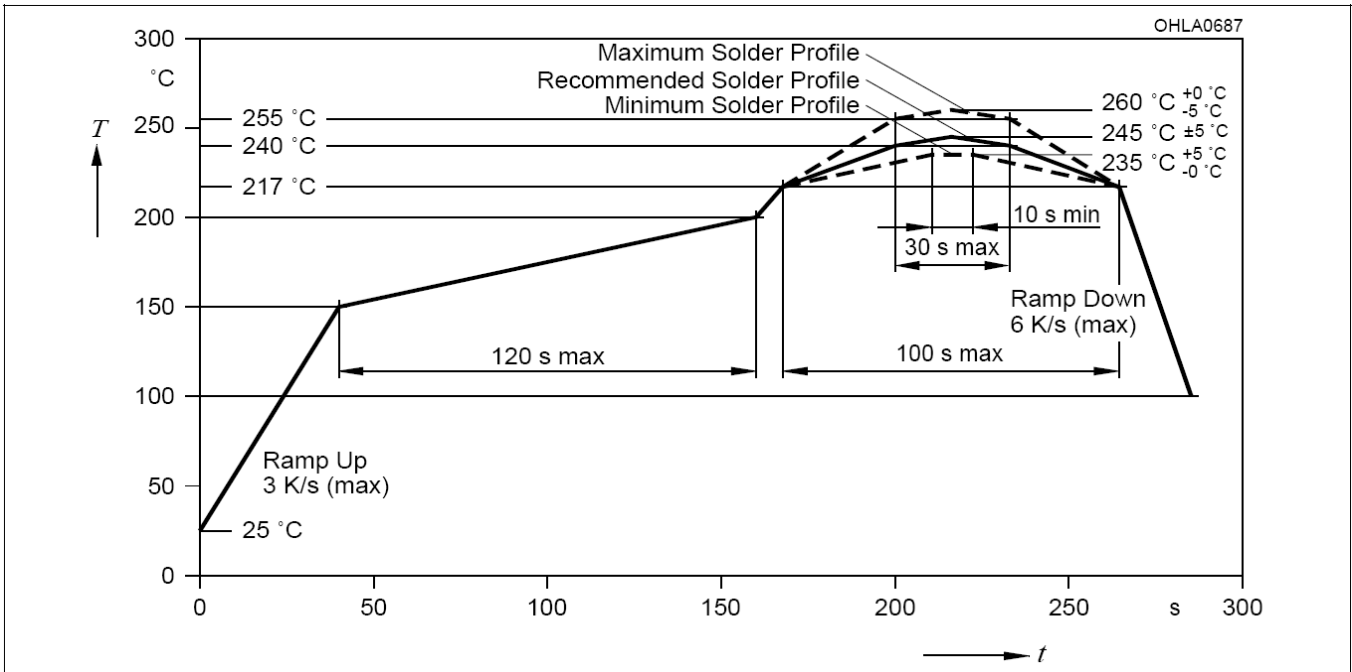
焊接条件  
Soldering Conditions

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

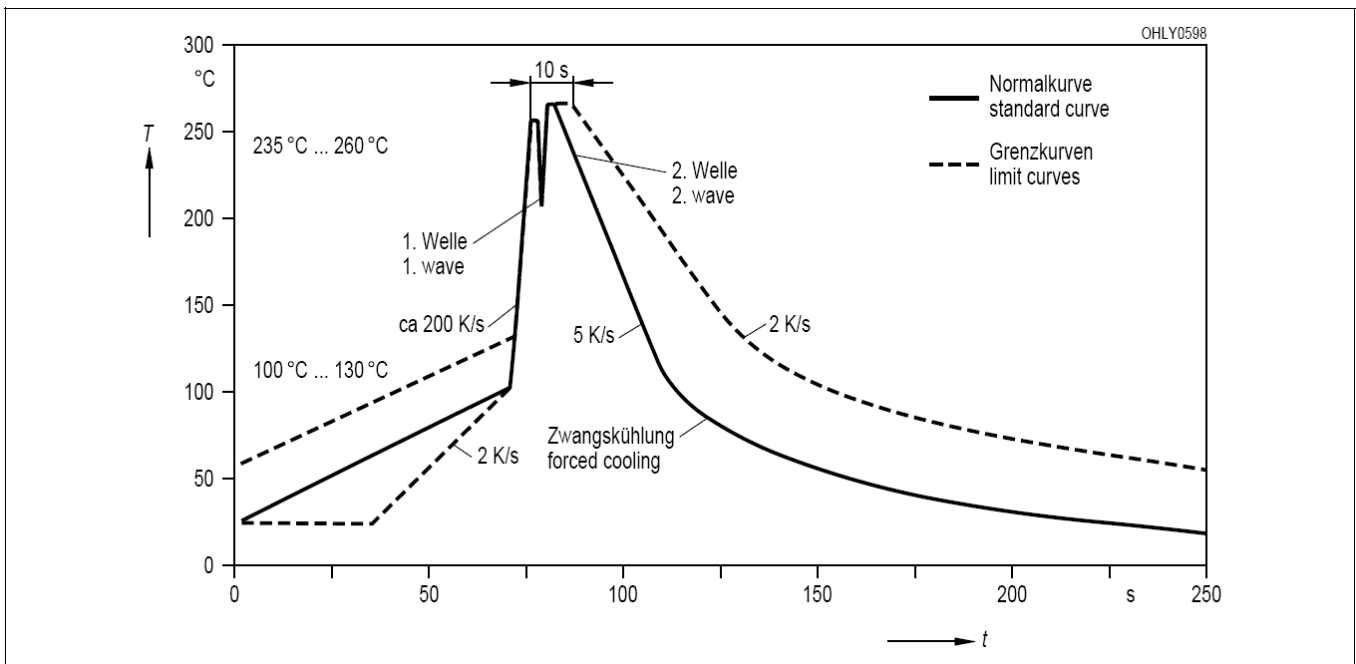
(符合 J-STD-020C 标准)  
(acc. to CECC 00802)



TTW 焊接  
TTW Soldering

BPW 34 FA

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



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如果您已对包装材料进行分类，我们将根据协议进行回收，所产生的运输费用须由您承担。对于未经分类即退回本公司或我们没有责任接受的包装材料，我们将开发票由您支付因此产生的一切费用。

**生命支持装置或系统所采用的元件必须获取用于该目的明确授权！** 仅当获得欧司朗光电半导体的明确书面许可时，方可将关键元件<sup>1</sup> 用于生命支持装置或系统<sup>2</sup>。

<sup>1</sup> 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。

<sup>2</sup> 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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## Packing

Please use the recycling operators known to you. We can also help you – get in touch with your nearest sales office. By agreement we will take packing material back, if it is sorted. You must bear the costs of transport. For packing material that is returned to us unsorted or which we are not obliged to accept, we shall have to invoice you for any costs incurred.

**Components used in life-support devices or systems must be expressly authorized for such purpose!** Critical components<sup>1</sup>, may only be used in life-support devices or systems<sup>2</sup> with the express written approval of OSRAM OS.

<sup>1</sup> 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.

<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.