Hyper 5 mm (T1 ¾) LED, Non Diffused
Hyper-Bright LED

LB 5433, LV 5433, LT 5433

Vorläufige Daten / Preliminary Data

Besondere Merkmale

- **Gehäusetyp:** klares 5 mm (T1 ¾) Gehäuse
- **Besonderheit des Bauteils:** enge Abstrahlcharakteristik
- **Wellenlänge:** 470 nm (blau), 505 nm (verde), 528 nm (true green)
- **Abstrahlwinkel:** 40°
- **Technologie:** InGaN
- **optischer Wirkungsgrad:** 2 lm/W (blau), 6 lm/W (verde), 8 lm/W (true green)
- **Gruppierungsparameter:** Lichtstärke
- **Lötmethode:** Wellenlöten (TTW)
- **Verpackung:** Schüttgut, gegurtet lieferbar
- **ESD-Festigkeit:** ESD-sicher bis 2 kV nach MIL STD 883 D, Method 3015,7

Features

- **package:** clear 5 mm (T1 ¾) package
- **feature of the device:** narrow viewing angle
- **wavelength:** 470 nm (blue), 505 nm (verde), 528 nm (true green)
- **viewing angle:** 40°
- **technology:** InGaN
- **optical efficiency:** 2 lm/W (blue), 6 lm/W (verde), 8 lm/W (true green)
- **grouping parameter:** luminous intensity
- **soldering methods:** TTW soldering
- **packing:** bulk, available taped on reel
- **ESD-withstand voltage:** up to 2 kV acc. to MIL STD 883 D, Method 3015.7

Anwendungen

- Informationsanzeigen im Außenbereich
- optischer Indikator
- Hinterleuchtung (Tasten, Displays, Werbebeleuchtung, Allgemeinbeleuchtung)
- Innenbeleuchtung im Automobilbereich (z.B. Instrumentenbeleuchtung, u. ä.)
- Ersatz von Kleinst-Glühlampen
- Signal- und Symbolleuchten
- Markierungsbeleuchtung (z.B. Stufen, Fluchtwege, u.ä.)

Applications

- outdoor displays
- optical indicators
- backlighting (keys, displays, illuminated advertising, general lighting)
- interior automotive lighting (e.g. dashboard backlighting, etc.)
- substitution of micro incandescent lamps
- 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 = 20 mA I_V (mcd)	Lichtstrom Luminous Flux I_F = 20 mA Φ_V (mlm)	Bestellnummer Ordering Code
LB 5433-QS	blue	colorless clear	71 ... 280	120 (typ.)	Q62703-Q4843
LB 5433-SU			180 ... 710	300 (typ.)	
LB 5433-Q			71 ... 112	60 (typ.)	
LB 5433-R			112 ... 180	90 (typ.)	
LB 5433-S			180 ... 280	150 (typ.)	
LB 5433-T			280 ... 450	230 (typ.)	
LB 5433-U			450 ... 710	380 (typ.)	
LV 5433-TV	verde	colorless clear	280 ... 1120	470 (typ.)	Q62703-Q4850
LV 5433-VBW			710 ... 2800	1000 (typ.)	
LV 5433-T			280 ... 450	230 (typ.)	
LV 5433-U			450 ... 710	380 (typ.)	
LV 5433-V			710 ... 1120	590 (typ.)	
LV 5433-AW			1120 ... 1800	940 (typ.)	
LV 5433-BW			1800 ... 2800	1500 (typ.)	
LT 5433-TV	true green	colorless clear	280 ... 1120	470 (typ.)	Q62703-Q4857
LT 5433-VBW			710 ... 2800	1000 (typ.)	
LT 5433-T			280 ... 450	230 (typ.)	
LT 5433-U			450 ... 710	380 (typ.)	
LT 5433-V			710 ... 1120	590 (typ.)	
LT 5433-AW			1120 ... 1800	940 (typ.)	
LT 5433-BW			1800 ... 2800	1500 (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**
		LB	**LV, LT**	
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	20		mA
Stoßstrom Surge current $t \leq 10$ µs, $D = 0.005$	I_{FM}	200	250	mA
Sperrspannung Reverse voltage	V_R	5		V
Leistungsaufnahme Power dissipation $T_A \leq 25$ °C	P_{tot}	85		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) Minimale Beinchenlänge Minimum lead length	 $R_{th\ JA}$ $R_{th\ JS}$	 400 180		 K/W K/W

Kennwerte (T_A = 25 °C)
Characteristics

Bezeichnung **Parameter**		**Symbol** **Symbol**	**Werte** **Values**			**Einheit** **Unit**
			LB	**LV**	**LT**	
Wellenlänge des emittierten Lichtes Wavelength at peak emission I_F = 20 mA	(typ.)	λ_{peak}	465	503	523	nm
Dominantwellenlänge[1)] Dominant wavelength[1)] I_F = 20 mA	(typ.)	λ_{dom}	470 ± 6	505 ± 7	528 ± 9	nm
Spektrale Bandbreite bei 50 % $I_{rel\ max}$ Spectral bandwidth at 50 % $I_{rel\ max}$ I_F = 20 mA	(typ.)	$\Delta\lambda$	25	30	33	nm
Abstrahlwinkel bei 50 % I_V (Vollwinkel) Viewing angle at 50 % I_V	(typ.)	2φ	40	40	40	Grad deg.
Durchlassspannung Forward voltage I_F = 20 mA	(typ.) (max.)	V_F V_F	3.5 4.2	3.3 4.2	3.3 4.2	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 = 20 mA	(typ.)	$TC_{\lambda peak}$	0.04	0.03	0.04	nm/K
Temperaturkoeffizient von λ_{dom} Temperature coefficient of λ_{dom} I_F = 20 mA	(typ.)	$TC_{\lambda dom}$	0.02	0.02	0.03	nm/K
Temperaturkoeffizient von V_F Temperature coefficient of V_F I_F = 20 mA	(typ.)	TC_V	– 2.9	– 3.2	– 3.6	mV/K
Optischer Wirkungsgrad Optical efficiency I_F = 20 mA	(typ.)	η_{opt}	2	6	8	lm/W

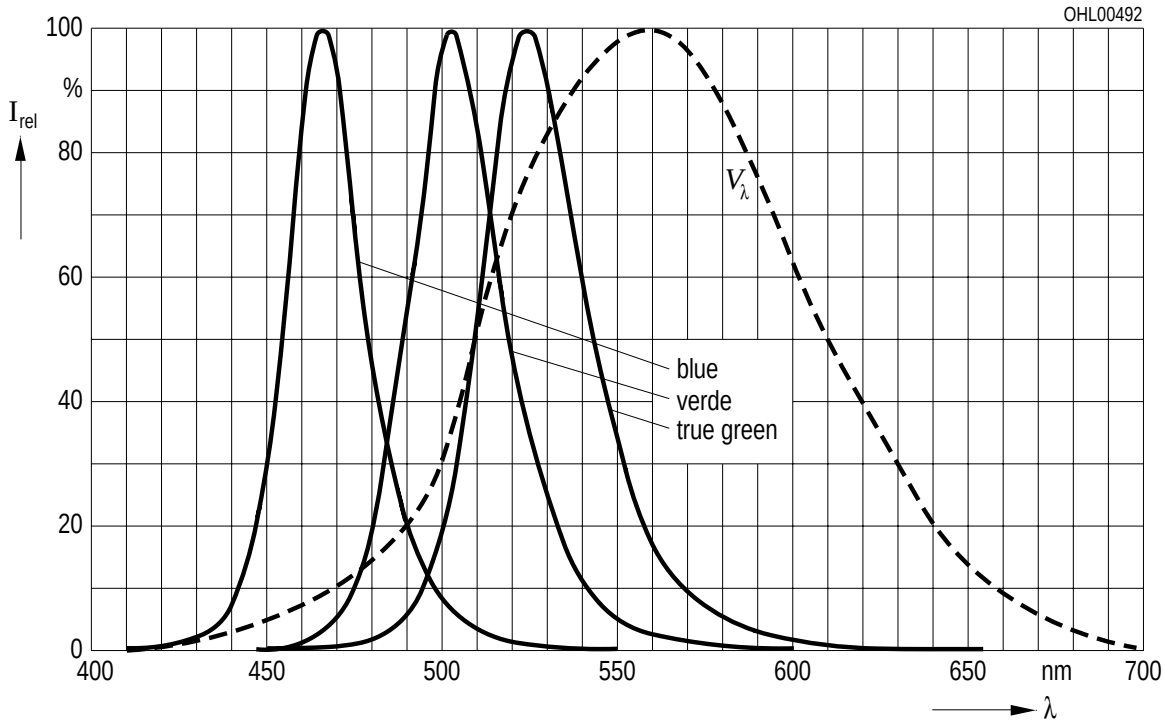
[1] **Wellenlängengruppen / Wavelength groups**

Gruppe Group	blue		verde		true green	
	min.	max.	min.	max.	min.	max.
3	464	468	498	503	519	525
4	468	472	503	507	525	531
5	472	476	507	512	531	537

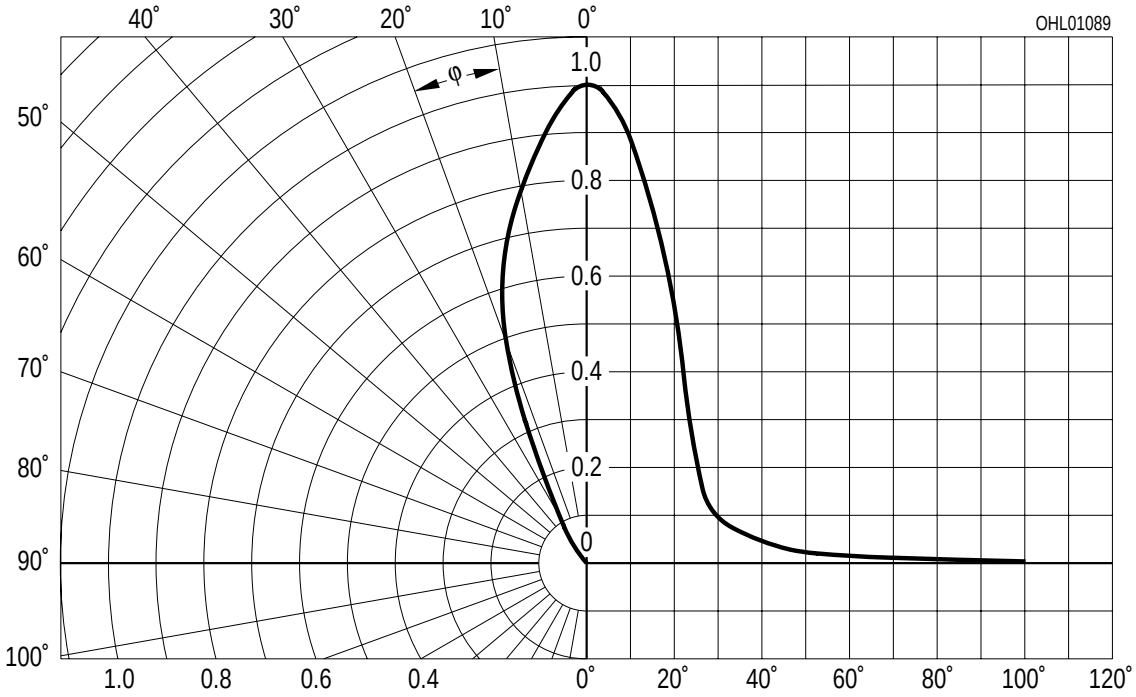
Wellenlängengruppen werden mit einer Stromeinprägedauer von 25 ms und einer Genauigkeit von ±1 nm ermittelt.

Wavelength groups are tested at a current pulse duration of 25 ms and an accuracy of ±1 nm.

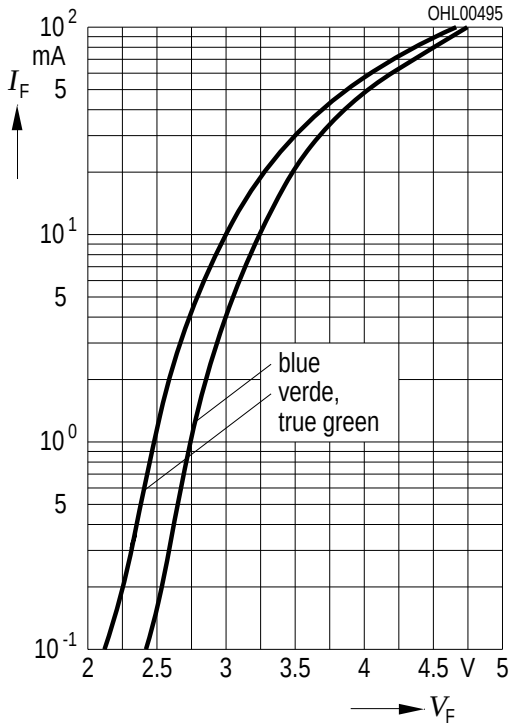
Relative spektrale Emission $I_{rel} = f(\lambda)$, T_A = 25 °C, I_F = 20 mA
Relative Spectral Emission
V(λ) = spektrale Augenempfindlichkeit
Standard eye response curve



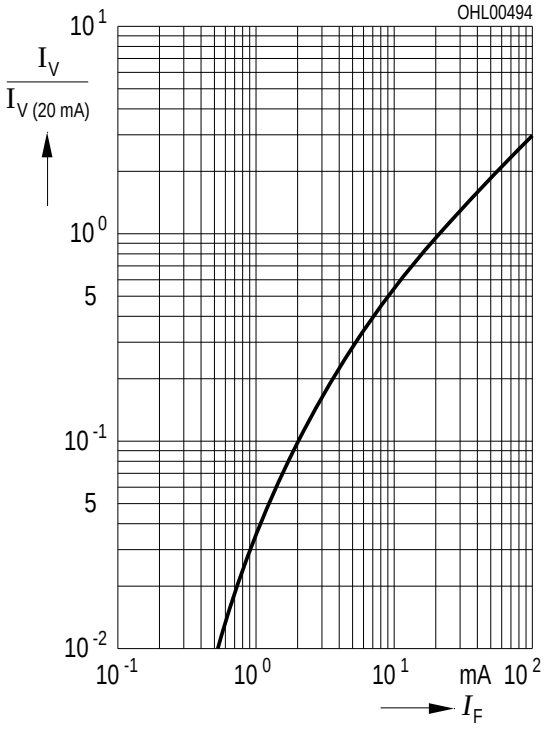
Abstrahlcharakteristik $I_{rel} = f(\varphi)$
Radiation Characteristic



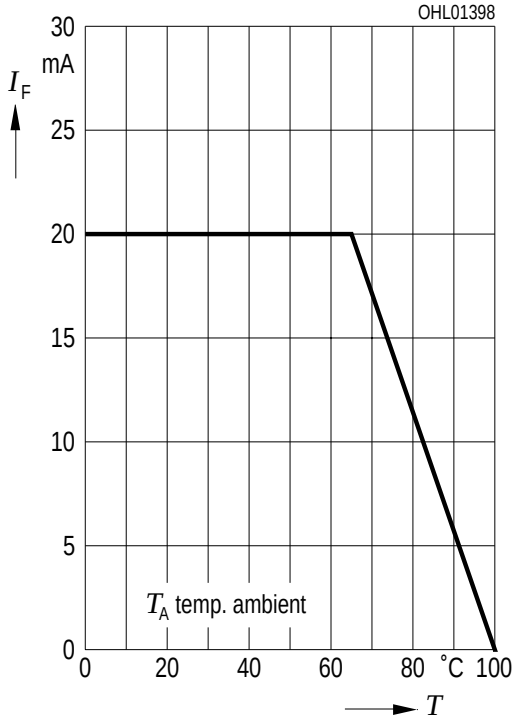
Durchlassstrom $I_F = f(V_F)$
Forward Current
T_A = 25 °C



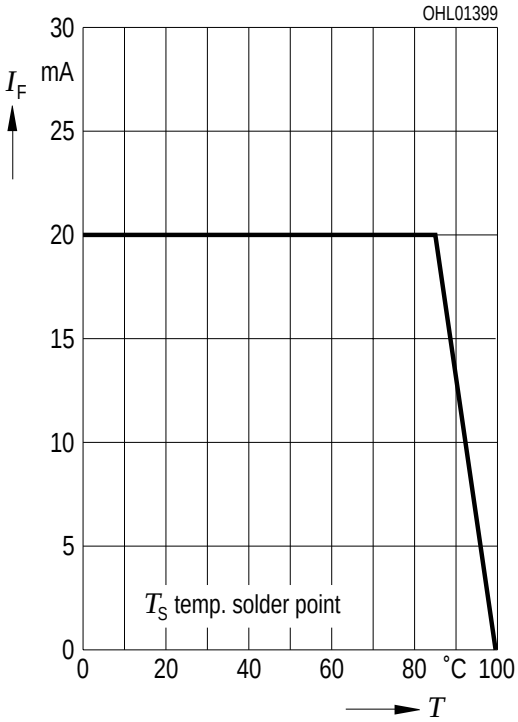
Relative Lichtstärke $I_V/I_{V(20\ mA)} = f(I_F)$
Relative Luminous Intensity
T_A = 25 °C



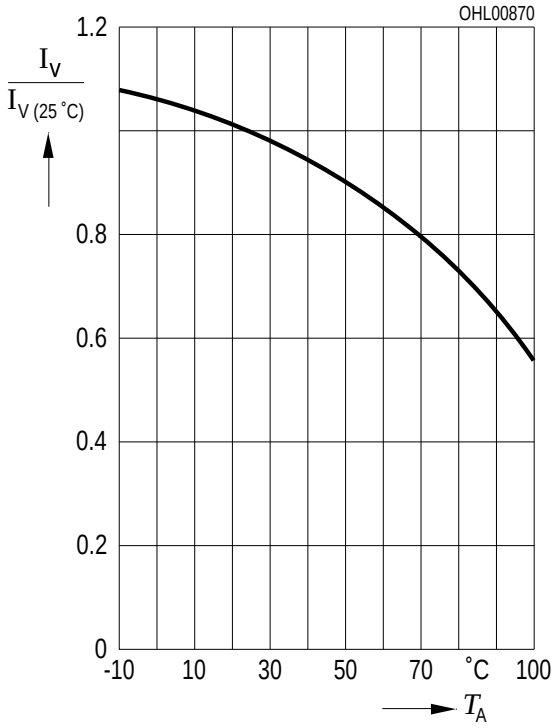
Maximal zulässiger Durchlassstrom $I_F = f(T)$
Max. Permissible Forward Current



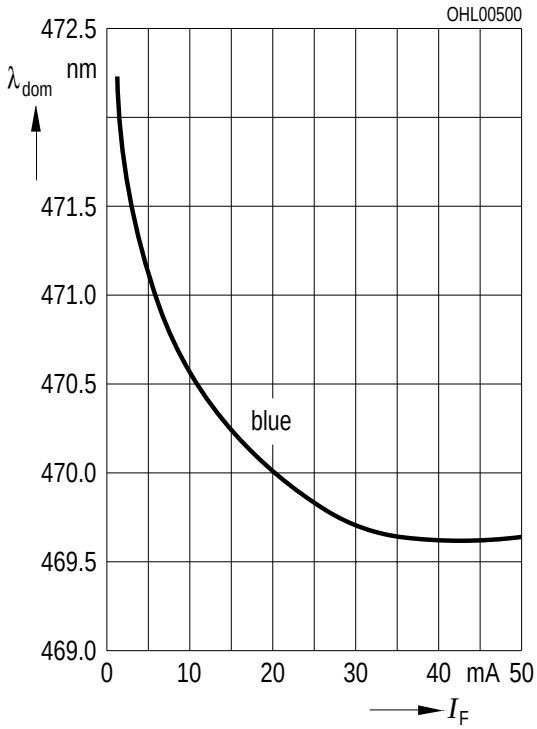
Maximal zulässiger Durchlassstrom $I_F = f(T)$
Max. Permissible Forward Current



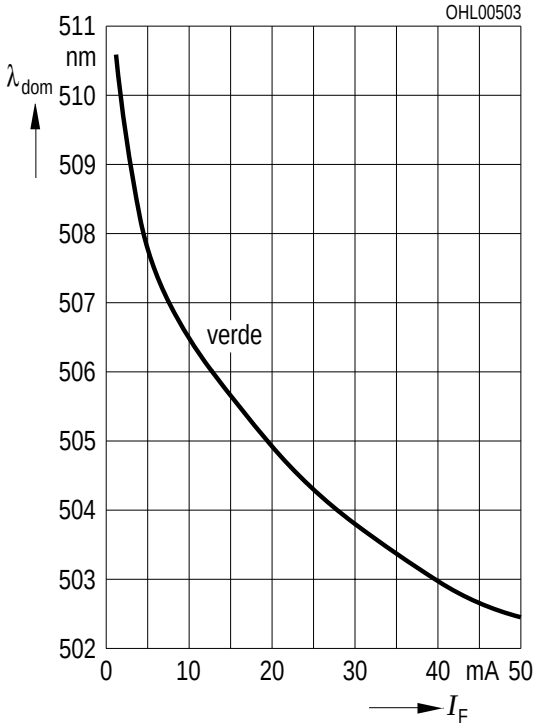
Relative Lichtstärke $I_V/I_{V(25\,°C)} = f(T_A)$
Relative Luminous Intensity
I_F = 20 mA



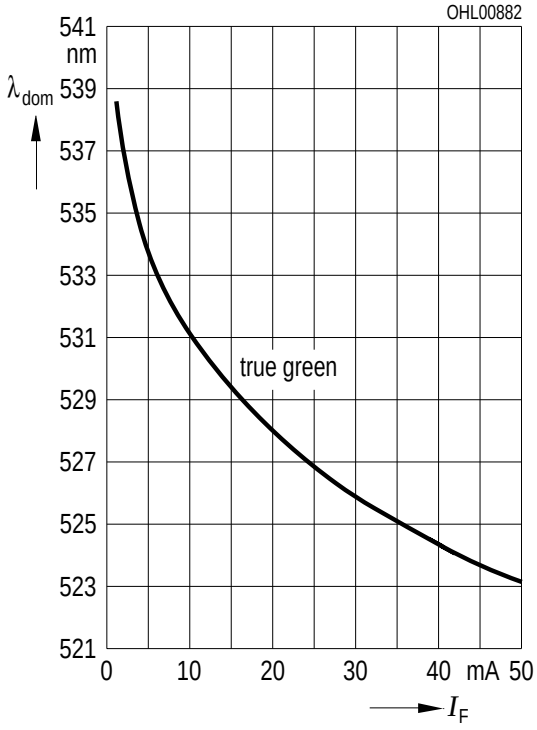
Dominante Wellenlänge $\lambda_{dom} = f(I_F)$
Dominant Wavelength
LB, T_A = 25 °C



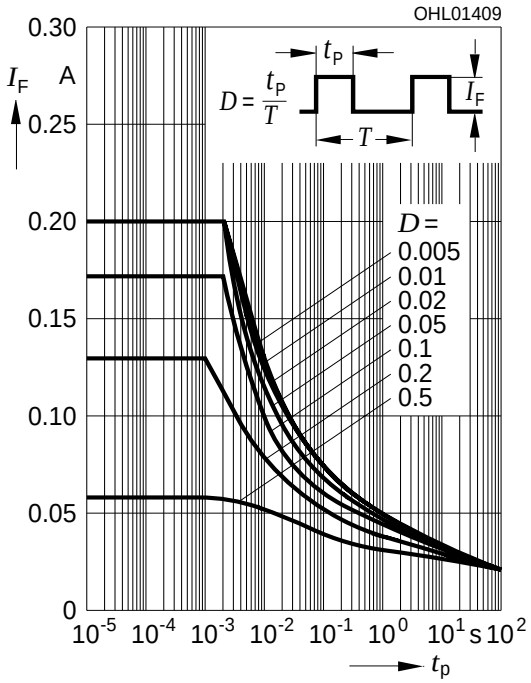
Dominante Wellenlänge $\lambda_{dom} = f(I_F)$
Dominant Wavelength
LV, T_A = 25 °C



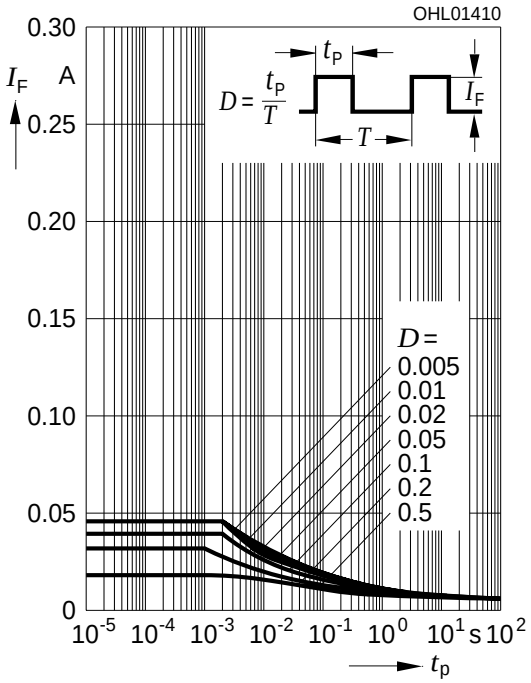
Dominante Wellenlänge $\lambda_{dom} = f(I_F)$
Dominant Wavelength
LT, T_A = 25 °C



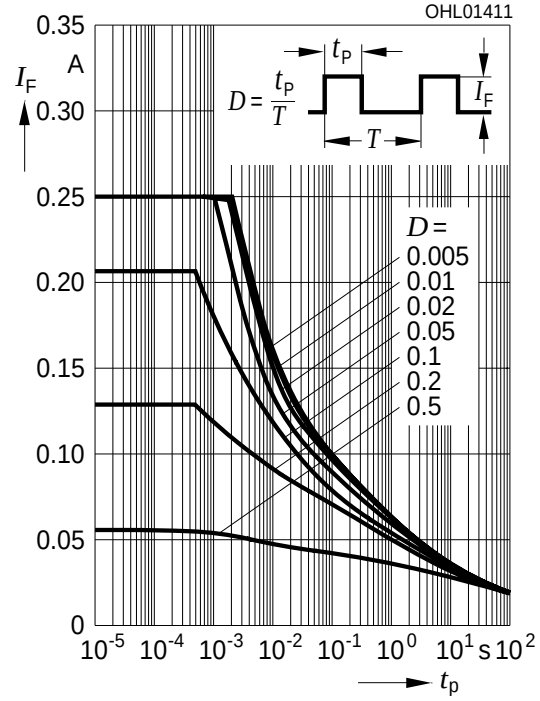
Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible Pulse Handling Capability
Duty cycle D = parameter, T_A= 25 °C
LB



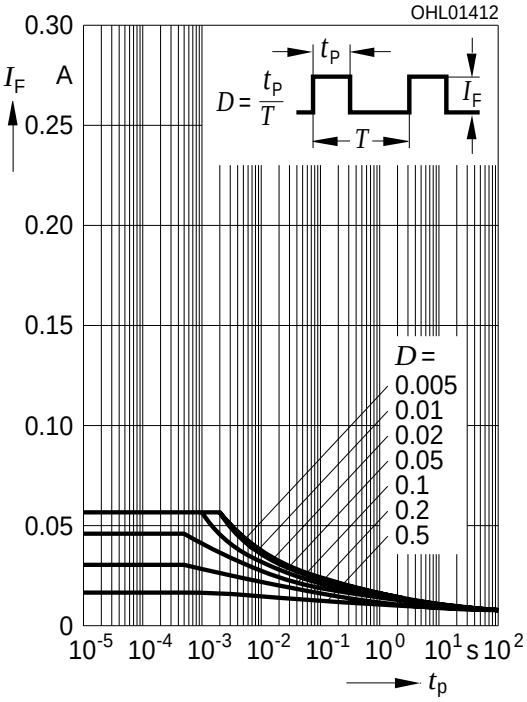
Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible Pulse Handling Capability
Duty cycle D = parameter, T_A= 85 °C
LB



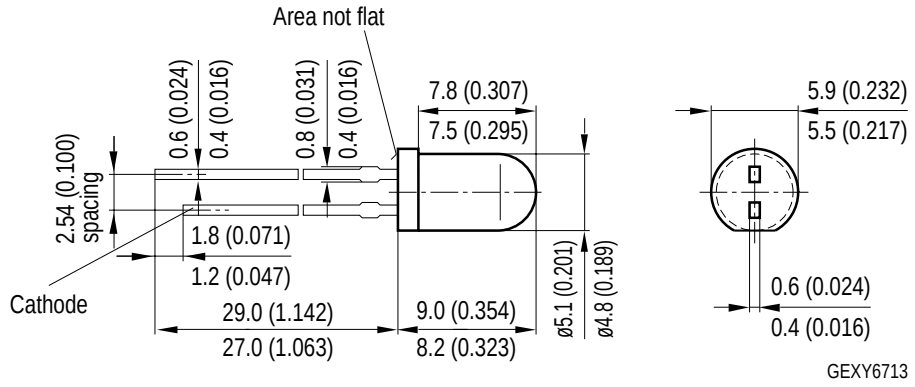
Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible Pulse Handling Capability
Duty cycle D = parameter, T_A= 25 °C
LV, LT



Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible Pulse Handling Capability
Duty cycle D = parameter, T_A= 85 °C
LV, LT



Maßzeichnung
Package Outlines

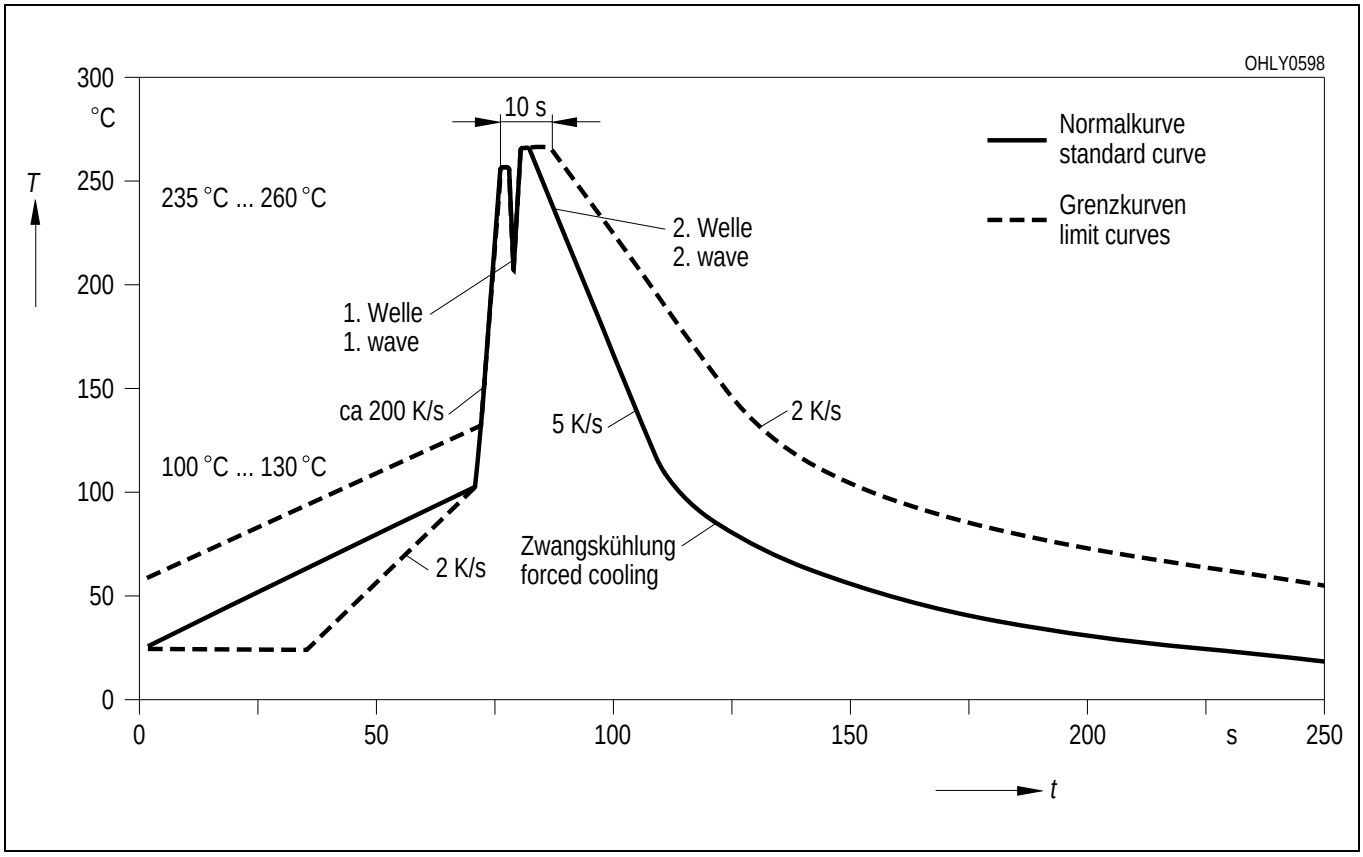


Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

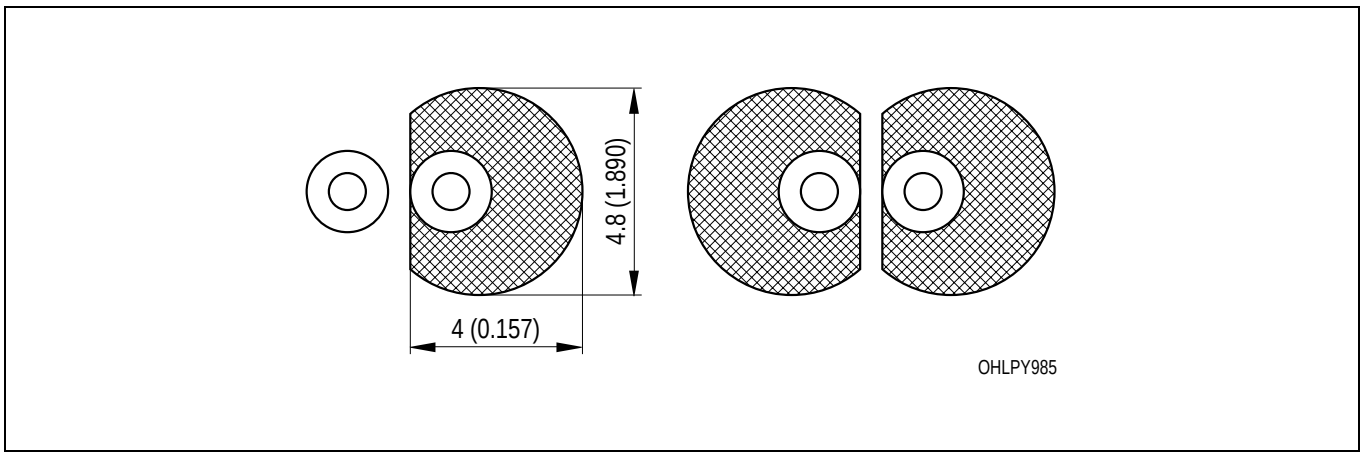
Kathodenkennung: kürzerer Lötspieß
Cathode mark: short solder lead
Gewicht / Approx. weight: 0.35 g

Lötbedingungen
Soldering Conditions

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



Empfohlenes Lötpaddesign Wellenlöten (TTW)
Recommended Solder Pad TTW Soldering



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