

Micro SIDELED

LG Y870



Vorläufige Daten / Preliminary Data

Besondere Merkmale

- **Gehäusetyp:** weißes SMT-Gehäuse
- **Besonderheit des Bauteils:** kleine Bauform mit extrem breiter Abstrahlcharakteristik; ideal für Hinterleuchtungen und Einkopplungen in Lichtleiter
- **Wellenlänge:** 570 nm
- **Abstrahlwinkel:** Lambertischer Strahler (120°)
- **Technologie:** GaP
- **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 3000/Rolle, ø180 mm oder 10000/Rolle, ø330 mm

Anwendungen

- optimale Einkopplung in Lichtleiter
- Hinterleuchtung (LCD, Mobiltelefone, Tasten, Allgemeinbeleuchtung, Werbebeleuchtung)
- Signal- und Symbolleuchten
- Automobilbereich (z. B. Instrumentenbeleuchtung)

Features

- **package:** white SMT package
- **feature of the device:** small package with extremely wide viewing angle; ideal for backlighting and coupling in light guides
- **wavelength:** 570 nm
- **viewing angle:** Lambertian Emitter (120°)
- **technology:** GaP
- **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 3000/reel, ø180 mm or 10000/reel, ø330 mm

Applications

- optimized coupling into light guides
- backlighting (LCD, cellular phones, keys, general lightning, illuminated advertising)
- signal and symbol luminaire
- automotive (e. g. car radio backlighting)

LG Y870

Typ	Emissions- farbe	Farbe der Lichtaustritts- fläche	Lichtstärke	Lichtstrom	Bestellnummer
Type	Color of Emission	Color of the Light Emitting Area	Luminous Intensity $I_F = 10 \text{ mA}$ $I_V \text{ (mcd)}$	Luminous Flux $I_F = 10 \text{ mA}$ $\Phi_V \text{ (lm)}$	Ordering Code
LG Y870-J2K2-1	green	colorless clear	5.6 ... 11.2	25 (typ.)	Q62703-Q6189
LG Y870-K2M1-1			9.0 ... 22.4	45 (typ.)	Q62703-Q6190

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 half group.*

**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	30	mA
Stoßstrom Surge current $t \leq 10 \mu s, D = 0.005$	I_{FM}	t.b.d.	A
Sperrspannung Reverse voltage	V_R	5	V
Leistungsaufnahme Power consumption	P_{tot}	95	mW
Wärmewiderstand Thermal resistance Sperrschicht/Umgebung Junction/air	$R_{th JA}$	530	K/W
Sperrschicht/Lötpad Junction/soldering point Montage auf PC-Board FR 4 (Padgröße $\geq 16 \text{ mm}^2$) mounted on PC board FR 4 (pad size $\geq 16 \text{ mm}^2$)	$R_{th JS}$	300	K/W

Kennwerte ($T_A = 25\text{ °C}$)
Characteristics

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge des emittierten Lichtes Wavelength at peak emission $I_F = 10\text{ mA}$	(typ.) λ_{peak}	572	nm
Dominantwellenlänge ¹⁾ Dominant wavelength ¹⁾ $I_F = 10\text{ mA}$	(typ.) λ_{dom}	570 ± 6	nm
Spektrale Bandbreite bei 50 % $I_{\text{rel max}}$ Spectral bandwidth at 50 % $I_{\text{rel max}}$ $I_F = 10\text{ mA}$	(typ.) $\Delta\lambda$	25	nm
Abstrahlwinkel bei 50 % I_V (Vollwinkel) Viewing angle at 50 % I_V	(typ.) 2ϕ	120	Grad deg.
Durchlassspannung ²⁾ Forward voltage ²⁾ $I_F = 10\text{ mA}$	(typ.) V_F (max.) V_F	2.0 2.5	V V
Sperrstrom Reverse current $V_R = 5\text{ V}$	(typ.) I_R (max.) I_R	0.01 10	μA μA
Temperaturkoeffizient von λ_{peak} Temperature coefficient of λ_{peak} $I_F = 10\text{ mA}; -10\text{ °C} \leq T \leq 100\text{ °C}$	(typ.) $TC_{\lambda_{\text{peak}}}$	0.11	nm/K
Temperaturkoeffizient von λ_{dom} Temperature coefficient of λ_{dom} $I_F = 10\text{ mA}; -10\text{ °C} \leq T \leq 100\text{ °C}$	(typ.) $TC_{\lambda_{\text{dom}}}$	0.07	nm/K
Temperaturkoeffizient von V_F Temperature coefficient of V_F $I_F = 10\text{ mA}; -10\text{ °C} \leq T \leq 100\text{ °C}$	(typ.) TC_V	- 1.4	mV/K
Optischer Wirkungsgrad Optical efficiency $I_F = 10\text{ mA}$	(typ.) η_{opt}	2	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.

Helligkeits-Gruppierungsschema
Luminous Intensity Groups

Lichtgruppe Luminous Intensity Group	Lichtstärke Luminous Intensity I_v (mcd)	Lichtstrom Luminous Flux Φ_v (lm)
J2	5.6 ... 7.1	19 (typ.)
K1	7.1 ... 9.0	24 (typ.)
K2	9.0 ... 11.2	30 (typ.)
L1	11.2 ... 14.0	40 (typ.)
L2	14.0 ... 18.0	50 (typ.)
M1	18.0 ... 22.4	60 (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 a tolerance of $\pm 11\%$.

Gruppenbezeichnung auf Etikett
Group Name on Label

Beispiel: L1

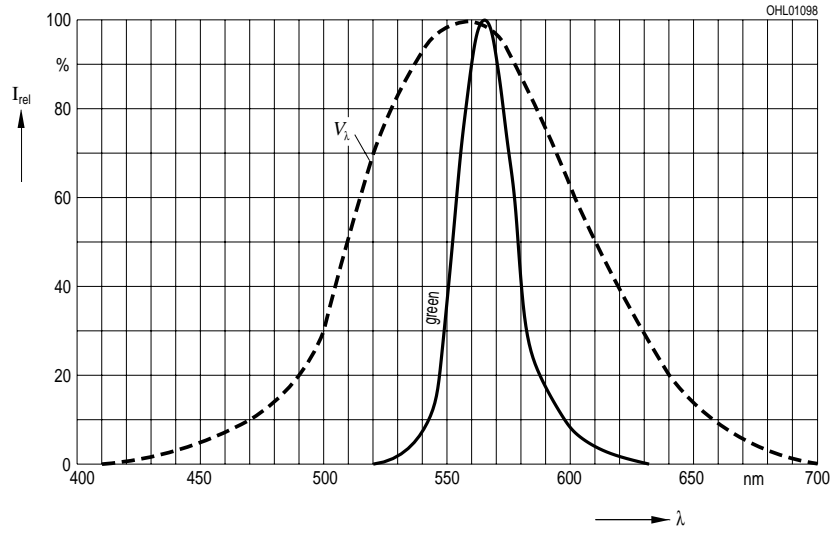
Example: L1

Lichtgruppe Luminous Intensity Group	Halbgruppe Half Group
L	1

Relative spektrale Emission $I_{rel} = f(\lambda)$, $T_A = 25\text{ °C}$, $I_F = 10\text{ mA}$

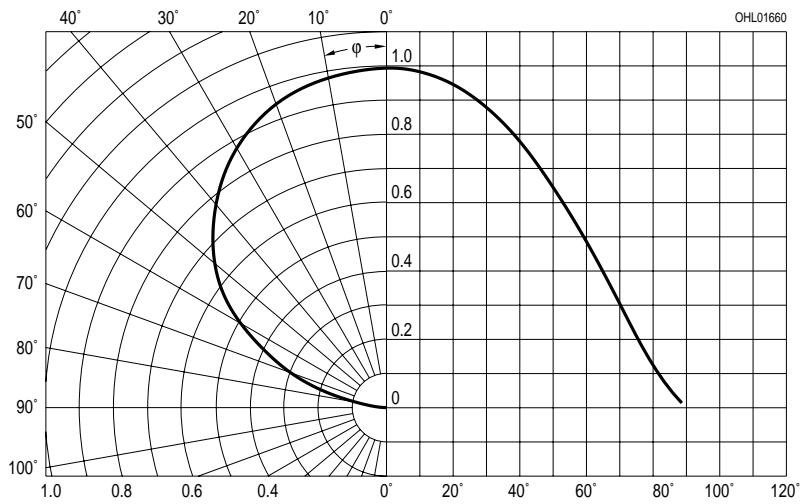
Relative Spectral Emission

$V(\lambda)$ = spektrale Augenempfindlichkeit
Standard eye response curve



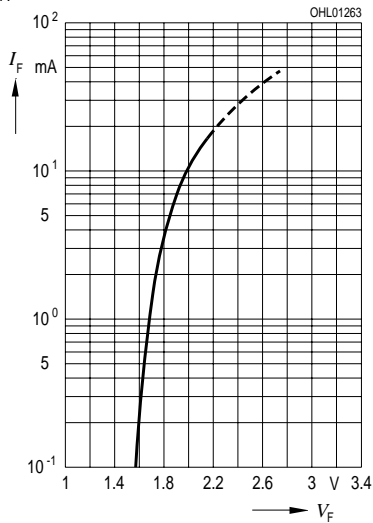
Abstrahlcharakteristik $I_{rel} = f(\varphi)$

Radiation Characteristic



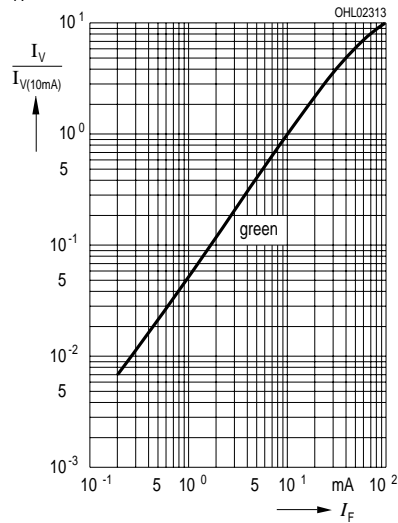
Durchlassstrom $I_F = f(V_F)$
Forward Current

$T_A = 25\text{ °C}$

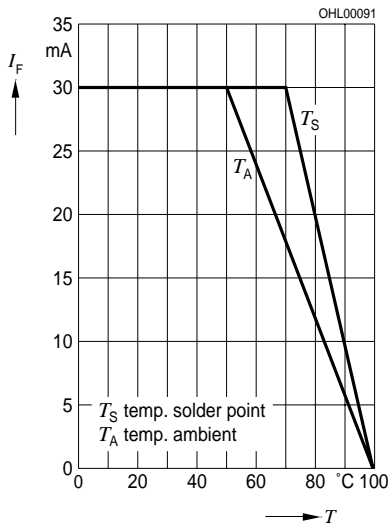


Relative Lichtstärke $I_V / I_{V(10\text{ mA})} = f(I_F)$
Relative Luminous Intensity

$T_A = 25\text{ °C}$

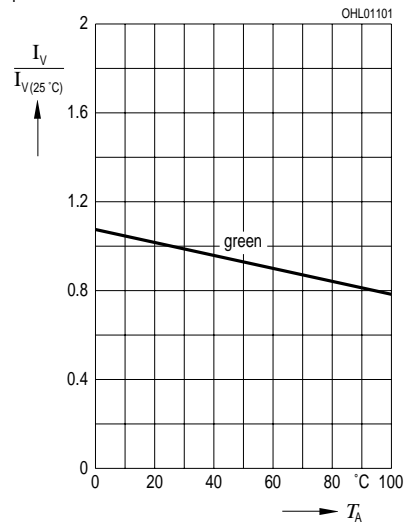


Maximal zulässiger Durchlassstrom $I_F = f(T_A)$
Max. Permissible Forward Current



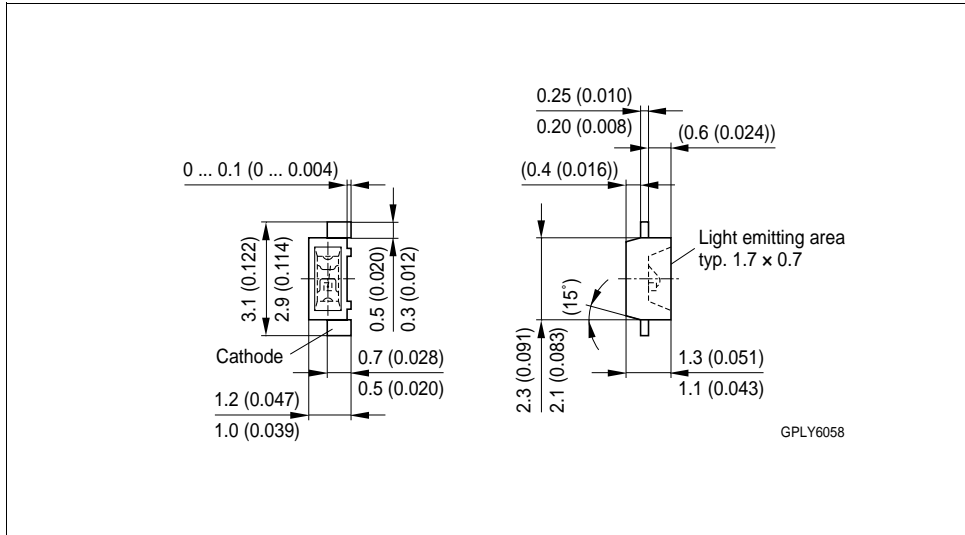
Relative Lichtstärke $I_V / I_{V(25\text{ °C})} = f(T_A)$
Relative Luminous Intensity

$I_F = 10\text{ mA}$



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

**Maßzeichnung
Package Outlines**

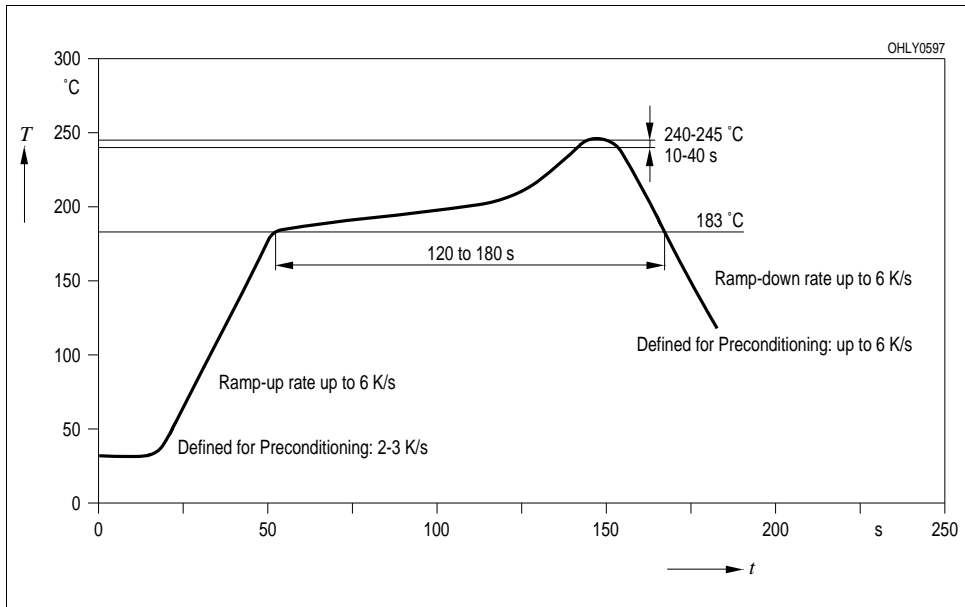


Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

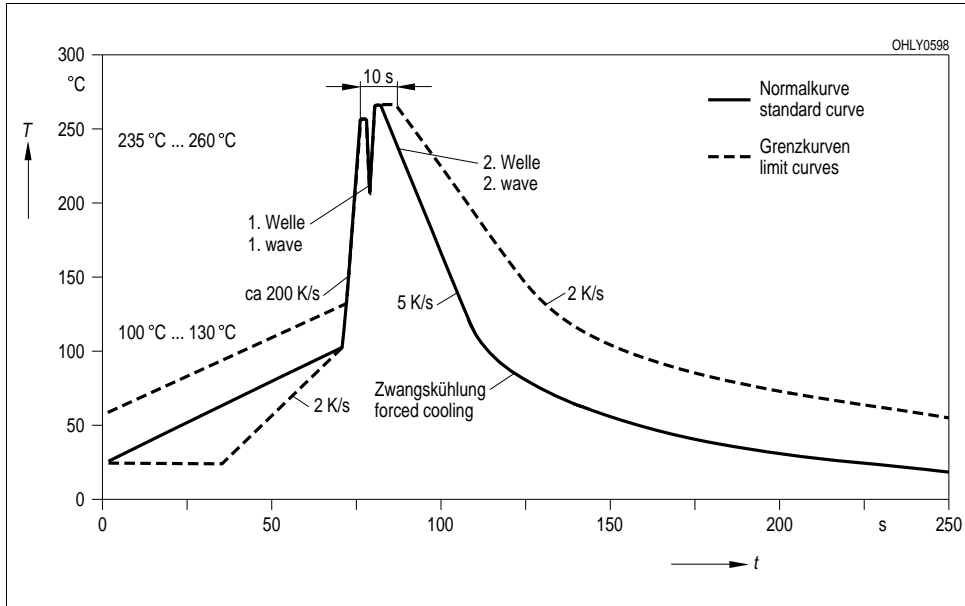
Gewicht / Approx. weight: 6 mg

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

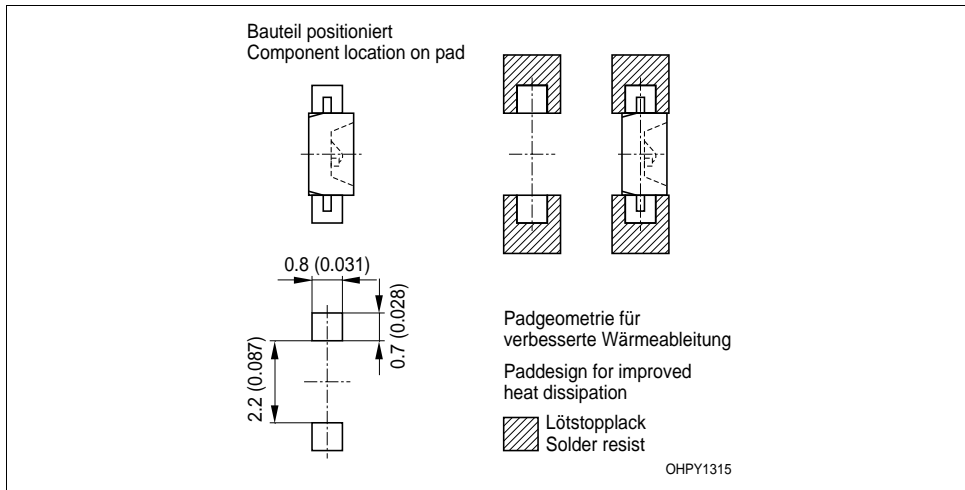
IR-Reflow Lötprofil (nach IPC 9501)
IR Reflow Soldering Profile (acc. to IPC 9501)



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

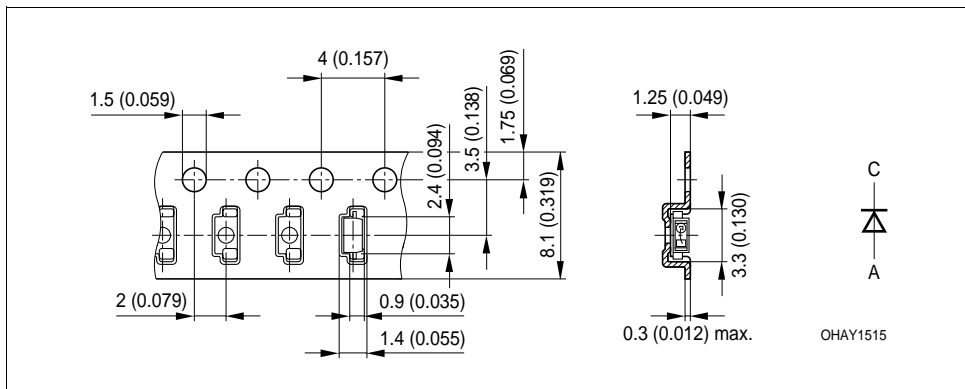


Empfohlenes Lötpadding IR Reflow Lötén
Recommended Solder Pad IR Reflow Soldering



Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).
 Gehäuse für Wellenlötén (TTW) geeignet / Package suitable for TTW-soldering

Gurtung / Polarität und Lage Verpackungseinheit 3000/Rolle, ø180 mm oder 10000/Rolle, ø330 mm
Method of Taping / Polarity and Orientation Packing unit 3000/reel, ø180 mm or 10000/reel, ø330 mm



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

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Page	Subjects (major changes since last revision)

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