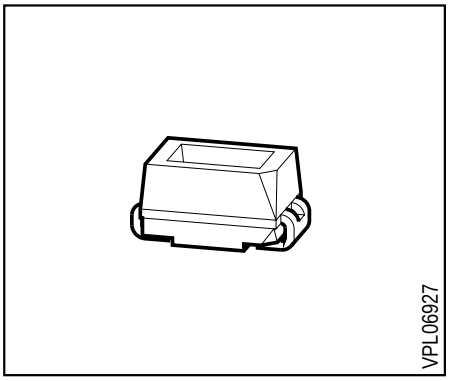
SIEMENS

Mini TOPLED®

LS M670, LO M670, LY M670
LG M670, LP M670

Besondere Merkmale

- Gehäusefarbe: weiß
- als optischer Indikator einsetzbar
- zur Hinterleuchtung, Lichtleiter- und Linseneinkopplung
- für alle SMT-Bestück- und Löttechniken geeignet
- gegurtet (8-mm-Filmgurt)
- Störimpulsfest nach DIN 40839



Features

- color of package: white
- for use as optical indicator
- for backlighting, optical coupling into light pipes and lenses
- suitable for all SMT assembly and soldering methods
- available taped on reel (8 mm tape)
- load dump resistant acc. to DIN 40839

Typ Type	Emissions-farbe Color of Emission	Farbe der Lichtaustritts-fläche Color of the Light Emitting Area	Lichtstärke Luminous Intensity I_F = 10 mA I_V (mcd)	Lichtstrom Luminous Flux I_F = 10 mA Φ_V (mlm)	Bestellnummer Ordering Code
LS M670-HK	super-red	colorless clear	2.5 … 12.5	-	Q62703-Q3380
LS M670-J			4.0 … 8.0	18 (typ.)	Q62703-Q3381
LS M670-K			6.3 … 12.5	30 (typ.)	Q62703-Q3382
LS M670-JM			4.0 … 32.0	-	Q62703-Q3383
LO M670-HK	orange	colorless clear	2.5 … 12.5	-	Q62703-Q3384
LO M670-J			4.0 … 8.0	18 (typ.)	Q62703-Q3385
LO M670-K			6.3 … 12.5	30 (typ.)	Q62703-Q3386
LO M670-JM			4.0 … 32.0	-	Q62703-Q3387
LY M670-HK	yellow	colorless clear	2.5 … 12.5	-	Q62703-Q3388
LY M670-J			4.0 … 8.0	18 (typ.)	Q62703-Q3389
LY M670-K			6.3 … 12.5	30 (typ.)	Q62703-Q3390
LY M670-JM			4.0 … 32.0	-	Q62703-Q3391
LG M670-HK	green	colorless clear	2.5 … 12.5	-	Q62703-Q3392
LG M670-J			4.0 … 8.0	18 (typ.)	Q62703-Q3393
LG M670-K			6.3 … 12.5	30 (typ.)	Q62703-Q3394
LG M670-JM			4.0 … 32.0	-	Q62703-Q3395
LP M670-FJ	pure green	colorless clear	1.0 … 8.0	-	Q62703-Q3396
LP M670-G			1.6 … 3.2	8 (typ.)	Q62703-Q3397
LP M670-H			2.5 … 5.0	12 (typ.)	Q62703-Q3398
LP M670-GK			1.6 … 12.5	-	Q62703-Q3399

Streuung der Lichtstärke in einer Verpackungseinheit $I_{V\,max} / I_{V\,min} \leq 2.0$.
Luminous intensity ratio in one packaging unit $I_{V\,max} / I_{V\,min} \leq 2.0$.

Grenzwerte
Maximum Ratings

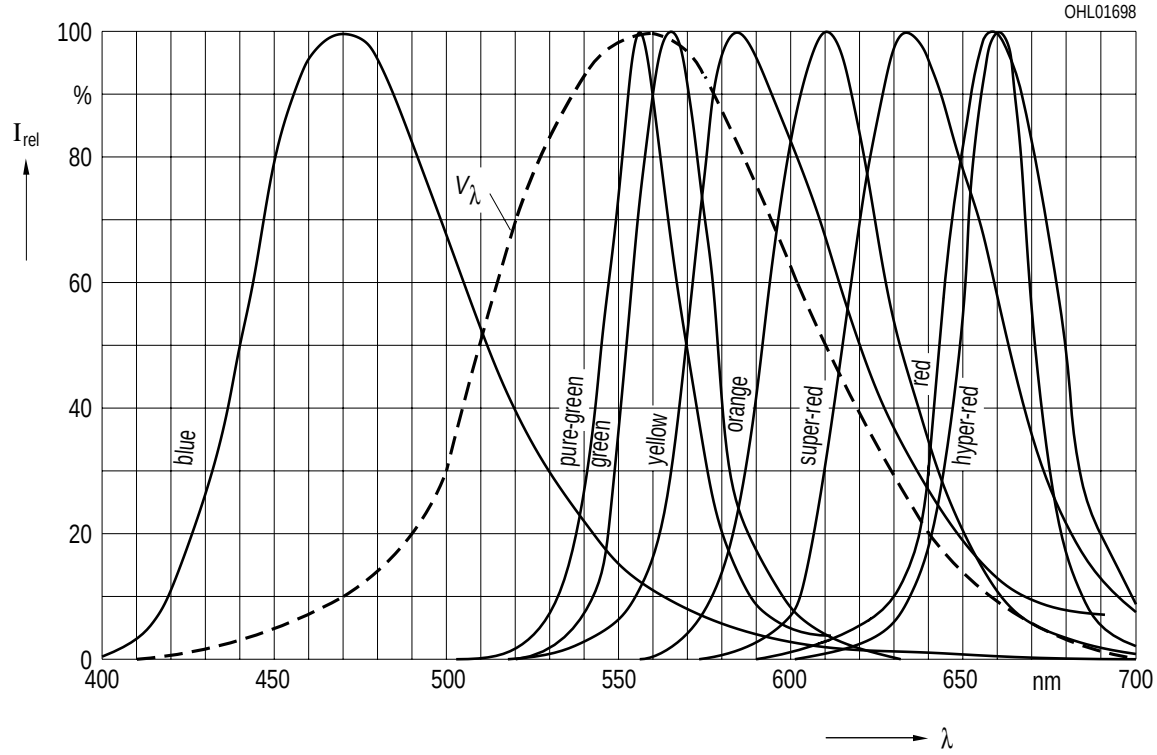
Bezeichnung **Parameter**	**Symbol** **Symbol**	**Werte** **Values**	**Einheit** **Unit**
Betriebstemperatur Operating temperature range	T_{op}	– 55 ... + 100	°C
Lagertemperatur Storage temperature range	T_{stg}	– 55 ... + 100	°C
Sperrschichttemperatur Junction temperature	T_j	+ 100	°C
Durchlaßstrom Forward current	I_F	30	mA
Stoßstrom Surge current $t \leq 10$ µs, $D = 0.005$	I_{FM}	0.5	A
Sperrspanung Reverse voltage	V_R	5	V
Verlustleistung Power dissipation	P_{tot}	80	mW
Wärmewiderstand Thermal resistance Sperrschicht / Umgebung Junction / air Montage auf PC-board*) (Padgröße ≥ 16 mm^2) mounted on PC board*) (pad size ≥ 16 mm^2)	$R_{th\ JA}$	480[1)]	K/W

*) PC-board: FR4
1) vorläufig/preliminary

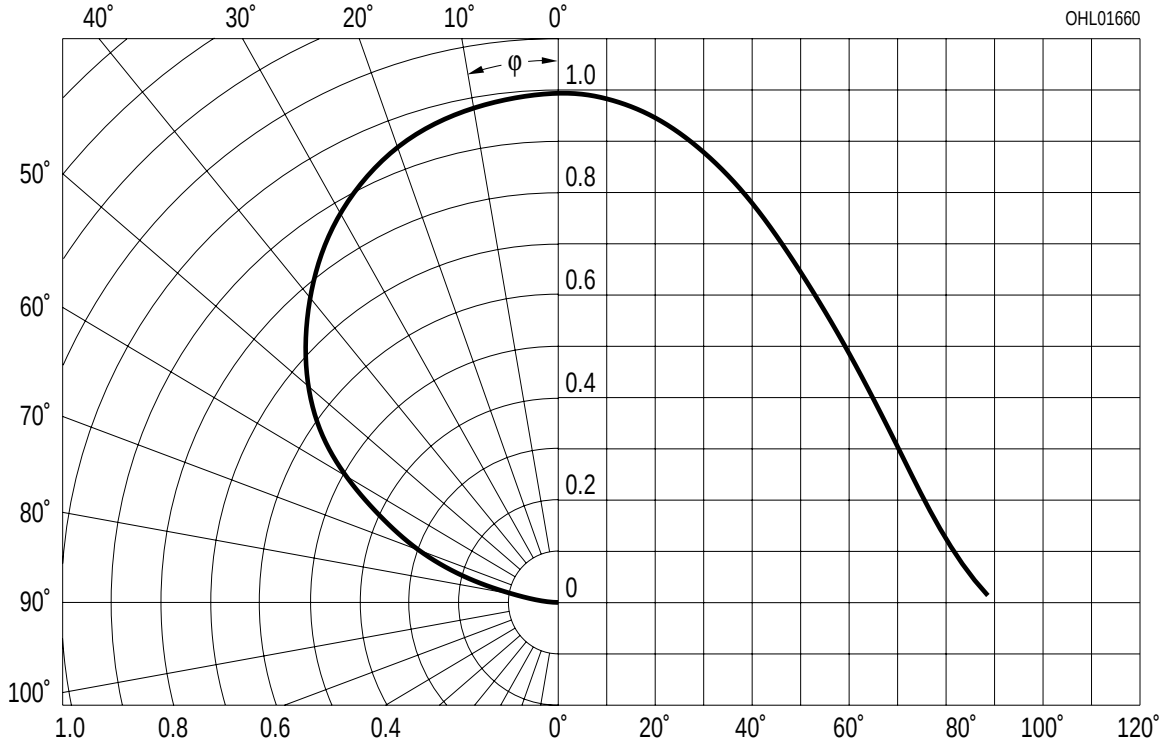
Kennwerte (T_A = 25 ˚C)
Characteristics

Bezeichnung **Parameter**		**Symbol** **Symbol**	**Werte** **Values**					**Einheit** **Unit**
			LS	**LO**	**LY**	**LG**	**LP**	
Wellenlänge des emittierten Lichtes Wavelength at peak emission I_F = 10 mA	(typ.) (typ.)	λ_{peak}	635	610	586	565	557	nm
Dominantwellenlänge Dominant wavelength I_F = 10 mA	(typ.) (typ.)	λ_{dom}	628	605	590	570	560	nm
Spektrale Bandbreite bei 50 % $I_{rel\ max}$ Spectral bandwidth at 50 % $I_{rel\ max}$ I_F = 10 mA	(typ.) (typ.)	$\Delta\lambda$	45	40	45	25	22	nm
Abstrahlwinkel bei 50 % I_v (Vollwinkel) Viewing angle at 50 % I_v		2φ	120	120	120	120	120	Grad deg.
Durchlaßspannung Forward voltage I_F = 10 mA	(typ.) (max.)	V_F V_F	2.0 2.6	2.0 2.6	2.0 2.6	2.0 2.6	2.0 2.6	V V
Sperrstrom Reverse current V_R = 5 V	(typ.) (max.)	I_R I_R	0.01 10	0.01 10	0.01 10	0.01 10	0.01 10	µA µA
Kapazität Capacitance V_R = 0 V, f = 1 MHz	(typ.)	C_0	12	8	10	15	15	pF
Schaltzeiten: Switching times: I_V from 10 % to 90 % I_V from 90 % to 10 % I_F = 100 mA, t_p = 10 µs, R_L = 50 Ω	 (typ.) (typ.)	 t_r t_f	 300 150	 300 150	 300 150	 450 200	 450 200	 ns ns

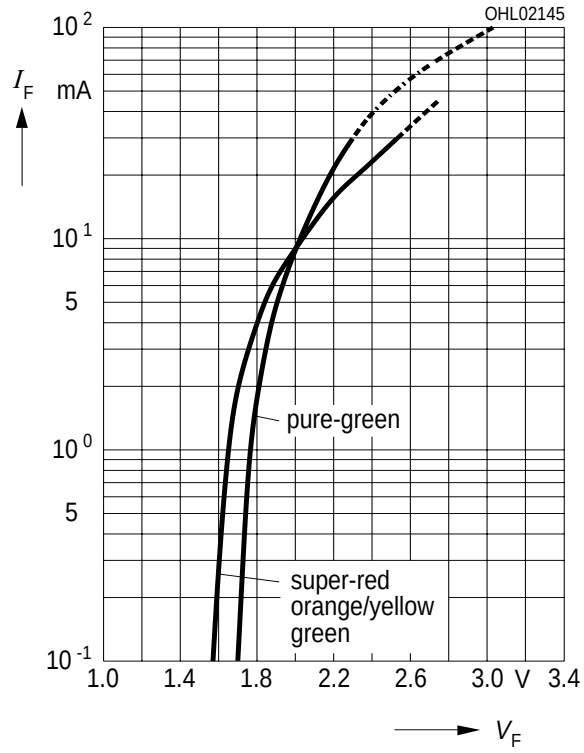
Relative spektrale Emission $I_{rel} = f(\lambda)$, $T_A = 25$ °C, $I_F = 10$ mA
Relative spectral emission
V(λ) = spektrale Augenempfindlichkeit
Standard eye response curve



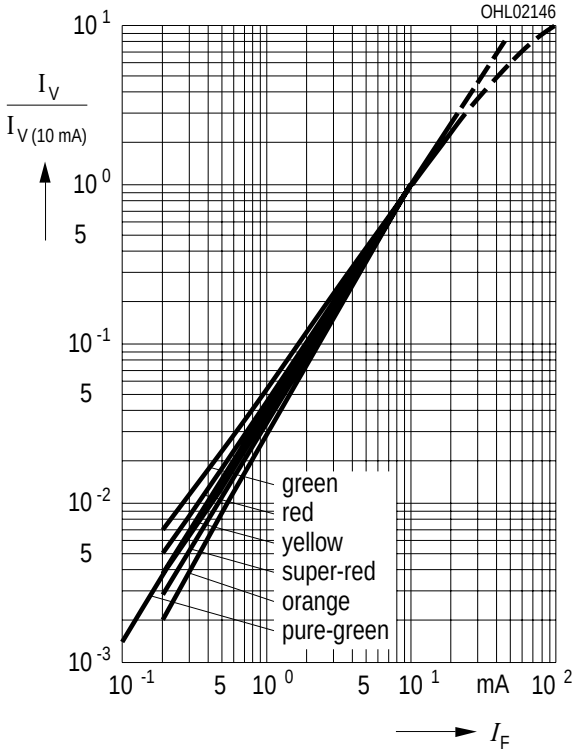
Abstrahlcharakteristik $I_{rel} = f(\varphi)$
Radiation characteristic



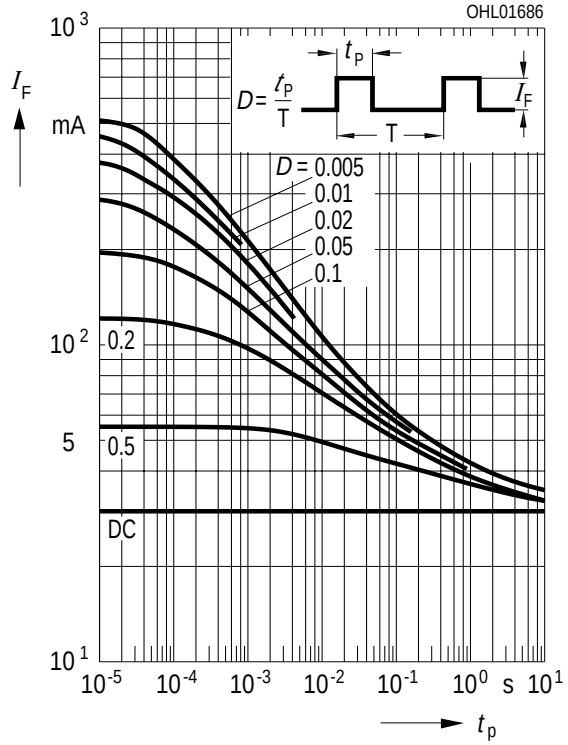
Durchlaßstrom $I_F = f(V_F)$
Forward current
T_A = 25 ˚C



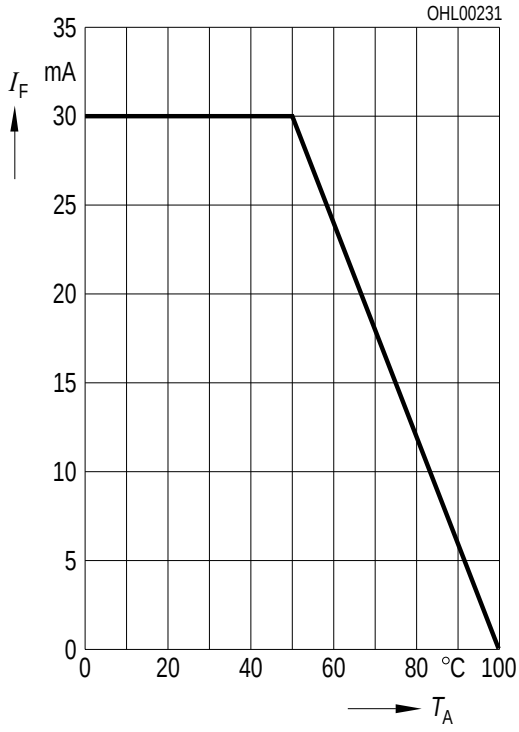
Relative Lichtstärke $I_V/I_{V(10\ mA)} = f(I_F)$
Relative luminous intensity
T_A = 25 ˚C



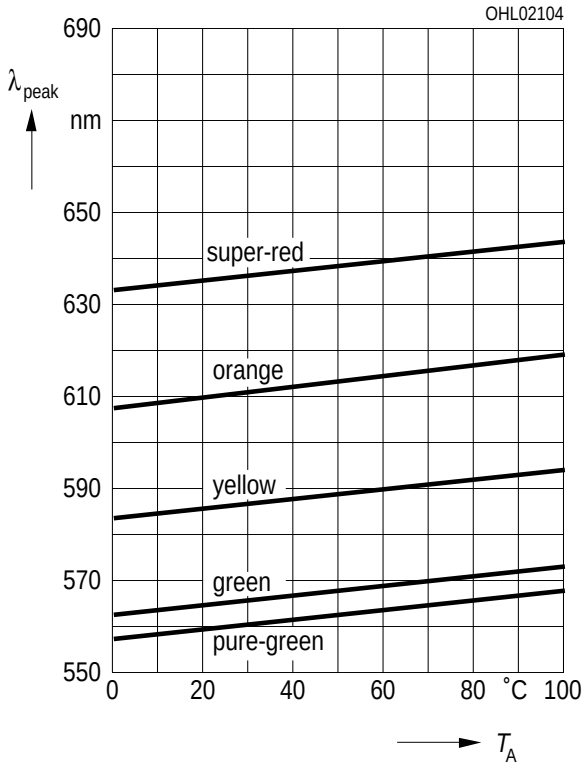
Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible pulse handling capability
Duty cycle D = parameter, T_A = 25 ˚C



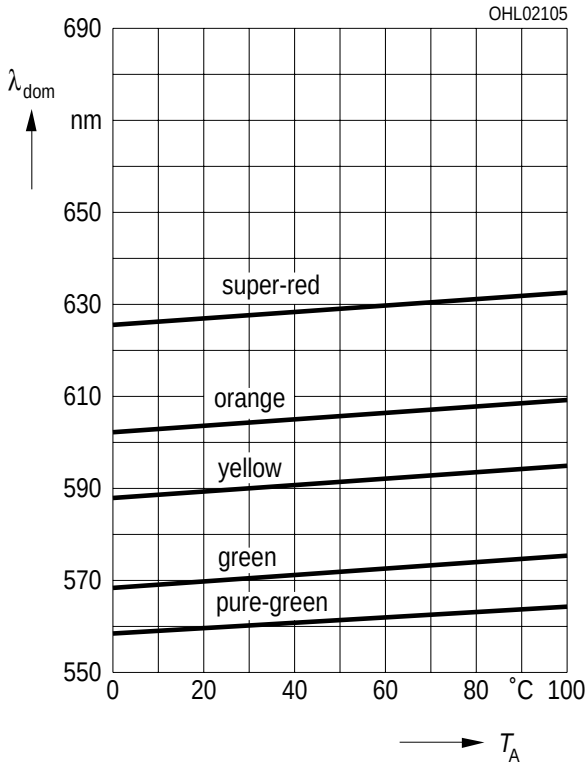
Maximal zulässiger Durchlaßstrom
Max. permissible forward current
$I_F = f(T_A)$



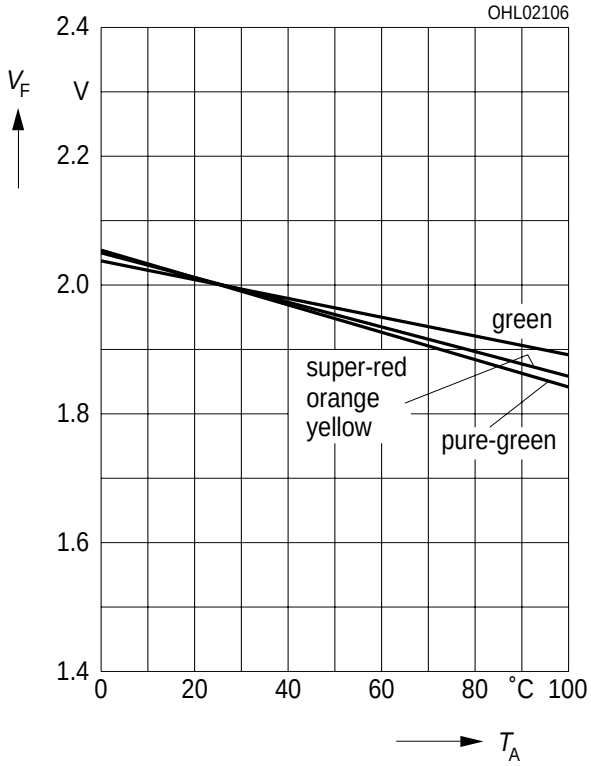
Wellenlänge der Strahlung $\lambda_{peak} = f(T_A)$
Wavelength at peak emission
I_F = 10 mA



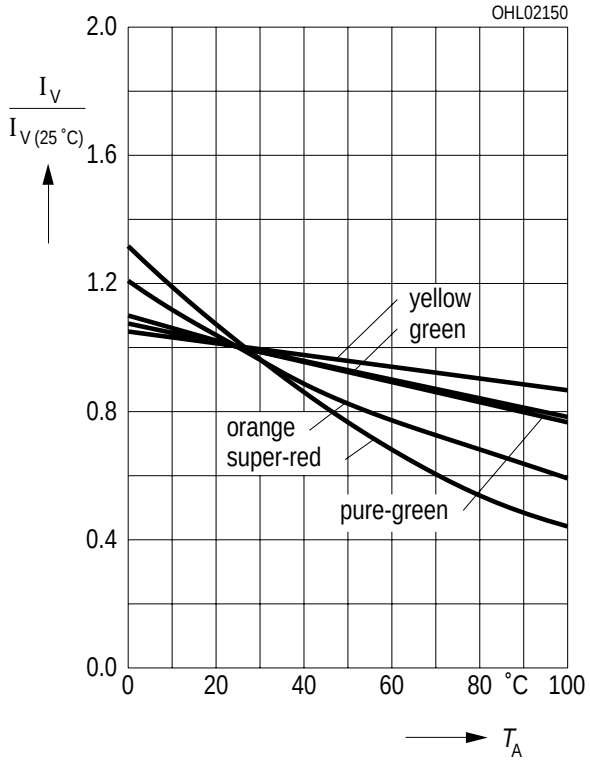
Dominantwellenlänge $\lambda_{dom} = f(T_A)$
Dominant wavelength
I_F = 10 mA



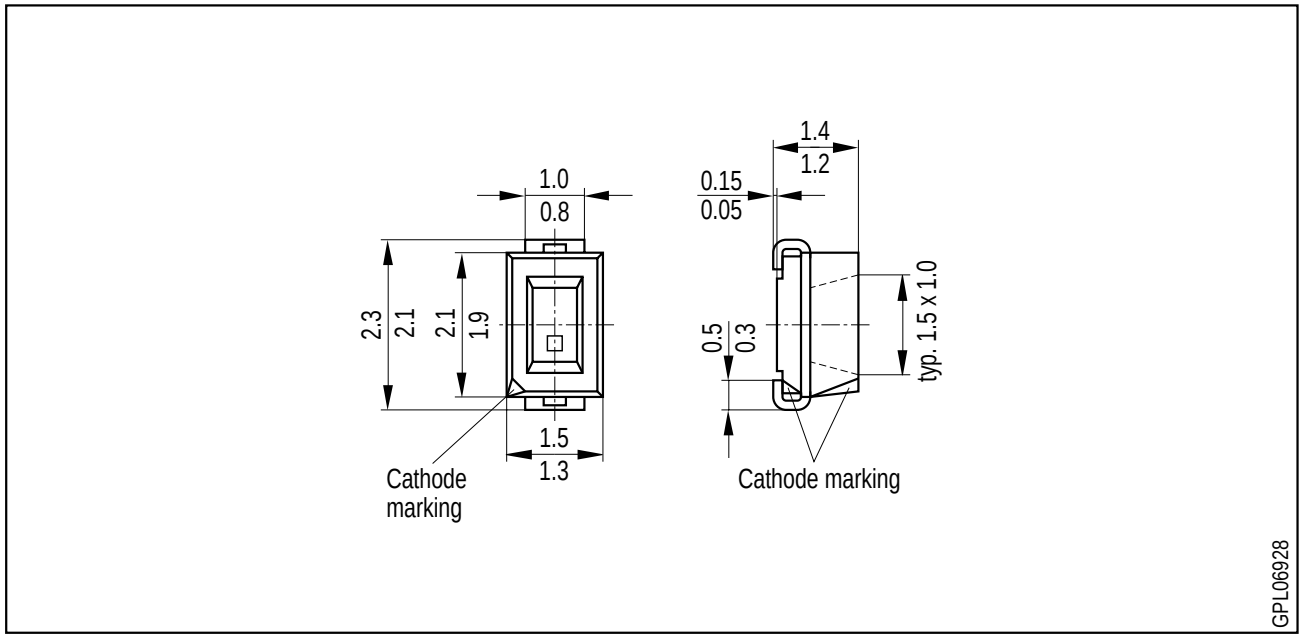
Durchlaßspannung $V_F = f(T_A)$
Forward voltage
I_F = 10 mA



Relative Lichtstärke $I_V / I_{V(25\,^\circ C)} = f(T_A)$
Relative luminous intensity
I_F = 10 mA



Maßzeichnung (Maße in mm, wenn nicht anders angegeben)
Package Outlines (Dimensions in mm, unless otherwise specified)



Kathodenkennung: abgeschrägte Ecke
Cathode mark: bevelled edge