LC TOPLED®
Low Current LED

LS T679, LY T679, LG T679

Besondere Merkmale

- **Gehäusetyp:** weißes P-LCC-2 Gehäuse
- **Besonderheit des Bauteils:** extrem breite Abstrahlcharakteristik; ideal für Hinterleuchtungen und Einkopplungen in Lichtleiter
- **Wellenlänge:** 628 nm (super-rot), 590 nm (gelb), 570 nm (grün)
- **Abstrahlwinkel:** Lambertscher 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:** 8 mm Gurt mit 2000/Rolle, ø180 mm oder 8000/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 P-LCC-2 package
- **feature of the device:** extremely wide viewing angle; ideal for backlighting and coupling in light guides
- **wavelength:** 628 nm (super-red), 590 nm (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:** 8 mm tape with 2000/reel, ø180 mm or 8000/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 Type	Emissions-farbe Color of Emission	Farbe der Lichtaustritts-fläche Color of the Light Emitting Area	Lichtstärke Luminous Intensity I_F = 2 mA I_V (mcd)	Lichtstrom Luminous Flux I_F = 2 mA Φ_V (mlm)	Bestellnummer Ordering Code
LS T679-D2E2-1	super-red	colorless clear	0.56 ... 1.12	2.5 (typ.)	Q62703-Q5098
LS T679-E2F2-1			0.90 ... 1.80	3.9 (typ.)	Q62703-Q5099
LS T679-F2G2-1			1.40 ... 2.80	6.1 (typ.)	Q62703-Q5100
LS T679-D2			0.56 ... 0.71	2.0 (typ.)	
LS T679-E1			0.71 ... 0.90	2.5 (typ.)	
LS T679-E2			0.90 ... 1.12	3.0 (typ.)	
LS T679-F1			1.12 ... 1.40	3.8 (typ.)	
LS T679-F2			1.40 ... 1.80	4.8 (typ.)	
LS T679-G1			1.80 ... 2.24	6.0 (typ.)	
LS T679-G2			2.24 ... 2.80	7.6 (typ.)	
LY T679-D2E2-1	yellow	colorless clear	0.56 ... 1.12	2.5 (typ.)	Q62703-Q5136
LY T679-E2F2-1			0.90 ... 1.80	3.9 (typ.)	Q62703-Q5137
LY T679-F2G2-1			1.40 ... 2.80	6.1 (typ.)	Q62703-Q5138
LY T679-D2			0.56 ... 0.71	2.0 (typ.)	
LY T679-E1			0.71 ... 0.90	2.5 (typ.)	
LY T679-E2			0.90 ... 1.12	3.0 (typ.)	
LY T679-F1			1.12 ... 1.40	3.8 (typ.)	
LY T679-F2			1.40 ... 1.80	4.8 (typ.)	
LY T679-G1			1.80 ... 2.24	6.0 (typ.)	
LY T679-G2			2.24 ... 2.80	7.6 (typ.)	
LG T679-E1F1-1	green	colorless clear	0.71 ... 1.40	3.1 (typ.)	Q62703-Q5016
LG T679-F1G2-1			1.12 ... 2.80	5.5 (typ.)	Q62703-Q5017
LG T679-E1			0.71 ... 0.90	2.5 (typ.)	
LG T679-E2			0.90 ... 1.12	3.0 (typ.)	
LG T679-F1			1.12 ... 1.40	3.8 (typ.)	
LG T679-F2			1.40 ... 1.80	4.8 (typ.)	
LG T679-G1			1.80 ... 2.24	6.0 (typ.)	
LG T679-G2			2.24 ... 2.80	7.6 (typ.)	

Helligkeitswerte werden mit einer Stromeinprägedauer von 25 ms und einer Genauigkeit von ±11 % ermittelt.

Luminous intensity is tested at a current pulse duration of 25 ms and an accuracy of ±11 %.

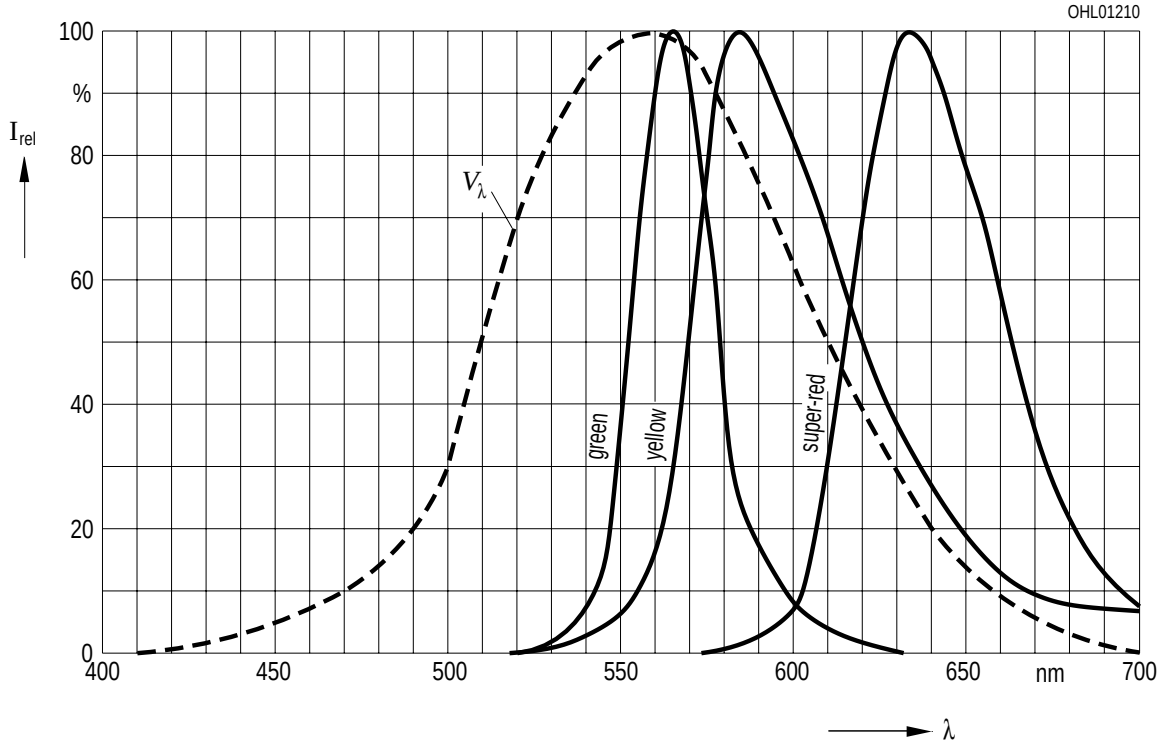
Grenzwerte
Maximum Ratings

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	7.5	mA
Stoßstrom Surge current $t \leq 10$ µs, $D = 0.005$	I_{FM}	0.15	A
Sperrspannung Reverse voltage	V_R	5	V
Leistungsaufnahme Power dissipation	P_{tot}	20	mW
Wärmewiderstand Thermal resistance Sperrschicht/Umgebung Junction/ambient Sperrschicht/Lötpad Junction/solder point Montage auf PC-Board FR 4 (Padgröße ≥ 16 mm^2) mounted on PC board FR 4 (pad size ≥ 16 mm^2)	 $R_{th\ JA}$ $R_{th\ JS}$	 400 180	 K/W K/W

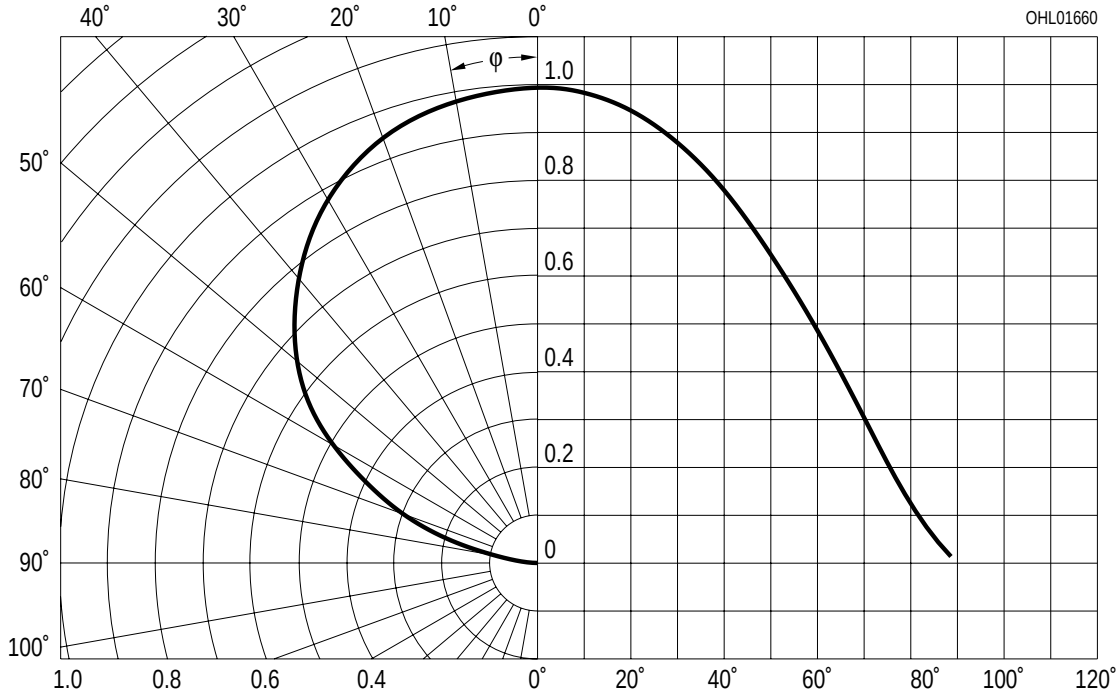
Kennwerte (T_A = 25 °C)
Characteristics

Bezeichnung **Parameter**		**Symbol** **Symbol**	**Werte** **Values**			**Einheit** **Unit**
			LS	**LY**	**LG**	
Wellenlänge des emittierten Lichtes Wavelength at peak emission I_F = 2 mA	(typ.)	λ_{peak}	635	586	565	nm
Dominantwellenlänge Dominant wavelength I_F = 2 mA	(typ.)	λ_{dom}	628	590	570	nm
Spektrale Bandbreite bei 50 % $I_{rel\ max}$ Spectral bandwidth at 50 % $I_{rel\ max}$ I_F = 2 mA	(typ.)	$\Delta\lambda$	45	45	25	nm
Abstrahlwinkel bei 50 % I_V (Vollwinkel) Viewing angle at 50 % I_V	(typ.)	2φ	120	120	120	Grad deg.
Durchlassspannung Forward voltage I_F = 2 mA	(typ.) (max.)	V_F V_F	1.8 2.6	2.0 2.7	1.9 2.6	V V
Sperrstrom Reverse current V_R = 5 V	(typ.) (max.)	I_R 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 mA	(typ.)	$TC_{\lambda peak}$	0.11	0.10	0.11	nm/K
Temperaturkoeffizient von λ_{dom} Temperature coefficient of λ_{dom} I_F = 2 mA	(typ.)	$TC_{\lambda dom}$	0.07	0.07	0.07	nm/K
Temperaturkoeffizient von V_F Temperature coefficient of V_F I_F = 2 mA	(typ.)	TC_V	– 2.0	– 1.6	– 1.9	mV/K
Optischer Wirkungsgrad Optical efficiency I_F = 2 mA	(typ.)	η_{opt}	2	2	2	lm/W

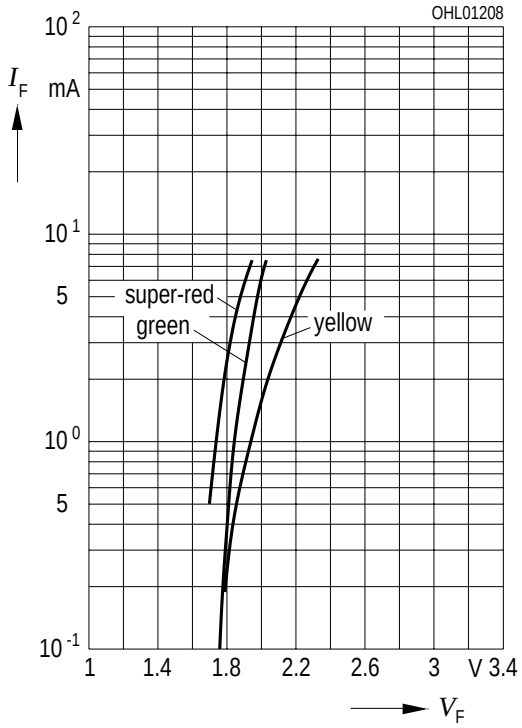
Relative spektrale Emission $I_{rel} = f(\lambda)$, T_A = 25 °C, I_F = 2 mA
Relative Spectral Emission
V(λ) = spektrale Augenempfindlichkeit
Standard eye response curve



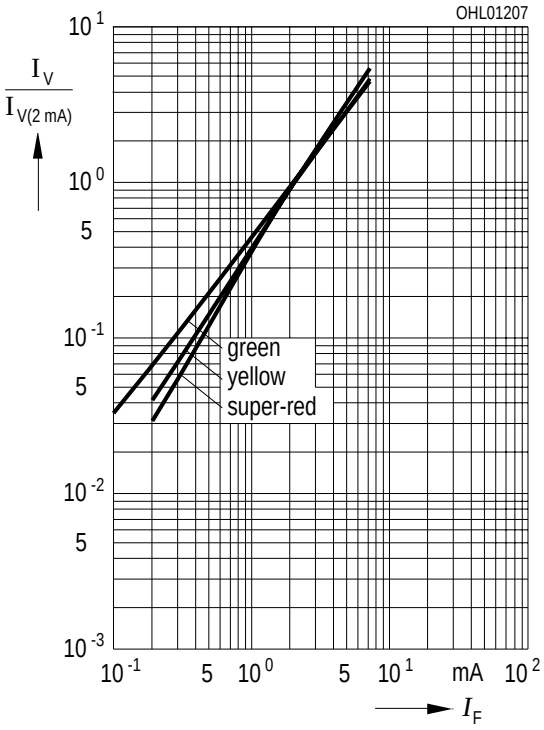
Abstrahlcharakteristik $I_{rel} = f(\varphi)$
Radiation Characteristic



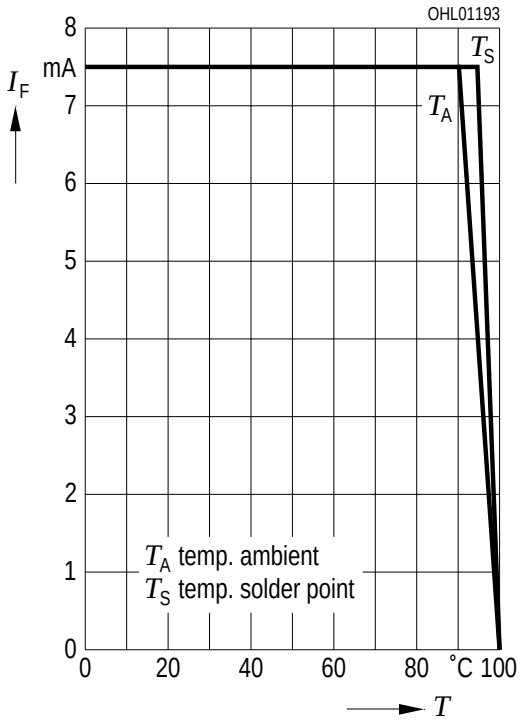
Durchlassstrom $I_F = f(V_F)$
Forward Current
T_A = 25 °C



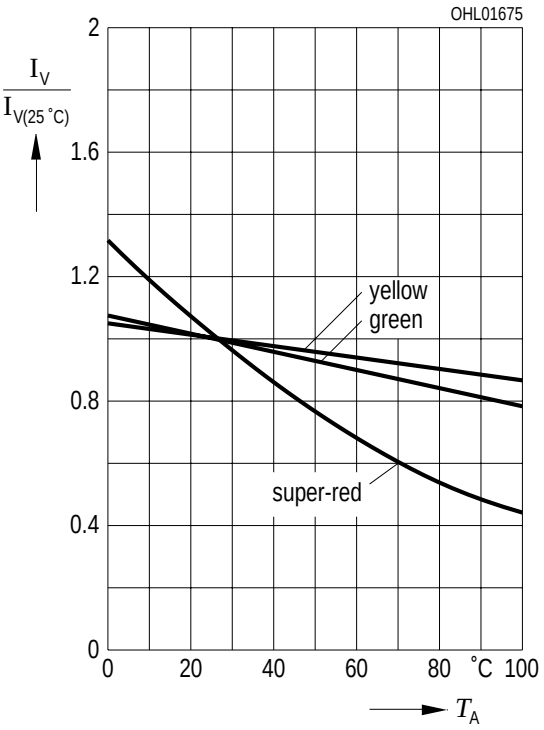
Relative Lichtstärke $I_V/I_{V(2\ mA)} = f(I_F)$
Relative Luminous Intensity
T_A = 25 °C



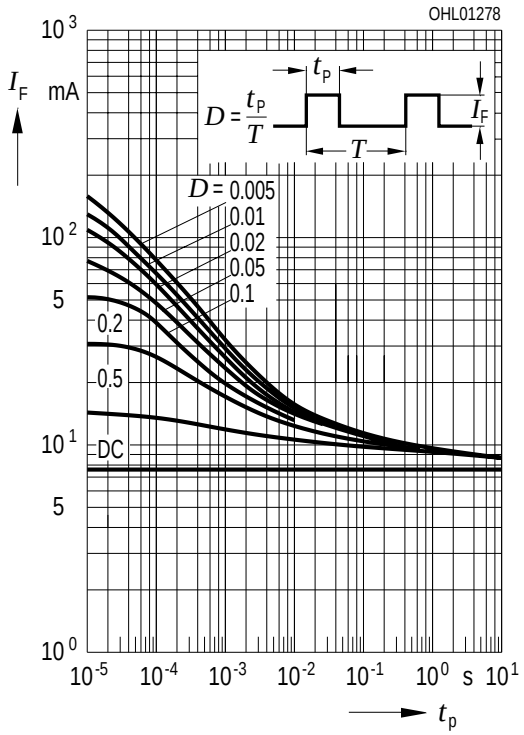
Maximal zulässiger Durchlassstrom $I_F = f(T)$
Max. Permissible Forward Current



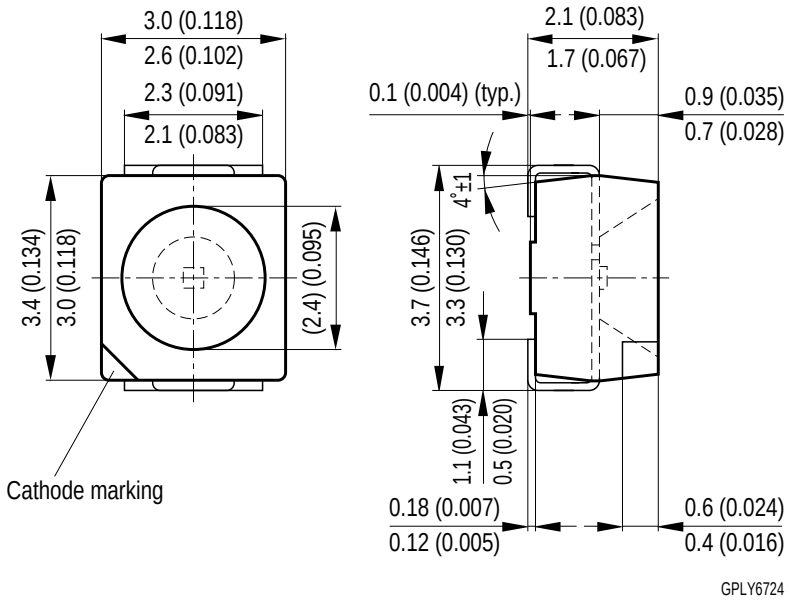
Relative Lichtstärke $I_V/I_{V(25\ °C)} = f(T_A)$
Relative Luminous Intensity
I_F = 2 mA



Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible Pulse Handling Capability
Duty cycle D = parameter, T_A = 25 °C



Maßzeichnung
Package Outlines

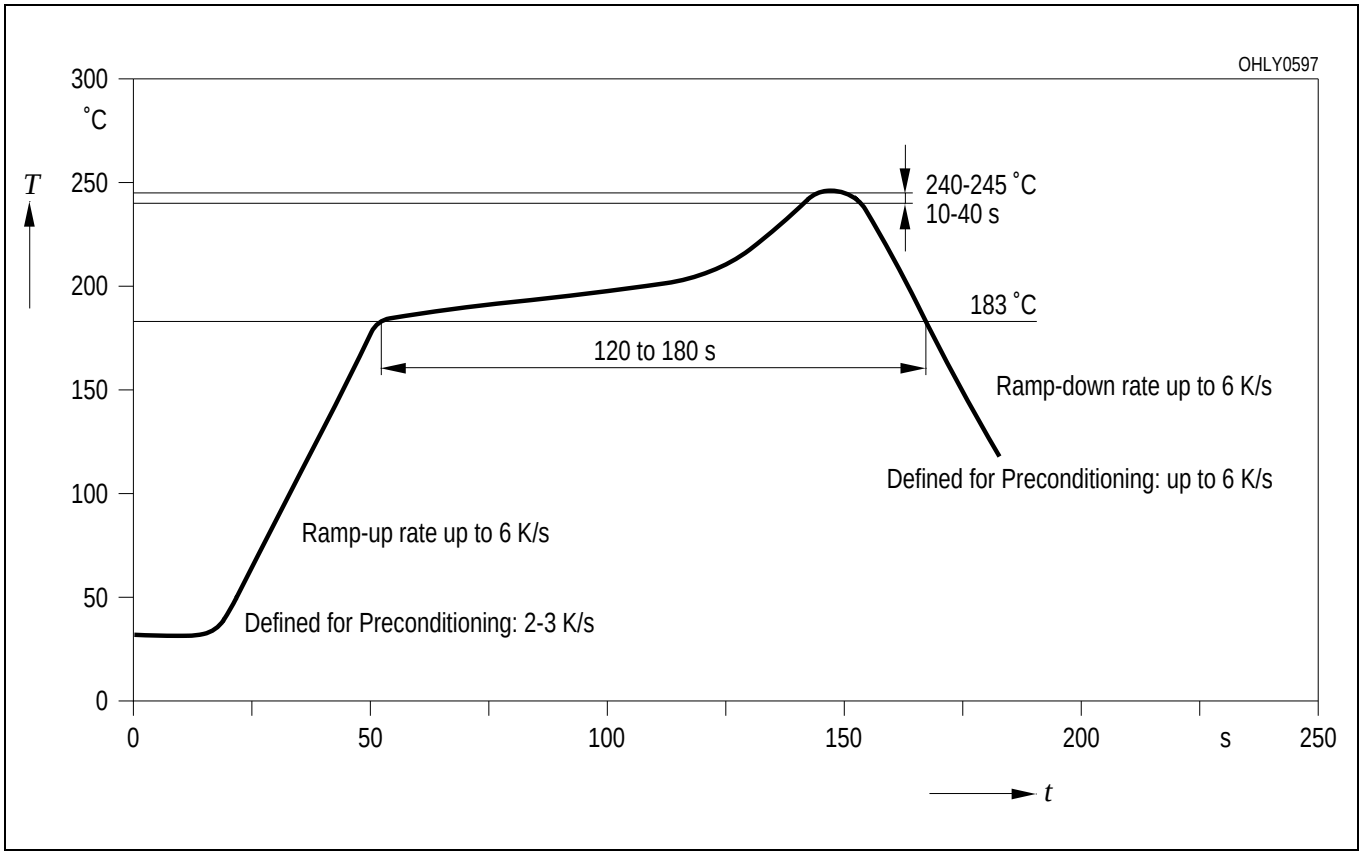


Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

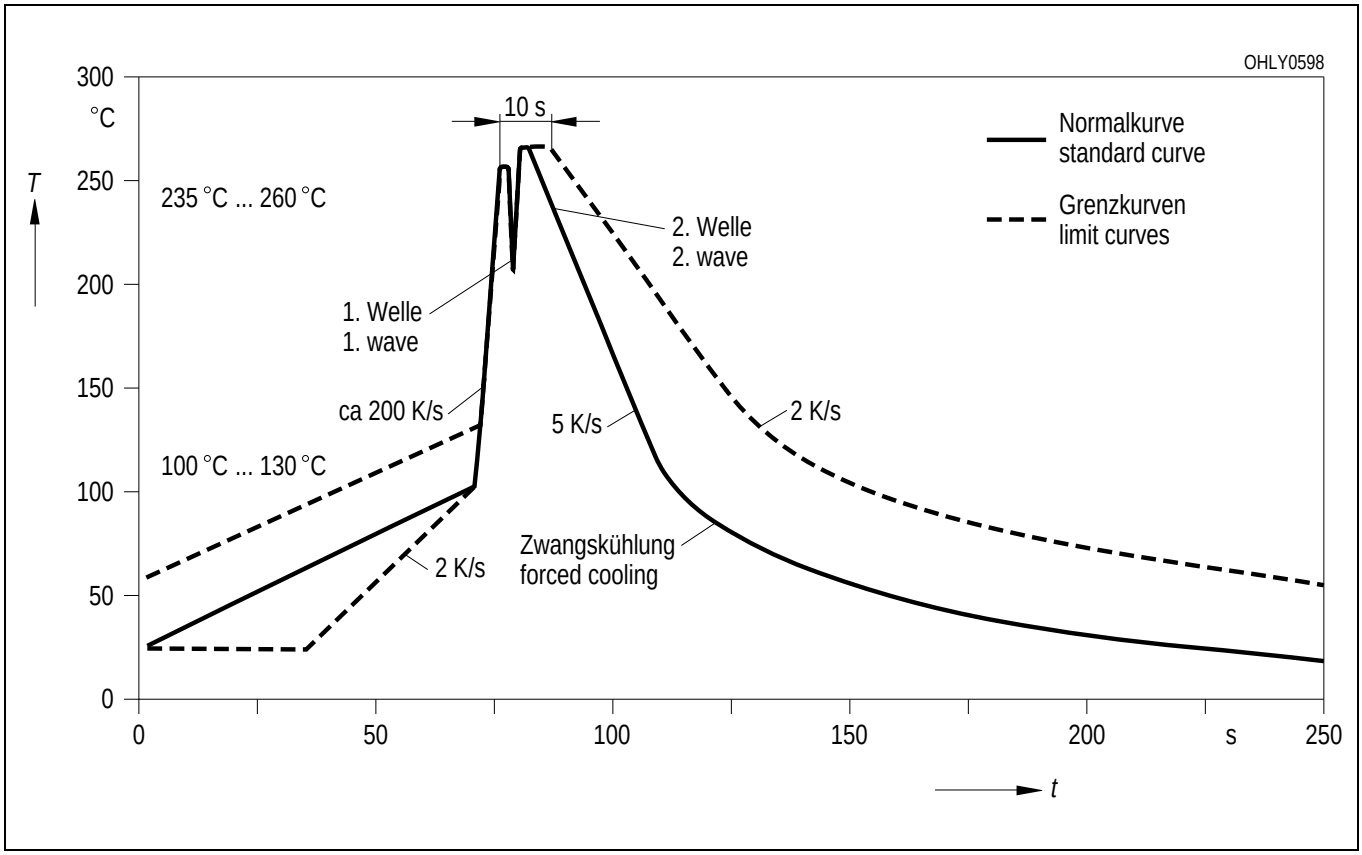
Kathodenkennung: abgeschrägte Ecke
Cathode mark: bevelled edge

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

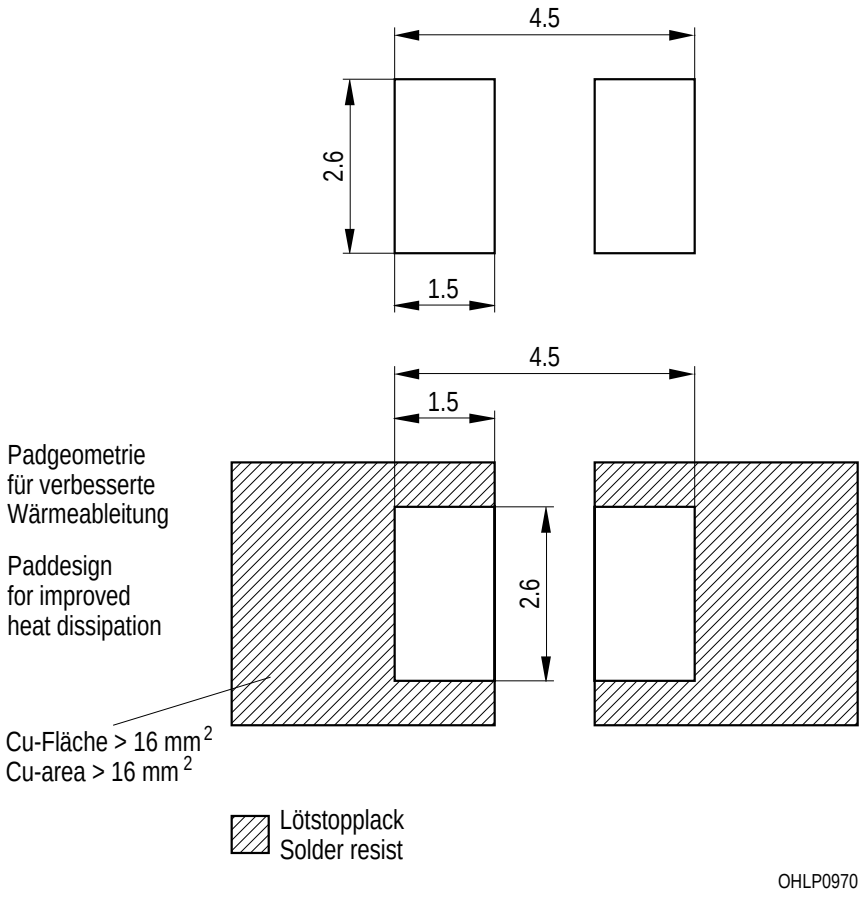
IR-Reflow Lötprofil (nach IPC 9501)
IR Reflow Soldering Profile (acc. to IPC 9501)



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



Gurtung / Polarität und Lage

Verpackungseinheit 2000/Rolle, ø180 mm
oder 8000/Rolle, ø330 mm

Method of Taping / Polarity and Orientation

Packing unit 2000/reel, ø180 mm
or 8000/reel, ø330 mm