

Hyper Mini SIDELED® Hyper-Bright LED

LS C876, LA C876, LO C876, LY C876



Besondere Merkmale

- **Gehäusotyp:** weißes SMT-Gehäuse
- **Besonderheit des Bauteils:** kleine Bauform mit extrem breiter Abstrahlcharakteristik; ideal für Einkopplungen in Lichtleiter
- **Wellenlänge:** 632 nm (super-rot), 615 nm (amber), 605 nm (orange), 587 nm (gelb)
- **Abstrahlwinkel:** Lambertscher Strahler (120°)
- **Technologie:** InGaAlP
- **optischer Wirkungsgrad:** 11 lm/W (gelb, orange, amber), 7 lm/W (super-rot)
- **Gruppierungsparameter:** Lichtstärke
- **Verarbeitungsmethode:** für alle SMT-Bestücktechniken geeignet
- **Lötmethode:** IR Reflow Löten
- **Vorbehandlung:** nach JEDEC Level 2
- **Gurtung:** 12 mm Gurt mit 2500/Rolle, ø180 mm oder 10000/Rolle, ø330 mm

Anwendungen

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

Features

- **package:** white SMT package
- **feature of the device:** small package with extremely wide viewing angle; ideal for coupling in light guides
- **wavelength:** 632 nm (super-red), 615 nm (amber), 605 nm (orange), 587 nm (yellow)
- **viewing angle:** Lambertian Emitter (120°)
- **technology:** InGaAlP
- **optical efficiency:** 11 lm/W (yellow, orange, amber), 7 lm/W (super-red)
- **grouping parameter:** luminous intensity
- **assembly methods:** suitable for all SMT assembly methods
- **soldering methods:** IR reflow soldering
- **preconditioning:** acc. to JEDEC Level 2
- **taping:** 12 mm tape with 2500/reel, ø180 mm or 10000/reel, ø330 mm

Applications

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

LS C876, LA C876, LO C876, LY C876

| Typ | Emissions- farbe | Farbe der Lichtaustritts- fläche | Lichtstärke | Lichtstrom | Bestellnummer |
|--|----------------------|--|---|--|------------------------------|
| Type | Color of Emission | Color of the Light Emitting Area | Luminous Intensity $I_F = 20 \text{ mA}$ $I_V \text{ (mcd)}$ | Luminous Flux $I_F = 20 \text{ mA}$ $\Phi_V \text{ (lm)}$ | Ordering Code |
| LS C876-N2P2-1 LS C876-P2R1-1 LS C876-N2 LS C876-P1 LS C876-P2 LS C876-Q1 LS C876-Q2 LS C876-R1 | super-red | colorless clear | 35.5 ... 71.0 56.0 ... 140.0 35.5 ... 45.0 45.0 ... 56.0 56.0 ... 71.0 71.0 ... 90.0 90.0 ... 112.0 112.0 ... 140.0 | 150 (typ.) 280 (typ.) 120 (typ.) 150 (typ.) 190 (typ.) 240 (typ.) 300 (typ.) 380 (typ.) | Q62703-Q5081 Q62703-Q5082 |
| LA C876-P2Q2-1 LA C876-Q2S1-1 LA C876-P2 LA C876-Q1 LA C876-Q2 LA C876-R1 LA C876-R2 LA C876-S1 | amber | colorless clear | 56.0 ... 112.0 90.0 ... 224.0 56.0 ... 71.0 71.0 ... 90.0 90.0 ... 112.0 112.0 ... 140.0 140.0 ... 180.0 180.0 ... 224.0 | 240 (typ.) 440 (typ.) 190 (typ.) 240 (typ.) 300 (typ.) 380 (typ.) 480 (typ.) 600 (typ.) | Q62703-Q4974 Q62703-Q4975 |
| LO C876-P2Q2-1 LO C876-Q2S1-1 LO C876-P2 LO C876-Q1 LO C876-Q2 LO C876-R1 LO C876-R2 LO C876-S1 | orange | colorless clear | 56.0 ... 112.0 90.0 ... 224.0 56.0 ... 71.0 71.0 ... 90.0 90.0 ... 112.0 112.0 ... 140.0 140.0 ... 180.0 180.0 ... 224.0 | 240 (typ.) 440 (typ.) 190 (typ.) 240 (typ.) 300 (typ.) 380 (typ.) 480 (typ.) 600 (typ.) | Q62703-Q5036 Q62703-Q5037 |
| LY C876-P2Q2-1 LY C876-Q2S1-1 LY C876-P2 LY C876-Q1 LY C876-Q2 LY C876-R1 LY C876-R2 LY C876-S1 | yellow | colorless clear | 56.0 ... 112.0 90.0 ... 224.0 56.0 ... 71.0 71.0 ... 90.0 90.0 ... 112.0 112.0 ... 140.0 140.0 ... 180.0 180.0 ... 224.0 | 240 (typ.) 440 (typ.) 190 (typ.) 240 (typ.) 300 (typ.) 380 (typ.) 480 (typ.) 600 (typ.) | Q62703-Q5117 Q62703-Q5118 |

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 $\pm 11 \%$.

Grenzwerte
Maximum Ratings

| Bezeichnung Parameter | Symbol Symbol | Werte Values | | Einheit Unit |
|--|--------------------------------|-----------------|-----|-----------------|
| | | LS, LO, LA | LY | |
| 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} | 0.8 | 0.2 | A |
| Sperrspannung Reverse voltage $I_F = 10 \mu A$ | V_R | 3 | | V |
| Leistungsaufnahme Power dissipation $T_A \leq 25 \text{ °C}$ | P_{tot} | 80 | | mW |
| Wärmewiderstand Thermal resistance Sperrschicht/Umgebung Junction/ambient 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 $\geq 16 \text{ mm}^2$) | $R_{th JA}$ $R_{th JS}$ | 630 350 | | K/W K/W |

Kennwerte ($T_A = 25\text{ °C}$)

Characteristics

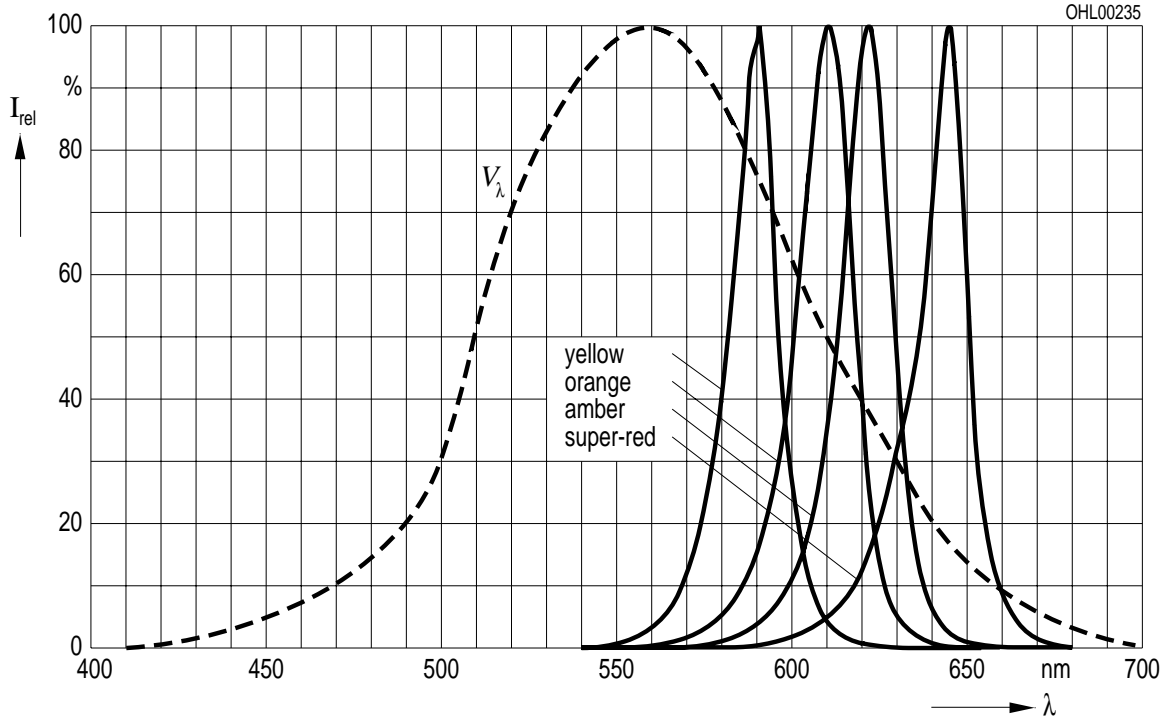
| Bezeichnung Parameter | Symbol Symbol | Werte Values | | | | Einheit Unit |
|---|-------------------------------------|-----------------|------------|------------|------------|--------------------------------|
| | | LS | LA | LO | LY | |
| Wellenlänge des emittierten Lichtes Wavelength at peak emission $I_F = 20\text{ mA}$ | (typ.) λ_{peak} | 645 | 622 | 610 | 591 | nm |
| Dominantwellenlänge Dominant wavelength $I_F = 20\text{ mA}$ | (typ.) λ_{dom} | 632 | 615 | 605 | 587 | nm |
| Spektrale Bandbreite bei 50 % $I_{\text{rel max}}$ Spectral bandwidth at 50 % $I_{\text{rel max}}$ $I_F = 20\text{ mA}$ | (typ.) $\Delta\lambda$ | 16 | 16 | 16 | 15 | nm |
| Abstrahlwinkel bei 50 % I_V (Vollwinkel) Viewing angle at 50 % I_V | (typ.) 2φ | 120 | 120 | 120 | 120 | Grad deg. |
| Durchlassspannung Forward voltage $I_F = 20\text{ mA}$ | (typ.) V_F (max.) V_F | 2.0 2.5 | 2.0 2.5 | 2.0 2.5 | 2.0 2.5 | V V |
| Sperrstrom Reverse current $V_R = 3\text{ V}$ | (typ.) I_R (max.) I_R | 0.01 10 | 0.01 10 | 0.01 10 | 0.01 10 | μA μA |
| Temperaturkoeffizient von λ_{peak} Temperature coefficient of λ_{peak} $I_F = 20\text{ mA}$ | (typ.) $TC_{\lambda_{\text{peak}}}$ | 0.14 | 0.13 | 0.13 | 0.13 | nm/K |
| Temperaturkoeffizient von λ_{dom} Temperature coefficient of λ_{dom} $I_F = 20\text{ mA}$ | (typ.) $TC_{\lambda_{\text{dom}}}$ | 0.01 | 0.06 | 0.07 | 0.10 | nm/K |
| Temperaturkoeffizient von V_F Temperature coefficient of V_F $I_F = 20\text{ mA}$ | (typ.) TC_V | -2.0 | -1.8 | -1.7 | -2.5 | mV/K |
| Optischer Wirkungsgrad Optical efficiency $I_F = 20\text{ mA}$ | (typ.) η_{opt} | 7 | 11 | 11 | 11 | lm/W |

Relative spektrale Emission $I_{rel} = f(\lambda)$, $T_A = 25\text{ °C}$, $I_F = 20\text{ mA}$

Relative Spectral Emission

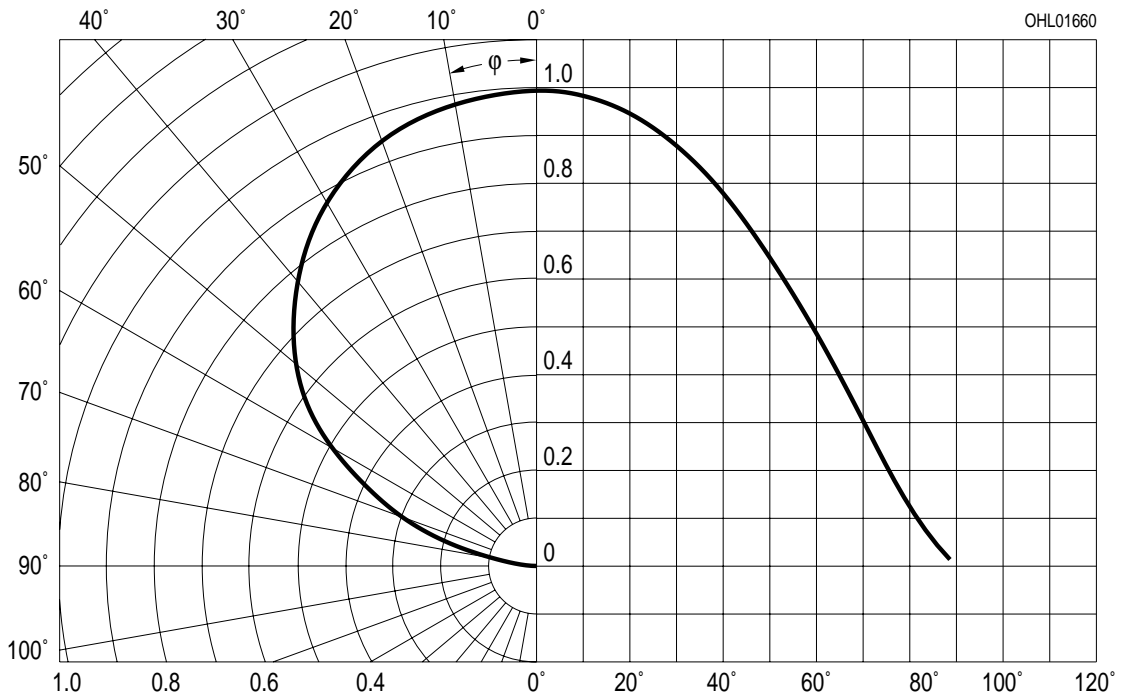
$V(\lambda)$ = spektrale Augenempfindlichkeit

Standard eye response curve



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

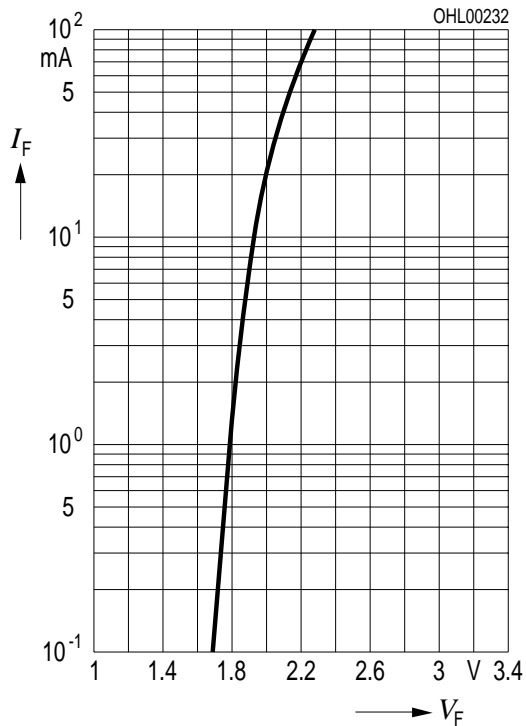
Radiation Characteristic



Durchlassstrom $I_F = f(V_F)$

Forward Current

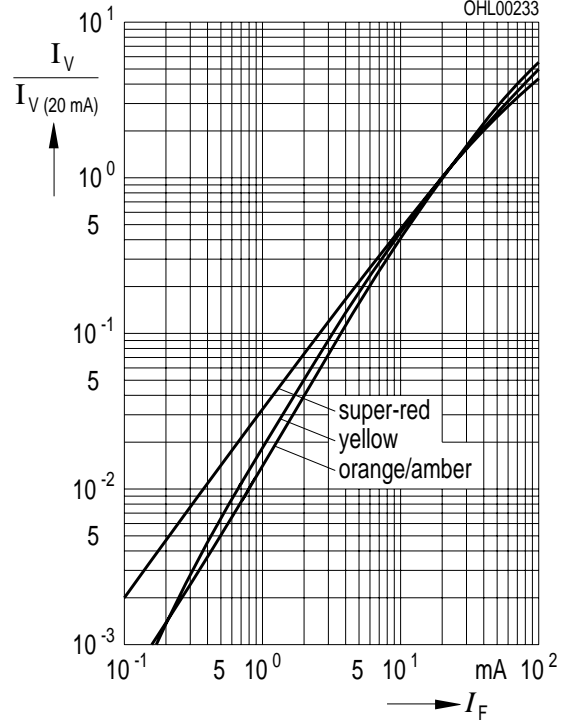
$T_A = 25\text{ }^\circ\text{C}$



Relative Lichtstärke $I_V/I_{V(20\text{ mA})} = f(I_F)$

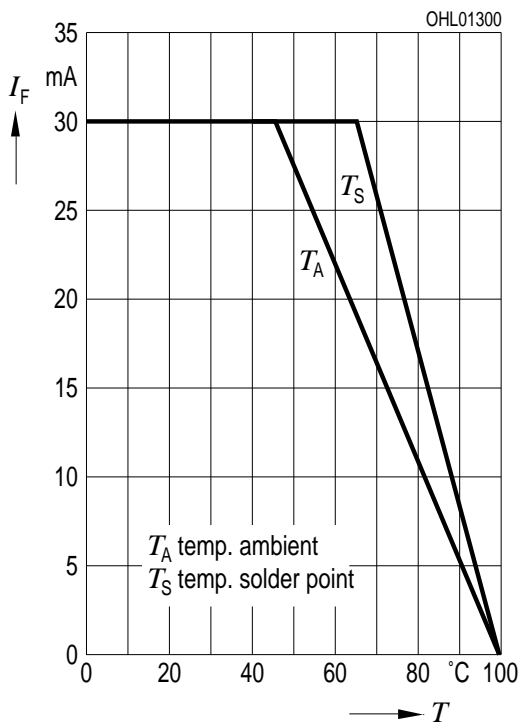
Relative Luminous Intensity

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



Maximal zulässiger Durchlassstrom $I_F = f(T)$

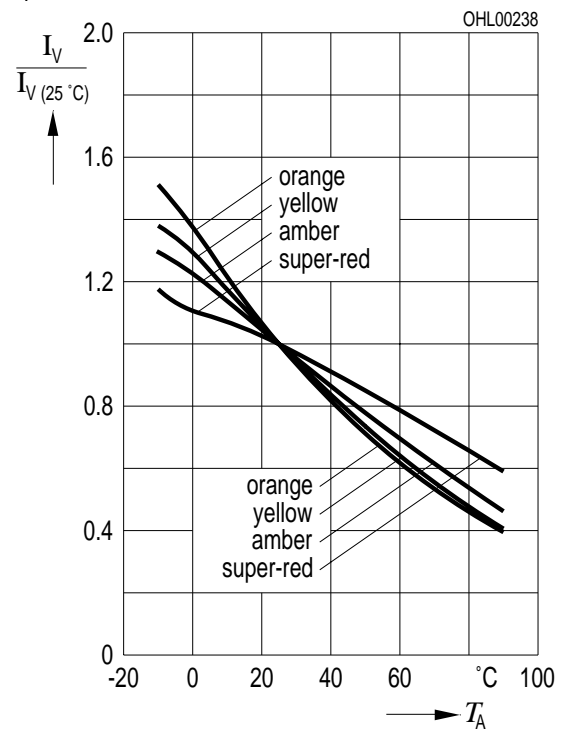
Max. Permissible Forward Current



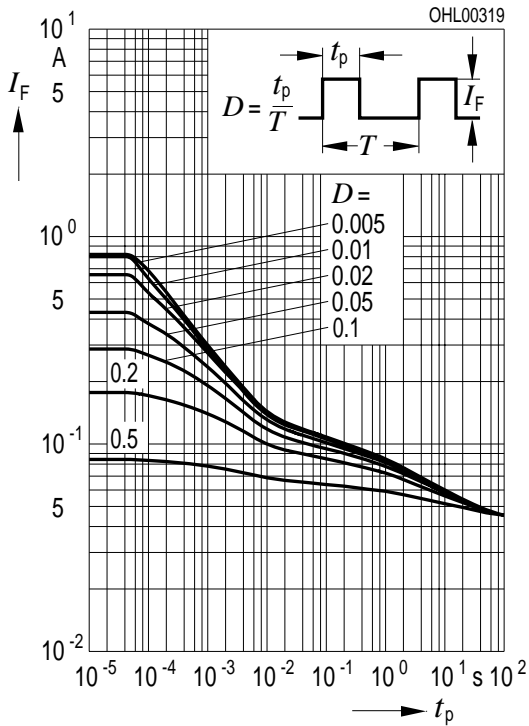
Relative Lichtstärke $I_V/I_{V(25\text{ }^\circ\text{C})} = f(T_A)$

Relative Luminous Intensity

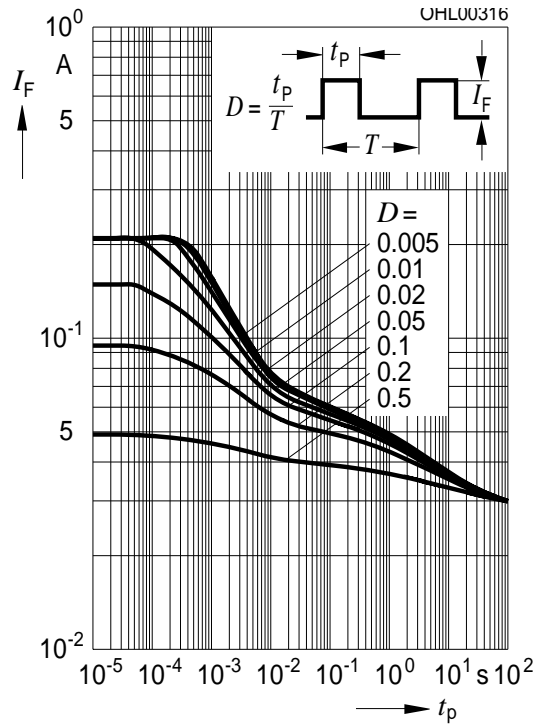
$I_F = 20\text{ mA}$



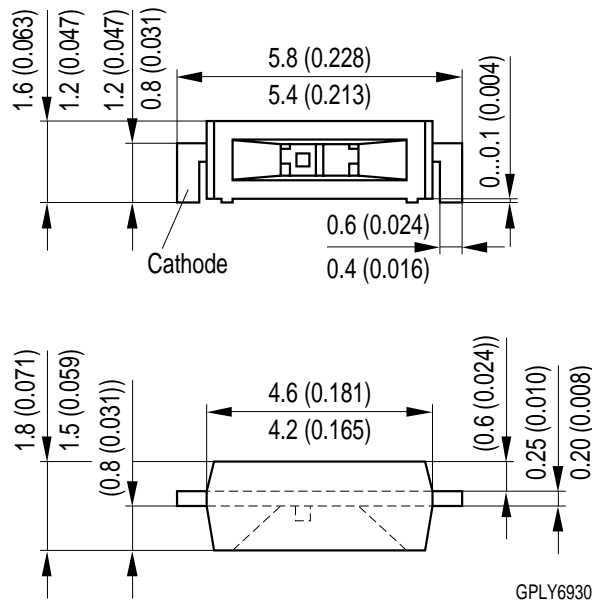
Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible Pulse Handling Capability
 Duty cycle $D =$ parameter, $T_A = 25\text{ °C}$
LS, LA, LO



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



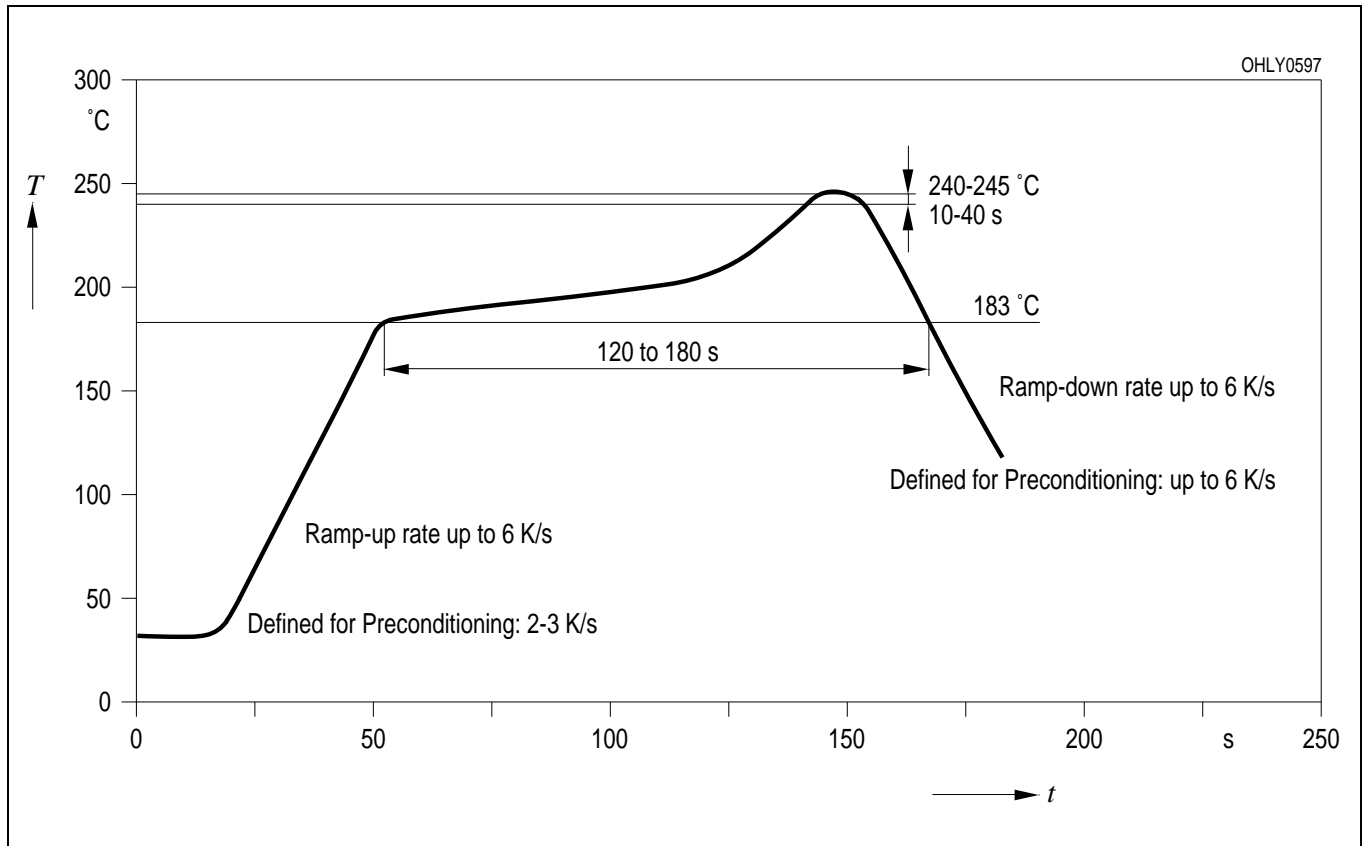
Maßzeichnung
Package Outlines



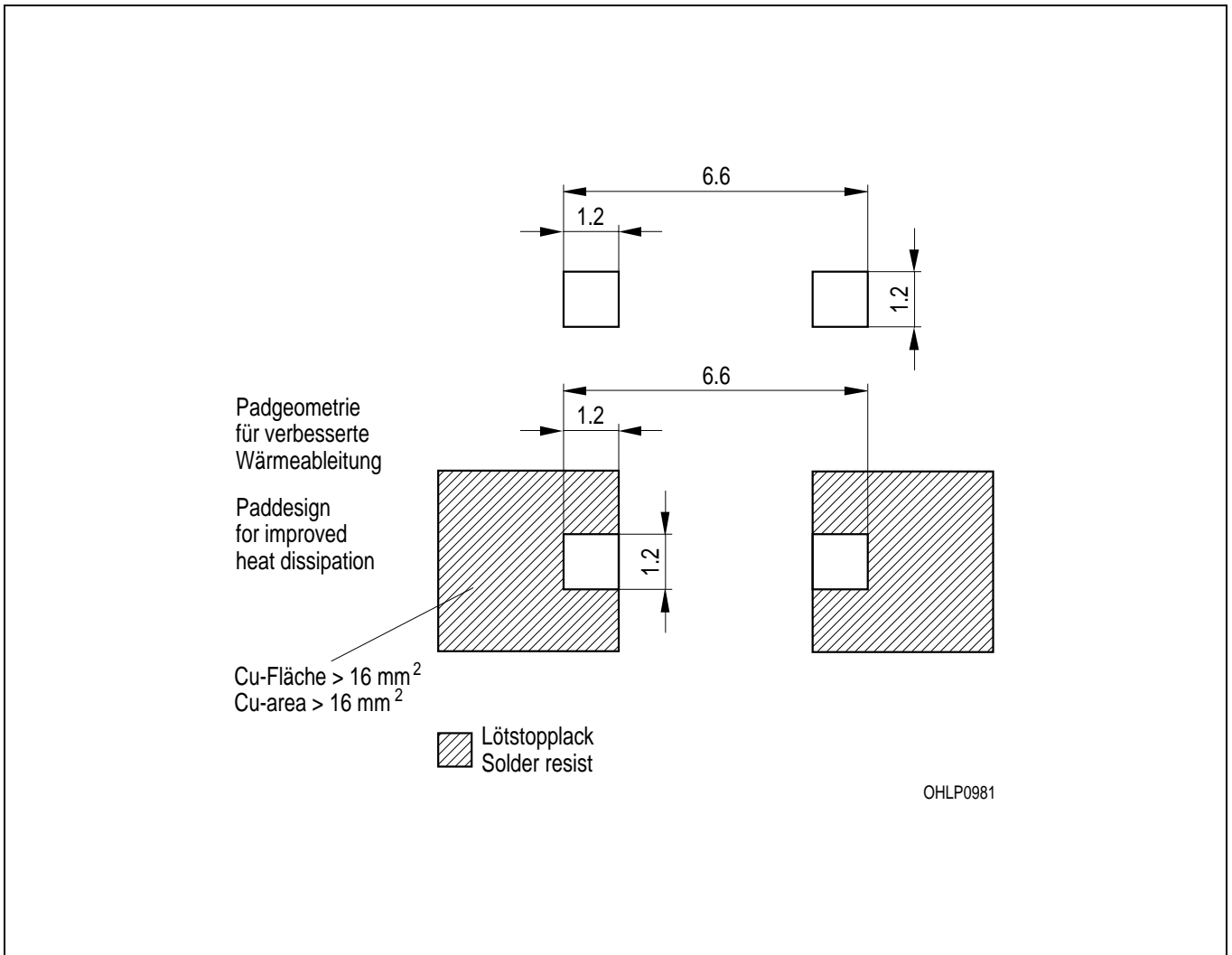
Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

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)



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



Gurtung / Polarität und Lage

Verpackungseinheit 2500/Rolle, \varnothing 180 mm
oder 10000/Rolle, \varnothing 330 mm

Method of Taping / Polarity and Orientation

Packing unit 2500/reel, \varnothing 180 mm
or 10000/reel, \varnothing 330 mm

