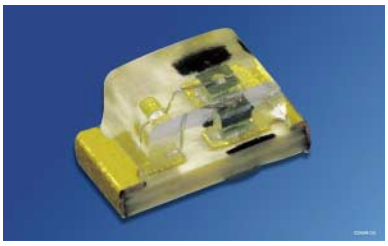
Hyper CHIPLED
Hyper-Bright LED

LO Q996



Besondere Merkmale

- **Gehäusetyp:** 0603
- **Besonderheit des Bauteils:** kleinste Bauform 1,6 mm x 0,8 mm x 0,8 mm
- **Wellenlänge:** 606 nm (orange)
- **Abstrahlwinkel:** extrem breite Abstrahlcharakteristik (160°)
- **Technologie:** InGaAlP
- **optischer Wirkungsgrad:** 11 lm/W
- **Verarbeitungsmethode:** für alle SMT-Bestücktechniken geeignet
- **Lötmethode:** IR Reflow Löten
- **Vorbehandlung:** nach JEDEC Level 2
- **Gurtung:** 8 mm Gurt mit 4000/Rolle, ø180 mm

Anwendungen

- Informationsanzeigen im Außenbereich
- Flache Hinterleuchtung (LCD, Handy, Schalter, Display)
- Signal- und Symbolleuchten
- Markierungsbeleuchtung (z.B. Stufen, Fluchtwege, u.ä.)

Features

- **package:** 0603
- **feature of the device:** smallest package 1.6 mm x 0.8 mm x 0.8 mm
- **wavelength:** 606 nm (orange)
- **viewing angle:** extremely wide (160°)
- **technology:** InGaAlP
- **optical efficiency:** 11 lm/W
- **assembly methods:** suitable for all SMT assembly methods
- **soldering methods:** IR reflow soldering
- **preconditioning:** acc. to JEDEC Level 2
- **taping:** 8 mm tape with 4000/reel, ø180 mm

Applications

- outdoor displays
- flat backlighting (LCD, cellular phones, switches, displays)
- signal and symbol luminaire
- marker lights (e.g. steps, exit ways, etc.)

Typ **Type**	**Emissionsfarbe** **Color of Emission**	**Farbe der Lichtaustrittsfläche** **Color of the Light Emitting Area**	**Lichtstärke** **Luminous Intensity I_F = 20 mA I_V (mcd)**		**Bestellnummer** **Ordering Code**
			min.	**typ.**	
LO Q996-1	orange	colorless clear	35.5	70	Q62702-P5337

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.: -1 gesamter Farbbereich, Lieferung in Einzelgruppen (siehe ***Seite 5****)*

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, delivery in single groups (please see ***page 5****)*

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 half group

Grenzwerte
Maximum Ratings

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Betriebstemperatur Operating temperature range	T_{op}	– 30 … + 85	°C
Lagertemperatur Storage temperature range	T_{stg}	– 40 … + 85	°C
Sperrschichttemperatur Junction temperature	T_j	+ 95	°C
Durchlassstrom Forward current	I_F	25	mA
Stoßstrom Surge current $t \leq 10$ µs, $D = 0.1$	I_{FM}	0.1	A
Sperrspannung Reverse voltage	V_R	3	V
Leistungsaufnahme Power consumption	P_{tot}	65	mW
Wärmewiderstand Thermal resistance			
Sperrschicht/Umgebung Junction/ambient	$R_{th\ JA}$	900	K/W
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)	$R_{th\ JS}$	510	K/W

Kennwerte (T_A = 25 °C)
Characteristics

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Wellenlänge des emittierten Lichtes (typ.) Wavelength at peak emission I_F = 20 mA	λ_{peak}	610	nm
Dominantwellenlänge 1) (typ.) Dominant wavelength I_F =20 mA	λ_{dom}	606 ± 6	nm
Spektrale Bandbreite bei 50 % $I_{rel\ max}$ (typ.) Spectral bandwidth at 50 % $I_{rel\ max}$ I_F = 20 mA	$\Delta\lambda$	16	nm
Abstrahlwinkel bei 50 % I_V (Vollwinkel) (typ.) Viewing angle at 50 % I_V	2φ	160	Grad deg.
Durchlassspannung 2) (typ.) Forward voltage (max.) I_F = 20 mA	V_F V_F	2.0 2.4	V V
Sperrstrom (typ.) Reverse current (max.) V_R = 3 V	I_R I_R	0.01 10	µA µA
Temperaturkoeffizient von λ_{peak} (typ.) Temperature coefficient of λ_{peak} I_F = 20 mA; –10°C ≤ T ≤ 100°C	$TC_{\lambda peak}$	0.13	nm/K
Temperaturkoeffizient von λ_{dom} (typ.) Temperature coefficient of λ_{dom} I_F = 20 mA; –10°C ≤ T ≤ 100°C	$TC_{\lambda dom}$	0.07	nm/K
Temperaturkoeffizient von V_F (typ.) Temperature coefficient of V_F I_F = 20 mA; –10°C ≤ T ≤ 100°C	TC_V	– 1.7	mV/K
Optischer Wirkungsgrad (typ.) Optical efficiency I_F = 20 mA	η_{opt}	11	lm/W

1) Wellenlängengruppen werden mit einer Stromeinprägedauer von 25 ms und einer Genauigkeit von ±1 nm ermittelt.
Wavelength groups are tested at a current pulse duration of 25 ms and a tolerance of ±1 nm.

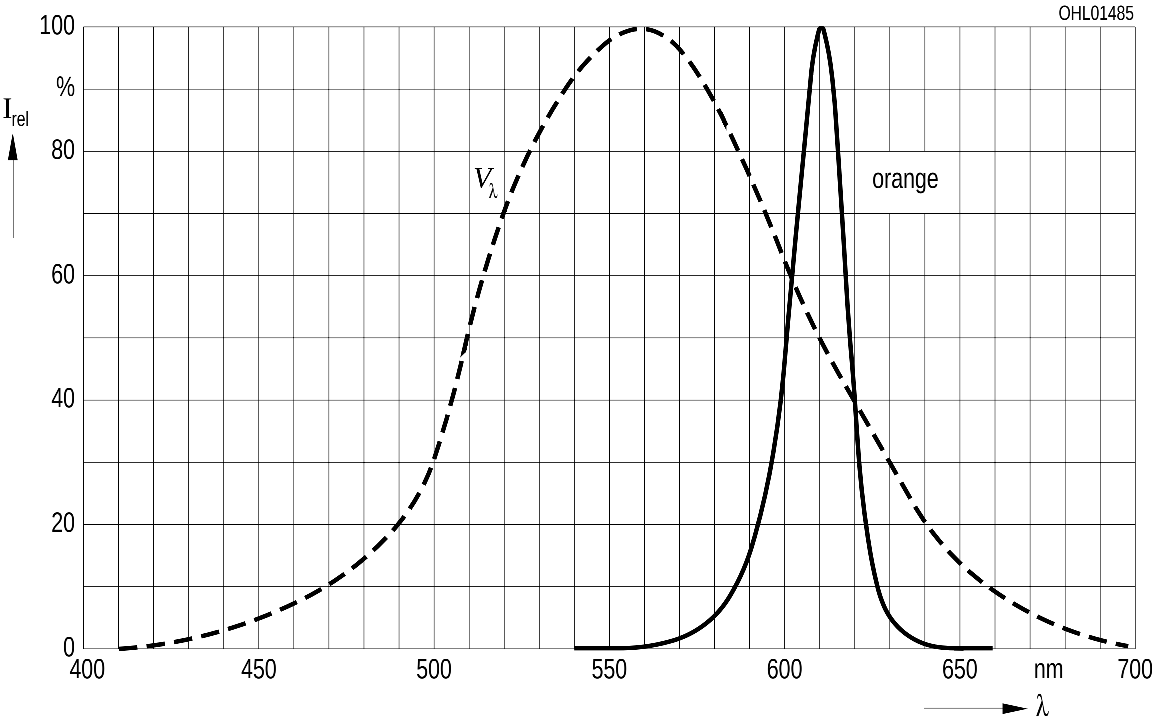
2) Spannungswerte werden mit einer Stromeinprägedauer von 1 ms und einer Genauigkeit von ±0,1 V ermittelt.
Voltages are tested at a current pulse duration of 1 ms and a tolerance of ±0.1 V.

[1] **Wellenlängengruppen**
Wavelength groups

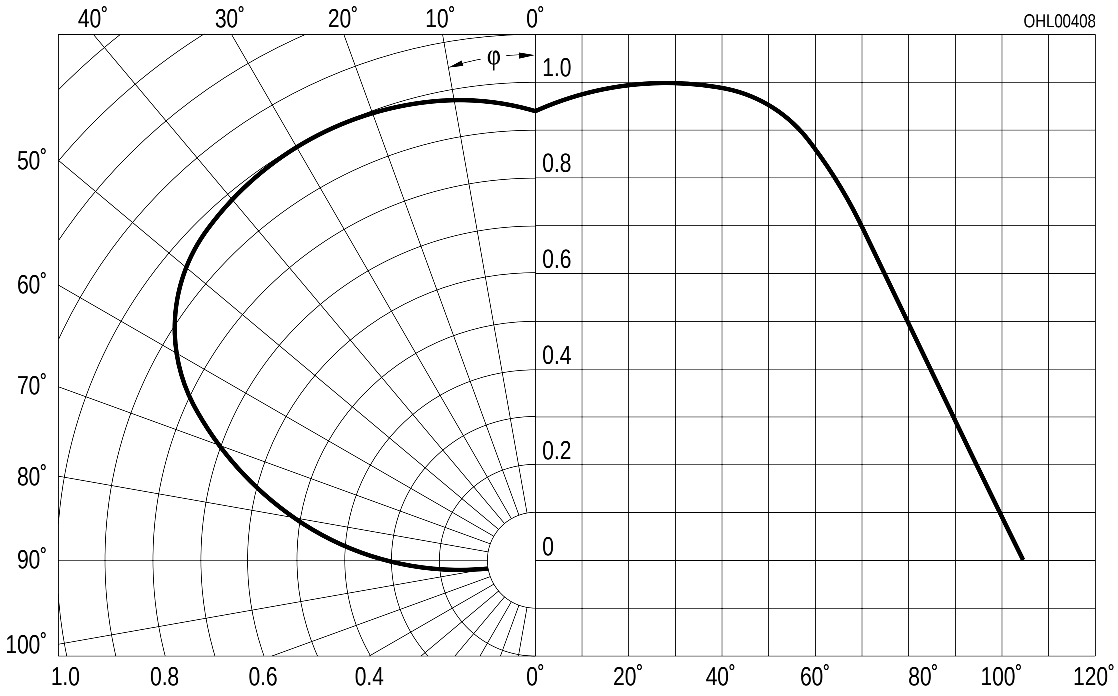
Gruppe **Group**	**Wellenlänge** **Wavelength**		**Einheit** **Unit**
	min.	**max.**	
2	600	603	nm
3	603	606	nm
4	606	609	nm
5	609	612	nm

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

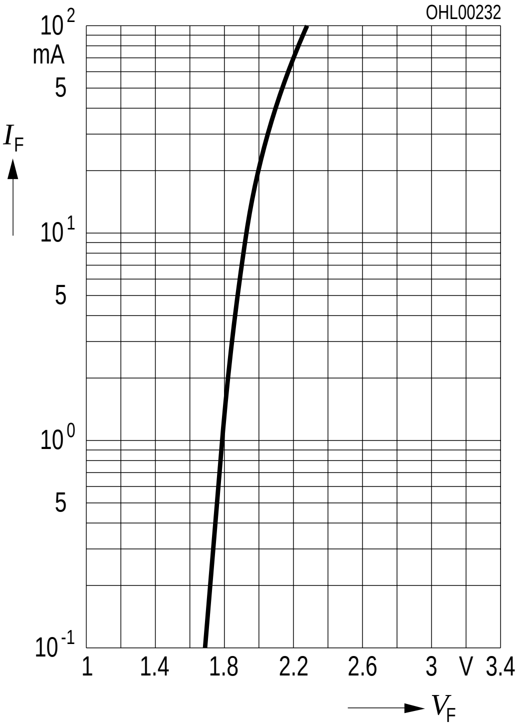
V(λ) = spektrale Augenempfindlichkeit
Standard eye response curve



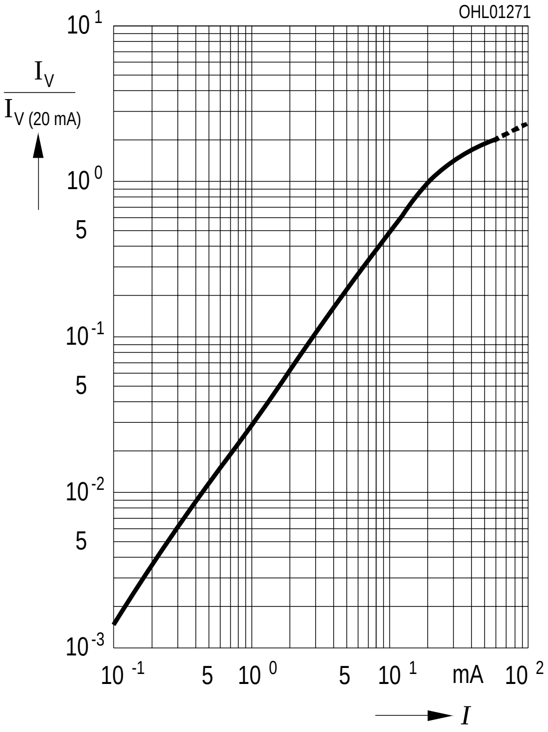
Abstrahlcharakteristik $I_{rel} = f(\varphi)$
Radiation Characteristic



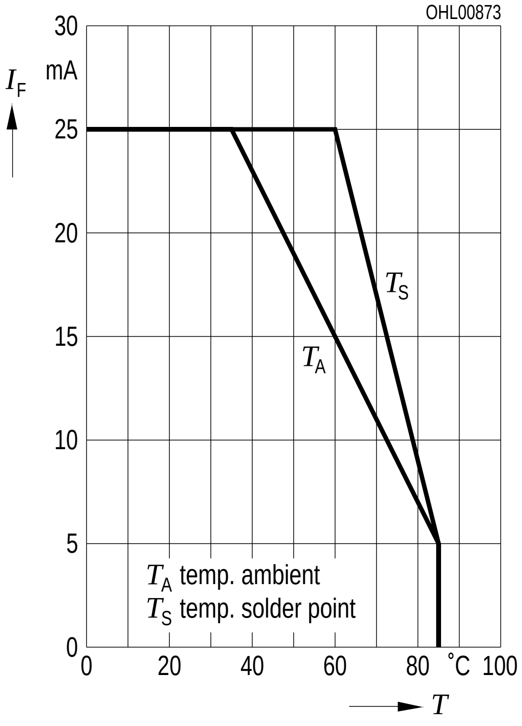
Durchlassstrom $I_F = f(V_F)$
Forward Current
T_A = 25 °C



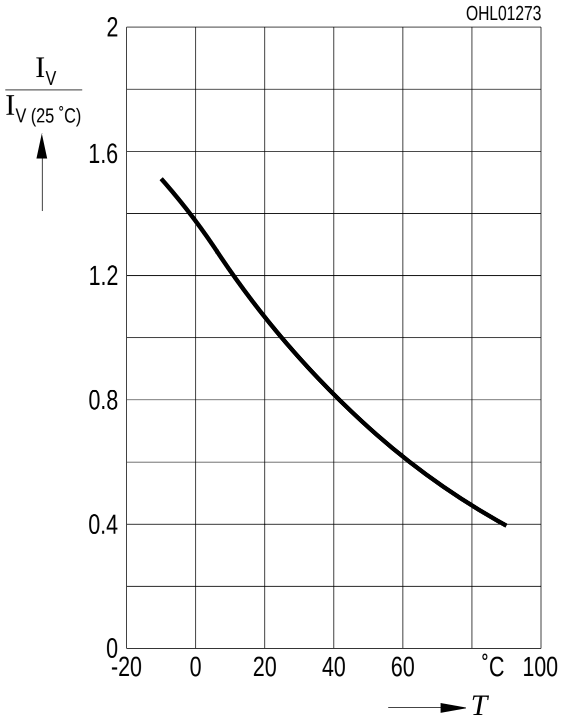
Relative Lichtstärke $I_V/I_{V(20\ mA)} = f(I_F)$
Relative Luminous Intensity
T_A = 25 °C



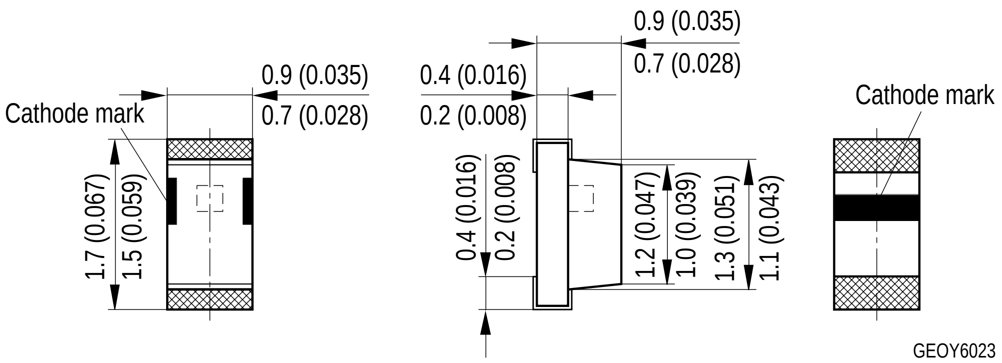
Maximal zulässiger Durchlassstrom $I_F = f(T)$
Max. Permissible Forward Current



Relative Lichtstärke $I_V/I_{V(25\ °C)} = f(T_A)$
Relative Luminous Intensity
I_F = 20 mA



Maßzeichnung
Package Outlines

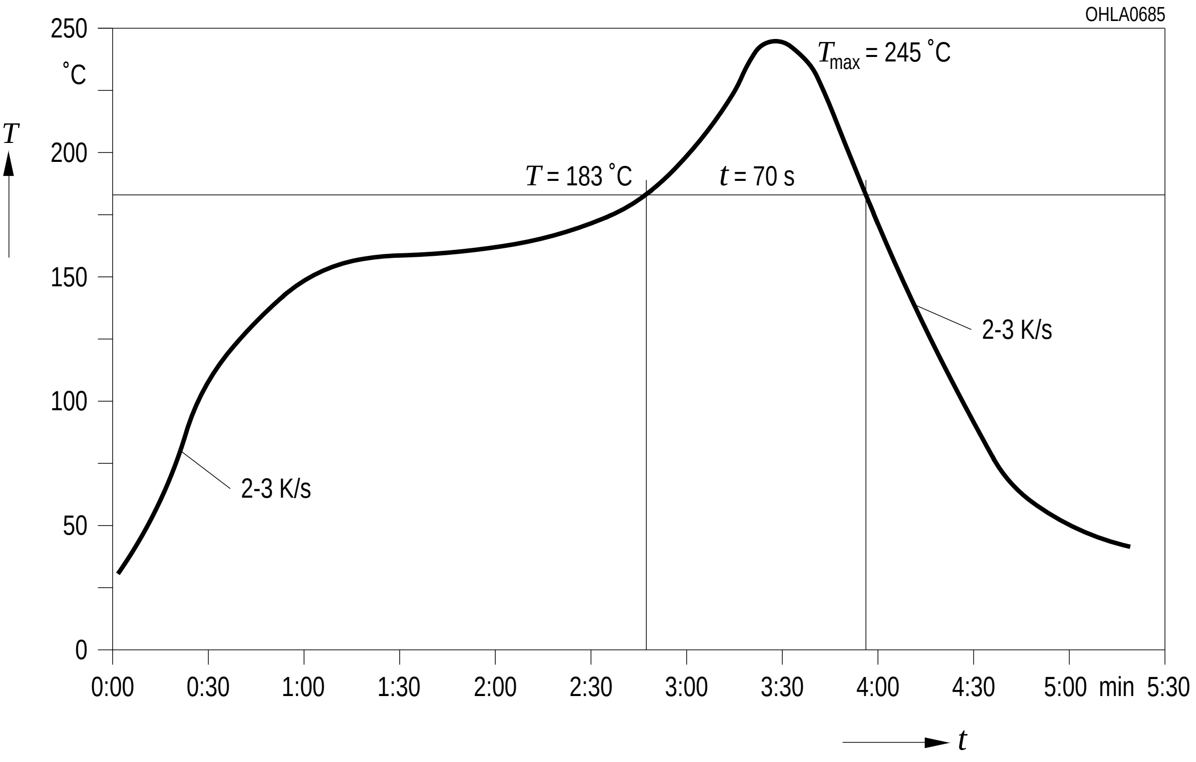


Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

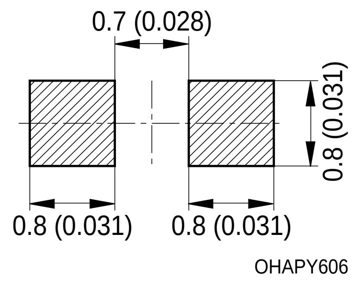
Gewicht / Approx. weight: 1.4 mg

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)

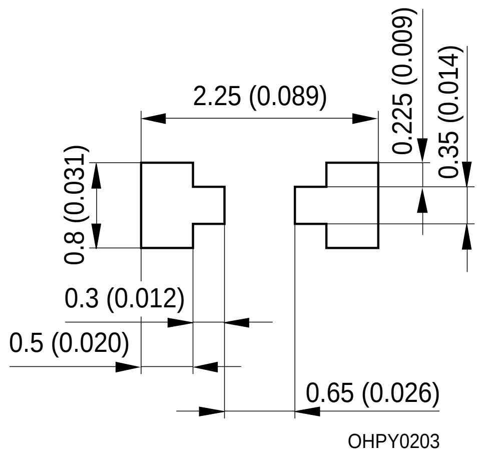


Empfohlenes Lötpaddesign IR Reflow Löten
Recommended Solder Pad IR Reflow Soldering



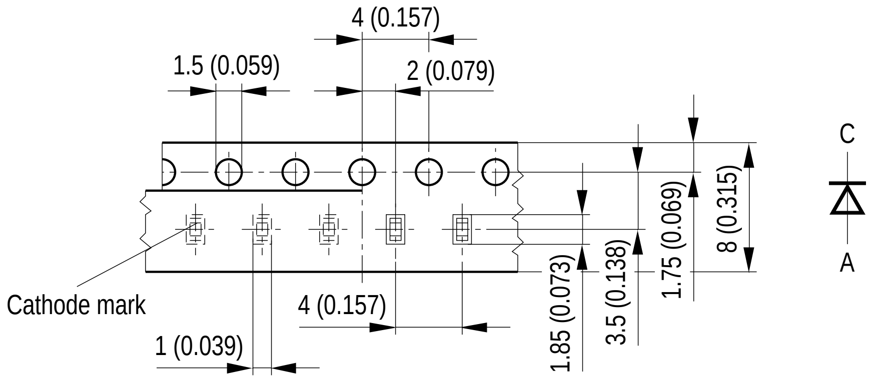
Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

Empfohlenes Lötpaddesign verwendbar für Hyper CHIPLED und Chipled - Bauform 0603
IR Reflow Löten
Recommended Solder Pad useable for Hyper CHIPLED and Chipled - Package 0603
IR Reflow Soldering



Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).
Empfohlene Lötpastendicke: 120 µm/ recommended thickness of solder paste: 120 µm

Gurtung / Polarität und Lage	Verpackungseinheit 4000/Rolle, ø180 mm
Method of Taping / Polarity and Orientation	Packing unit 4000/reel, ø180 mm



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

Revision History:	**2001-11-30**
Previous Version:	2001-02-08
Page	**Subjects (major changes since last revision)**
10	recommended solder pad

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