3 mm (T1) LED, Diffused
Super-Bright, Hyper-Red GaAlAs-LED

LH 3364

Besondere Merkmale

- **Gehäusetyp:** eingefärbtes, diffuses 3 mm (T1) Gehäuse
- **Besonderheit des Bauteils:** Lötspieße mit Aufsetzebene
- **Wellenlänge:** 645 nm
- **Abstrahlwinkel:** 45°
- **Technologie:** GaAlAs
- **optischer Wirkungsgrad:** 3 lm/W
- **Gruppierungsparameter:** Lichtstärke
- **Lötmethode:** Wellenlöten (TTW)
- **Verpackung:** Schüttgut, gegurtet lieferbar (2000/Rolle)

Anwendungen

- optischer Indikator
- Hinterleuchtung (LCD, Schalter, Tasten, Displays, Werbebeleuchtung, Allgemeinbeleuchtung)
- Innenbeleuchtung im Automobilbereich (z.B. Instrumentenbeleuchtung, u.ä.)
- Signal- und Symbolleuchten
- Markierungsbeleuchtung (z.B. Stufen, Fluchtwege, u.ä.)

Features

- **package:** colored, diffused 3 mm (T1) package
- **feature of the device:** solder leads with stand-off
- **wavelength:** 645 nm
- **viewing angle:** 45°
- **technology:** GaAlAs
- **optical efficiency:** 3 lm/W
- **grouping parameter:** luminous intensity
- **soldering methods:** TTW soldering
- **Packing:** bulk, available taped on reel (2000/reel)

Applications

- optical indicators
- backlighting (LCD, switches, keys, displays, illuminated advertising, general lighting)
- interior automotive lighting (e.g. dashboard backlighting, etc.)
- signal and symbol luminaire
- marker lights (e.g. steps, exit ways, etc.)

Typ Type	Emissions-farbe Color of Emission	Gehäusefarbe Color of Package	Lichtstärke Luminous Intensity I_F = 10 mA I_V (mcd)	Lichtstrom Luminous Flux I_F = 10 mA Φ_V (mlm)	Bestellnummer Ordering Code
LH 3364-LP	hyper-red	red diffused	11.2 ... 71.0	80 (typ.)	Q62703-Q3202
LH 3364-M			18.0 ... 28.0	40 (typ.)	Q62703-Q3203
LH 3364-N			28.0 ... 45.0	70 (typ.)	Q62703-Q2798
LH 3364-MQ			18.0 ... 112.0	130 (typ.)	Q62703-Q3201

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 a tolerance of ±11 %.

Anm.: Die Standardlieferform von Serientypen beinhaltet eine untere bzw. eine obere Familiengruppe oder mindestens zwei Einzelgruppen.
In einer Verpackungseinheit / Gurt ist immer nur eine Helligkeitsgruppe enthalten.
Die technologiebedingte Helligkeits-Streuung der heutigen LED-Herstellprozesse über einen längeren Fertigungszeitraum (Halbleitermaterial - Chipherstellung - Montageprozesss) erlaubt keine Zusage einer einzelnen Helligkeitsgruppe. Daher müssen mindestens zwei Helligkeitsgruppen vorgesehen werden!

Note: The standard shipping format for serial types includes a lower or upper family group or at least two individual groups.
No packing unit / tape ever contains more than one luminous intensity group.
Luminosity variations caused by the technology used in current LED manufacturing processes over a protracted manufacturing period (semiconductor material - chip fabrication - assembly process) mean that it is not possible to assign LEDs to a single luminous intensity group. For this reason at least two luminous intensity groups must be provided!

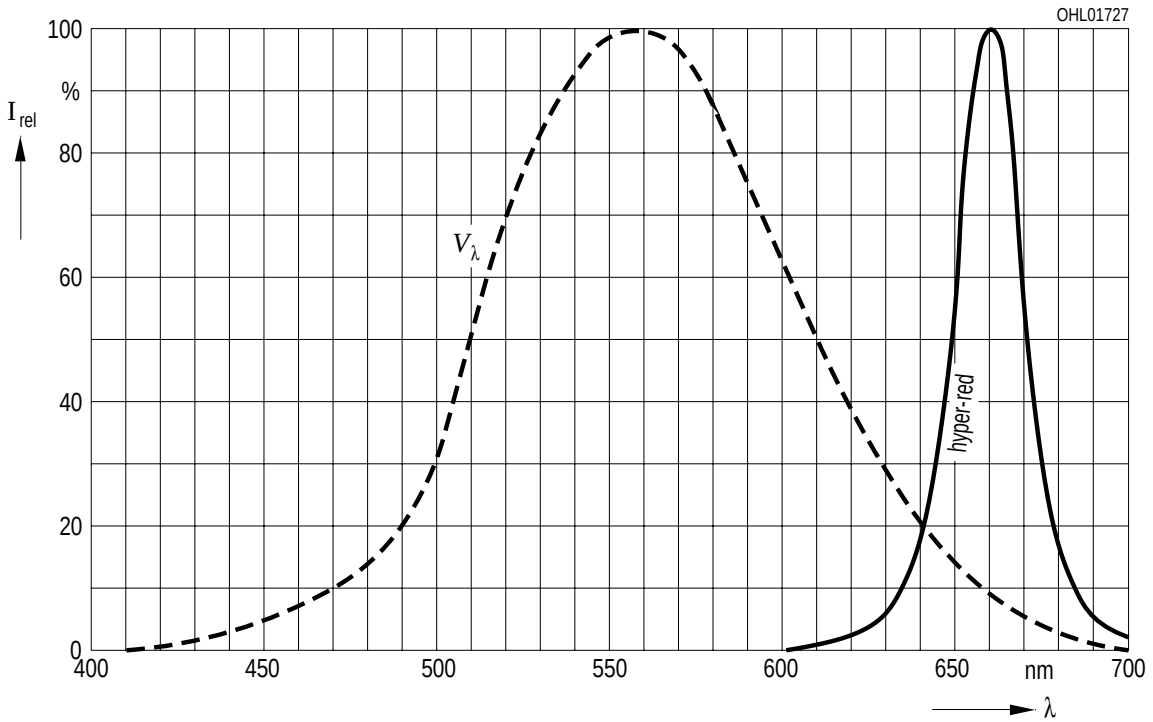
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebstemperatur Operating temperature range	T_{op}	– 55 … + 100	°C
Lagertemperatur Storage temperature range	T_{stg}	– 55 … + 100	°C
Sperrschichttemperatur Junction temperature	T_j	+ 100	°C
Durchlassstrom Forward current	I_F	40	mA
Stoßstrom Surge current $t \leq 10$ µs, $D = 0.005$	I_{FM}	0.5	A
Sperrspannung Reverse voltage	V_R	3	V
Leistungsaufnahme Power consumption $T_A \leq 25$ °C	P_{tot}	120	mW
Wärmewiderstand Thermal resistance Sperrschicht/Umgebung Junction/air Sperrschicht/Lötpad Junction/solder point Montage auf PC-Board FR 4 (Padgröße ≥ 16 mm²) mounted on PC board FR 4 (pad size ≥ 16 mm²) Minimale Beinchenlänge Minimum lead length	 $R_{th\ JA}$ $R_{th\ JS}$	 400 180	 K/W K/W

Bezeichnung Parameter		Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge des emittierten Lichtes Wavelength at peak emission I_F = 10 mA	(typ.)	λ_{peak}	660	nm
Dominantwellenlänge [1] Dominant wavelength I_F = 10 mA	(typ.)	λ_{dom}	645	nm
Spektrale Bandbreite bei 50 % $I_{rel\ max}$ Spectral bandwidth at 50 % $I_{rel\ max}$ I_F = 10 mA	(typ.)	$\Delta\lambda$	22	nm
Abstrahlwinkel bei 50 % I_V (Vollwinkel) Viewing angle at 50 % I_V	(typ.)	2φ	45	Grad deg.
Durchlassspannung [2] Forward voltage I_F = 10 mA	(typ.) (max.)	V_F V_F	1.75 2.5	V V
Sperrstrom Reverse current V_R = 3 V	(typ.) (max.)	I_R I_R	0.01 10	µA µA
Temperaturkoeffizient von λ_{peak} Temperature coefficient of λ_{peak} I_F = 10 mA; –10°C ≤ T ≤ 100°C	(typ.)	$TC_{\lambda peak}$	0.28	nm/K
Temperaturkoeffizient von λ_{dom} Temperature coefficient of λ_{dom} I_F = 10 mA; –10°C ≤ T ≤ 100°C	(typ.)	$TC_{\lambda dom}$	0.05	nm/K
Temperaturkoeffizient von V_F Temperature coefficient of V_F I_F = 10 mA; –10°C ≤ T ≤ 100°C	(typ.)	TC_V	– 2.5	mV/K
Optischer Wirkungsgrad Optical efficiency I_F = 10 mA	(typ.)	η_{opt}	3	lm/W

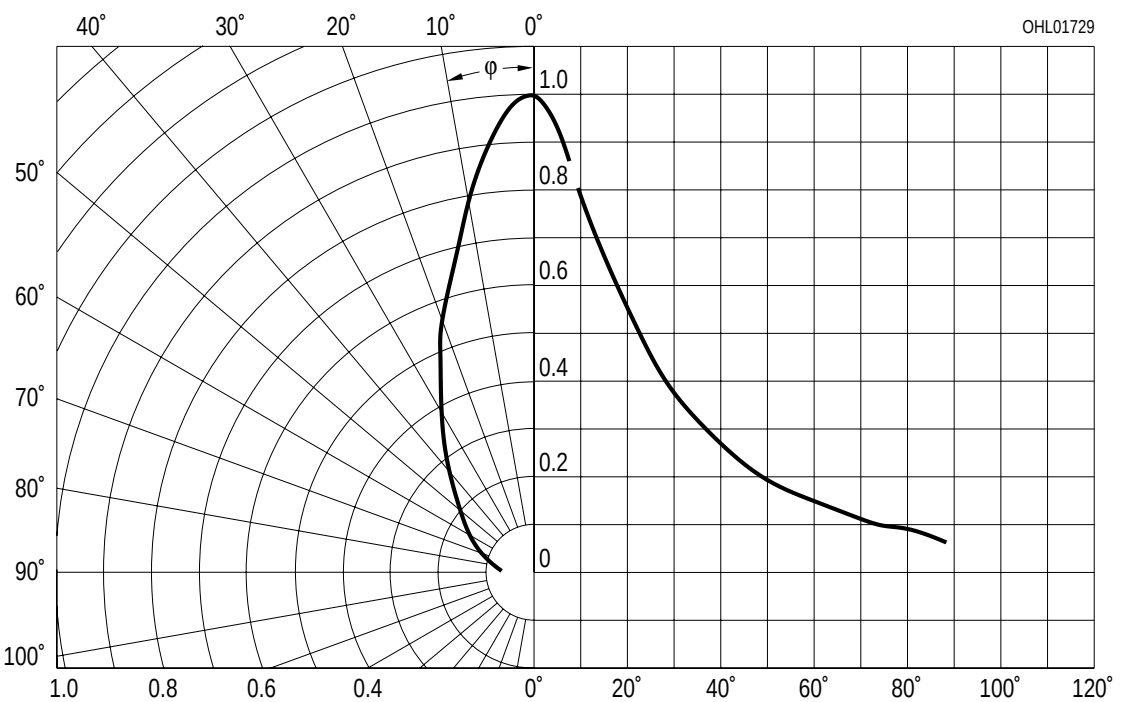
[1] Wellenlängen werden mit einer Stromeinprägedauer von 25 ms und einer Genauigkeit von ±1 nm ermittelt.
Wavelengths are tested at a current pulse duration of 25 ms and a tolerance of ±1 nm.

[2] Spannungswerte werden mit einer Stromeinprägedauer von 1 ms und einer Genauigkeit von ±0.1 V ermittelt.
Voltages are tested at a current pulse duration of 1 ms and a tolerance of ±0.1 V.

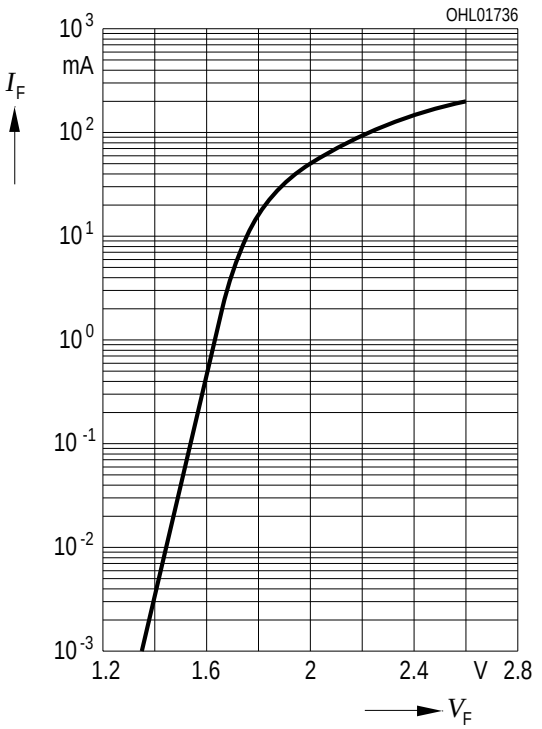
Relative spektrale Emission $I_{rel} = f(\lambda)$, $T_A = 25$ °C, $I_F = 10$ mA
Relative Spectral Emission
V(λ) = spektrale Augenempfindlichkeit
Standard eye response curve



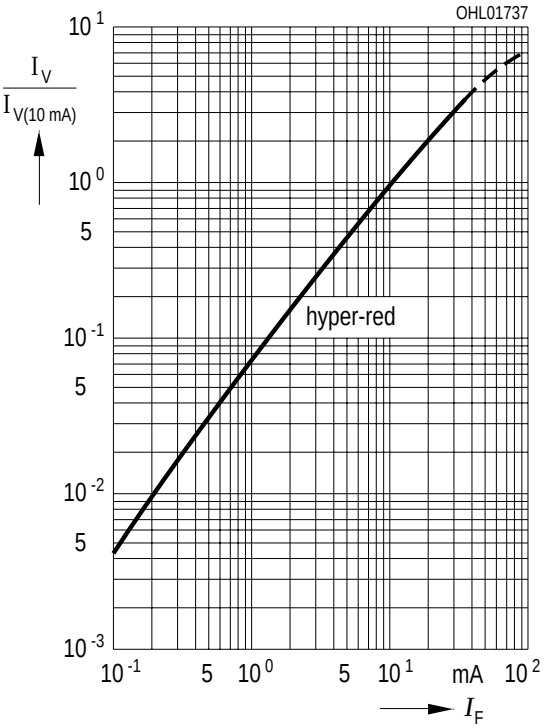
Abstrahlcharakteristik $I_{rel} = f(\varphi)$
Radiation Characteristic



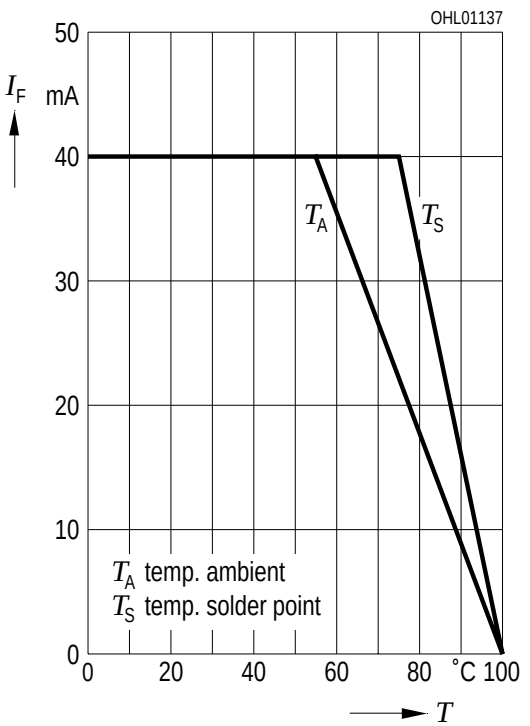
Durchlassstrom $I_F = f(V_F)$
Forward Current
T_A = 25 °C



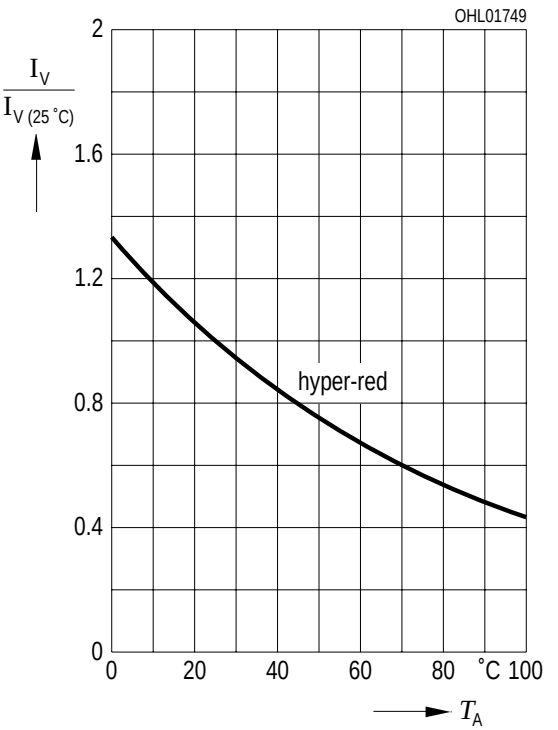
Relative Lichtstärke $I_V/I_{V(10\ mA)} = f(I_F)$
Relative Luminous Intensity
T_A = 25 °C



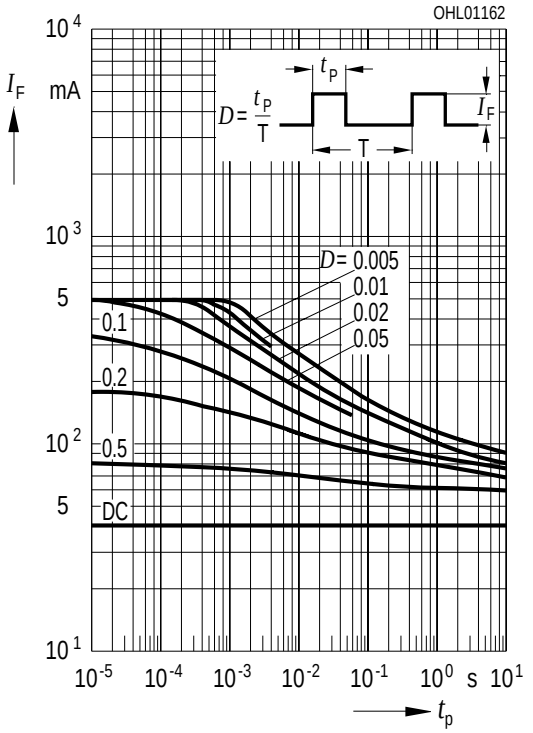
Maximal zulässiger Durchlassstrom $I_F = f(T)$
Max. Permissible Forward Current



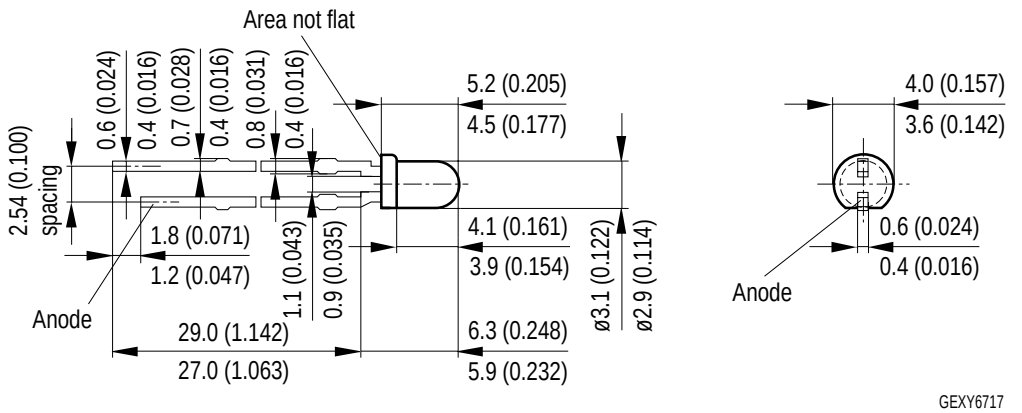
Relative Lichtstärke $I_V/I_{V(25\ °C)} = f(T_A)$
Relative Luminous Intensity
I_F = 10 mA



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



Maßzeichnung
Package Outlines

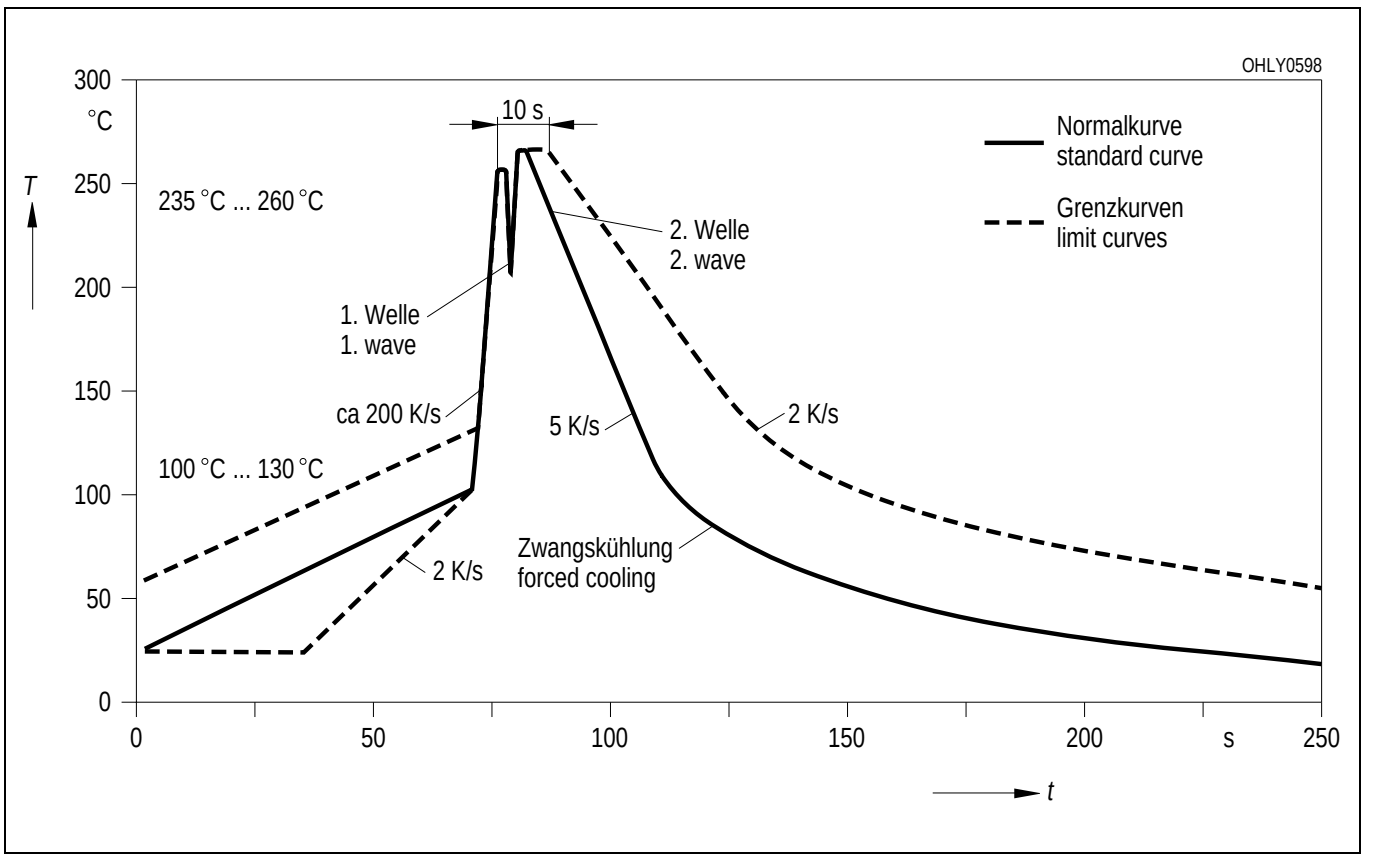


Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

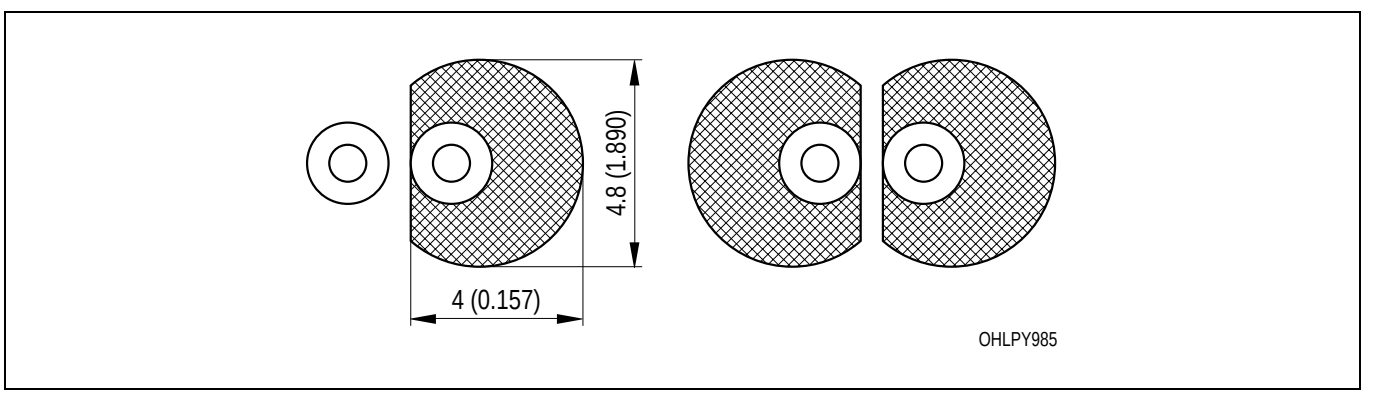
Anodenkennung: kürzerer Lötspieß
Anode mark: short solder lead
Gewicht / Approx. weight: 0.15 g

Lötbedingungen
Soldering Conditions

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



Empfohlenes Lötpaddesign Wellenlöten (TTW)
Recommended Solder Pad TTW Soldering



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

Revision History: 2001-03-12	
Previous Version: 2001-03-12	
Page	**Subjects (major changes since last revision)**

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