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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



MULTILED

Enhanced optical Power LED (ThinFilm / ThinGaN)

Version 1.1

LTRB GFSF



Released

Besondere Merkmale

- **Gehäusotyp:** weißes PLCC-6 Gehäuse mit diffusem Silikon-Verguss
- **Besonderheit des Bauteils:** additive Farbmischung durch unabhängige Ansteuerung aller Chips
- **Wellenlänge:** 625 nm (rot), 530 nm (true green), 460 nm (blau)
- **Abstrahlwinkel:** Lambertischer Strahler (120°)
- **Technologie:** ThinFilm (rot), ThinGaN (true green, blau)
- **optischer Wirkungsgrad:** 45 lm/W @ Cx=0,31; Cy=0,31
- **Gruppierungsparameter:** Lichtstärke, Farbort

- **Verarbeitungsmethode:** für alle SMT-Bestücktechniken geeignet
- **Lötmethode:** Reflow Löten
- **Vorbehandlung:** nach JEDEC Level 4
- **Gurtung:** 12 mm Gurt mit 1000/Rolle, ø180 mm
- **ESD-Festigkeit:** ESD-sicher bis 1 kV nach JESD22-A114-D

Anwendungen

- Anzeigen im Innen- und Außenbereich (z.B. im Verkehrsbereich; Laufschriftanzeigen)
- Getrennte Antsteuerung der Leuchtdiodenchips zur Darstellung verschiedener Farben inklusive weiß
- Hinterleuchtung (LCD, Schalter, Tasten, Werbebeleuchtung, Allgemeinbeleuchtung)
- Einkopplung in Lichtleiter

Features

- **package:** white PLCC-6 package with diffused silicone resin
- **feature of the device:** well defined white color groups with RGB-LED

- **wavelength:** 625 nm (red), 530 nm (true green), 460 nm (blue)
- **viewing angle:** Lambertian Emitter (120°)
- **technology:** ThinFilm (red), ThinGaN (true green, blue)
- **optical efficiency:** 45 lm/W @ Cx=0.31; Cy=0.31
- **grouping parameter:** luminous intensity, color coordinates
- **assembly methods:** suitable for all SMT assembly methods
- **soldering methods:** reflow soldering
- **preconditioning:** acc. to JEDEC Level 4
- **taping:** 12 mm tape with 1000/reel, ø180 mm
- **ESD-withstand voltage:** up to 1 kV acc. to JESD22-A114-D

Applications

- indoor and outdoor displays (e.g. displays for traffic; light writing displays)
- LED chips can be controlled separately to display various colors including white
- backlighting (LCD, switches, keys, illuminated advertising, general lighting)
- coupling into light guides

Bestellinformation
Ordering Information

Typ Type	Emissionsfarbe Color of Emission	Lichtstärke ¹⁾ Seite 32 Luminous Intensity ¹⁾ page 32 I _v (mcd)		
		white		
LTRB GFSF-ABCB-QKYO	true green (20mA) red (20mA) blue (10mA)	1.400...4.500		
		red	true green	blue
	I _v (typ) @20mA (T,R); (10mA (B))	700	1350	160

Bestellinformation
Ordering Information

Typ Type	Bestellnummer Ordering Code
LTRB GFSF-ABCB-QKYO	Q65110A9484

*Anm.: Die oben genannten Typbezeichnungen umfassen die bestellbaren Selektionen. Diese bestehen aus wenigen Helligkeitsgruppen (siehe **Seite 9** für nähere Informationen). Es wird nur eine einzige Helligkeitsgruppe pro Gurt geliefert. Z.B.: LTRB GFSF-**ABCB**-QKYO bedeutet, dass auf dem Gurt nur eine der Helligkeitsgruppen AB, BA, BB, CA oder CB enthalten ist. Um die Liefersicherheit zu gewährleisten, können einzelne Helligkeitsgruppen nicht bestellt werden.*

*Gleiches gilt für die Farben, bei denen Farbortgruppen gemessen und gruppiert werden. Pro Gurt wird nur eine Farbortgruppe geliefert. Z.B.: LTRB GFSF-ABCB-**QKYO** bedeutet, dass auf dem Gurt nur eine der Farbortgruppen -QK bis -YO enthalten ist (siehe **Seite 5** für nähere Information). Um die Liefersicherheit zu gewährleisten, können einzelne Farbortgruppen nicht bestellt werden.*

*Note: The above Type Numbers represent the order groups which include only a few brightness groups (see **page 9** for explanation). Only one group will be shipped on each reel (there will be no mixing of two groups on each reel). E.g. LTRB GFSF-**ABCB**-QKYO means that only one group AB, BA, BB, CA or CB will be shippable for any one reel.*

In order to ensure availability, single brightness groups will not be orderable.

*In a similar manner for colors where chromaticity coordinate groups are measured and binned, single chromaticity coordinate groups will be shipped on any one reel. E.g. LTRB GFSF-ABCB-**QKYO** means that only 1 chromaticity coordinate group -QK to -YO will be shippable on each reel (see **page 5** for explanation). In order to ensure availability, single chromaticity coordinate groups will not be orderable..*

Grenzwerte
Maximum Ratings

Bezeichnung Parameter	Symbol Symbol	Werte Values			Einheit Unit
		red	true green	blue	
Betriebstemperatur Operating temperature range	T_{op}	- 40 ... + 100			°C
Lagertemperatur Storage temperature range	T_{stg}	- 40 ... + 100			°C
Sperrschichttemperatur Junction temperature	T_j	+ 125			°C
Durchlassstrom (min.) Forward current (max.) ($T_S=25^\circ\text{C}$)	I_F	- 40	5 50	mA	
Stoßstrom Surge current $t_p = 10 \mu\text{s}$, $D = 0.005$, $T_S=25^\circ\text{C}$	I_{FM}	100	300	mA	
Sperrspannung ^{2) Seite 32} Reverse voltage ^{2) page 32} ($T_S=25^\circ\text{C}$)	V_R	12	5	V	

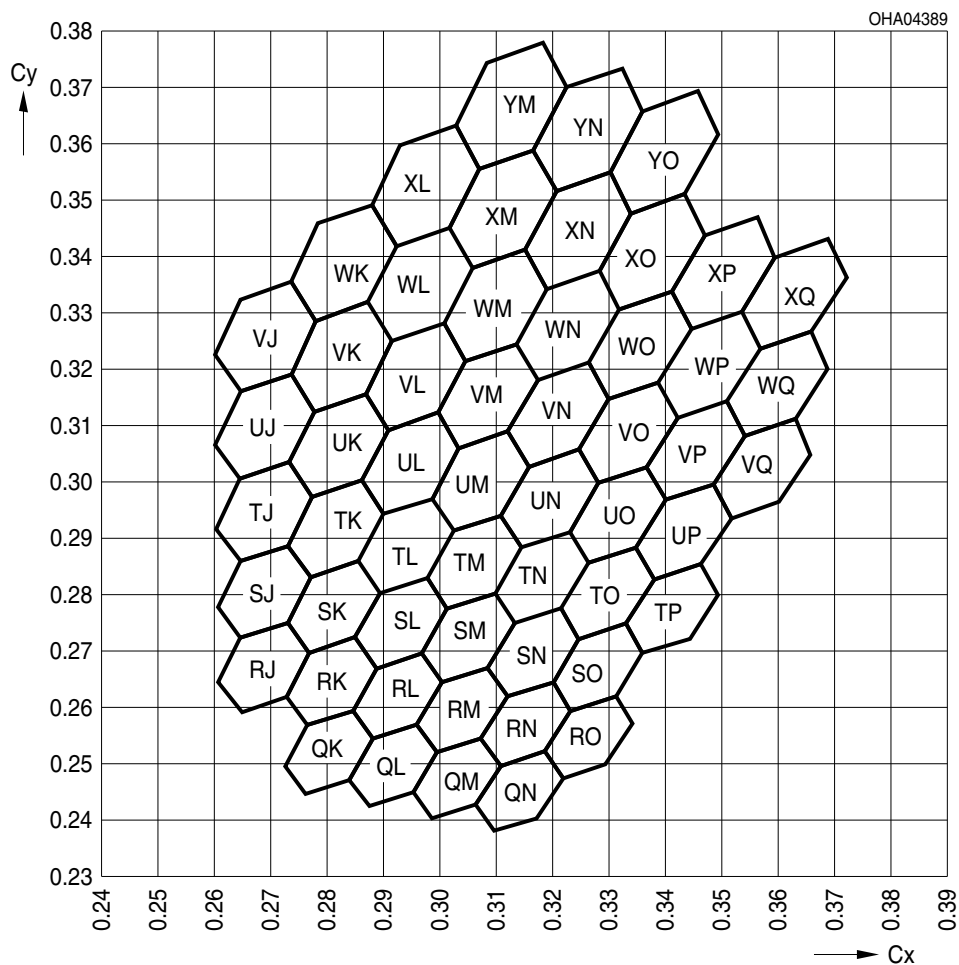
Kennwerte Characteristics

($T_S = 25\text{ °C}$)

Bezeichnung Parameter	Symbol Symbol	Werte Values			Einheit Unit
		red	true green	blue	
Wellenlänge des emittierten Lichtes Wavelength at peak emission $I_F = 20\text{ mA}$	(typ.) λ_{peak}	632	520	454	nm
Dominantwellenlänge ³⁾ Seite 32 Dominant wavelength ³⁾ page 32 $I_F = 20\text{ mA}$	(min.) λ_{dom} (typ.) (max.)	619 625 631	519 530 540	457 460 470	nm nm nm
Spektrale Bandbreite bei 50 % $I_{\text{rel max}}$ Spectral bandwidth at 50 % $I_{\text{rel max}}$ $I_F = 20\text{ mA}$	(typ.) $\Delta\lambda$	18	33	25	nm
Abstrahlwinkel bei 50 % I_V (Vollwinkel) Viewing angle at 50 % I_V	(typ.) 2φ	120			Grad deg.
Durchlassspannung ⁴⁾ Seite 32 Forward voltage ⁴⁾ page 32 $I_F = 20\text{ mA}$	(min.) V_F (typ.) V_F (max.) V_F	1.8 2.05 2.4	2.9 3.2 3.7		V V V
Sperrstrom Reverse current $V_R = 5\text{ V}$ (blue / true green); 12 V (red)	(typ.) I_R (max.) I_R	0.02 10	0.01 10		μA μA
Temperaturkoeffizient von V_F Temperature coefficient of V_F $I_F = 20\text{ mA}$; $-10\text{ °C} \leq T \leq 100\text{ °C}$	(typ.) TC_V	- 2.5	- 3.6	- 4.0	mV/K
Wärmewiderstand Thermal resistance Sperrschicht/Umgebung ⁵⁾ Seite 32 Junction/ambient ⁵⁾ page 32 Sperrschicht/Lötspad Junction/solder point	1 chip on (typ.) 3 chips on (typ.) (max.)	$R_{\text{th JA}}$ $R_{\text{th JA}}$ $R_{\text{th JS}}$	440** 700 280**	340** 600 180**	K/W K/W K/W

* Einzelgruppen siehe Seite 8
Individual groups on page 8

** R_{th} (max) basiert auf statistischen Werten
 R_{th} (max) is based on statistic values



Gruppe Group	Cx	Cy
QK	0,2845	0,2592
	0,2882	0,2543
	0,2841	0,2470
	0,2764	0,2446
	0,2726	0,2494
	0,2766	0,2567
QL	0,2961	0,2568
	0,2996	0,2519
	0,2953	0,2447
	0,2877	0,2423
	0,2841	0,2470
	0,2882	0,2543

Gruppe Group	Cx	Cy
TN	0,3230	0,2910
	0,3264	0,2854
	0,3214	0,2773
	0,3132	0,2747
	0,3097	0,2800
	0,3145	0,2883
TM	0,3109	0,2940
	0,3145	0,2883
	0,3097	0,2800
	0,3014	0,2774
	0,2977	0,2828
	0,3024	0,2912

Gruppe Group	Cx	Cy
VK	0,2873	0,3316
	0,2915	0,3249
	0,2867	0,3154
	0,2778	0,3124
	0,2735	0,3188
	0,2781	0,3285
VJ	0,2737	0,3354
	0,2781	0,3285
	0,2735	0,3188
	0,2645	0,3158
	0,2600	0,3223
	0,2645	0,3322

Gruppe Group	Cx	Cy	Gruppe Group	Cx	Cy	Gruppe Group	Cx	Cy
QM	0.3074	0.2543	TL	0.2986	0.2970	WK	0.2879	0.3489
	0.3108	0.2495		0.3024	0.2912		0.2923	0.3418
	0.3064	0.2425		0.2977	0.2828		0.2873	0.3316
	0.2988	0.2401		0.2894	0.2802		0.2781	0.3285
	0.2953	0.2447		0.2856	0.2857		0.2737	0.3354
	0.2996	0.2519		0.2901	0.2942		0.2785	0.3457
QN	0.3186	0.2520	TK	0.2861	0.3001	WL	0.3017	0.3450
	0.3218	0.2472		0.2901	0.2942		0.3058	0.3379
	0.3172	0.2403		0.2856	0.2857		0.3006	0.3280
	0.3097	0.2379		0.2772	0.2830		0.2915	0.3249
	0.3064	0.2425		0.2731	0.2886		0.2873	0.3316
	0.3108	0.2495		0.2775	0.2973		0.2923	0.3418
RO	0.3312	0.2618	TJ	0.2733	0.3033	WM	0.3151	0.3411
	0.3342	0.2569		0.2775	0.2973		0.3189	0.3342
	0.3295	0.2496		0.2731	0.2886		0.3136	0.3244
	0.3218	0.2472		0.2647	0.2859		0.3046	0.3214
	0.3186	0.2520		0.2604	0.2916		0.3006	0.3280
	0.3232	0.2593		0.2646	0.3004		0.3058	0.3379
RN	0.3200	0.2643	UJ	0.2735	0.3188	WN	0.3282	0.3373
	0.3232	0.2593		0.2778	0.3124		0.3318	0.3306
	0.3186	0.2520		0.2733	0.3033		0.3264	0.3210
	0.3108	0.2495		0.2646	0.3004		0.3174	0.3180
	0.3074	0.2543		0.2602	0.3065		0.3136	0.3244
	0.3120	0.2618		0.2645	0.3158		0.3189	0.3342
RM	0.3085	0.2668	UK	0.2867	0.3154	WO	0.3410	0.3336
	0.3120	0.2618		0.2908	0.3091		0.3445	0.3270
	0.3074	0.2543		0.2861	0.3001		0.3388	0.3176
	0.2996	0.2519		0.2775	0.2973		0.3299	0.3146
	0.2961	0.2568		0.2733	0.3033		0.3264	0.3210
	0.3005	0.2643		0.2778	0.3124		0.3318	0.3306
RL	0.2969	0.2694	UL	0.2996	0.3121	WP	0.3536	0.3300
	0.3005	0.2643		0.3035	0.3059		0.3568	0.3235
	0.2961	0.2568		0.2986	0.2970		0.3510	0.3142
	0.2882	0.2543		0.2901	0.2942		0.3422	0.3113
	0.2845	0.2592		0.2861	0.3001		0.3388	0.3176
	0.2888	0.2669		0.2908	0.3091		0.3445	0.3270

Gruppe Group	Cx	Cy	Gruppe Group	Cx	Cy	Gruppe Group	Cx	Cy
RK	0.2850	0.2721	UM	0.3122	0.3088	WQ	0.3659	0.3265
	0.2888	0.2669		0.3159	0.3027		0.3689	0.3201
	0.2845	0.2592		0.3109	0.2940		0.3630	0.3109
	0.2766	0.2567		0.3024	0.2912		0.3542	0.3081
	0.2728	0.2617		0.2986	0.2970		0.3510	0.3142
	0.2769	0.2695		0.3035	0.3059		0.3568	0.3235
RJ	0.2729	0.2748	UN	0.3246	0.3055	XQ	0.3689	0.3430
	0.2769	0.2695		0.3281	0.2996		0.3720	0.3362
	0.2728	0.2617		0.3230	0.2910		0.3659	0.3265
	0.2648	0.2592		0.3145	0.2883		0.3568	0.3235
	0.2608	0.2643		0.3109	0.2940		0.3536	0.3300
	0.2647	0.2722		0.3159	0.3027		0.3596	0.3399
SJ	0.2731	0.2886	UO	0.3367	0.3024	XP	0.3563	0.3468
	0.2772	0.2830		0.3400	0.2965		0.3596	0.3399
	0.2729	0.2748		0.3348	0.2881		0.3536	0.3300
	0.2647	0.2722		0.3264	0.2854		0.3445	0.3270
	0.2606	0.2776		0.3230	0.2910		0.3410	0.3336
	0.2647	0.2859		0.3281	0.2996		0.3469	0.3437
SK	0.2856	0.2857	UP	0.3486	0.2993	XO	0.3434	0.3508
	0.2894	0.2802		0.3517	0.2935		0.3469	0.3437
	0.2850	0.2721		0.3463	0.2852		0.3410	0.3336
	0.2769	0.2695		0.3380	0.2826		0.3318	0.3306
	0.2729	0.2748		0.3348	0.2881		0.3282	0.3373
	0.2772	0.2830		0.3400	0.2965		0.3339	0.3475
SL	0.2977	0.2828	VQ	0.3630	0.3109	XN	0.3302	0.3548
	0.3014	0.2774		0.3659	0.3049		0.3339	0.3475
	0.2969	0.2694		0.3602	0.2963		0.3282	0.3373
	0.2888	0.2669		0.3517	0.2935		0.3189	0.3342
	0.2850	0.2721		0.3486	0.2993		0.3151	0.3411
	0.2894	0.2802		0.3542	0.3081		0.3206	0.3515
SM	0.3097	0.2800	VP	0.3510	0.3142	XM	0.3166	0.3589
	0.3132	0.2747		0.3542	0.3081		0.3206	0.3515
	0.3085	0.2668		0.3486	0.2993		0.3151	0.3411
	0.3005	0.2643		0.3400	0.2965		0.3058	0.3379
	0.2969	0.2694		0.3367	0.3024		0.3017	0.3450
	0.3014	0.2774		0.3422	0.3113		0.3070	0.3555

Gruppe Group	Cx	Cy	Gruppe Group	Cx	Cy	Gruppe Group	Cx	Cy
SN	0.3214	0.2773	VO	0.3388	0.3176	XL	0.3028	0.3631
	0.3247	0.2720		0.3422	0.3113		0.3070	0.3555
	0.3200	0.2643		0.3367	0.3024		0.3017	0.3450
	0.3120	0.2618		0.3281	0.2996		0.2923	0.3418
	0.3085	0.2668		0.3246	0.3055		0.2879	0.3489
	0.3132	0.2747		0.3299	0.3146		0.2931	0.3597
SO	0.3329	0.2746	VN	0.3264	0.3210	YM	0.3183	0.3778
	0.3361	0.2694		0.3299	0.3146		0.3224	0.3699
	0.3312	0.2618		0.3246	0.3055		0.3166	0.3589
	0.3232	0.2593		0.3159	0.3027		0.3070	0.3555
	0.3200	0.2643		0.3122	0.3088		0.3028	0.3631
	0.3247	0.2720		0.3174	0.3180		0.3084	0.3743
TP	0.3463	0.2852	VM	0.3136	0.3244	YN	0.3323	0.3733
	0.3494	0.2798		0.3174	0.3180		0.3361	0.3656
	0.3442	0.2719		0.3122	0.3088		0.3302	0.3548
	0.3361	0.2694		0.3035	0.3059		0.3206	0.3515
	0.3329	0.2746		0.2996	0.3121		0.3166	0.3589
	0.3380	0.2826		0.3046	0.3214		0.3224	0.3699
TO	0.3348	0.2881	VL	0.3006	0.3280	YO	0.3459	0.3690
	0.3380	0.2826		0.3046	0.3214		0.3495	0.3614
	0.3329	0.2746		0.2996	0.3121		0.3434	0.3508
	0.3247	0.2720		0.2908	0.3091		0.3339	0.3475
	0.3214	0.2773		0.2867	0.3154		0.3302	0.3548
	0.3264	0.2854		0.2915	0.3249		0.3361	0.3656

Anm.: Die Farbkoordinaten des Mischlichtes können innerhalb des gekennzeichneten Bereichs des Farbdreiecks erwartet werden.
 Note: The color coordinates of the mixed light can be expected within the marked area of the color triangle

Helligkeits-Gruppierungsschema Brightness Groups

Helligkeitsgruppe Brightness Group	Lichtstärke ¹⁾ Seite 32 Luminous Intensity ¹⁾ page 32 I_v (mcd)
AB	1.400 ...1.800
BA	1.800 ...2.240
BB	2.240 ...2.800
CA	2.800 ...3.550
CB	3.550 ...4.500

Anm.: Die Standardlieferform von Serientypen beinhaltet eine Familiengruppe. Diese besteht aus 5 Helligkeitsgruppen. Einzelne Helligkeitsgruppen sind nicht bestellbar.

Note: The standard shipping format for serial types includes a family group of 5 individual brightness groups. Individual brightness groups cannot be ordered.

Gruppenbezeichnung auf Etikett

Group Name on Label

Beispiel: BA-QK

Example: BA-QK

Helligkeitsgruppe Brightness Group	Farbortgruppe Color coordinates
BA	QK

Anm.: In einer Verpackungseinheit / Gurt ist immer nur eine Helligkeitsgruppe pro Farbe enthalten.

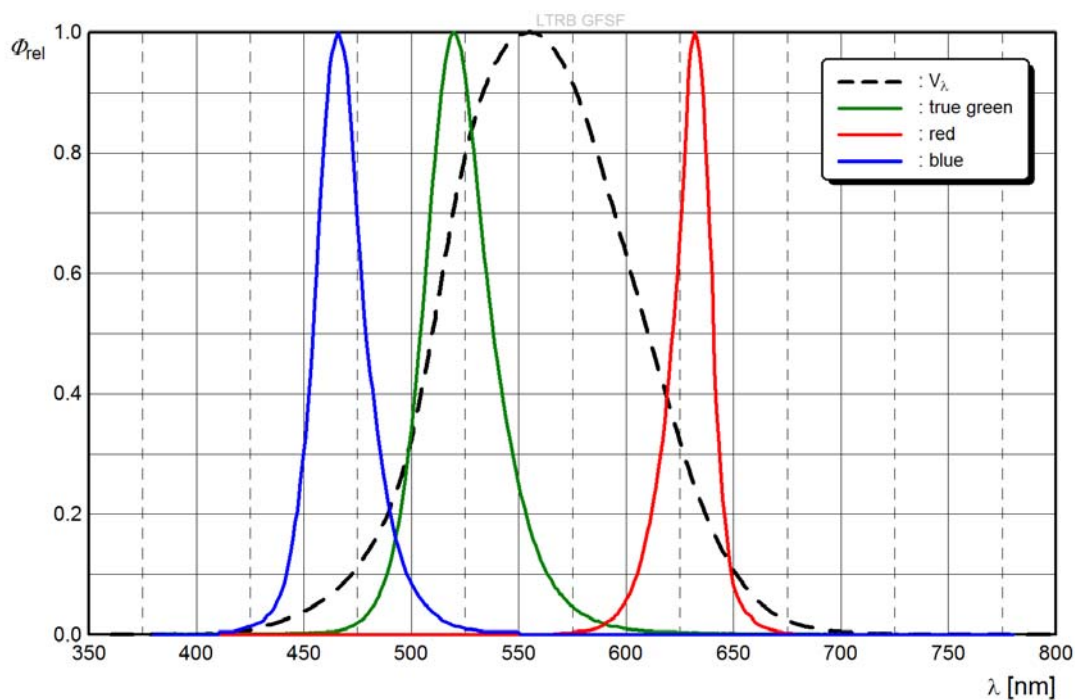
Note: No packing unit / tape ever contains more than one brightness group per color.

Relative spektrale Emission⁷⁾ Seite 32

Relative Spectral Emission⁷⁾ page 32

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

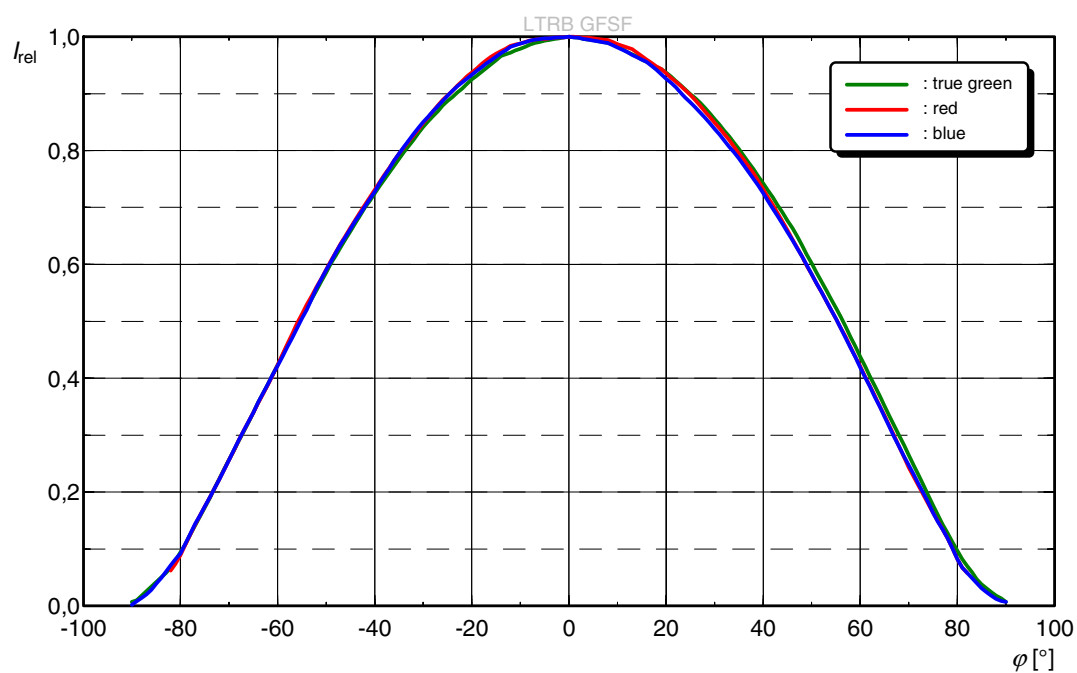
$I_{\text{rel}} = f(\lambda)$; $T_S = 25\text{ °C}$; $I_F = 20\text{ mA}$ (T, R); 10 mA (B)



Abstrahlcharakteristik⁷⁾ Seite 32

Radiation Characteristic⁷⁾ page 32

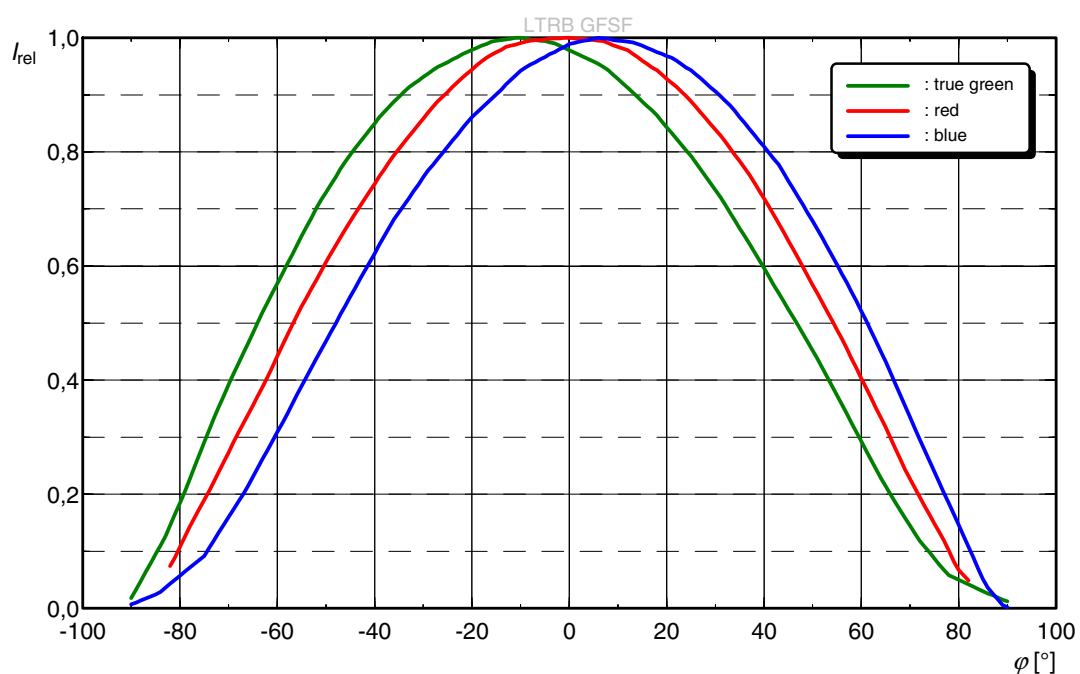
$I_{rel} = f(\varphi)$; $T_S = 25\text{ °C}$, $I_F = 20\text{ mA}$ (T, R); 10 mA (B) true green, red, blue



Abstrahlcharakteristik⁷⁾ Seite 32

Radiation Characteristic⁷⁾ page 32

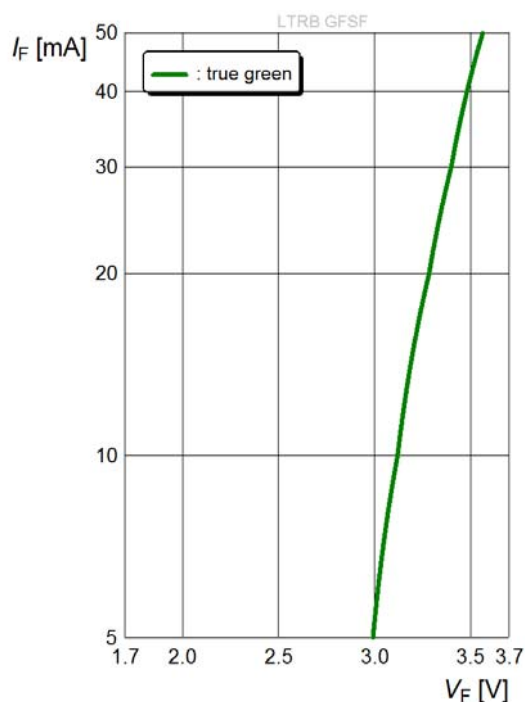
$I_{rel} = f(\varphi)$; $T_S = 25\text{ °C}$, $I_F = 20\text{ mA}$ (T, R); 10 mA (B) true green, red, blue



Durchlassstrom^{7) Seite 32}

Forward Current^{7) page 32}

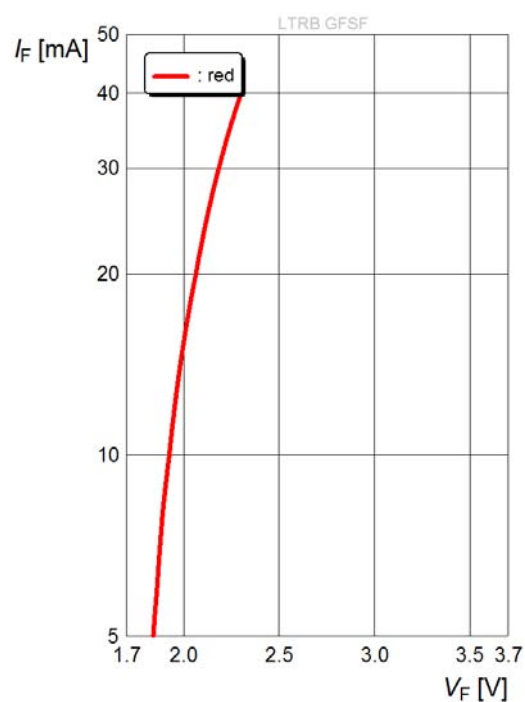
$I_F = f(V_F)$; $T_S = 25\text{ °C}$; true green



Durchlassstrom^{7) Seite 32}

Forward Current^{7) page 32}

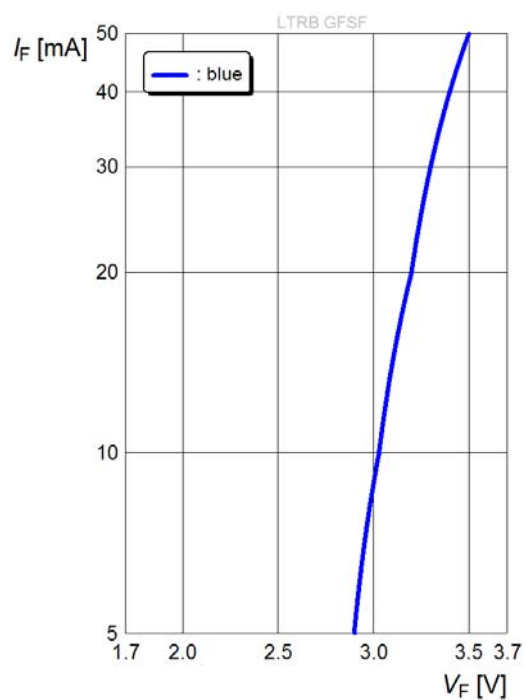
$I_F = f(V_F)$; $T_S = 25\text{ °C}$; red



Durchlassstrom^{7) Seite 32}

Forward Current^{7) page 32}

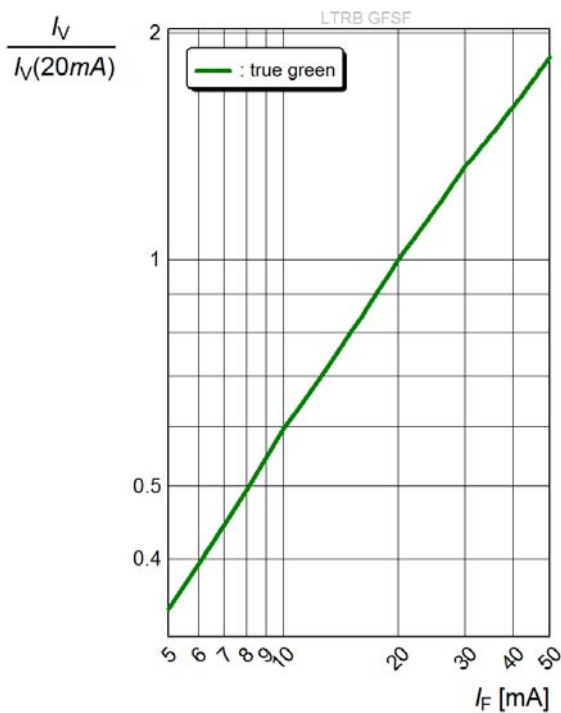
$I_F = f(V_F)$; $T_S = 25\text{ °C}$; blue



Relative Lichtstärke^{7) Seite 32}

Relative Luminous Intensity^{7) page 32}

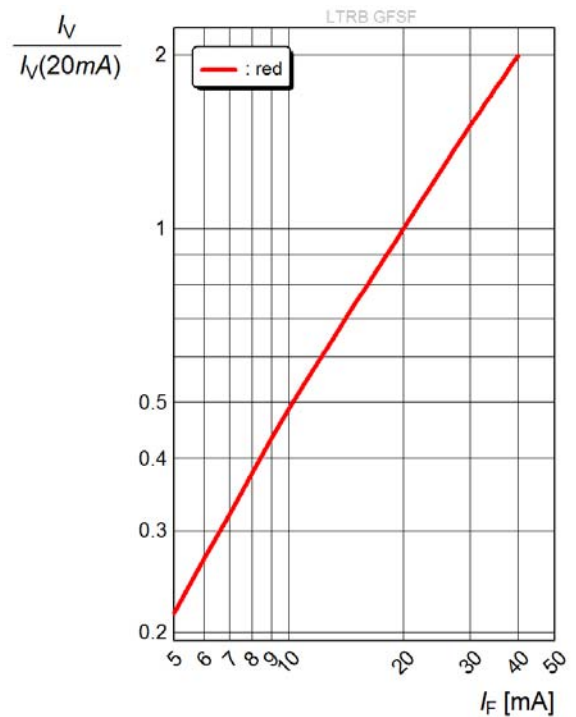
$I_V/I_V(20\text{ mA}) = f(I_F); T_S = 25\text{ }^\circ\text{C}, \text{ true green}$



Relative Lichtstärke^{7) Seite 32}

Relative Luminous Intensity^{7) page 32}

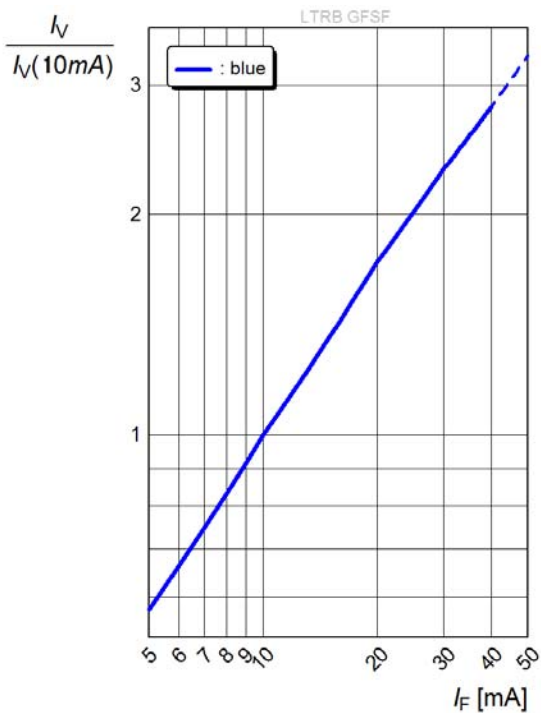
$I_V/I_V(20\text{ mA}) = f(I_F); T_S = 25\text{ }^\circ\text{C}, \text{ red}$



Relative Lichtstärke^{7) 8) Seite 32}

Relative Luminous Intensity^{7) 8) page 32}

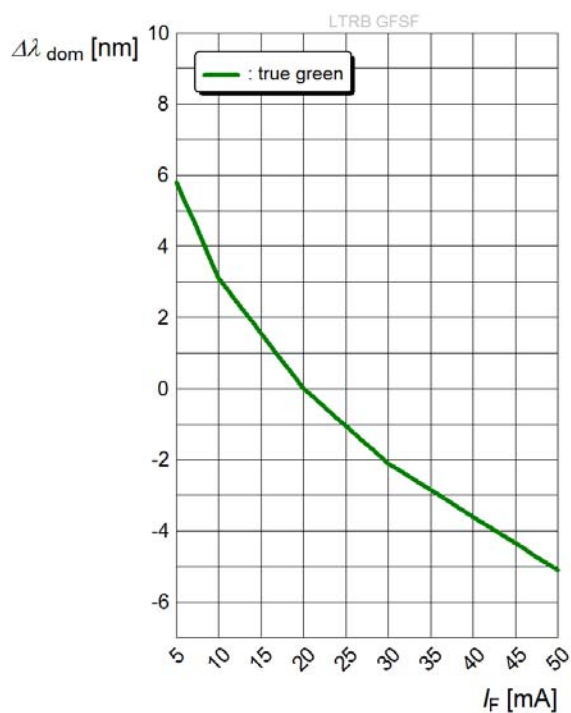
$I_V/I_V(10\text{ mA}) = f(I_F); T_S = 25\text{ }^\circ\text{C}, \text{ blue}$



Relative Dominante Wellenlänge⁷⁾ Seite 32

Relativ Dominant Wavelength⁷⁾ page 32

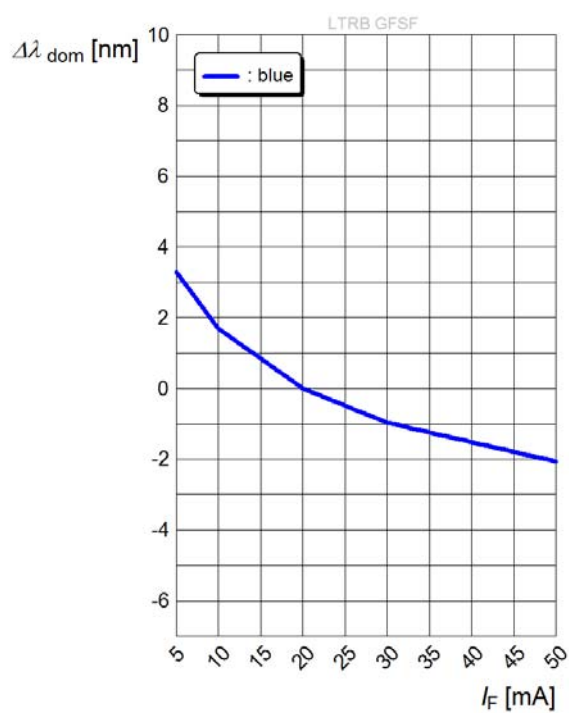
$\Delta\lambda_{\text{dom}} = f(I_F); T_S = 25\text{ °C, true green}$



Relative Dominante Wellenlänge⁷⁾ Seite 32

Relativ Dominant Wavelength⁷⁾ page 32

$\Delta\lambda_{\text{dom}} = f(I_F); T_S = 25\text{ °C, blue}$

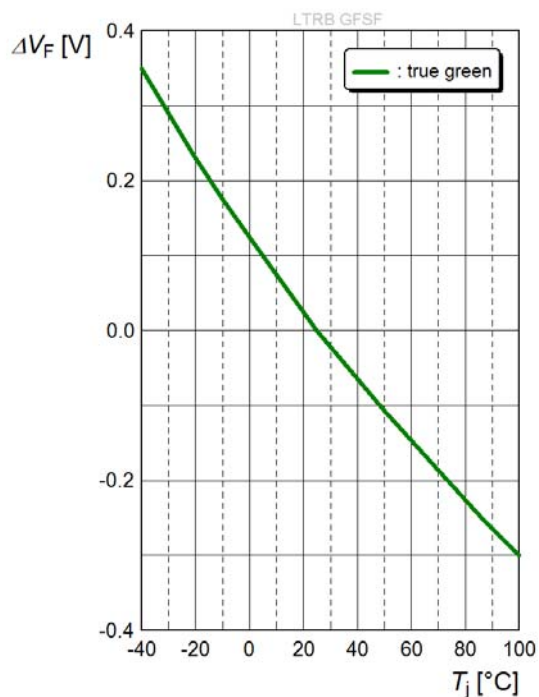


I

Relative Vorwärtsspannung^{7) Seite 32}

Relative Forward Voltage^{7) page 32}

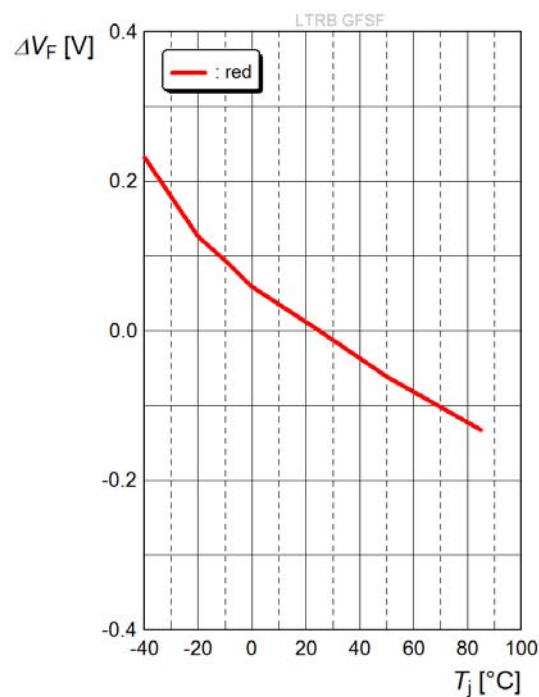
$\Delta V_F = V_F - V_F(25\text{ °C}) = f(T_j)$; $I_F = 20\text{ mA}$, true green



Relative Vorwärtsspannung^{7) Seite 32}

Relative Forward Voltage^{7) page 32}

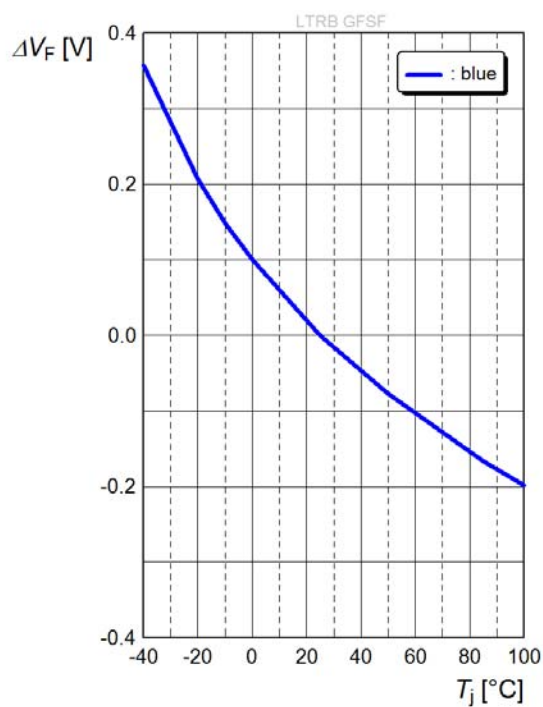
$\Delta V_F = V_F - V_F(25\text{ °C}) = f(T_j)$; $I_F = 20\text{ mA}$, red



Relative Vorwärtsspannung^{7) Seite 32}

Relative Forward Voltage^{7) page 32}

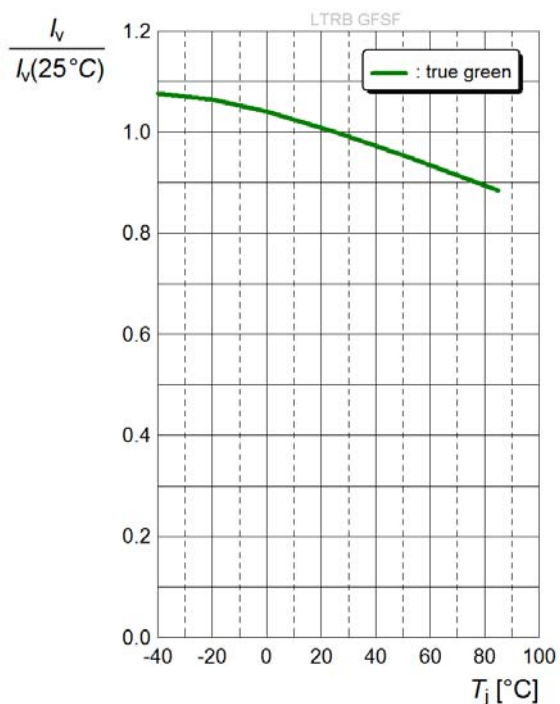
$\Delta V_F = V_F - V_F(25\text{ °C}) = f(T_j)$; $I_F = 10\text{ mA}$, blue



Relative Lichtstärke⁷⁾ Seite 32

Relative Luminous Intensity⁷⁾ page 32

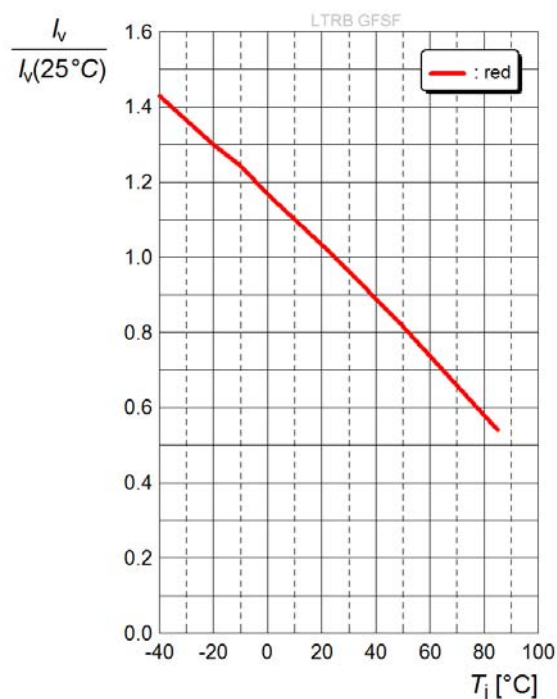
$I_V/I_V(25\text{ °C}) = f(T_j)$; $I_F = 20\text{ mA}$, true green



Relative Lichtstärke⁷⁾ Seite 32

Relative Luminous Intensity⁷⁾ page 32

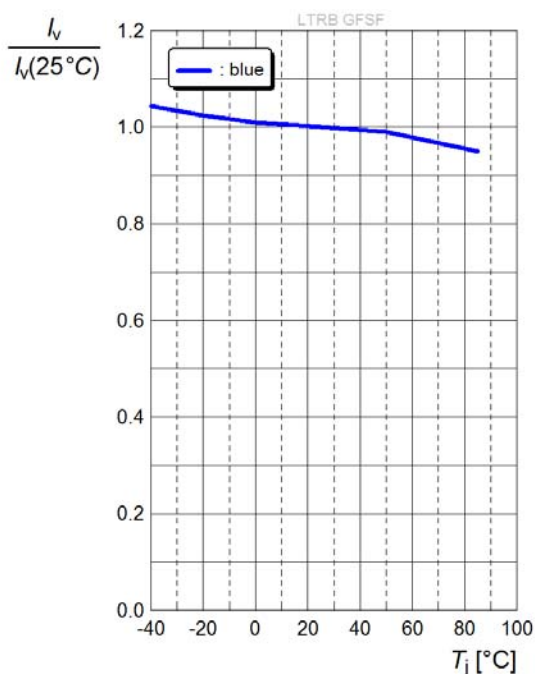
$I_V/I_V(25\text{ °C}) = f(T_j)$; $I_F = 20\text{ mA}$, red



Relative Lichtstärke⁷⁾ Seite 32

Relative Luminous Intensity⁷⁾ page 32

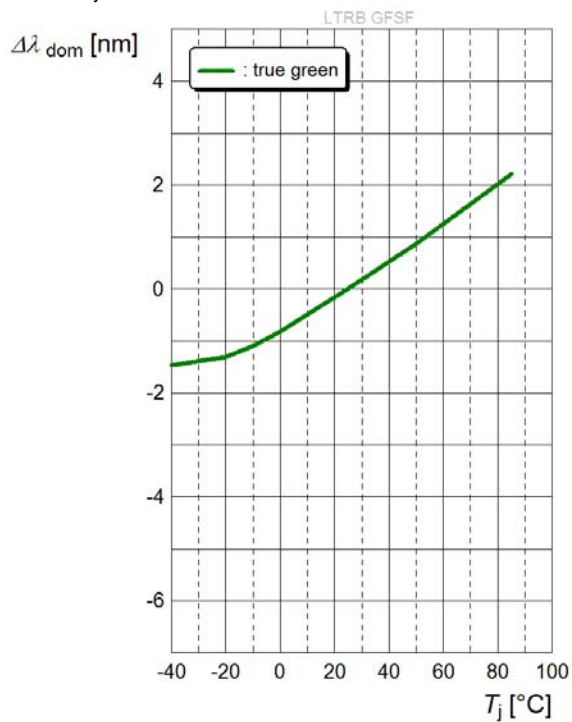
$I_V/I_V(25\text{ °C}) = f(T_j)$; $I_F = 10\text{ mA}$, blue



Relative Dominante Wellenlänge⁷⁾ Seite 32

Relativ Dominant Wavelength⁷⁾ page 32

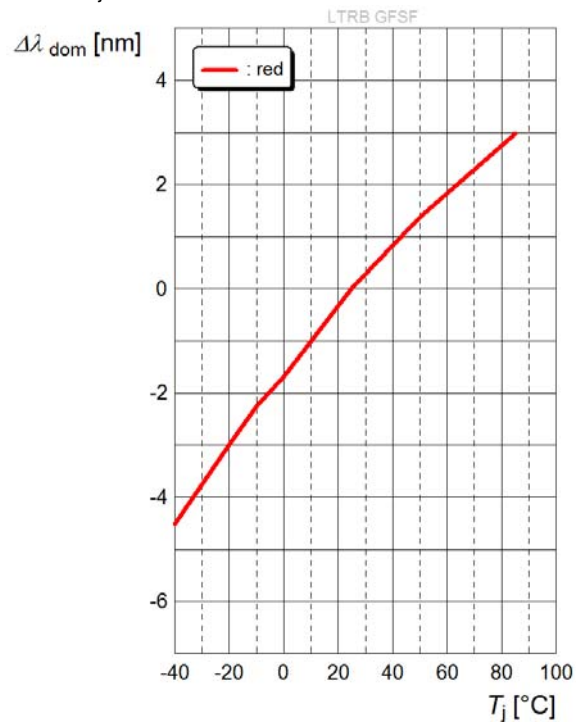
$\Delta\lambda_{\text{dom}} = f(T_j)$; $I_F = 20 \text{ mA}$, true green



Relative Dominante Wellenlänge⁷⁾ Seite 32

Relativ Dominant Wavelength⁷⁾ page 32

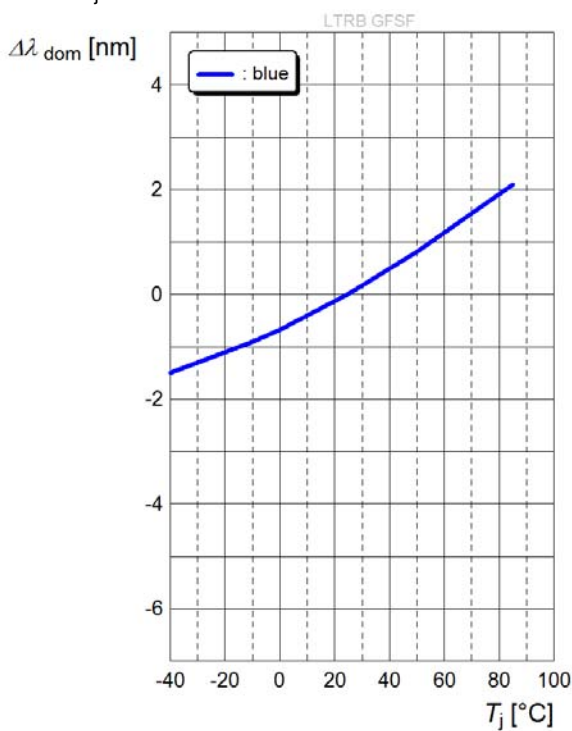
$\Delta\lambda_{\text{dom}} = f(T_j)$; $I_F = 20 \text{ mA}$, red



Relative Dominante Wellenlänge⁷⁾ Seite 32

Relativ Dominant Wavelength⁷⁾ page 32

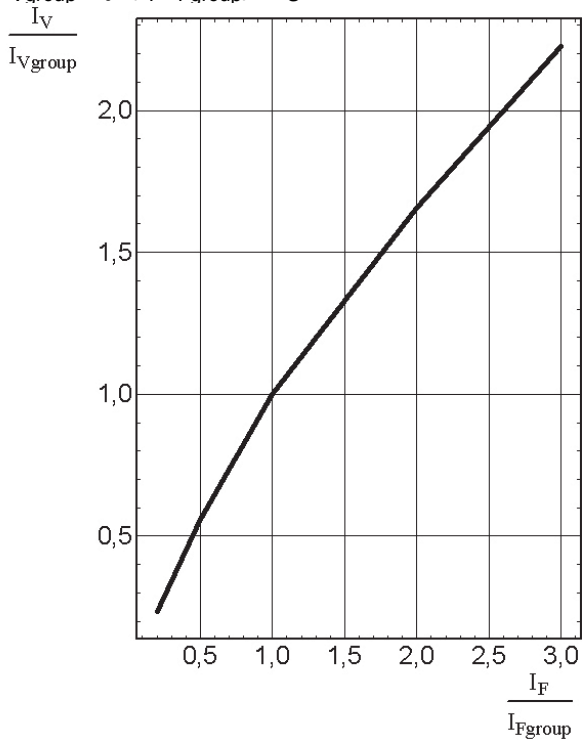
$\Delta\lambda_{\text{dom}} = f(T_j)$; $I_F = 10 \text{ mA}$, blue



Relative Lichtstärke^{7) Seite 32}

Relative Luminous Intensity^{7) page 32}

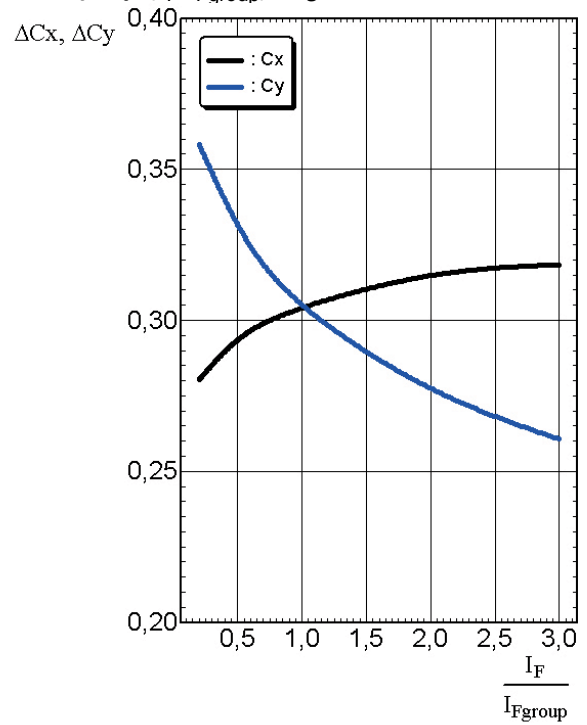
$I_V/I_{Vgroup} = f(I_F/I_{Fgroup}); T_S = 25\text{ °C}$



Farbortverschiebung^{7) Seite 32}

Chromaticity Coordinate Shift^{7) page 32}

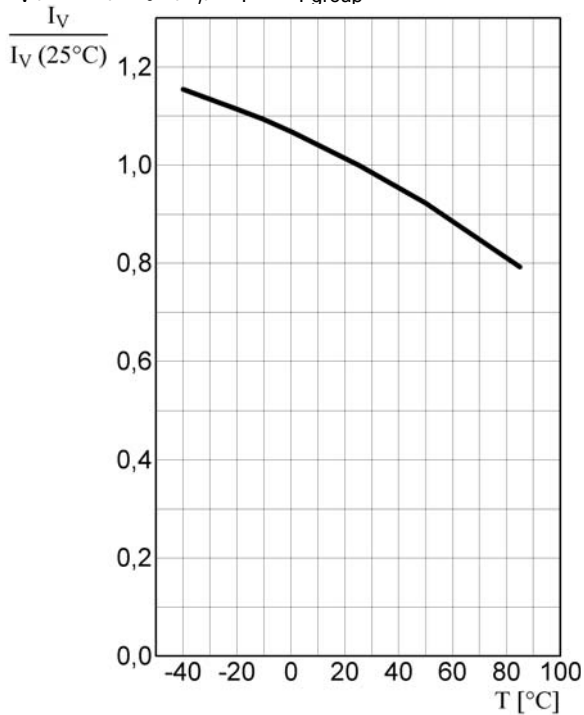
$\Delta Cx, \Delta Cy = f(I_F/I_{Fgroup}); T_S = 25\text{ °C}$



Relative Lichtstärke^{7) Seite 32}

Relative Luminous Intensity^{7) page 32}

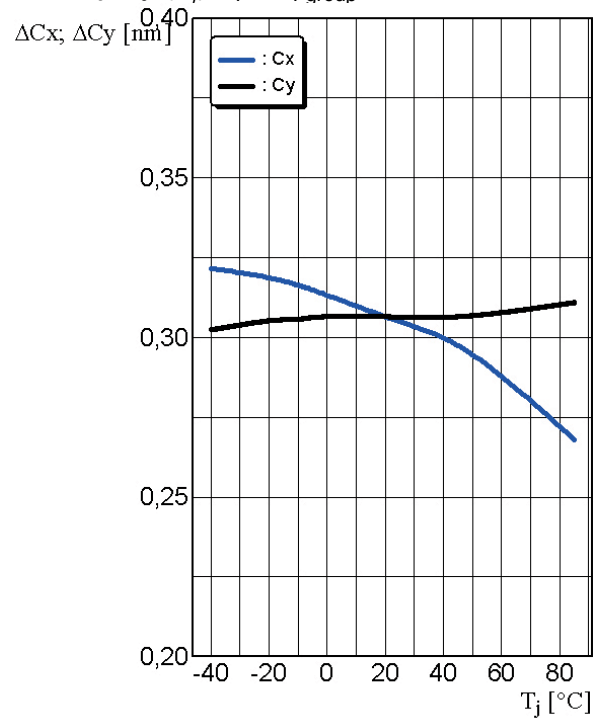
$I_V/I_V(25\text{ °C}) = f(T_j); I_F = I_{Fgroup}$



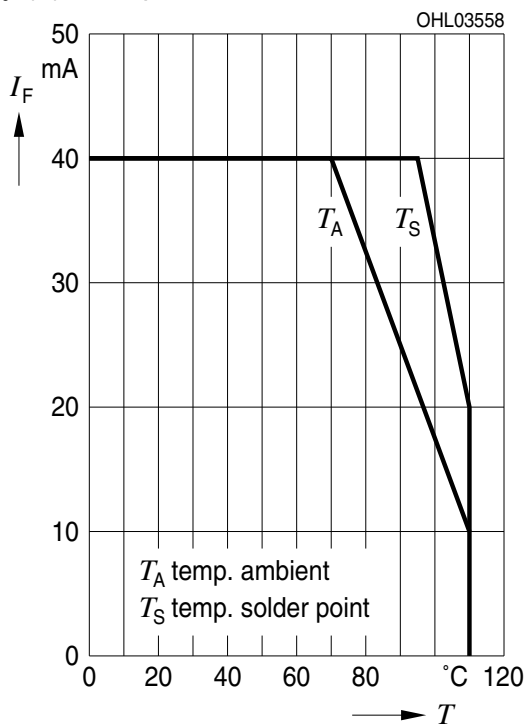
Farbortverschiebung^{7) Seite 32}

Chromaticity Coordinate Shift^{7) page 32}

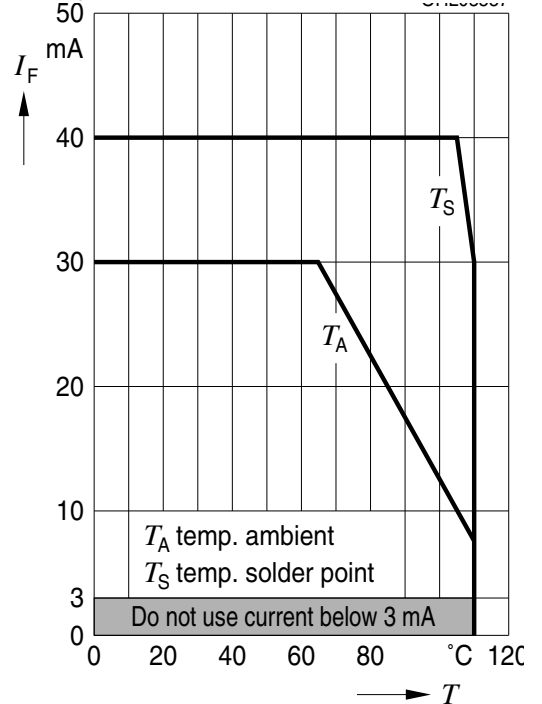
$\Delta Cx, \Delta Cy = f(T_j); I_F = I_{Fgroup}$



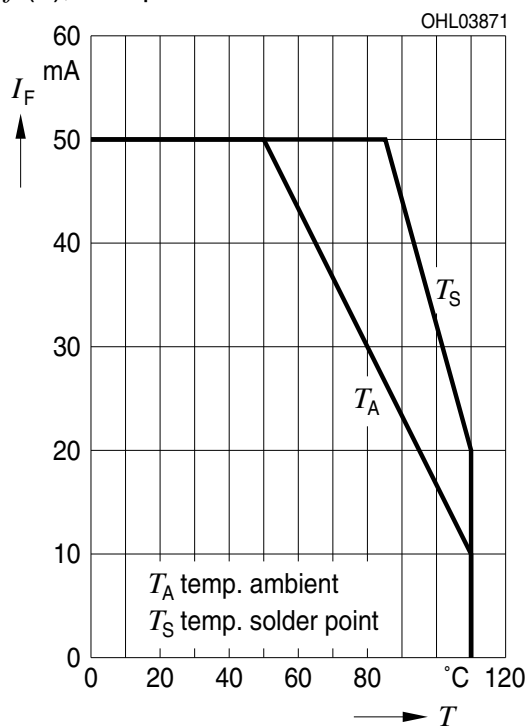
Maximal zulässiger Durchlassstrom rot
Max. Permissible Forward Current red
 $I_F = f(T)$; 1 chip on



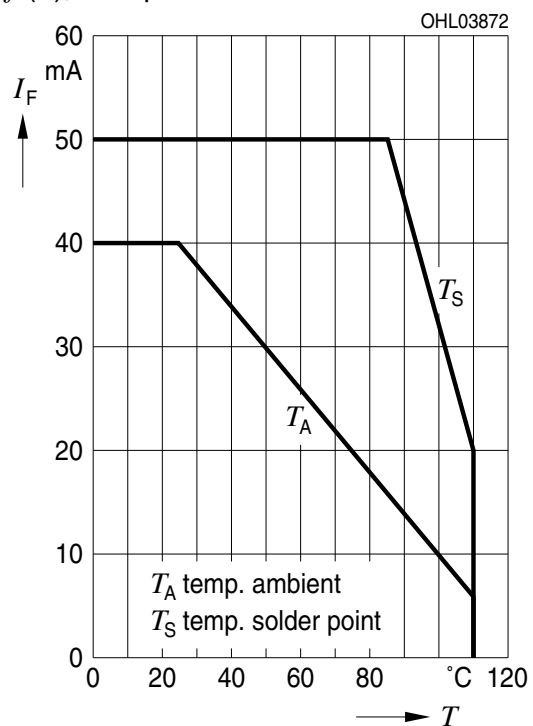
Maximal zulässiger Durchlassstrom rot
Max. Permissible Forward Current red
 $I_F = f(T)$; 3 chips on



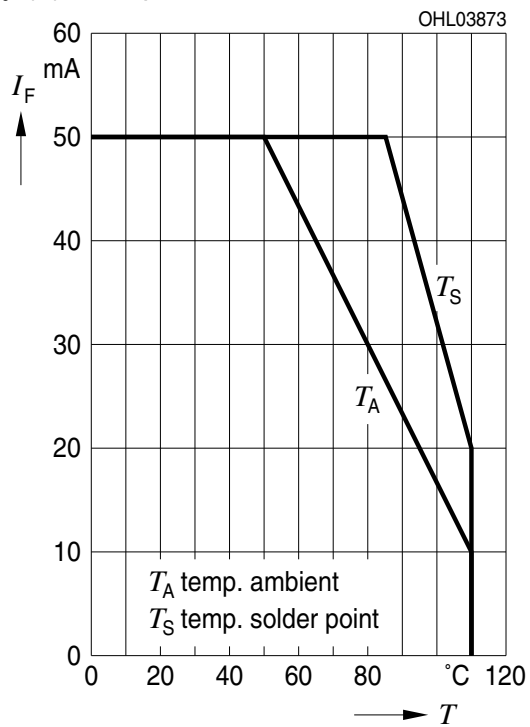
Maximal zulässiger Durchlassstrom true grün
Max. Permissible Forward Current true green
 $I_F = f(T)$; 1 chip on



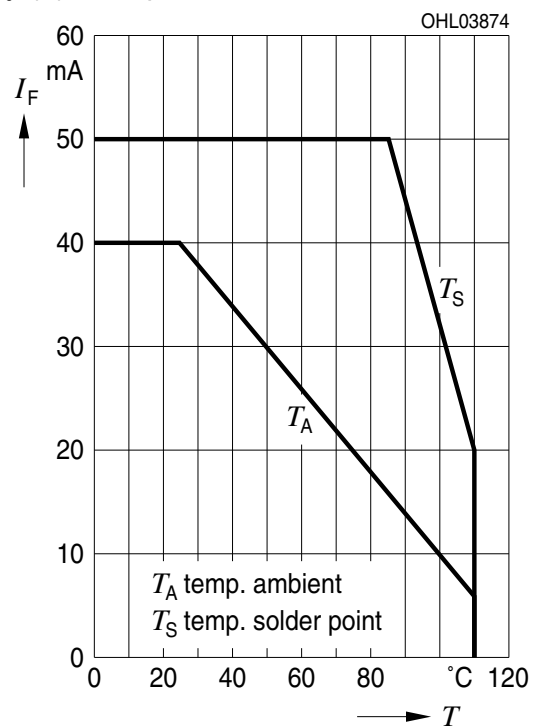
Maximal zulässiger Durchlassstrom true grün
Max. Permissible Forward Current true green
 $I_F = f(T)$; 3 chips on



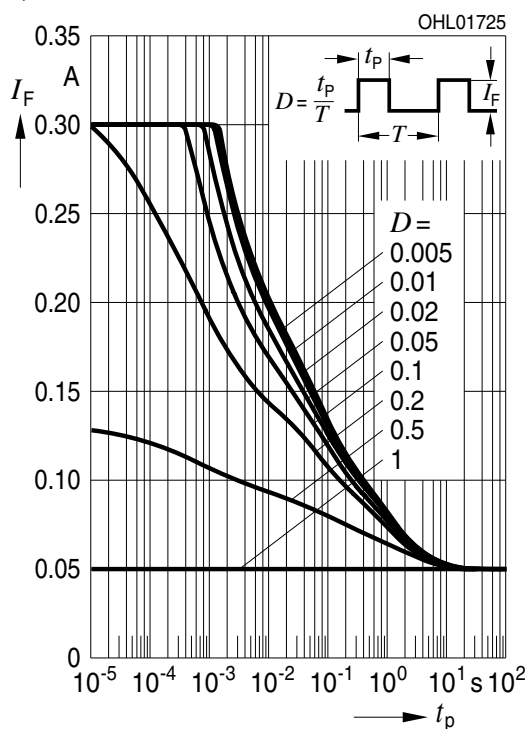
Maximal zulässiger Durchlassstrom blau
Max. Permissible Forward Current blue
 $I_F = f(T)$; 1 chip on



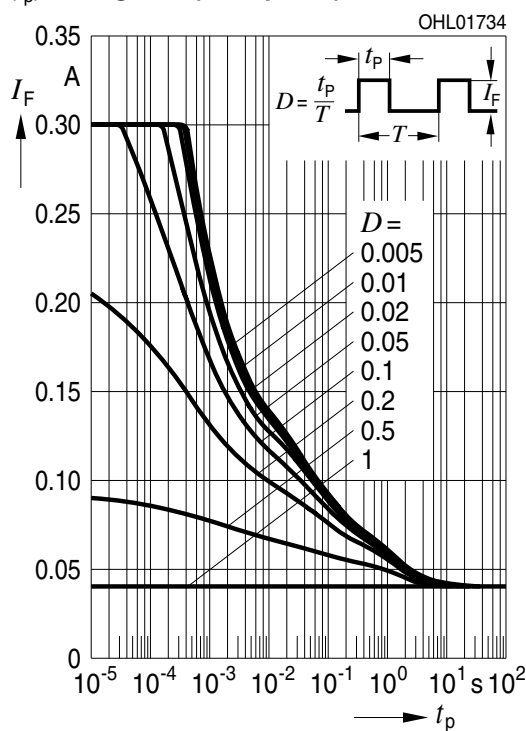
Maximal zulässiger Durchlassstrom blau
Max. Permissible Forward Current blue
 $I_F = f(T)$; 3 chips on



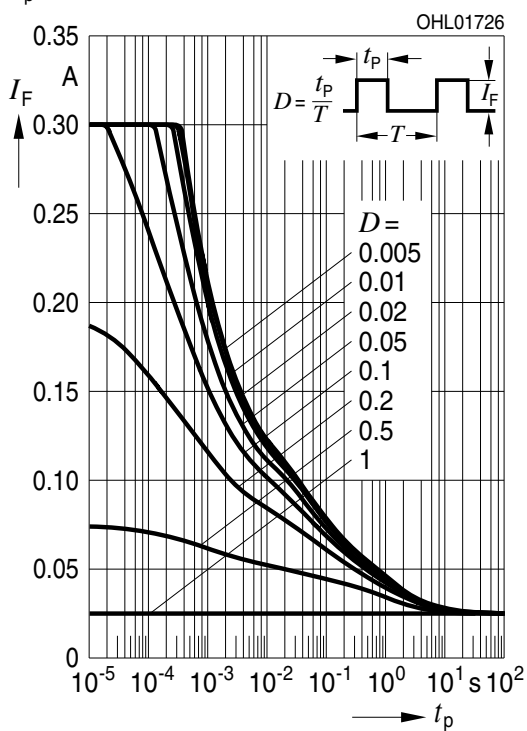
Zulässige Impulsbelastbarkeit
Permissible Pulse Handling Capability
 Duty cycle $D =$ parameter, $T_S = 25\text{ °C}$
 $I_F = f(t_p)$; true green (1 Chip on)



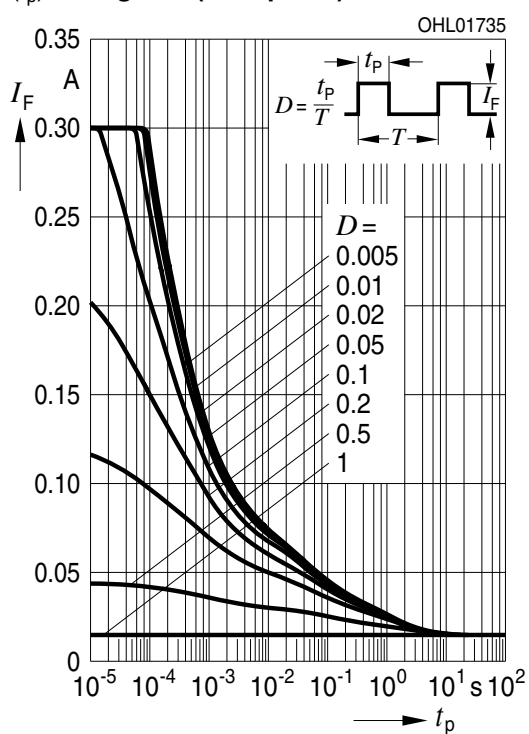
Zulässige Impulsbelastbarkeit
Permissible Pulse Handling Capability
 Duty cycle $D =$ parameter, $T_S = 25\text{ °C}$
 $I_F = f(t_p)$; true green (3 Chips on)



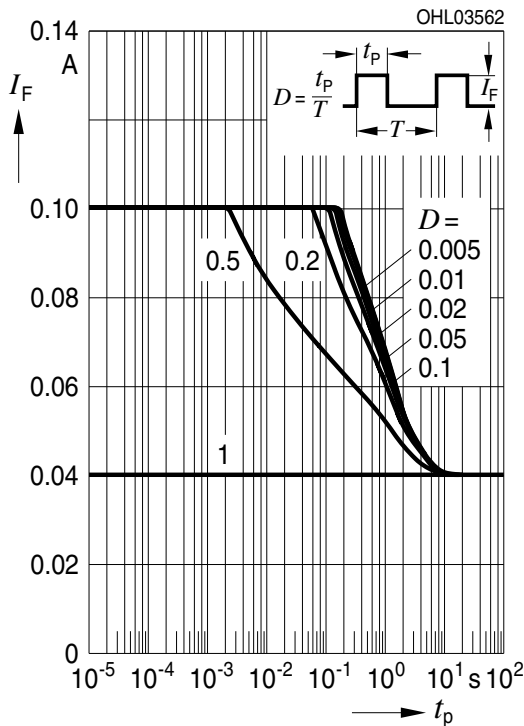
Zulässige Impulsbelastbarkeit
Permissible Pulse Handling Capability
 Duty cycle $D =$ parameter, $T_S = 85\text{ °C}$
 $I_F = f(t_p)$; true green (1 Chip on)



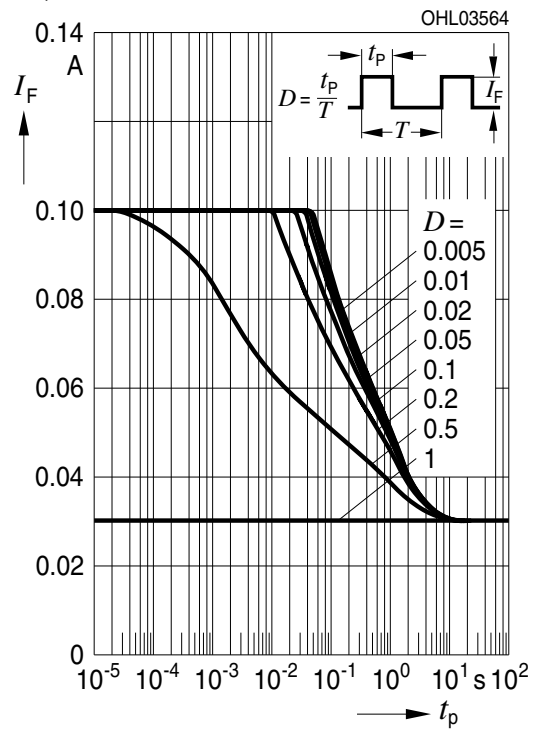
Zulässige Impulsbelastbarkeit
Permissible Pulse Handling Capability
 Duty cycle $D =$ parameter, $T_S = 85\text{ °C}$
 $I_F = f(t_p)$; true green (3 Chips on)



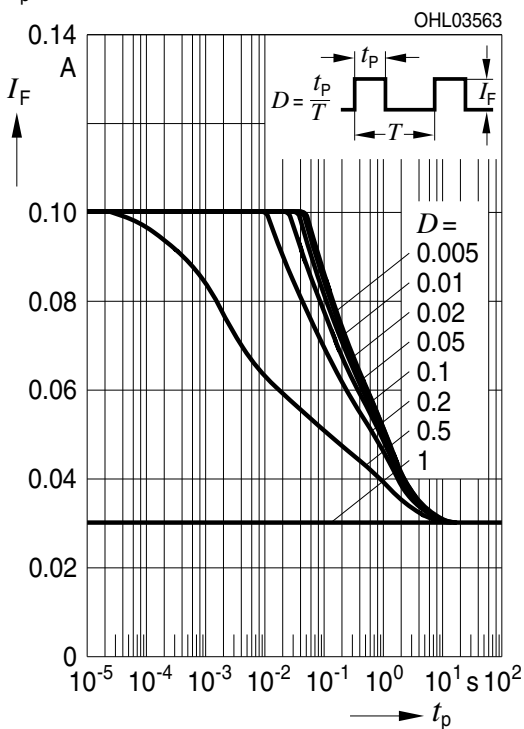
Zulässige Impulsbelastbarkeit
Permissible Pulse Handling Capability
 Duty cycle $D =$ parameter, $T_S = 25\text{ °C}$
 $I_F = f(t_p)$; red (1 Chip on)



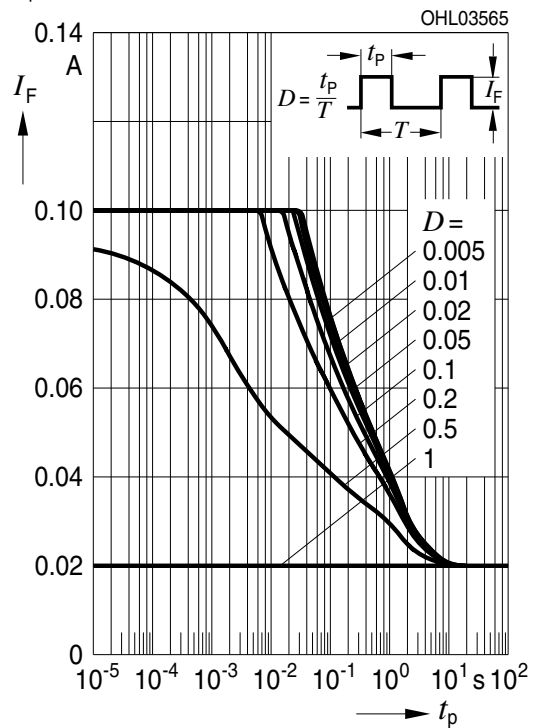
Zulässige Impulsbelastbarkeit
Permissible Pulse Handling Capability
 Duty cycle $D =$ parameter, $T_S = 25\text{ °C}$
 $I_F = f(t_p)$; red (3 Chips on)



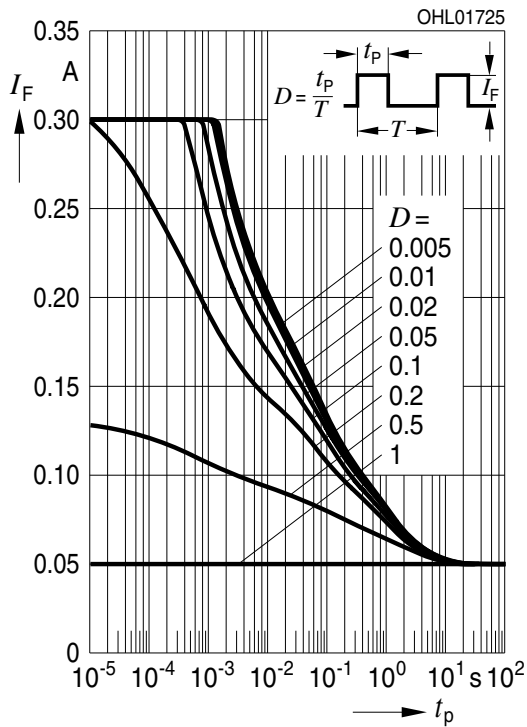
Zulässige Impulsbelastbarkeit
Permissible Pulse Handling Capability
 Duty cycle $D =$ parameter, $T_S = 85\text{ °C}$
 $I_F = f(t_p)$; red (1 Chip on)



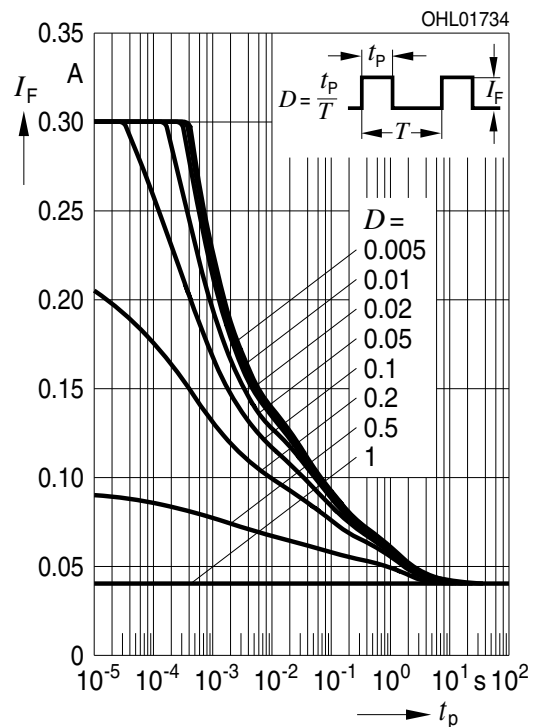
Zulässige Impulsbelastbarkeit
Permissible Pulse Handling Capability
 Duty cycle $D =$ parameter, $T_S = 85\text{ °C}$
 $I_F = f(t_p)$; red (3 Chips on)



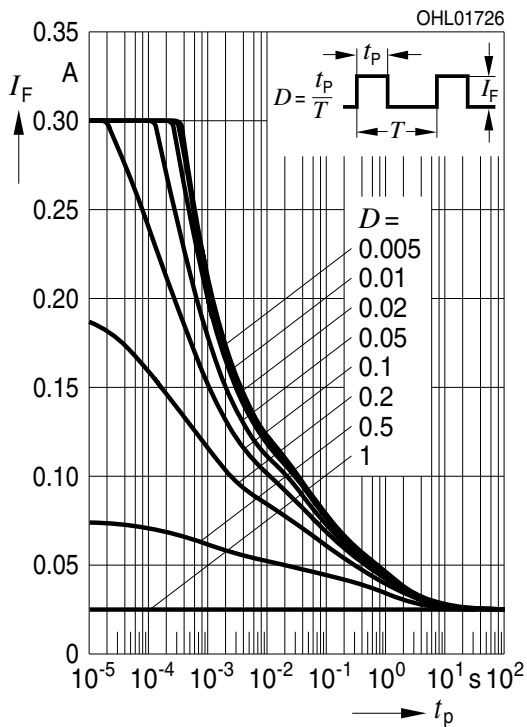
Zulässige Impulsbelastbarkeit
Permissible Pulse Handling Capability
 Duty cycle $D =$ parameter, $T_S = 25\text{ °C}$
 $I_F = f(t_p)$; blue (1 Chip on)



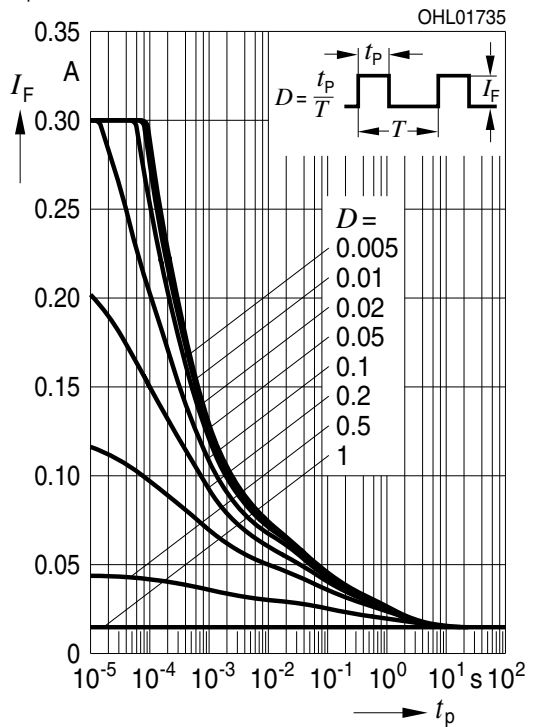
Zulässige Impulsbelastbarkeit
Permissible Pulse Handling Capability
 Duty cycle $D =$ parameter, $T_S = 25\text{ °C}$
 $I_F = f(t_p)$; blue (3 Chips on)



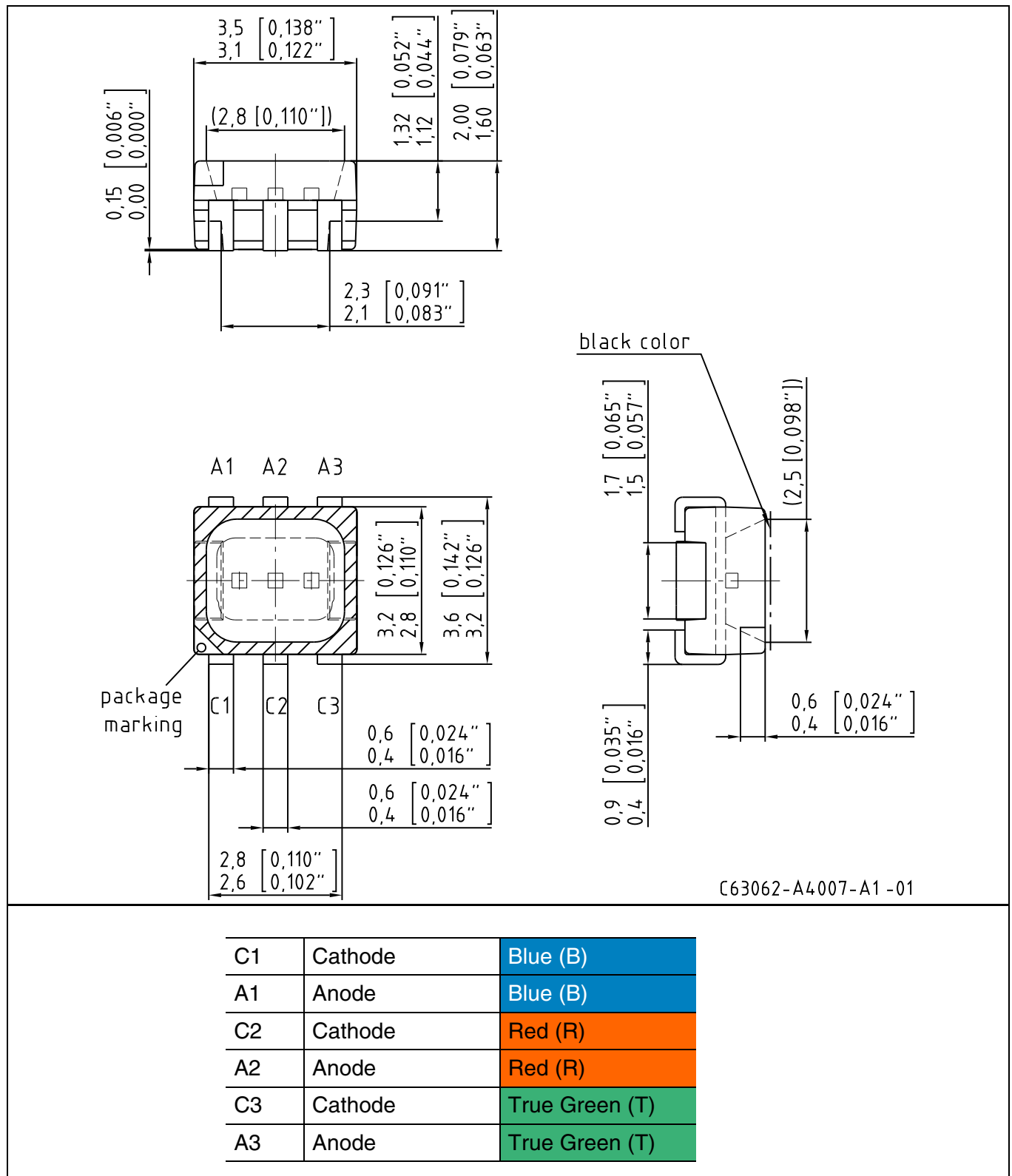
Zulässige Impulsbelastbarkeit
Permissible Pulse Handling Capability
 Duty cycle $D =$ parameter, $T_S = 85\text{ °C}$
 $I_F = f(t_p)$; blue (1 Chip on)



Zulässige Impulsbelastbarkeit
Permissible Pulse Handling Capability
 Duty cycle $D =$ parameter, $T_S = 85\text{ °C}$
 $I_F = f(t_p)$; blue (3 Chips on)



Maßzeichnung⁹⁾ Seite 32
 Package Outlines⁹⁾ page 32



Gewicht / Approx. weight:

40 mg

Gurtung / Polarität und Lage⁹⁾ Seite 32

Verpackungseinheit 1000/Rolle, ø180 mm

Method of Taping / Polarity and Orientation⁹⁾ page 32

Packing unit 1000/reel, ø180 mm

