

LC SIDELED Low Current LED

LS A679, LY A679, LG A679



Besondere Merkmale

- **Gehäusetyyp:** weißes SMT Gehäuse
- **Besonderheit des Bauteils:** Abstrahlung parallel zur Platine, deshalb ideal zur Einkopplung in Lichtleiter
- **Wellenlänge:** 628 nm (super-rot), 587 nm (gelb), 570 nm (grün)
- **Abstrahlwinkel:** Lambertischer Strahler (120°)
- **Technologie:** GaAsP
- **optischer Wirkungsgrad:** 2 lm/W
- **Gruppierungsparameter:** Lichtstärke
- **Verarbeitungsmethode:** für alle SMT-Bestücktechniken geeignet
- **Lötmethode:** IR Reflow Löten und Wellenlöten (TTW)
- **Vorbehandlung:** nach JEDEC Level 2
- **Gurtung:** 12 mm Gurt mit 2000/Rolle, ø330 mm

Anwendungen

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

Features

- **package:** white SMT package
- **feature of the device:** radiation direction parallel to PCB, so an ideal LED for coupling in light guides
- **wavelength:** 628 nm (super-red), 587nm (yellow), 570 nm (green)
- **viewing angle:** Lambertian Emitter (120°)
- **technology:** GaAsP
- **optical efficiency:** 2 lm/W
- **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:** 12 mm tape with 2000/reel, ø330 mm

Applications

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

Typ	Emissions- farbe	Farbe der Lichtaustritts- fläche	Lichtstärke	Lichtstrom	Bestellnummer
Type	Color of Emission	Color of the Light Emitting Area	Luminous Intensity $I_F = 2 \text{ mA}$ $I_V \text{ (mcd)}$	Luminous Flux $I_F = 2 \text{ mA}$ $\Phi_V \text{ (mlm)}$	Ordering Code
LS A679-D2E2-1	super-red	colorless clear	0.56 ... 1.12	2.5 (typ.)	Q62703-Q5076
LS A679-E2F2-1			0.90 ... 1.80	3.9 (typ.)	Q62703-Q5077
LS A679-F2G2-1			1.40 ... 2.80	6.1 (typ.)	Q62703-Q5078
LY A679-D2E2-1	yellow	colorless clear	0.56 ... 1.12	2.5 (typ.)	Q62703-Q5113
LY A679-E2G1-1			0.90 ... 2.24	4.4 (typ.)	Q62703-Q5114
LG A679-E1F1-1	green	colorless clear	0.71 ... 1.40	3.1 (typ.)	Q62703-Q5002
LG A679-F1G2-1			1.12 ... 2.80	5.5 (typ.)	Q62703-Q5003

Anm.: -1 gesamter Farbbereich

*Die Standardlieferform von Serientypen beinhaltet eine untere bzw. eine obere Familiengruppe, die aus nur 3 bzw. 4 Halbgruppen besteht. Einzelne Halbgruppen sind nicht erhältlich.
In einer Verpackungseinheit / Gurt ist immer nur eine Halbgruppe enthalten.*

Note: -1 Total color tolerance range

*The standard shipping format for serial types includes a lower or upper family group of 3 or 4 individual groups. Individual half groups are not available.
No packing unit / tape ever contains more than one luminous intensity group.*

Bezeichnung Parameter	Symbol Symbol	Werte Values	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	7.5	mA
Stoßstrom Surge current $t \leq 10 \mu s, D = 0.005$	I_{FM}	0.15	A
Sperrspannung Reverse voltage	V_R	5	V
Leistungsaufnahme Power consumption $T_A \leq 25 \text{ °C}$	P_{tot}	20	mW
Wärmewiderstand Thermal resistance Sperrschicht/Umgebung Junction/ambient	$R_{th JA}$	430	K/W
Sperrschicht/Löt看pad Junction/solder point Montage auf PC-Board FR 4 (Padgröße $\geq 16 \text{ mm}^2$) mounted on PC board FR 4 (pad size $\geq 16 \text{ mm}^2$)	$R_{th JS}$	200	K/W

Bezeichnung Parameter	Symbol Symbol	Werte Values			Einheit Unit
		LS	LY	LG	
Wellenlänge des emittierten Lichtes Wavelength at peak emission $I_F = 2 \text{ mA}$	(typ.) λ_{peak}	635	586	572	nm
Dominantwellenlänge ¹⁾ Dominant wavelength $I_F = 2 \text{ mA}$	(typ.) λ_{dom}	628 ± 6	587 +8/-7	570 ± 6	nm
Spektrale Bandbreite bei 50 % $I_{\text{rel max}}$ Spectral bandwidth at 50 % $I_{\text{rel max}}$ $I_F = 2 \text{ mA}$	(typ.) $\Delta\lambda$	45	45	25	nm
Durchlassspannung ²⁾ Forward voltage $I_F = 2 \text{ mA}$	(typ.) V_F (max.) V_F	1.8 2.5	2.0 2.6	1.9 2.5	V V
Abstrahlwinkel bei 50 % I_V (Vollwinkel) Viewing angle at 50 % I_V	(typ.) 2ϕ	120	120	120	Grad deg.
Sperrstrom Reverse current $V_R = 5 \text{ V}$	(typ.) I_R (max.) I_R	0.01 10	0.01 10	0.01 10	μA μA
Temperaturkoeffizient von λ_{peak} Temperature coefficient of λ_{peak} $I_F = 2 \text{ mA}; -10^\circ\text{C} \leq T \leq 100^\circ\text{C}$	(typ.) $TC_{\lambda_{\text{peak}}}$	0.11	0.10	0.11	nm/K
Temperaturkoeffizient von λ_{dom} Temperature coefficient of λ_{dom} $I_F = 2 \text{ mA}; -10^\circ\text{C} \leq T \leq 100^\circ\text{C}$	(typ.) $TC_{\lambda_{\text{dom}}}$	0.07	0.07	0.07	nm/K
Temperaturkoeffizient von V_F Temperature coefficient of V_F $I_F = 2 \text{ mA}; -10^\circ\text{C} \leq T \leq 100^\circ\text{C}$	(typ.) TC_V	-2.0	-1.6	-1.9	mV/K
Optischer Wirkungsgrad Optical efficiency $I_F = 2 \text{ mA}$	(typ.) η_{opt}	2	2	2	lm/W

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

²⁾ Spannungswerte werden mit einer Stromeinprägedauer 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 an accuracy of $\pm 0.1 \text{ V}$.

Helligkeits-Gruppierungsschema
Luminous Intensity Groups

Lichtgruppe Luminous Intensity Group	Lichtstärke Luminous Intensity I_v (mcd)	Lichtstrom Luminous Flux Φ_v (mlm)
D2	0.56 ... 0.71	2.0 (typ.)
E1	0.71 ... 0.90	2.5 (typ.)
E2	0.90 ... 1.12	3.0 (typ.)
F1	1.12 ... 1.40	3.8 (typ.)
F2	1.40 ... 1.80	4.8 (typ.)
G1	1.80 ... 2.24	6.0 (typ.)
G2	2.24 ... 2.80	7.6 (typ.)

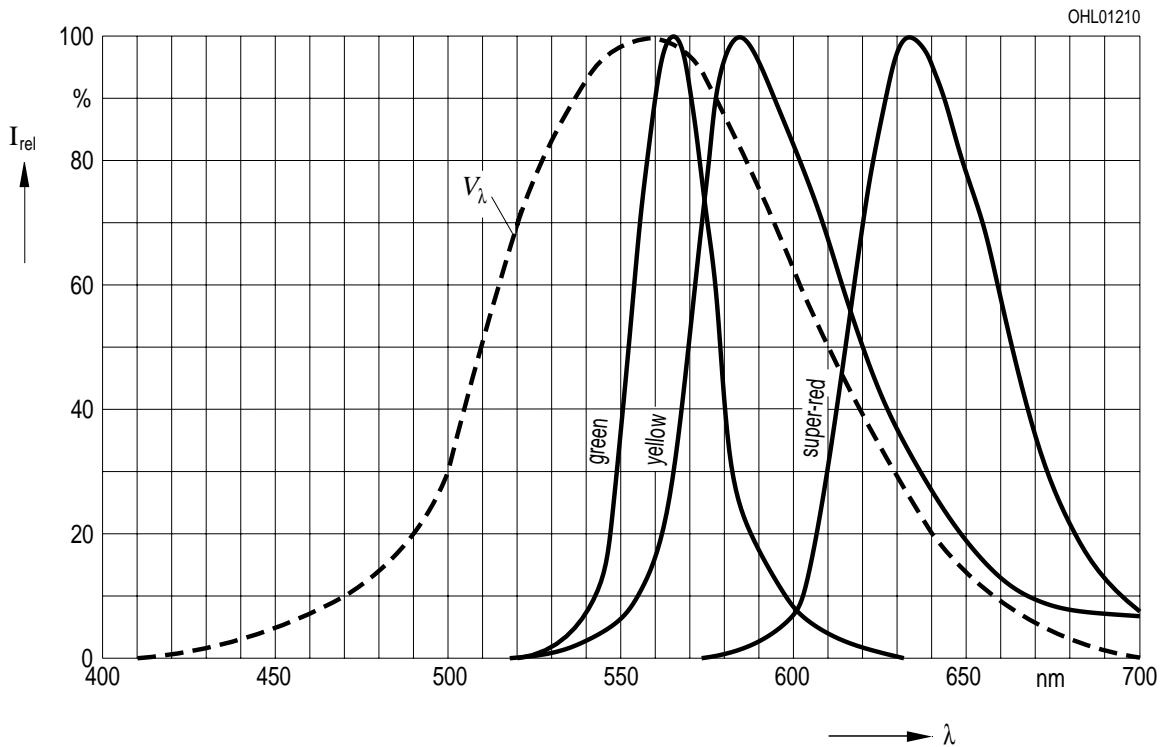
Helligkeitswerte werden mit einer Stromeinprägedauer von 25 ms und einer Genauigkeit von $\pm 11\%$ ermittelt.
Luminous intensity is tested at a current pulse duration of 25 ms and an accuracy of $\pm 11\%$.

Relative spektrale Emission $I_{rel} = f(\lambda)$, $T_A = 25\text{ °C}$, $I_F = 2\text{ mA}$

Relative Spectral Emission

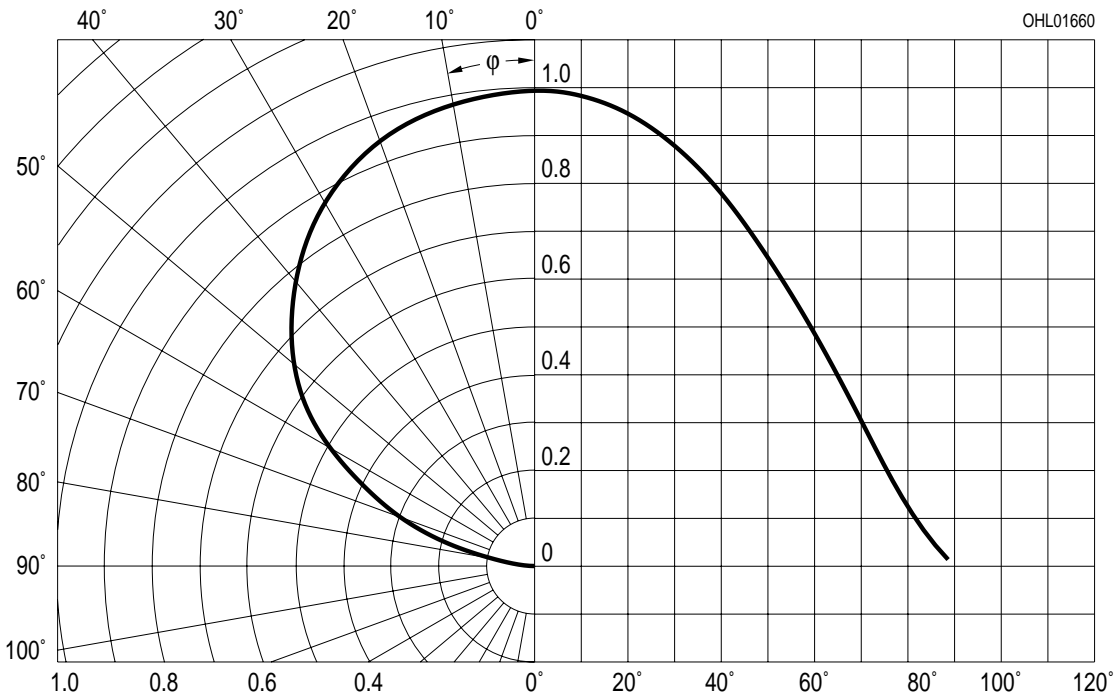
$V(\lambda)$ = spektrale Augenempfindlichkeit

Standard eye response curve



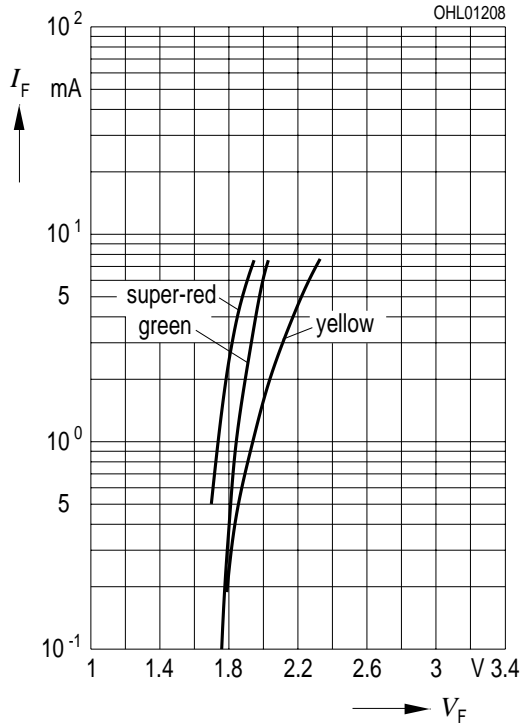
Abstrahlcharakteristik $I_{rel} = f(\varphi)$

Radiation Characteristic



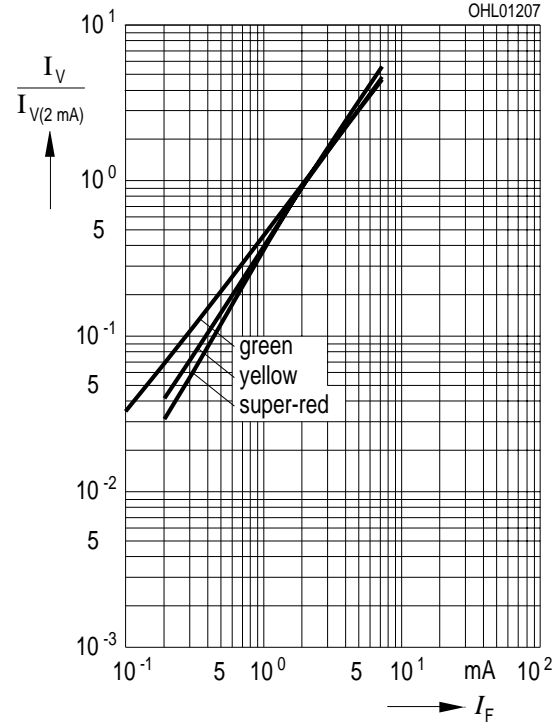
Durchlassstrom $I_F = f(V_F)$
Forward Current

$T_A = 25\text{ °C}$

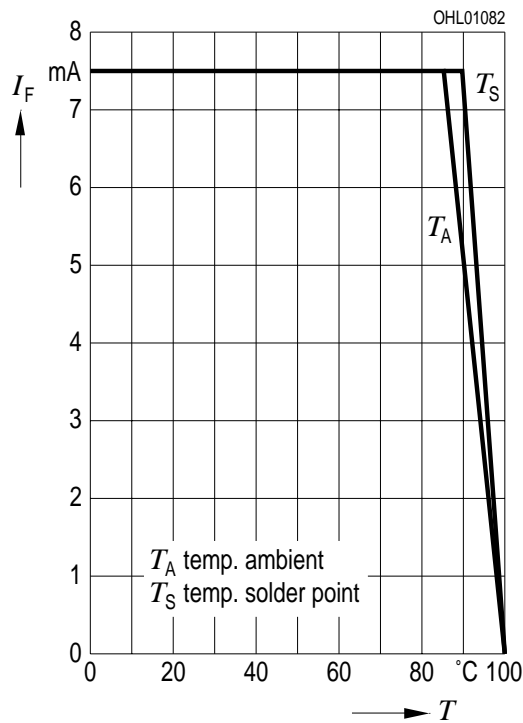


Relative Lichtstärke $I_V/I_{V(2\text{ mA})} = f(I_F)$
Relative Luminous Intensity

$T_A = 25\text{ °C}$

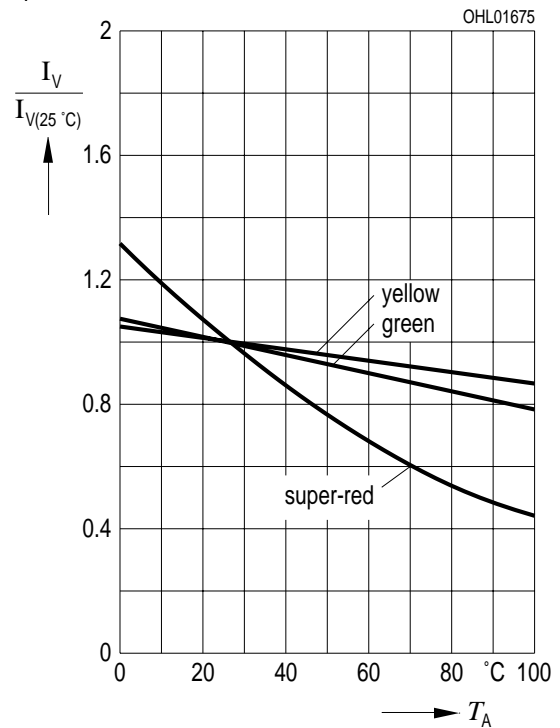


Maximal zulässiger Durchlassstrom $I_F = f(T)$
Max. Permissible Forward Current



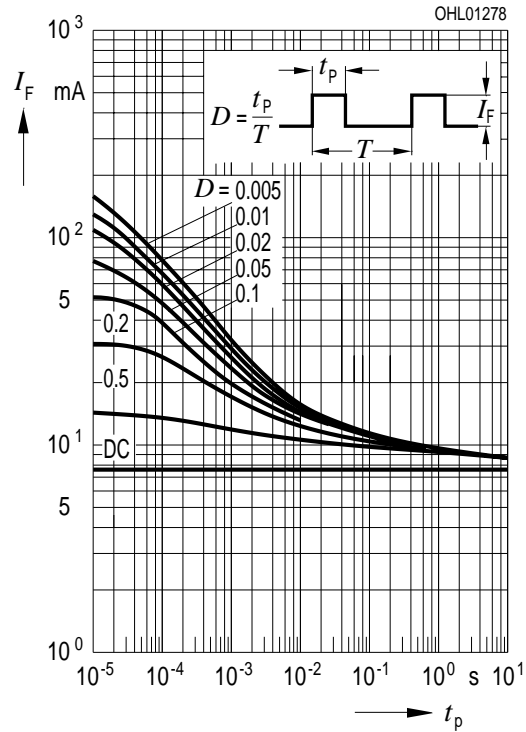
Relative Lichtstärke $I_V/I_{V(25\text{ °C})} = f(T_A)$
Relative Luminous Intensity

$I_F = 2\text{ mA}$

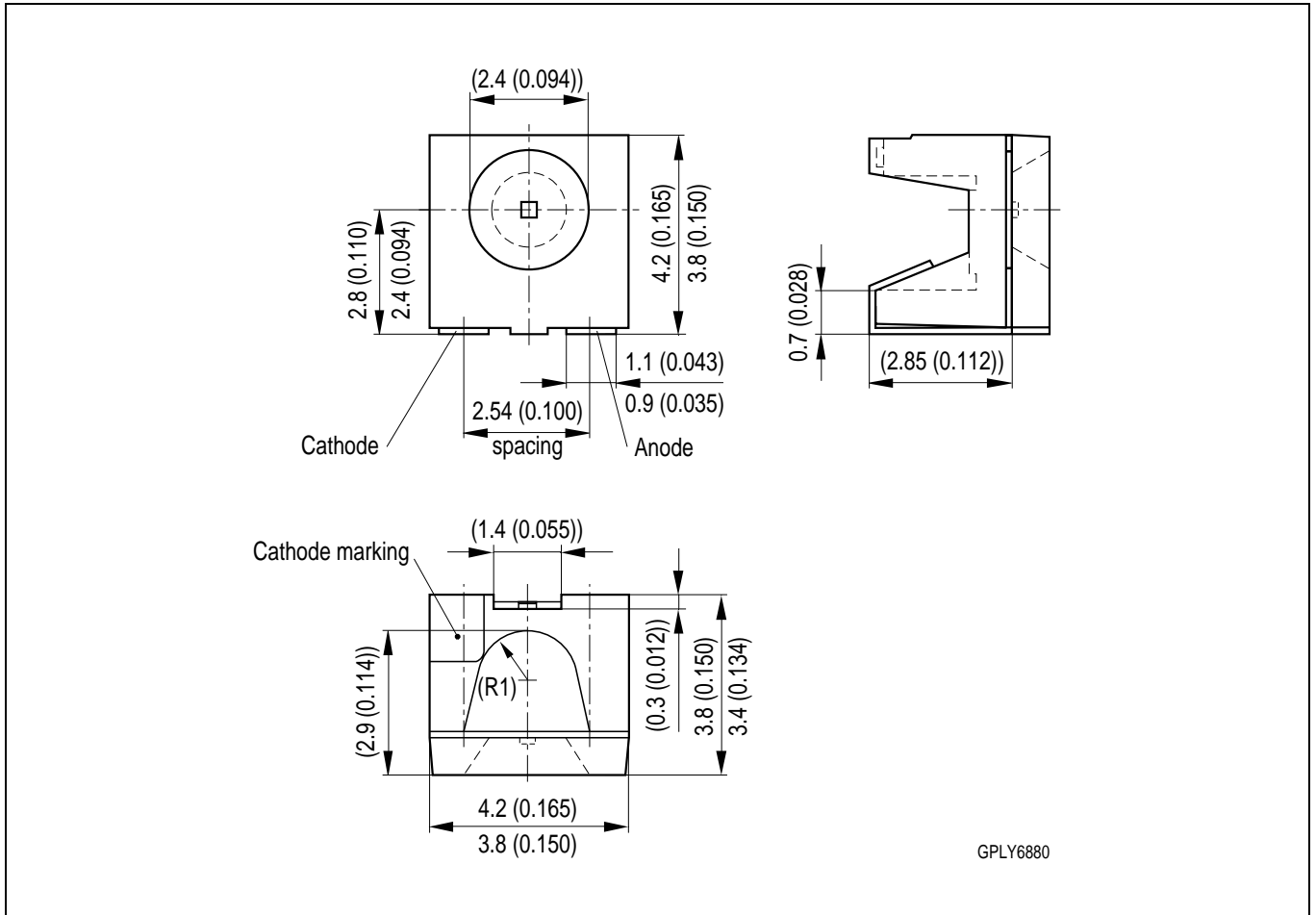


Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible Pulse Handling Capability

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



Maßzeichnung
Package Outlines

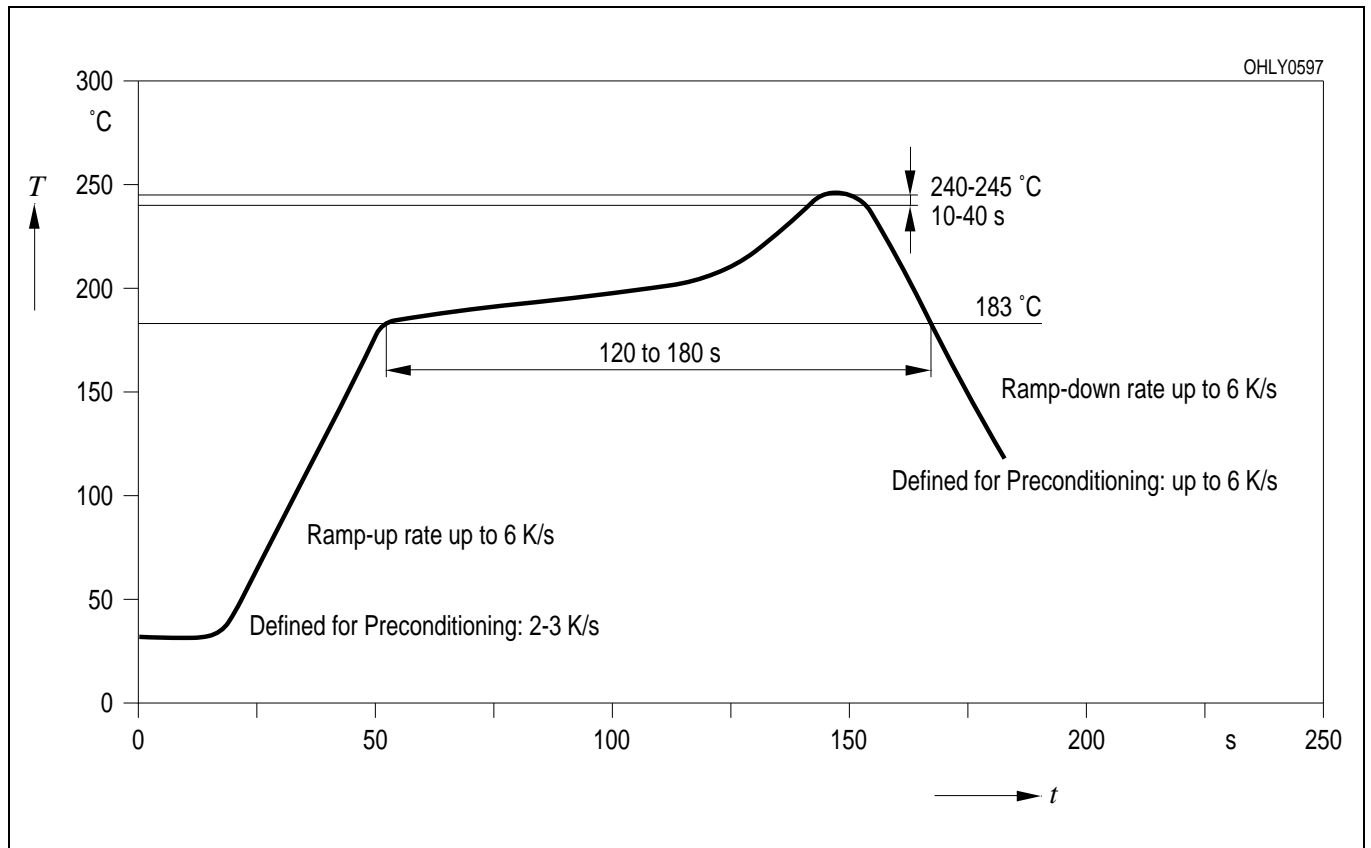


Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

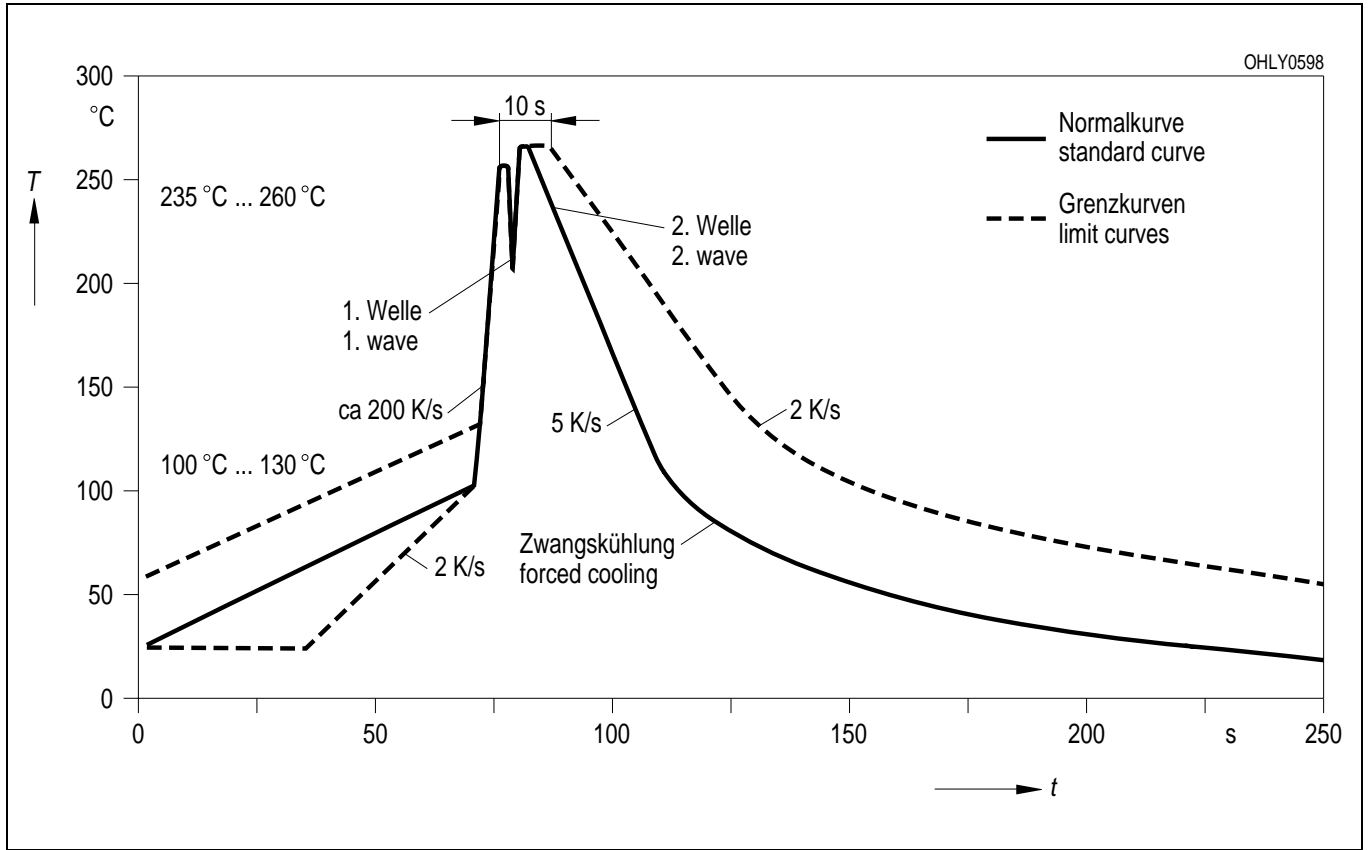
Kathodenkennung: abgeschrägte Ecke
Cathode mark: bevelled edge
Gewicht / Approx. weight: 40 mg

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

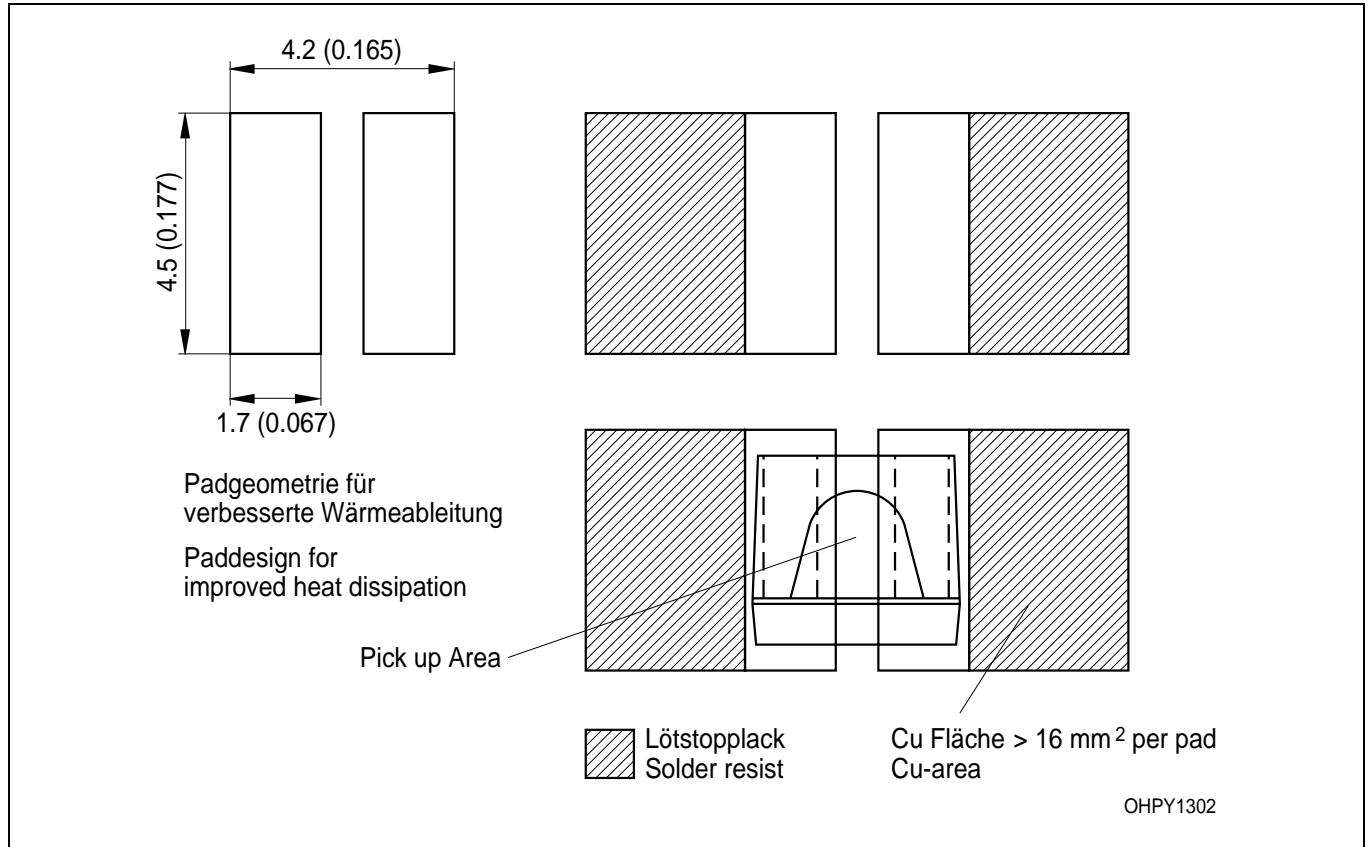
IR-Reflow Lötprofil (nach IPC 9501)
IR Reflow Soldering Profile (acc. to IPC 9501)



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

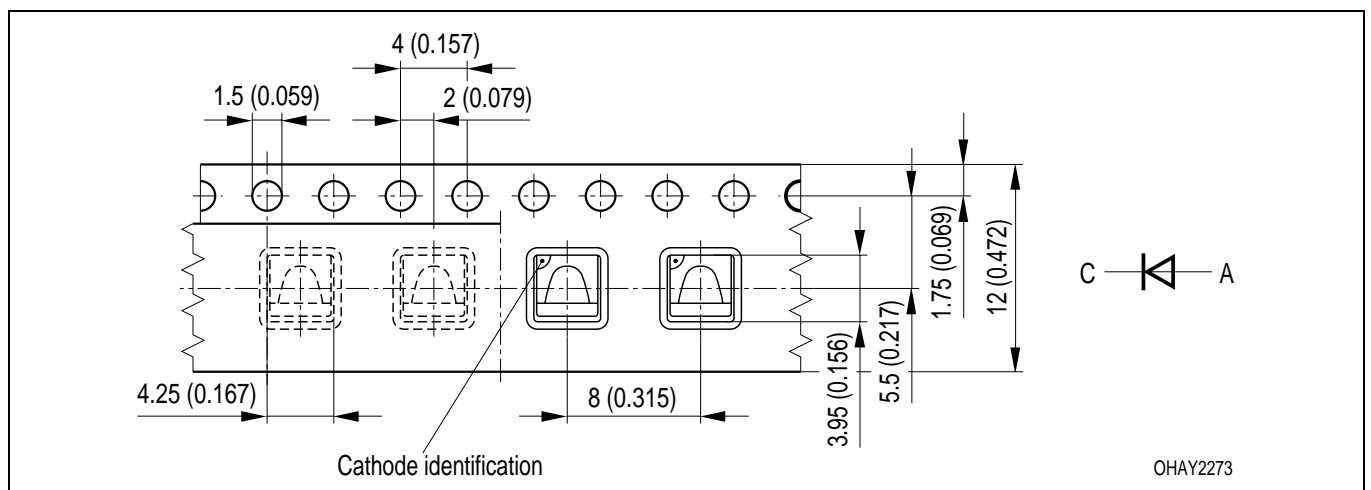


Empfohlenes Lötpad Design IR Reflow Löten
Recommended Solder Pad IR Reflow Soldering



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

Gurtung / Polarität und Lage Verpackungseinheit 2000/Rolle, $\varnothing 330 \text{ mm}$
Method of Taping / Polarity and Orientation Packing unit 2000/reel, $\varnothing 330 \text{ mm}$



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

Revision History: 2001-05-07

Previous Version: 2001-03-14

Page	Subjects (major changes since last revision)
12	Recommended Solder Pad

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