

Multi TOPLED Cathodes On One Side

LSG T677



Besondere Merkmale

- **Gehäusotyp:** weißes P-LCC-4 Gehäuse
- **Besonderheit des Bauteils:**
2 Leuchtdiodenchips getrennt ansteuerbar
- **Wellenlänge:** 628 nm (super-rot),
570 nm (grün)
- **Abstrahlwinkel:** Lambertscher Strahler (120°)
- **Technologie:** GaAlP
- **optischer Wirkungsgrad:** 1,5 lm/W (super-rot),
2,5 lm/W (grün)
- **Gruppierungsparameter:** Lichtstärke
- **Verarbeitungsmethode:** für alle
SMT-Bestücktechniken geeignet
- **Lötmethode:** IR Reflow Löten und
Wellenlöten TTW)
- **Vorbehandlung:** nach JEDEC Level 2
- **Gurtung:** 8 mm Gurt mit 2000/Rolle, ø180 mm
oder 8000/Rolle, ø330 mm

Anwendungen

- optischer Indikator
- Einkopplung in Lichtleiter
- Hinterleuchtung (LCD, Schalter, Tasten,
Displays, Werbebeleuchtung,
Allgemeinbeleuchtung)
- Innenbeleuchtung im Automobilbereich
(z.B. Instrumentenbeleuchtung, u.ä.)

Features

- **package:** white P-LCC-4 package
- **feature of the device:** 2 chips can be
controlled separately
- **wavelength:** 628 nm (super-red),
570 nm (green)
- **viewing angle:** Lambertian Emitter (120°)
- **technology:** GaAlP
- **optical efficiency:** 1.5 lm/W (super-red),
2.5 lm/W (green)
- **grouping parameter:** luminous intensity
- **assembly methods:** suitable for all
SMT assembly methods
- **soldering methods:** IR reflow soldering and
TTW soldering
- **preconditioning:** acc. to JEDEC Level 2
- **taping:** 8 mm tape with 2000/reel, ø180 mm or
8000/reel, ø330 mm

Applications

- optical indicators
- coupling into light guides
- backlighting (LCD, switches, keys, displays,
illuminated advertising, general lighting)
- interior automotive lighting (e.g. dashboard
backlighting, etc.)

Typ	Emissions- farbe	Farbe der Lichtaustritts- fläche	Lichtstärke		Bestellnummer
Type	Color of Emission	Color of the Light Emitting Area	Luminous Intensity $I_F = 10 \text{ mA}$ $I_V \text{ (mcd)}$		Ordering Code
			super-red	green	
LSG T677	super-red / green	colorless clear	4.5 ... 18.0	4.5 ... 18.0	Q62703-Q4327
J+J			4.5 ... 7.1	4.5 ... 7.1	
J+K			4.5 ... 7.1	7.1 ... 11.2	
J+L			4.5 ... 7.1	11.2 ... 18.0	
K+J			7.1 ... 11.2	4.5 ... 7.1	
K+K			7.1 ... 11.2	7.1 ... 11.2	
K+L			7.1 ... 11.2	11.2 ... 18.0	
L+J			11.2 ... 18.0	4.5 ... 7.1	
L+K			11.2 ... 18.0	7.1 ... 11.2	
L+L			11.2 ... 18.0	11.2 ... 18.0	

Helligkeitswerte werden mit einer Stromeinprägedauer von 25 ms und einer Genauigkeit von $\pm 11 \%$ ermittelt.
Luminous intensity is tested at a current pulse duration of 25 ms and a tolerance of $\pm 11 \%$.

Anm.: Die Standardlieferform von Serientypen beinhaltet eine Familiengruppe. Einzelne Gruppen sind nicht erhältlich.

In einer Verpackungseinheit / Gurt ist immer nur eine Gruppe pro Farbe enthalten.

Note: The standard shipping format for serial types includes a family group. Individual groups are not available.

No packing unit / tape ever contains more than one luminous intensity group per color.

Grenzwerte
Maximum Ratings

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebstemperatur Operating temperature range	T_{op}	– 40 ... + 100	°C
Lagertemperatur Storage temperature range	T_{stg}	– 40 ... + 100	°C
Sperrschichttemperatur Junction temperature	T_j	+ 100	°C
Durchlassstrom Forward current	I_F	30	mA
Stoßstrom Surge current $t \leq 10 \mu s, D = 0.005$	I_{FM}	0.5	A
Sperrspannung Reverse voltage	V_R	5	V
Leistungsaufnahme Power consumption	P_{tot}	95	mW
Wärmewiderstand Thermal resistance			
Sperrschicht/Umgebung Junction/ambient	$R_{th JA}$	480	K/W
Sperrschicht/Löt看 Junction/solder point	$R_{th JS}$	260	K/W
Montage auf PC-Board FR 4 (Padgröße $\geq 16 \text{ mm}^2$) mounted on PC board FR 4 (pad size $\geq 16 \text{ mm}^2$)	$R_{th JS}$	360	K/W

Kennwerte ($T_A = 25\text{ °C}$)**Characteristics**

Bezeichnung Parameter	Symbol Symbol	Werte Values		Einheit Unit
		LS	LG	
Wellenlänge des emittierten Lichtes (typ.) Wavelength at peak emission $I_F = 10\text{ mA}$	λ_{peak}	635	572	nm
Dominantwellenlänge ¹⁾ (typ.) Dominant wavelength $I_F = 10\text{ mA}$	λ_{dom}	628 ± 6	570 ± 6	nm
Spektrale Bandbreite bei 50 % $I_{\text{rel max}}$ (typ.) Spectral bandwidth at 50 % $I_{\text{rel max}}$ $I_F = 10\text{ mA}$	$\Delta\lambda$	45	25	nm
Abstrahlwinkel bei 50 % I_V (Vollwinkel) (typ.) Viewing angle at 50 % I_V	2ϕ	120	120	Grad deg.
Durchlassspannung ²⁾ (typ.) Forward voltage (max.) $I_F = 10\text{ mA}$	V_F V_F	2.0 2.5	2.0 2.5	V V
Sperrstrom (typ.) Reverse current (max.) $V_R = 5\text{ V}$	I_R I_R	0.01 10	0.01 10	μA μA
Temperaturkoeffizient von λ_{peak} (typ.) Temperature coefficient of λ_{peak} $I_F = 10\text{ mA}; -10^\circ\text{C} \leq T \leq 100^\circ\text{C}$	$TC_{\lambda_{\text{peak}}}$	0.11	0.11	nm/K
Temperaturkoeffizient von λ_{dom} (typ.) Temperature coefficient of λ_{dom} $I_F = 10\text{ mA}; -10^\circ\text{C} \leq T \leq 100^\circ\text{C}$	$TC_{\lambda_{\text{dom}}}$	0.07	0.07	nm/K
Temperaturkoeffizient von V_F (typ.) Temperature coefficient of V_F $I_F = 10\text{ mA}; -10^\circ\text{C} \leq T \leq 100^\circ\text{C}$	TC_V	- 1.9	- 1.4	mV/K
Optischer Wirkungsgrad (typ.) Optical efficiency $I_F = 10\text{ mA}$	η_{opt}	1.5	2.5	lm/W

¹⁾ Wellenlängen werden mit einer Stromeinprägungsdauer von 25 ms und einer Genauigkeit von $\pm 1\text{ nm}$ ermittelt.
Wavelengths are tested at a current pulse duration of 25 ms and a tolerance of $\pm 1\text{ nm}$.

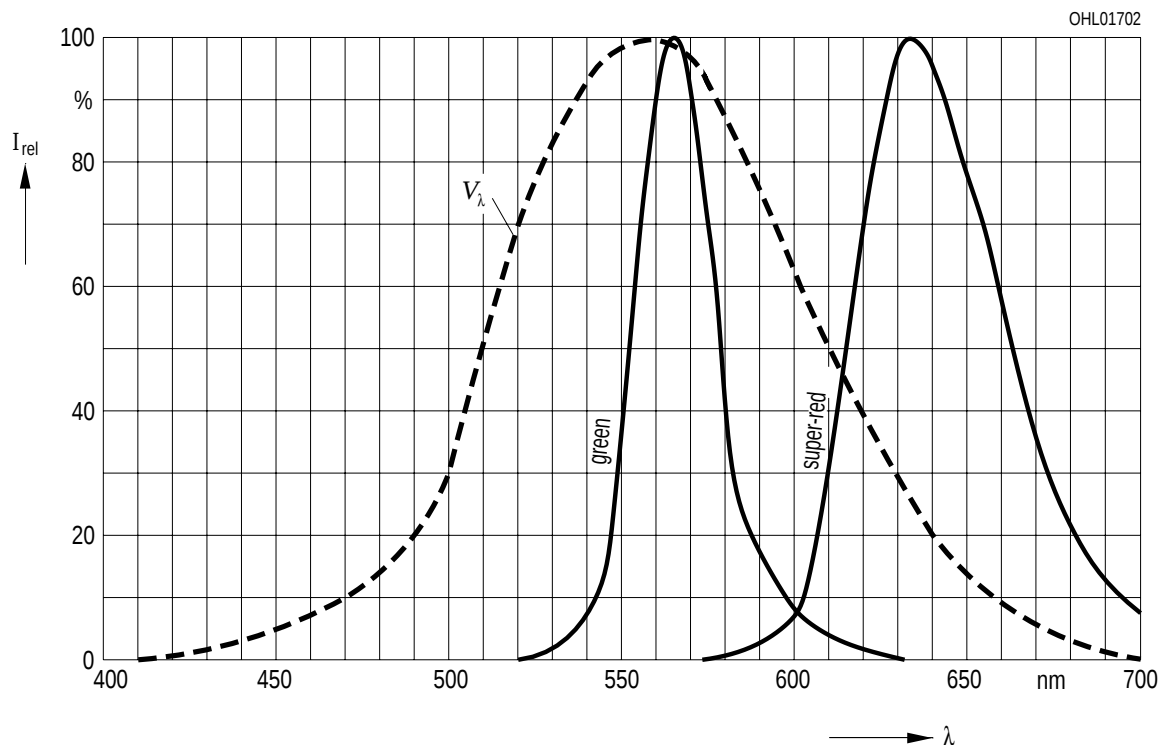
²⁾ Spannungswerte werden mit einer Stromeinprägungsdauer von 1 ms und einer Genauigkeit von $\pm 0,1\text{ V}$ ermittelt.
Voltages are tested at a current pulse duration of 1 ms and a tolerance of $\pm 0.1\text{ V}$.

Relative spektrale Emission $I_{\text{rel}} = f(\lambda)$, $T_A = 25^\circ\text{C}$, $I_F = 10\text{ mA}$

Relative Spectral Emission

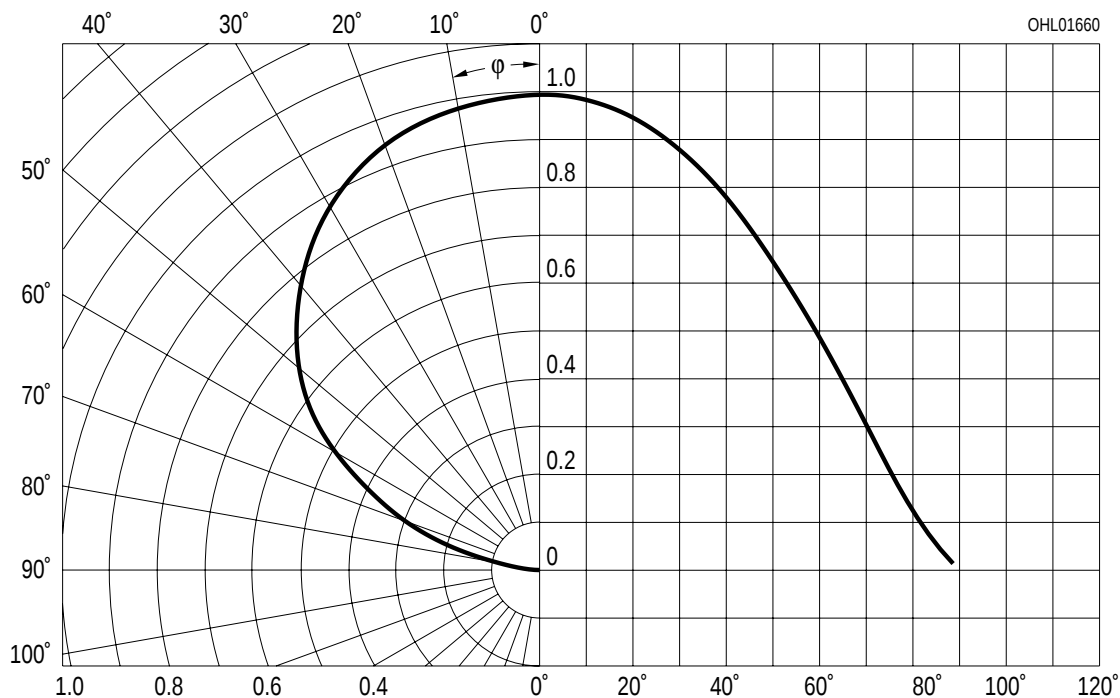
$V(\lambda)$ = spektrale Augenempfindlichkeit

Standard eye response curve



Abstrahlcharakteristik $I_{\text{rel}} = f(\varphi)$

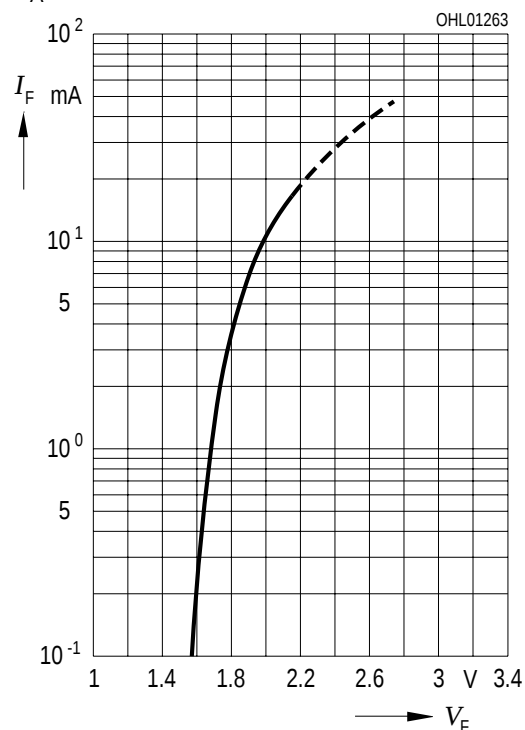
Radiation Characteristic



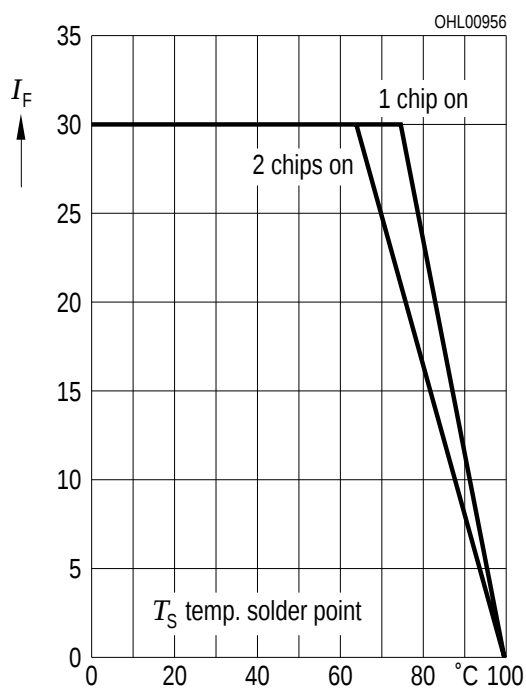
Durchlassstrom $I_F = f(V_F)$

Forward Current

$T_A = 25\text{ }^{\circ}\text{C}$



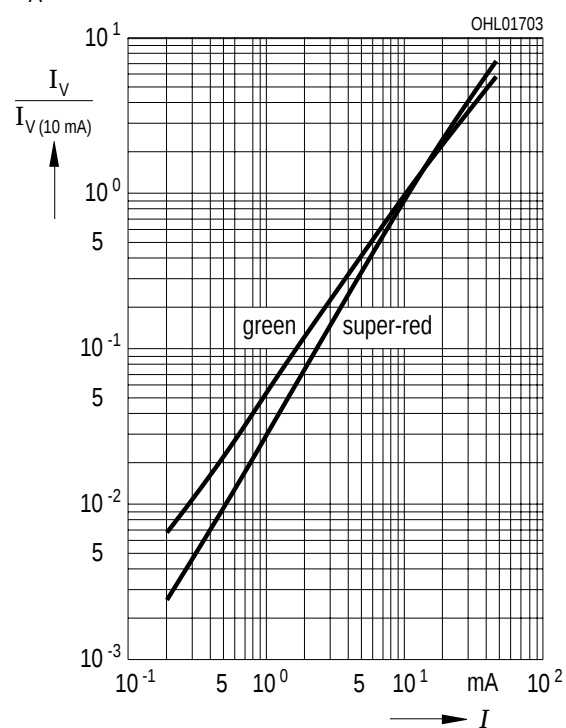
Maximal zulässiger Durchlassstrom $I_F = f(T)$
Max. Permissible Forward Current



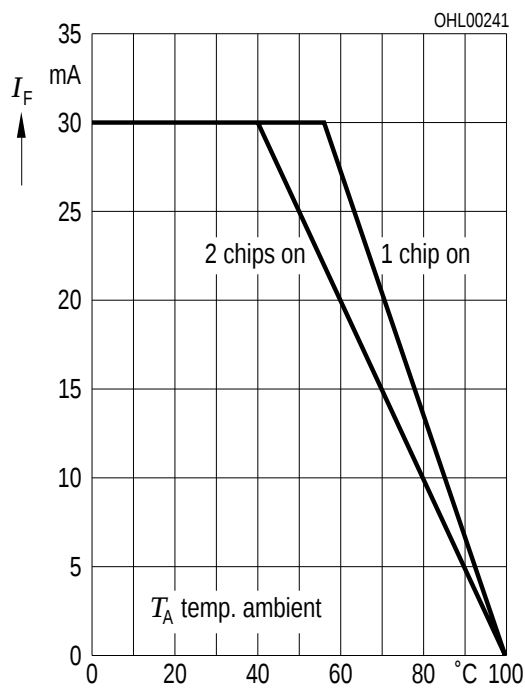
Relative Lichtstärke $I_V/I_{V(10\text{ mA})} = f(I_F)$

Relative Luminous Intensity

$T_A = 25\text{ }^{\circ}\text{C}$



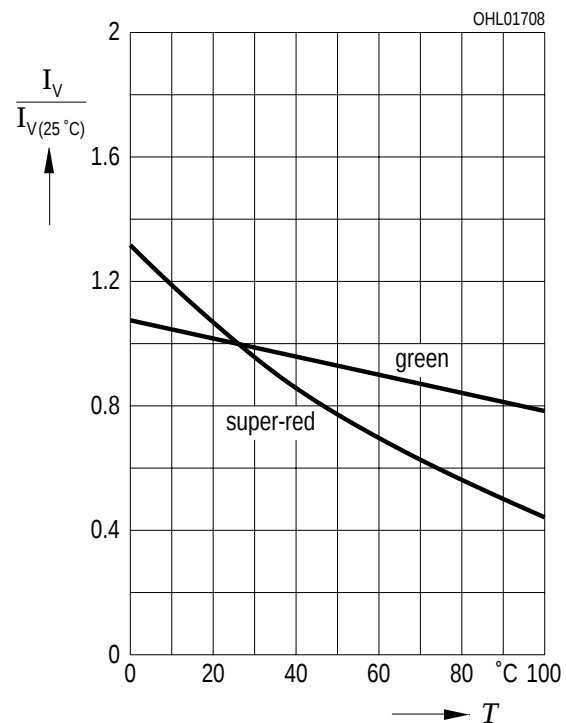
Maximal zulässiger Durchlassstrom $I_F = f(T)$
Max. Permissible Forward Current



Relative Lichtstärke $I_V/I_{V(25^\circ\text{C})} = f(T_A)$

Relative Luminous Intensity

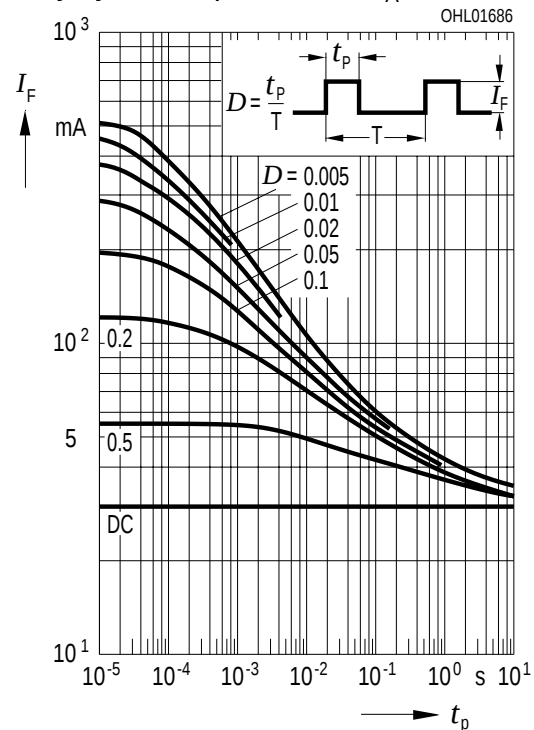
$I_F = 10 \text{ mA}$



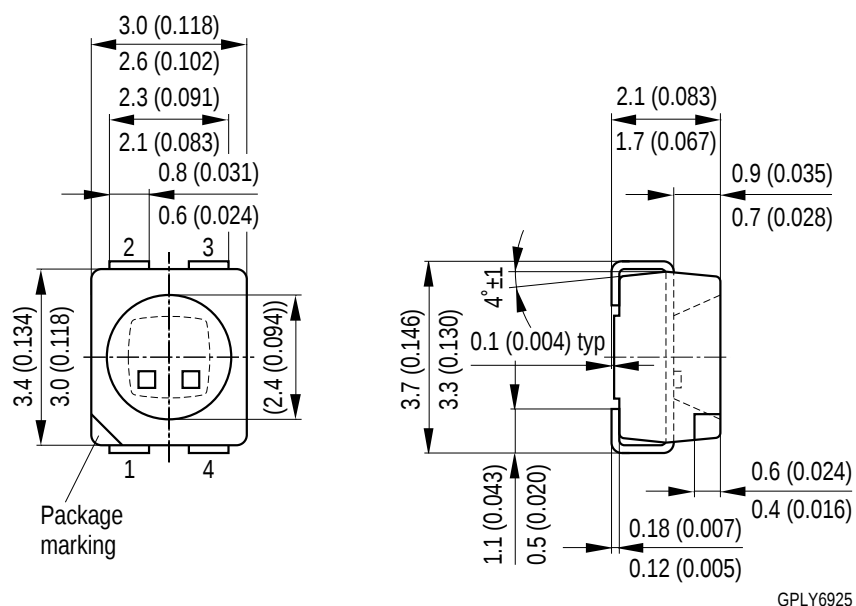
Zulässige Impulsbelastbarkeit $I_F = f(t_p)$

Permissible Pulse Handling Capability

Duty cycle $D = \text{parameter}$, $T_A = 25^\circ\text{C}$



Maßzeichnung
Package Outlines



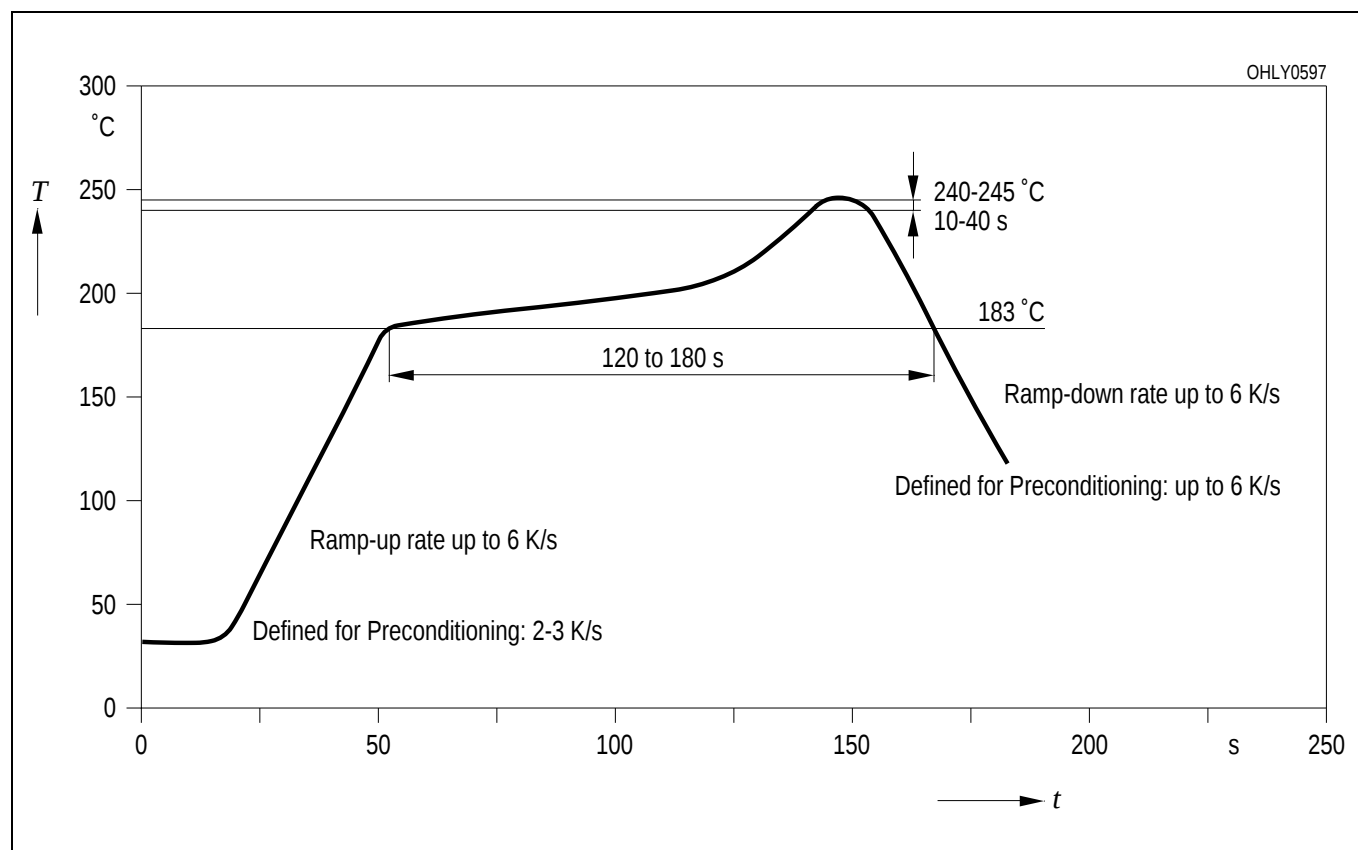
L	S	G	T677
LED	Emission color 1	Emission color 2	Package
	Cathode: pin 1	Cathode: pin 4	

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

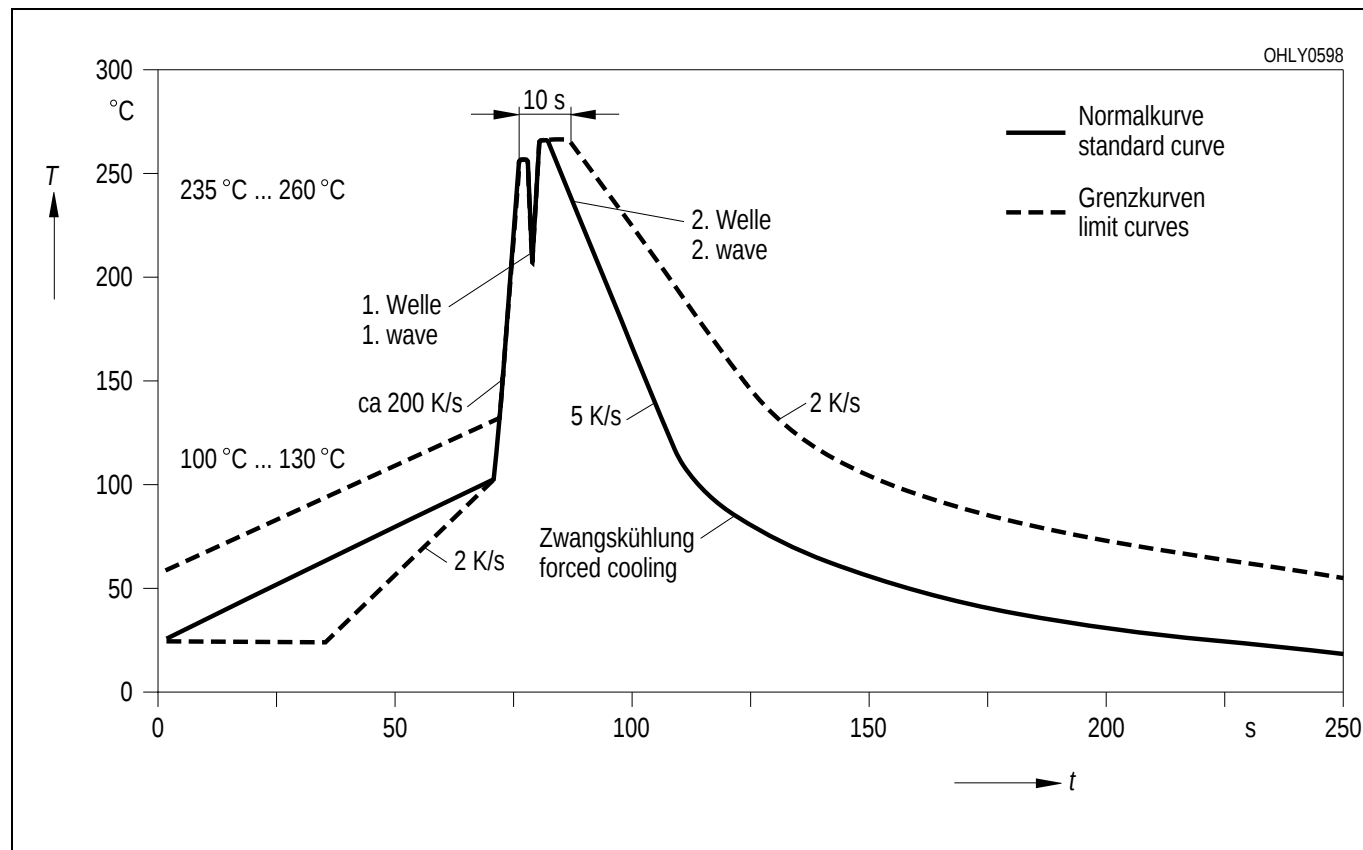
Gewicht / Approx. weight: 34 mg

Lötbedingungen Vorbehandlung nach JEDEC Level 2
Soldering Conditions Preconditioning acc. to JEDEC Level 2

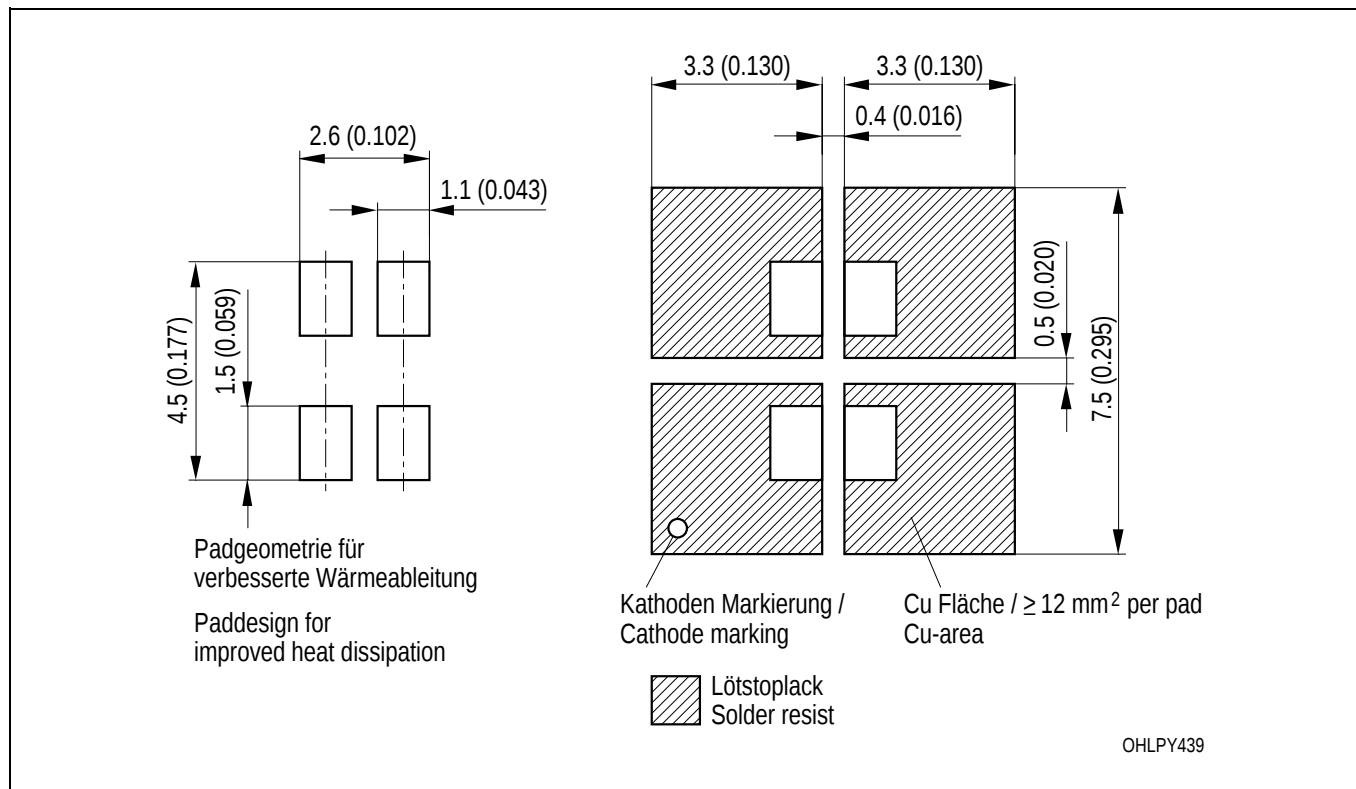
IR-Reflow Lötprofil (nach IPC 9501)
IR Reflow Soldering Profile (acc. to IPC 9501)



Wellenlöten (TTW) (nach CECC 00802)
TTW Soldering (acc. to CECC 00802)



Empfohlenes Lötpaddesign IR Reflow Löten / Wellenlöten (TTW)
Recommended Solder Pad IR Reflow Soldering / TTW Soldering



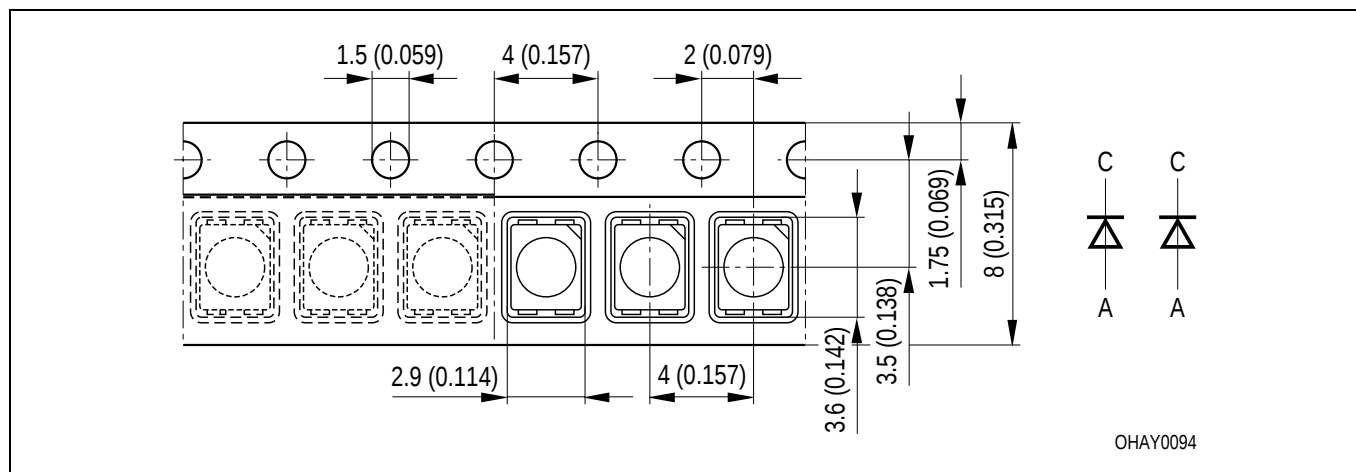
Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

Gurtung / Polarität und Lage

Verpackungseinheit 2000/Rolle, $\varnothing 180 \text{ mm}$
 oder 8000/Rolle, $\varnothing 330 \text{ mm}$

Method of Taping / Polarity and Orientation

Packing unit 2000/reel, $\varnothing 180 \text{ mm}$
 or 8000/reel, $\varnothing 330 \text{ mm}$



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

Revision History: 2001-03-14

Previous Version: 2001-03-14

Page	Subjects (major changes since last revision)
10	TTW soldering

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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.

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