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**Light Emitting Diodes**

**Lumineszenzdioden**

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### Safety Instructions

The use of new chip technologies means that OSRAM LEDs are delivering higher and higher levels of optical performance. Thus, even eye safety issues might increasingly need to be considered. In general, the EU product safety legislation requires conformity with EC directives (such as the "Low Voltage Directive") which define the "essential requirements", e.g., protection of health and safety, that goods must meet when they are placed on the market.

We therefore recommend that the current version of the IEC 62471 standard is taken into account right from the outset, i.e. at the equipment development stage, and that suitable protection facilities are provided in your laboratories.

### Eye Safety Information

The light output of modern High-Power-LEDs is strong enough for eye irritation and temporal blinding effects. Therefore, in general, do not stare into the light beam of any LED at close range.

Optical radiation hazards by LED-based lamps, lamp systems or luminaires have to be assessed and classified according to the requirements of IEC62471 ("Photobiological safety of lamps and lamp systems").

Within the risk grouping system of this IEC standard, most LEDs specified in this catalogue fall into the "exempt" group. However, high-power "blue" LEDs and the most important "white" LEDs for general lighting may need some attention. Due to their dominating photochemical hazard potential, extensive deliberate long-term direct viewing from close distance can indeed be hazardous. Under worst case conditions of classification, these high power light sources can even be allocated to the "moderate risk group" i.e. safety bases on aversion reactions against bright light. However, under real circumstances (for exposure time, eye pupils, observation distance), it is assumed that no endangerment to the eye exists from these devices. This is valid for single LEDs under the mentioned conditions and operating conditions defined in the data sheet. Complex Multi-LED-designs, additional optics or extreme application conditions demand a separate evaluation of the entire system.

As a matter of principle, however, it should be mentioned that intense light sources have a high secondary exposure potential due to their blinding effect. As for any bright light source, when viewing into it (e.g. headlights), temporary reduction in visual acuity and afterimages can occur, leading to irritation, annoyance, visual impairment, and even accidents, depending on the situation.

### Remarks:

User shall not reverse engineer by disassembling or analysis of the LEDs without having the prior written consent of OSRAM Opto Semiconductors GmbH. When defective LEDs are found, user shall inform to OSRAM Opto Semiconductors GmbH directly before disassembling or analysis.

The appearance and specifications of the product may be modified for improvement without notice.

### Sicherheitshinweise

OSRAM LEDs erreichen aufgrund von neuen Chip-Technologien immer höhere optische Leistungen. Deshalb müssen auch Sicherheitsaspekte bezüglich Augensicherheit zunehmend in Betracht gezogen werden. Generell fordern die EU Produkt-Sicherheitsgesetze Konformität mit den EU Richtlinien (z.B. die "Niederspannungsrichtlinie"), die wesentliche Forderungen festlegen, z.B. an Sicherheit und Gesundheitsschutz, die die auf den Markt gebrachten Produkte erfüllen müssen.

Wir empfehlen daher, schon bei der Entwicklung von Geräten, die zu diesem Zeitpunkt gültige Norm IEC 62471 zu beachten und insbesondere auf den Gebrauch von entsprechenden Schutzvorrichtungen in Ihren Labors hinzuweisen.

### Informationen zur Augensicherheit

Die Lichtausbeute der modernen Hochleistung-LEDs ist stark genug, um Augenreizungen und zeitliche Blindheitseffekte hervorzurufen. Daher sollten Sie generell nicht aus kurzer Entfernung in den Lichtstrahl jeglicher LED blicken.

Risiken durch optische Strahlung, die durch LED-basierte Lampen, Lampen-Systeme oder Leuchten entstehen, müssen eingeschätzt und nach der Forderungen des IEC62471 Standards ("Photobiological safety of lamps and lamp systems") bewertet werden.

Im Rahmen des Risikogruppensystems des IEC Standards fallen die meisten in diesem Katalog beschriebenen LEDs in die "exempt" (befreit) Gruppe. Jedoch sollten hochleistungsfähige blaue LEDs und die wichtigsten weißen LEDs näher betrachtet werden. Auf Grund ihres hohen photochemischen Risiko-Potenzials kann das langfristige, bewusste, direkte Ansehen gefährlich sein. Bei ungünstigsten Bedingungen der Anordnung können die Hochleistungs-LEDs sogar der "moderate risk group" (gemäßigte Risikogruppe) zugeordnet werden, d.h. die Sicherheit beruht auf Aversions-Reaktionen auf helles Licht. Unter realen Umständen (in Bezug auf Belichtungszeit, Pupillen, Betrachtungsabstand) kann jedoch angenommen werden, dass keine Gefahr für die Augen von diesen Geräten ausgeht. Dies gilt für einzelne LEDs unter den genannten Konditionen und im Datenblatt definierten Betriebsbedingungen. Komplexe Multi-LED Designs, zusätzliche Optik oder außergewöhnliche Anwendungsbedingungen fordern eine gesonderte Bewertung des ganzen Systems.

Prinzipiell ist jedoch zu erwähnen, dass starke Lichtquellen auf Grund ihrer Blendwirkung ein hohes, sekundäres Gefahrenpotenzial besitzen. Wie bei jeder hellen Lichtquelle kann das direkte Anschauen (z.B. Scheinwerfer) zur Reduzierung der Sehschärfe oder zu Nachbildern führen, was Reizungen, Irritationen und sogar Unfälle verursachen kann.

### Anmerkungen:

Der Anwender darf keinen Ausbau oder Analyse der LEDs vornehmen, ohne die vorherige schriftliche Zustimmung von OSRAM Opto Semiconductors GmbH zu haben. Wenn defekte LEDs gefunden werden, soll der Anwender baldmöglichst OSRAM Opto Semiconductors GmbH informieren, bevor er einen Ausbau oder eine Analyse vornimmt.

Erscheinungsform und technische Daten des Produktes können zwecks Verbesserung ohne Benachrichtigung geändert werden.



Summary of Types | Typenübersicht

OSTAR®

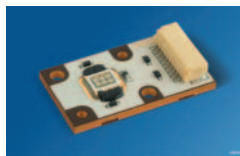
OSTAR® Projection



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OSTAR® Lighting



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OSTAR® Lighting with lens | OSTAR® Lighting mit Linse



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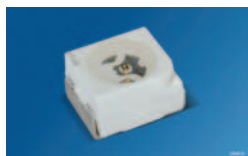
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Summary of Types | Typenübersicht

SMT Packages | SMT Bauteile

Top Emitting

Standard Packages | Standard-Gehäuse



**TOPLED®**  
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**TOPLED® white**  
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**TOPLED® black surface**  
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**TOPLED® Silicone**  
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**TOPLED® RG (Reverse Gullwing)**  
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**TOPLED® RG (Reverse Gullwing) white**  
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**TOPLED® with lens**  
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Power Packages | Leistungsgehäuse



**Power TOPLED®**  
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**Power TOPLED® white**  
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**Power TOPLED® Silicone**  
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**Power TOPLED® Silicone white**  
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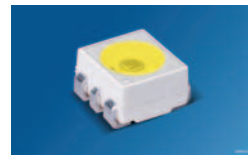
**Power TOPLED® with Lens**  
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**Power TOPLED® with Lens**  
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**Advanced Power TOPLED® Silicone**  
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**Advanced Power TOPLED® Silicone white**  
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**Golden DRAGON® Silicone**  
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**Golden DRAGON® Silicone white**  
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**Golden DRAGON® Silicone white**  
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Summary of Types | Typenübersicht

SMT Packages | SMT Bauteile

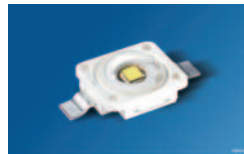
Top Emitting



Platinum DRAGON® Silicone  
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Platinum DRAGON® Silicone white  
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Golden DRAGON® Plus  
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Diamond DRAGON®  
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Diamond DRAGON® white  
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Golden DRAGON® Silicone with  
20° lens  
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Golden DRAGON® Silicone with  
40° lens  
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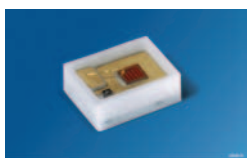


Golden DRAGON® Silicone with  
ARGUS® lens  
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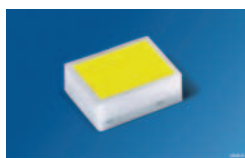


Golden DRAGON® Silicone with  
oval lens  
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Flash Products | LED für Blitzlichtanwendungen



CERAMOS®  
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CERAMOS® white  
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CERAMOS® white  
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Multi Chip Packages | Multi Chip Gehäuse



Multi TOPLED®  
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Multi TOPLED® RG  
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Multi TOPLED® black surface  
colorless diffused  
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Multi TOPLED® black surface  
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## Summary of Types | Typenübersicht

### SMT Packages | SMT Bauteile

#### Top Emitting



**6-lead MULTILED®**  
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**6-lead MULTILED® Thinfilm**  
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**Multi CHIPLED®**  
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**Multi Micro SIDELED®**  
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#### Miniature Packages | Miniaturgehäuse



**Mini TOPLED®**  
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**Mini TOPLED® white**  
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**Mini TOPLED Santana®**  
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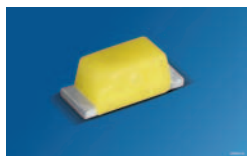
**PointLED® reverse mount**  
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**PointLED® top mount**  
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**SmartLED® 0603 0.6 mm**  
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**SmartLED® 0603 0.6 mm white**  
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**SmartLED® 0.2 mm**  
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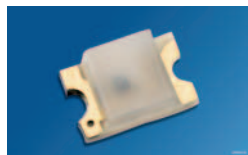
**SmartLED® 0.2 mm white**  
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**CHIPLED 0603 0.6 mm**  
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**CHIPLED 0603 / 0.8 mm**  
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**CHIPLED 0805**  
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**CHIPLED 1206**  
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Summary of Types | Typenübersicht

SMT Packages | SMT Bauteile

Side Emitting



**SIDELED®**  
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**SIDELED® white**  
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**SIDELED® Silicone**  
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**MultiSIDELED®**  
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**Micro SIDELED® 1 mm**  
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**Micro SIDELED® 1 mm white**  
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**Micro SIDELED® 1 mm Silicone**  
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**Micro SIDELED® 0.8 mm Silicone white**  
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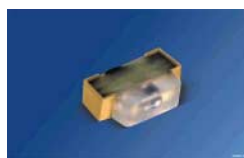
**Micro SIDELED® 0.8 mm Silicone white**  
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**FIREFLY® 0.5 mm**  
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**FIREFLY® 0.5 mm white**  
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**FIREFLY® 0.6 mm**  
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**FIREFLY® 0.6 mm white**  
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## Summary of Types | Typenübersicht

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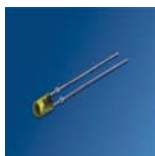
### Radial Packages

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#### Oval Packages



**4 mm oval**  
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**5 mm oval**  
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**5 mm oval**  
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#### UltraFlux

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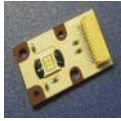

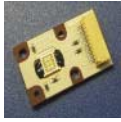


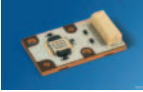

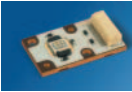




# Light Emitting Diodes | Lumineszenzdioden

## OSTAR®




Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm]	$I_V$ [mcd]		at $I_F$ [mA]	2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung

### OSTAR® Projection

	LE A G3W-LAMB-34	 amber (red)	617	(min) 112000/ (typ) 155000		1000	120	Q65110A7698	1
	LE B G3W-HAKA-23	 blue	464	(min) 28000/ (typ) 56000		1000	120	Q65110A7701	1
	LE T G3W-LANA-25	 true green	525	(min) 210/ (typ) 245000				Q65110A7703	
	LE A H3W-LAMB-34	 amber (red)	617	(min) 112000/ (typ) 155000		1000	120	Q65110A7699	2
	LE B H3W-HAKA-23	 blue	464	(min) 28000/ (typ) 56000		1000	120	Q65110A7702	2
	LE T H3W-LANA-25	 true green	525	(min) 210/ (typ) 245000				Q65110A7704	









Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm]	$I_V$ [mcd]			at $I_F$ [mA]	2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				color 1	color 2					

### OSTAR® Projection





	LE AB G3WB-KAMA-1+EBGB-23	 amber (red)  blue	617 / 464	(min) 71000/ (typ) 103000	9000/ (typ.) 19000		120	Q65110A7700	3
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Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm]	$I_V$ [mcd]			at $I_F$ [mA]	2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				color 1	color 2	color 3				






### OSTAR® Projection

	LE ATB A2A	 amber (red)  true green  blue	617 / 525 / 464	(min) 12000/ (typ) 18000	23000/ (typ.) 28000	(min) 2000/ (typ.) 3500	750 / 500 / 500	120	Q65110A3646	4
	LE ATB H2A	 amber (red)  true green  blue	617 / 525 / 464	(min) 12000/ (typ) 18000	23000/ (typ.) 28000	(min) 2000/ (typ.) 3500	750 / 500 / 500	120	Q65110A5235	5

## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissions- farbe	Color coor- dinates Cx/ Cy typ.	$\Phi_V$	$I_V$ (typ)	at $I_F$	2 $\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				[mlm]	[mcd]				
<b>OSTAR® Lighting</b>									
	LE W E2A-LZNY-6K8L	○ white	0.33 / 0.33	150000 ... 390000	68000	700	120	Q65110A4716	6
	LE W E3A-NXQX-6K8L	○ white	0.33 / 0.33	280000 ... 820000	148000	700	120	Q65110A7751	7
	LE CW E2A-LYNX-URVU	○ warm white	0.42 / 0.4	130000 ... 330000	72000	700	120	Q65110A7836	6
	LE CW E2A-LZNY-SRTU			150000 ... 390000	75000			Q65110A7848	
	LE CW E2A-MXNZ-QRRU			180000 ... 390000	80000			Q65110A7849	
	LE CW E2A-MXNZ-ORPU			180000 ... 450000	83000			Q65110A7851	
	LE CW E2A-MXNY-QRRU				86000			Q65110A7850	
	LE CW E3A-MXPX-URVU	○ warm white	0.42 / 0.4	180000 ... 520000	105000	700	120	Q65110A7857	7
	LE CW E3A-MYPY-SRTU			210000 ... 610000	115000			Q65110A7858	
	LE CW E3A-MZPY-QRRU				125000			Q65110A7861	
	LE CW E3A-MZPY-ORPU			240000 ... 610000	130000			Q65110A7860	
	LE CW E3A-MZPY-MRNU				135000			Q65110A7859	

## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	Color coordinates Cx/Cy typ.	$\Phi_V$	$I_V$ (typ)	at $I_F$	$2\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				[mlm]	[mcd]				
	LE W E2B-MZPZ-6K8L	○ white	0.33 / 0.33	240000 ... 710000	95000	700	130	Q65110A7623	8
	LE W E3B-NZQY-6K8L	○ white	0.33 / 0.33	390000 ... 970000	135000	700	120	Q65110A7620	8
	LE CW E2B-MXNZ-URVU	○ warm white	0.42 / 0.4	180000 ... 450000	65000	700	130	Q65110A7852	8
	LE CW E2B-MYNZ-SRTU			210000 ... 450000	71000			Q65110A7853	
	LE CW E2B-MYPX-QRRU			210000 ... 520000	76000			Q65110A7854	
	LE CW E2B-MZPY-ORPU			240000 ... 610000	88000			Q65110A7856	
	LE CW E2B-MZPY-MRNU							Q65110A7855	
	LE CW E3B-NXPY-URVU	○ warm white	0.42 / 0.4	280000 ... 610000	91000	700	130	Q65110A7862	8
	LE CW E3B-NYPZ-SRTU			330000 ... 710000	106000			Q65110A7847	
	LE CW E3B-NYPZ-QRRU			390000 ... 820000	124000			Q65110A7863	
	LE CW E3B-NZQX-ORPU							Q65110A7845	
	LE CW E3B-NZQX-MRNU							Q65110A7846	
	LE UW E3B-PZQZ-ERJV	○ ultra white	0.33 / 0.33	610000 ... 1120000	830000	700	130	Q65110A7843	8

# Light Emitting Diodes | Lumineszenzdioden

Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)

Figure 1: LE x G3W

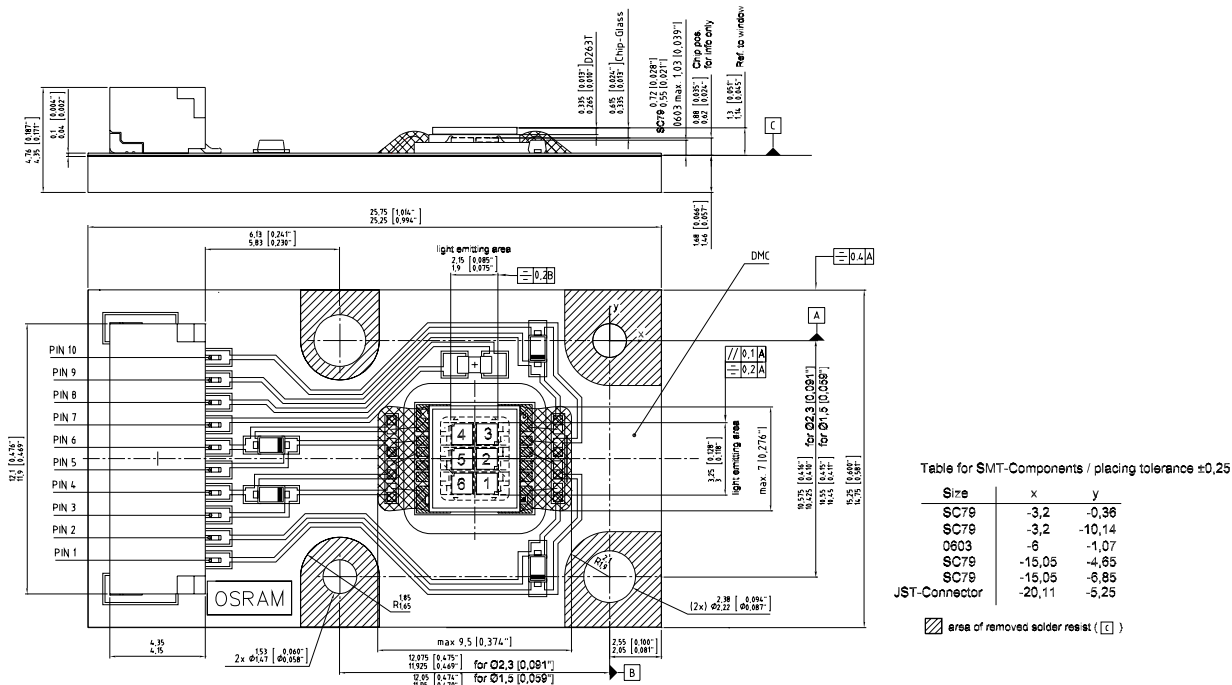
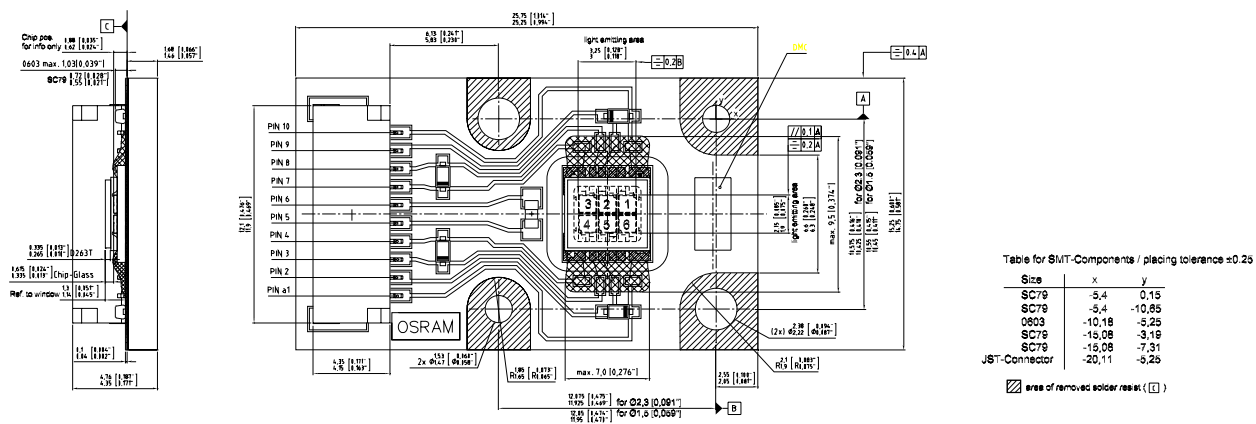


Figure 2: LE x H3W



# Light Emitting Diodes | Lumineszenzdioden

Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)

Figure 3: LE AB G3WB

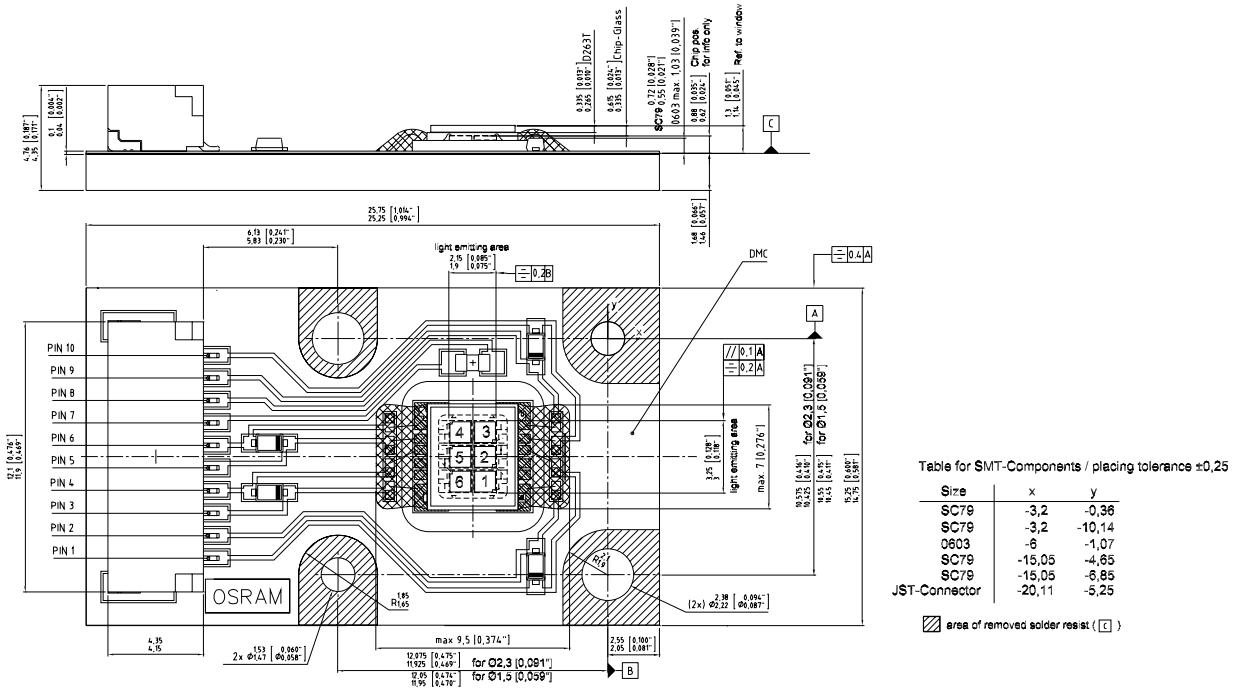
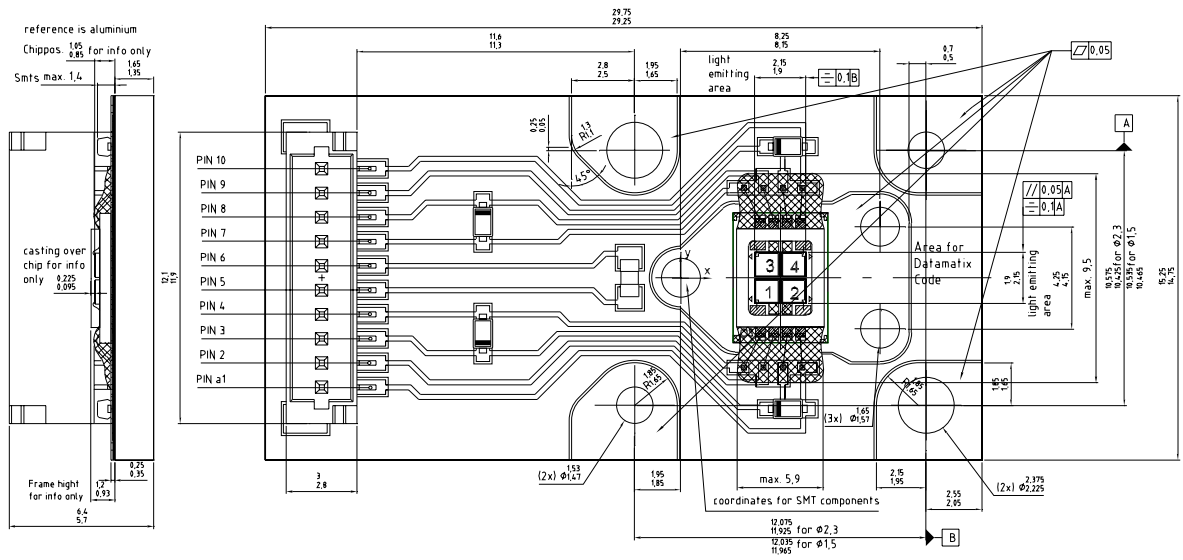


Figure 4: LE \* A2A



Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)

Figure 5: LE \* H2A

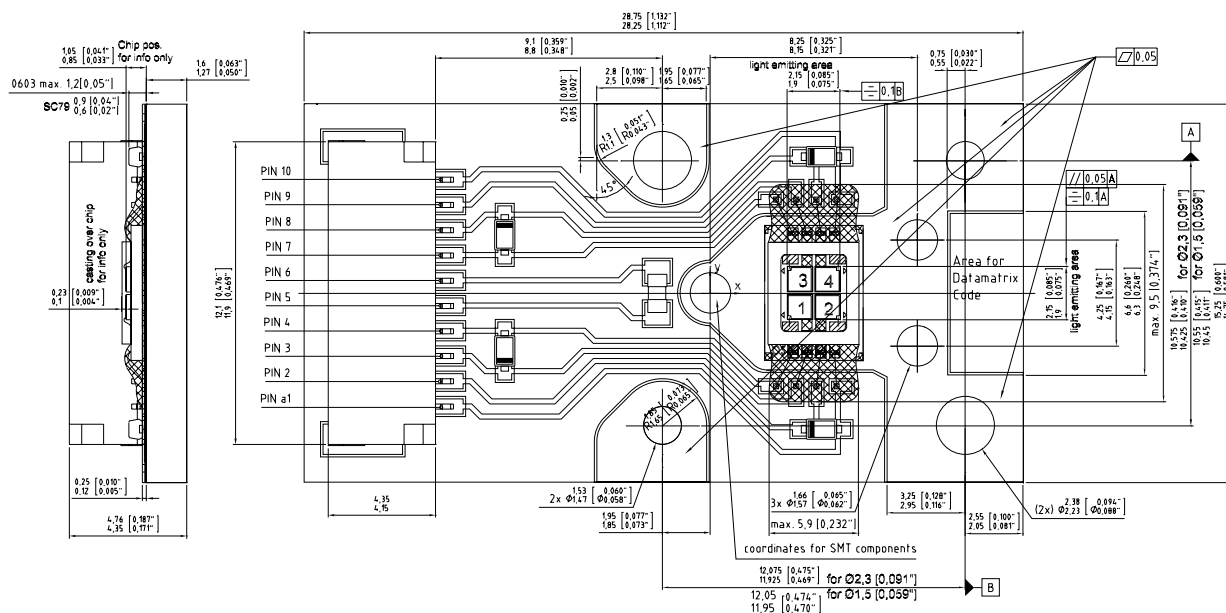
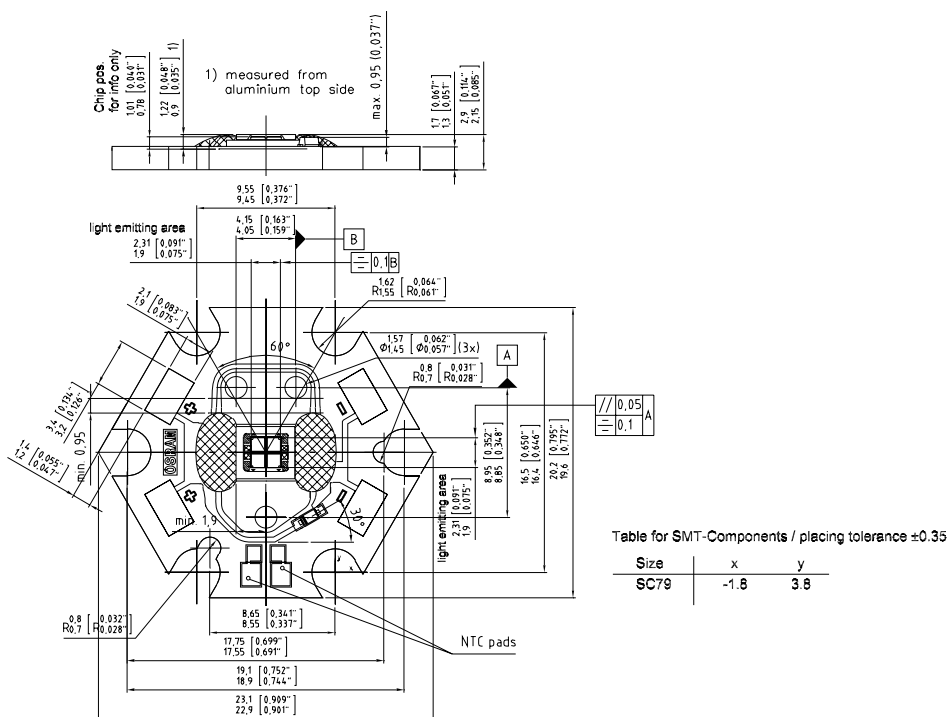


Figure 6: LE \* E2A



# Light Emitting Diodes | Lumineszenzdioden

Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)

Figure 7: LE \* E3A

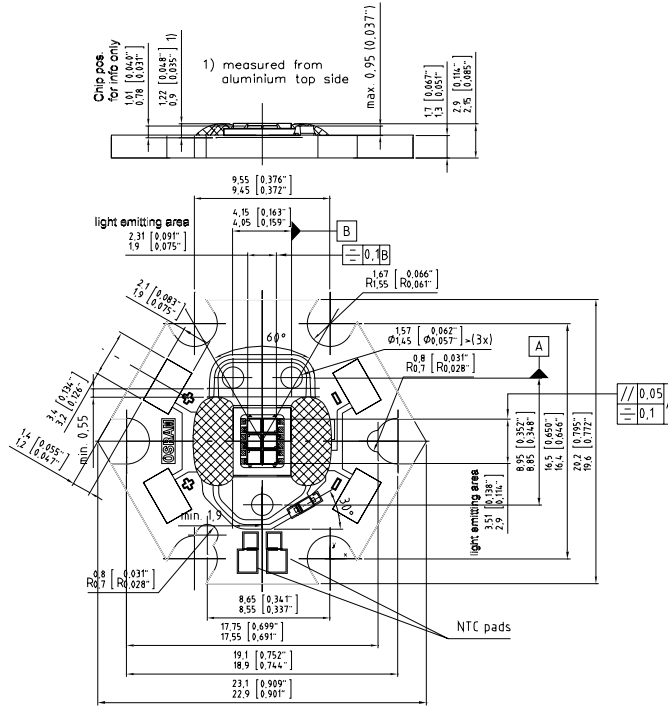


Table for SMT-Components / placing tolerance ±0.35

Size	x	y
SC79	-1.8	3.8

Figure 8: LE \* E2B, LE \* E3B

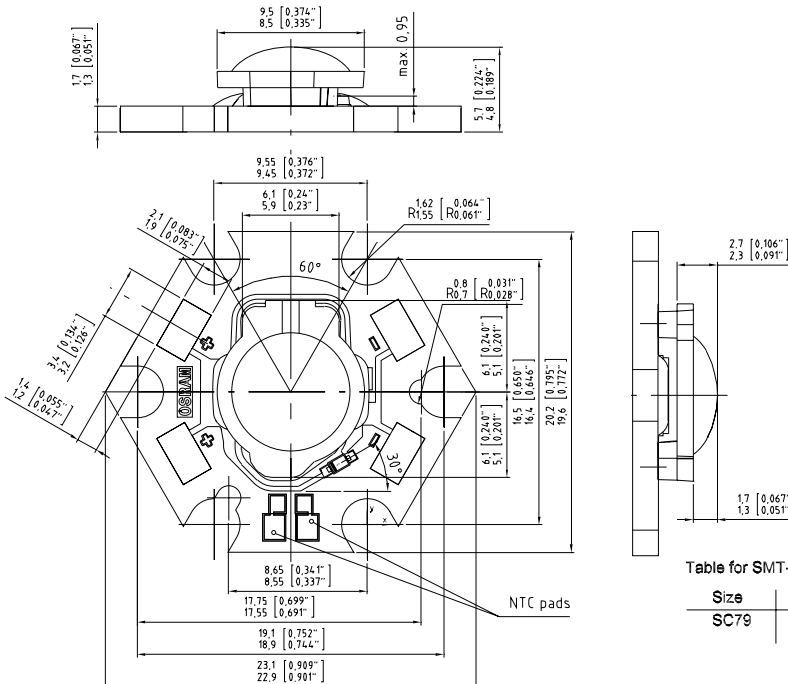







Table for SMT-Components / placing tolerance ±0.35

Size	x	y
SC79	-1.8	3.8






SMT Packages | SMT Bauteile








Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{dom}$ (typ.) [nm] / Color coord. Cx/Cy	$I_V$	$\Phi_V$	at $I_F$	$2\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung	
				[mcd]	[mlm]	[mA]				[°]
<b>TOPLED®</b>										
	LS T670-J1K2-1*	● super red	628	4.5 ... 11.2	24	10	120	Q65110A2170	1	
	LS T670-K1L2-1*			7.1 ... 18				40		Q65110A2171
	LS T670-J1L2-1*			4.5 ... 18				30		Q65110A2172
	LO T670-J1K2-24*	● orange	606	4.5 ... 11.2	24			Q65110A2164		
	LO T670-K1L2-24*			7.1 ... 18				40		Q65110A2165
	LO T670-J1L2-24*			4.5 ... 18				30		Q65110A2166
	LY T670-J1K2-26*	● yellow	587	4.5 ... 11.2	24			Q65110A2173		
	LY T670-K1L2-26*			7.1 ... 18				40		Q65110A2174
	LY T670-J1L2-26*			4.5 ... 18				30		Q65110A2175
	LG T670-K1L2-1*	● green	570	7.1 ... 18	40			Q65110A2162		
	LG T670-L1M2-1*			11.2 ... 28				60		Q65110A2120
	LG T670-K1M2-1*			7.1 ... 28				50		Q65110A2132
LP T670-G2J1-1*	● pure green	560	2.24 ... 5.6	12	Q65110A2167					
LP T670-H2J2-1*			3.55 ... 7.1		15	Q65110A2168				
LP T670-G2J2-1*			2.24 ... 7.1		14	Q65110A2169				
	LG T671-K2M1-1*	● green	570	9 ... 22.4	50	10	120	Q65110A2197	1	
	LG T671-L2N1-1*			14 ... 35.5				75		Q65110A2198
	LG T671-K2N1-1*			9 ... 35.5				65		Q65110A2199
	LS T67K-J1K2-1	● super red	630	4.5 ... 11.2	25	2	120	Q65110A2011	1	
	LS T67K-K1L2-1			7.1 ... 18				40		Q65110A2012
	LS T67K-J1L2-1			4.5 ... 18				30		Q65110A2013
	LO T67K-K1L2-24	● orange	606	7.1 ... 18	40			Q65110A2035		
	LO T67K-L1M2-24			11.2 ... 28				60		Q65110A2036
	LO T67K-K1M2-24			7.1 ... 28				50		Q65110A2037
LY T67K-J2L1-26	● yellow	587	5.6 ... 14	30	Q65110A2059					
LY T67K-K2M1-26			9 ... 22.4		50	Q65110A2060				
LY T67K-J2M1-26			5.6 ... 22.4		40	Q65110A2061				
	LG T67K-G2J1-24	● green	570	2.24 ... 5.6	12	2	120	Q65110A2182	1	
	LG T67K-H2K1-24			3.55 ... 9				19		Q65110A2183
	LG T67K-G2K1-24			2.24 ... 9				16		Q65110A2184
	LP T67K-E1F2-25	● pure green	560	0.71 ... 1.8	4			Q65110A2185		
	LP T67K-F1G2-25			1.12 ... 2.8				6		Q65110A2186
	LP T67K-E1G2-25			0.71 ... 2.8				5		Q65110A2187
	LG T679-E2H1-1*	● green	570	0.9 ... 3.55	6.7	2	120	Q65110A2190	1	
	LS T679-D1F2-1*	● super red	628	0.45 ... 1.8				3.4		Q65110A4408
	LY T679-D1F2-1*	● yellow	587							Q65110A4409

\*not for new design



## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{dom}$ (typ.) [nm] / Color coord. Cx/Cy				2 $\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				$I_V$ [mcd]	$\Phi_V$ [mlm]	at $I_F$ [mA]			
	LH T674-L2N1-1	● hyper-red	645	14 ... 35.5	70	10	120	Q65110A3595	1
	LH T674-M2P1-1			22.4 ... 56	110			Q65110A3597	
	LH T674-L2P1-1			14 ... 56	100			Q65110A3596	
	LS T67F-T1V1-1	● super red	633	280 ... 900	1510	20	120	Q65110A5553	1
	LR T67F-T2V2-1	● red	625	355 ... 1120	1890			Q65110A5550	
	LA T67F-U2AB-24	● amber (red)	617	560 ... 1800	3010			Q65110A5547	
	LO T67F-U2AB-24	● orange	606					Q65110A5549	
	LY T67F-T2V2-36	● yellow	590	355 ... 1120	1890			Q65110A5559	
	LS T676-Q1R2-1	● super red	633	71 ... 180	380	20	120	Q65110A2151	1
	LS T676-R1S1-1			112 ... 224	480			Q65110A2152	
	LS T676-P2S1-1			56 ... 224	420			Q65110A2153	
	LA T676-R1S2-1	● amber (red)	615	112 ... 280	600			Q65110A2145	
	LA T676-S1T1-1			180 ... 355	760			Q65110A2146	
	LA T676-Q2T1-1			90 ... 355	665			Q65110A2147	
	LO T676-R1S2-24	● orange	606	112 ... 280	600			Q65110A2148	
	LO T676-S1T1-24			180 ... 355	760			Q65110A2149	
	LO T676-Q2T1-24			90 ... 355	665			Q65110A2150	
	LY T676-R1S2-26	● yellow	587	112 ... 280	600			Q65110A2154	
LY T676-S1T1-26	180 ... 355			760	Q65110A2155				
LY T676-Q2T1-26	90 ... 355			665	Q65110A2156				
	LG T676-P1Q2-24	● green	570	45 ... 112	240	20	120	Q65110A2178	1
	LP T676-L1M2-25	● pure green	560	11.2 ... 28	60			Q65110A2179	
	LB T676-J2L2-1	● blue	465	5.6 ... 18	50	10	120	Q65110A2161	1
	LB T676-K2L2-1			9 ... 18	40			Q65110A2160	
	LB T676-J2K2-1			5.6 ... 11.2	25			Q65110A2159	
	LB T676-M1N2-1			18 ... 45	85			Q65110A5428	
	LP T675-N1P2-25	● pure green	560	28 ... 71	150	30	120	Q65110A2203	1
	LS T67B-S1T2-1	● super red	633	180 ... 450	950	30	120	Q65110A2205	1
	LS T67B-T1U1-1			280 ... 560	1200			Q65110A2206	
	LS T67B-S1U1-1			180 ... 560	1110			Q65110A2207	
	LT T67S-N2Q1-25	● true green	528	35.5 ... 90	190	10	120	Q65110A2556	1
	LT T67S-P2R1-25			56 ... 140	300			Q65110A2557	
	LT T67S-N2R2-25			35.5 ... 180	325			Q65110A2555	

## Light Emitting Diodes | Lumineszenzdioden




Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$I_V$	$\Phi_V$	at $I_F$	$2\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				[mcd]	[mlm]				
	LB T673-L2N1-35	● blue	471	14 ... 35.5	75	10	120	Q65110A1954	1
	LB T673-M2P1-35			22.4 ... 56	120			Q65110A1955	
	LB T673-L2P1-35			14 ... 56	100			Q65110A1956	
	LT T673-P1Q2-25	● true green	532	45 ... 112	240			Q65110A1966	
	LT T673-Q1R2-25			71 ... 180	380			Q65110A1967	
	LT T673-N2S1-25			35.5 ... 224	350			Q65110A1968	
LT T673-L2N2-35	14 ... 45	90	2	Q65110A5953					
	LB T67C-P2R1-35	● blue	470	56 ... 140	300	20	120	Q65110A1857	1
	LB T67C-Q2S1-35			90 ... 224	480			Q65110A1858	
	LB T67C-P2S1-35			56 ... 224	420			Q65110A1977	
	LV T67C-S1T2-35	● verde green	505	180 ... 450	950			Q65110A1878	
	LV T67C-T1U2-35			280 ... 710	1500			Q65110A1879	
	LV T67C-S1U2-35			180 ... 710	1330			Q65110A1987	
LT T67C-S2U1-35	● true green	528	224 ... 560	1200	Q65110A1870				
LT T67C-T2V1-35			355 ... 900	1900	Q65110A1871				
LT T67C-S2V1-35			224 ... 900	1680	Q65110A1983				
	LW T673-P2R1-5K8L	○ white	0.33 / 0.33	56 ... 140	300	10	120	Q65110A1939	1
	LW T673-Q2R2-5K8L			90 ... 180	380			Q65110A1940	
	LW T673-P1S1-5K8L			45 ... 224	480			Q65110A1941	
	LW T673-P2R1-3K6L			56 ... 140	300			Q65110A4100	
	LW T676-M1N2-25	○ white	0.3 / 0.32	18 ... 45	95	10	120	Q65110A2208	1
	LW T676-N1P2-25			28 ... 71	150			Q65110A2209	
	LW T676-M1P2-25			18 ... 71	130			Q65110A2210	
	LW T67C-S2U1-5K8L	○ white	0.33 / 0.33	224 ... 560	1200	20	120	Q65110A1743	1
	LW T67C-T2U2-5K8L			355 ... 710	1600			Q65110A1742	
	LW T67C-S2V1-5K8L			224 ... 900	1550			Q65110A1942	
	LUW T6SG-AABA-4N7Q	○ ultra white	0.31 / 0.32	1120 ... 2240	5040	20	120	Q65110A7881	3
	LCG T67C-S2U2	○ color on demand green	0.23 / 0.42	224 ... 710	1400	20	120	on request	1
	LCL T67C-S2U2	○ color on demand lagune	0.17 / 0.365	224 ... 710	1400	20	120	on request	1

## Light Emitting Diodes | Lumineszenzdioden


Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	at $I_F$			2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				$I_V$ [mcd]	$\Phi_V$ [mlm]	[mA]			
	LCB T67S-P1R1	○ color on demand blue	0.2 / 0.3	45 ... 112	240	10	120	on request	1
	LCB T67C-R1S2	○ color on demand blue	0.16 / 0.1	140 ... 280	630	20	120	on request	1

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	at $I_F$			2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				$I_V$ [mcd]	$\Phi_V$ [mlm]	[mA]			

### TOPLED® black surface | TOPLED® mit schwarzer Oberfläche


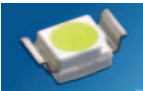
	LY T68B-T2V1-26	● yellow	587	355 ... 900	1900	30	120	Q65110A2158	1	
	LY T686-R1S2-26	● yellow	587	112 ... 280	590	20	120	Q65110A2211	1	
	LY T686-S1T1-26			180 ... 355				800		Q65110A2212
	LY T686-Q2T1-26			90 ... 355				665		Q65110A2213
	LR T68F-U1AA-1-1	● red	625	450 ... 1400	2800	20	120	Q65110A7321	55	
	LY T68F-U1AA-36-1	● yellow	590					Q65110A7320		
	LY T68F-T2V2-35-1		355 ... 1120	2200	Q65110A7796					

### TOPLED® RG (Reverse Gullwing)




	LO T770-J1K2-24*	● orange	606	4.5 ... 11.2	24	10	120	Q65110A2232	2
	LO T770-K1L2-24*			7.1 ... 18	40			Q65110A2233	
	LO T770-J1L2-24*			4.5 ... 18	30			Q65110A2234	
	LG T770-K1L2-1*	● green	570	7.1 ... 18	40			Q65110A2134	
	LG T770-L1M2-1*			11.2 ... 28	60			Q65110A2230	
	LG T770-K1M2-1*			7.1 ... 28	50			Q65110A2231	
	LP T770-G2J1-1*	● pure green	560	2.24 ... 5.6	12			Q65110A2235	
	LP T770-H2J2-1*			3.55 ... 7.1	15			Q65110A2236	
	LP T770-G2J2-1*			2.24 ... 7.1	14			Q65110A2237	

\*not for new design






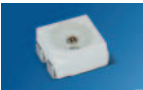

## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$I_V$	$\Phi_V$	at $I_F$	$2\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				[mcd]	[mlm]				
	LS T77K-J1K2-1	● super red	630	4.5 ... 11.2	24	2	120	Q65110A2029 Q65110A2030 Q65110A2031	2
	LS T77K-K1L2-1			7.1 ... 18	40				
	LS T77K-J1L2-1			4.5 ... 18	30				
	LO T77K-K1L2-24	● orange	606	7.1 ... 18	40			Q65110A2041 Q65110A2042 Q65110A2043	
	LO T77K-L1M2-24			11.2 ... 28	60				
	LO T77K-K1M2-24			7.1 ... 28	50				
	LY T77K-J2L1-26	● yellow	587	5.6 ... 14	30			Q65110A2769 Q65110A2767 Q65110A2768	
	LY T77K-K2M1-26			9 ... 22.4	50				
	LY T77K-J2M1-26			5.6 ... 22.4	40				
	LS T776-Q1R2-1	● super red	633	71 ... 180	380	20	120	Q65110A2220 Q65110A2221 Q65110A2222	2
	LS T776-R1S1-1			112 ... 224	480				
	LS T776-P2S1-1			56 ... 224	420				
	LA T776-R1S2-1	● amber (red)	615	112 ... 280	600			Q65110A2214 Q65110A2215 Q65110A2216	
	LA T776-S1T1-1			180 ... 355	760				
	LA T776-Q2T1-1			90 ... 355	665				
	LO T776-R1S2-24	● orange	606	112 ... 280	600			Q65110A2217 Q65110A2218 Q65110A2219	
	LO T776-S1T1-24			180 ... 355	760				
	LO T776-Q2T1-24			90 ... 355	665				
	LY T776-R1S2-26	● yellow	587	112 ... 280	600			Q65110A2223 Q65110A2224 Q65110A2225	
	LY T776-S1T1-26			180 ... 355	760				
	LY T776-Q2T1-26			90 ... 355	665				
	LP T776-L1M2-25	● pure green	560	11.2 ... 28	60	20	120	Q65110A2247	2
	LB T776-J2K2-1	● blue	465	5.6 ... 11.2	25	10	120	Q65110A2226 Q65110A2227 Q65110A2228 Q65110A5429	2
	LB T776-K2L2-1			9 ... 18	40				
	LB T776-J2L2-1			5.6 ... 18	30				
	LB T776-M1N2-1			18 ... 45					
	LB T773-L2N1-35	● blue	471	14 ... 35.5	75	10	120	Q65110A1957 Q65110A1958 Q65110A1959	2
	LB T773-M2P1-35			22.4 ... 56	120				
	LB T773-L2P1-35			14 ... 56	100				
	LT T773-P1Q2-25	● true green	532	45 ... 112	240			Q65110A1969 Q65110A1970 Q65110A1971	
	LT T773-Q1R2-25			71 ... 180	380				
	LT T773-N2S1-25			35.5 ... 224	350				
	LW T773-P2R1-5K8L	○ white	0.33 / 0.33	56 ... 140	300	10	120	Q65110A1943 Q65110A1944 Q65110A1945	2
	LW T773-Q2R2-5K8L			90 ... 180	400				
	LW T773-P1S1-5K8L			45 ... 224	380				







## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy				2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				$I_V$ [mcd]	$\Phi_V$ [mlm]	at $I_F$ [mA]			
<b>TOPLED® Silicone</b>									
	LW T6SC-T2V1-5K8L			355 ... 900	1700			Q65110A3638	
	LW T6SC-S2V1-5K8L	○ white	0.33 / 0.33	224 ... 900	1600	20	120	Q65110A5336	1
	LW T6SC-S2U1-3K6L			224 ... 560	1065			Q65110A4098	
	LW T6SG-V2BA-5K8L	○ white	0.33 / 0.33	900 ... 2240	4700	20	120	Q65110A6581	3
	LUW T6SG-AABA-4N7Q	○ ultra white	0.31 / 0.32	1120 ... 1800	5040	20	120	Q65110A7881	3

## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	at $I_F$			2 $\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung	
				$I_V$ [mcd]	$\Phi_V$ [mlm]	[mA]				[°]
<b>Power TOPLED®</b>										
	LP E675-P1Q2-25	● pure green	560	45 ... 112	240	50	120	Q65110A2334	5	
	LP E675-P2R1-25			56 ... 140				Q65110A7298		
	LS E67B-S2U1-1-1	● super red	633	224 ... 560	1200	50	120	Q65110A2319	5	
	LS E67B-T2V1-1-1			355 ... 900				1900		Q65110A2320
	LS E67B-S2V1-1-1			224 ... 900				1700		Q65110A2321
	LA E67B-T2V1-24-1	● amber (red)	617	355 ... 900	1900	50	120	Q65110A2315		
	LA E67B-U2AA-24-1			560 ... 1400				2950		Q65110A2316
	LA E67B-T2AA-24-1	355 ... 1400	2650	Q65110A2317						
	LO E67B-U2AA-24-1	● orange	606	560 ... 1400	2900	50	120	Q65110A2318		
LY E67B-T2V1-26-1	● yellow	587	355 ... 900	1900	Q65110A2322					
LY E67B-U2AA-26-1			560 ... 1400	2950	Q65110A2323					
LY E67B-T2AA-26-1			355 ... 1400	2650	Q65110A2324					
	LB E67C-Q1R2-35	● blue	469	71 ... 180	380	30	120	Q65110A1854	5	
	LB E67C-R1S2-35			112 ... 280				600		Q65110A1855
	LB E67C-Q1S2-35			71 ... 280				520		Q65110A1975
	LT E67C-T1U2-35	● true green	525	280 ... 710	1500	Q65110A1868				
	LT E67C-U1V2-35			450 ... 1120	2400	Q65110A1869				
LT E67C-T1V2-35	280 ... 1120	2100	Q65110A1982							
	LW E67C-T2V1-5K8L-1	○ white	0.33 / 0.33	355 ... 900	1900	30	120	Q65110A1930	5	
	LW E67C-U2V2-5K8L-1			560 ... 1120				2400		Q65110A1931
	LW E67C-T1V2-5K8L-1			280 ... 1120				2100		Q65110A1932
<b>Power TOPLED® Silicone</b>										
	LW E6SC-T2V1-5K8L-1	○ white	0.33 / 0.33	355 ... 900	1900	30	120	Q65110A2598	5	
	LW E6SC-U2AA-5K8L-1			560 ... 1400				3000		Q65110A1157
	LB E6SG-T1U2-35	● blue	470	280 ... 710	1500	30	120	Q65110A7883	4	
	LT E6SG-AABA-35	● true green	525	1120 ... 2240				5000		Q65110A7885
	LW E6SG-AABA-5K8L	○ white	0.33 / 0.33	1120 ... 2240	5000	30	120	Q65110A7887	4	

## Light Emitting Diodes | Lumineszenzdioden




Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy			at $I_F$ [mA]	2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				$I_V$ [mcd]	$\Phi_V$ [mlm]				
	LUW E6SG-AABA-4N7Q-1	○ white	0.33 / 0.33	1120 ... 2240	5500	30	120	Q65110A7582	4
	LUW E6SG-ABBB-4N7Q			1400 ... 2800	5900			Q65110A7880	
	LS E6SF-V2BA-1-1	● super red	633	900 ... 2240	4650	50	120	Q65110A4135	6
	LR E6SF-AABB-1-1	● red	625	1120 ... 2800	5800			Q65110A4137	
	LR E6SF-V2AB-1-1			900 ... 1800	4650			Q65110A4138	
	LA E6SF-AABA-24-1	● amber (red)	617	1120 ... 2240	4980			Q65110A4134	
	LA E6SF-BACA-24-1			1800 ... 3550	7925			Q65110A4136	
	LO E6SF-ABCB-24-1	● orange	606	1400 ... 4500	8800			Q65110A4141	
	LY E6SF-AABA-46-1	● yellow	590	1120 ... 2240	4980			Q65110A4140	
	LY E6SF-V2AB-35-1			900 ... 1800	4030			Q65110A4139	
					Q65110A7525				
	LCP E6SC-S2U1	○ color on demand pure green	0.36 / 0.59	224 ... 560	1060	30	120	on request	5
	LCP E6SC-T2V1			355 ... 900	1700				
	LCB E6SG-U2AB	○ color on demand blue	0.2 / 0.3	560 ... 1800	3500	30	120	on request	5
	LCR E6SG-U1V2	○ color on demand	0.38 / 0.24	450 ... 1120	2360	30	120	on request	5
	LCW E6SG-V1AB-4R9T	○ warm white	0.42 / 0.4	710 ... 1800	3500	30	120	Q65110A7737	4
	LCW E6SG-V1AB-4U9X-S				3200			Q65110A7736	
	LCW E6SG-V2BA-4L8N			4100	Q65110A7734				
	LCW E6SG-V2BA-4J8K			4200	Q65110A7735				
	LCW E6SG-V2BA-4O9Q			3800	Q65110A7733				





## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	at $I_F$			2 $\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				$I_V$ [mcd]	$\Phi_V$ [mlm]				

### TOPLED® with lens | TOPLED® mit Linse


	LP T655-Q1R2-25	<span style="color: green;">●</span> pure green	560	71 ... 180	140	30	60	Q65110A2355	7
	LG T656-Q1R2-24	<span style="color: green;">●</span> green	570	71 ... 180	195	20	60	Q65110A4449	7
	LG T656-Q1S2-24			71 ... 280	270			Q65110A4448	
	LG T656-R1S2-24			112 ... 280	300			Q65110A4447	
	LG T656-Q2S1-24	90 ... 224		Q65110A6350					
	LP T656-M2P1-25	<span style="color: green;">●</span> pure green	560	22.4 ... 56	60			Q65110A3556	
LP T656-M2Q1-25	22.4 ... 90			85	Q65110A3557				
LP T656-N2Q1-25	35.5 ... 90			95	Q65110A3558				
	LS T656-S1T2-1	<span style="color: red;">●</span> super red	633	180 ... 450	710	20	60	Q65110A4444	7
	LY T656-T1U2-26	<span style="color: yellow;">●</span> yellow	587	280 ... 710	1110			Q65110A4441	

### Power TOPLED® with lens | Power TOPLED® mit Linse



	LS E65B-V1AB-1-1	<span style="color: red;">●</span> super red	633	710 ... 1800	1450	50	60	Q65110A2763	8
	LS E65B-AABB-1-1			1120 ... 2800	2400			Q65110A2764	
	LS E65B-V1BB-1-1			710 ... 2800	2000			Q65110A2762	
	LA E65B-AABB-24-1	<span style="color: orange;">●</span> amber (red)	617	1120 ... 2800	2400			Q65110A2349	
	LA E65B-BACA-24-1			1800 ... 3550	3000			Q65110A2350	
	LA E65B-AACA-24-1			1120 ... 3550	2775			Q65110A2351	
LY E65B-AABB-26-1	<span style="color: yellow;">●</span> yellow	587	1120 ... 2800	2400	Q65110A2352				
LY E65B-BACA-26-1			1800 ... 3550	3000	Q65110A2353				
LY E65B-AACA-26-1			1120 ... 3550	2775	Q65110A2354				
	LS E65F-BBDA-1	<span style="color: red;">●</span> super red	633	2240 ... 5600	4480	50	60	Q65110A4106	11
	LA E65F-CADA-24-1	<span style="color: orange;">●</span> amber (red)	617	2800 ... 5600	4800			Q65110A2335	
	LA E65F-CBEA-24-1			3550 ... 9000	7170			Q65110A4104	
	LY E65F-BBCB-35-1	<span style="color: yellow;">●</span> yellow	590	2240 ... 4500	3850			Q65110A4110	
	LY E65F-CADA-46-1			2800 ... 5600	4800			Q65110A4109	

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	at $I_F$			2 $\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				$E_V$ [lux]	$\Phi_V$ [mlm]				

### Power TOPLED® with lens | Power TOPLED® mit Linse


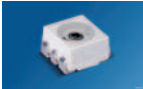

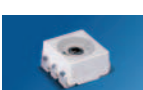
	LS E63B-BBCB-1-1	<span style="color: red;">●</span> super red	633	2240 ... 4500	1700	50	30	Q65110A2336	9
	LA E63B-CBEA-24-1	<span style="color: orange;">●</span> amber (red)	617	3550 ... 9000	3050			Q65110A2337	
	LO E63B-DAEB-24-1	<span style="color: orange;">●</span> orange	606	4500 ... 11200	3850			Q65110A2338	
	LY E63B-CBEA-26-1	<span style="color: yellow;">●</span> yellow	587	3550 ... 9000	3050			Q65110A2339	

## Light Emitting Diodes | Lumineszenzdioden

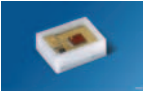
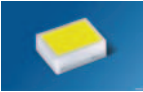
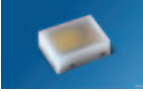
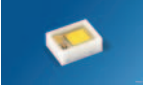
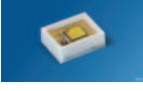
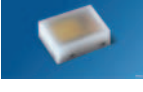
Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{dom}$ (typ.) [nm] / Color coord. Cx/Cy	$E_V$		at $I_F$	2 $\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				[lux]	[mlm]				
	LS E63F-DBFA-1	● super red	633	5600 ... 14000	4650	50	30	Q65110A4105	10
	LA E63F-EAFA-24-1	● amber (red)	617	7100 ... 14000	5000			Q65110A1845	
	LA E63F-EBGA-24-1			9000 ... 22400	7450			Q65110A4103	
	LY E63F-DBEB-35-1	● yellow	590	5600 ... 11200	3980			Q65110A4108	
	LY E63F-EAFA-46-1			7100 ... 14000	5000			Q65110A4107	
	LB E63C-T2V1-35	● blue	469	355 ... 900	370	30	20	Q65110A1852	8
	LB E63C-U2V2-35			560 ... 1120	490			Q65110A1973	
	LB E63C-T2V2-35			355 ... 1120	430			Q65110A1974	
	LT E63C-BACB-35	● true green	525	1800 ... 4500	1850			Q65110A1866	
	LT E63C-CADB-35			2800 ... 7100	2900			Q65110A1867	
	LT E63C-BADB-35			1800 ... 7100	2610			Q65110A1981	
	LV E63C-ABCA-35	● verde green	503	1400 ... 3550	1450			Q65110A1874	
	LV E63C-BBDA-35			2240 ... 5600	2300			Q65110A1875	
LV E63C-ABDA-35	1400 ... 5600			2050	Q65110A1985				

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{dom}$ (typ.) [nm] / Color coord. Cx/Cy	$I_V$		at $I_F$	2 $\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				[mcd]	[mlm]				

### Advanced Power TOPLED® Silicone

	LR G6SP-CADB-1-1	● red	625	2800 ... 7100	13400	140	120	Q65110A4728	12
	LA G6SP-CBEA-24-1	● amber (red)	617	3550 ... 9000	16800			Q65110A4732	
	LY G6SP-BBDB-36-1	● yellow	590	2240 ... 7100	12600			Q65110A4721	
	LB G6SP-AABB-35-1	● blue	470	1120 ... 2800	5250	140	120	on request	29
	LT G6SP-CBEB-25-1	● true green	528	3550 ... 11200	18700			Q65110A5874	
	LW G6SP-CBEA-2K6L-1	○ white	0.33 / 0.33	3550 ... 9000	15000	140	120	on request	29
	LW G6SP-DAEB-5K8L-1			4500 ... 11200	18800				
	LCW G6SP-CBEB-4J8K	○ warm white	0.42 / 0.4	3550 ... 11200	22600	140	120	Q65110A7714	29
	LCW G6SP-CAEA-4U9X			2800 ... 9000	17000			Q65110A7713	
	LCW G6SP-CBEB-4L8N			3550 ... 11200	22000			Q65110A7715	
	LCW G6SP-CBEB-4O9Q			20000	Q65110A7716				
	LCW G6SP-CAEA-4R9T			2800 ... 9000	18600			Q65110A7712	


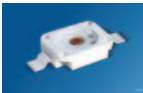




Flash Products | LED für Blitzlichtanwendungen

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy				$2\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				$I_V$ [mcd]	$\Phi_V$ [mlm]	at $I_F$ [mA]			
<b>CERAMOS®</b>									
	LA C9SM-CADB-24-1	● amber (red)	617	2800 ... 7100	1340	140	120	Q65110A6616	42
	LY C9SM-BACB-36-1	● yellow	590	1800 ... 4500	8550			Q65110A6613	
	LW C9SM-CADB-2K6L	○ white	0.33 / 0.33	2800 ... 7100	10600	140	120	Q65110A6646	42
	LUW C9EP	○ ultra white	0.31 / 0.32	-	80000	500	120	on request	49
	LUW C9SP	○ ultra white	0.31 / 0.32	-	80000	500	120	on request	49
	LW C9SN-FOGA-58	○ white	0.33 / 0.33	12500 ... 22400	45000	500	120	on request	50
	LW C9EN-FOGA-58	○ white	0.33 / 0.33	12500 ... 22400	55000	500	120	on request	50

## SMT Packages | SMT Bauteile

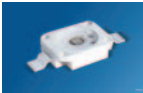
Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$\Phi_V$	$I_V$ (typ)	at $I_F$	$2\varphi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				[mlm]	[mcd]				

### Golden DRAGON® Silicone

	ZW W5SG-HYJZ-5K8L	○ white	0.33 / 0.33	33000 ... 71000	14500	350	120	Q65110A3801	13
	LR W5SM-GZHZ-1	● red	625	24000 ... 45000	9900	400	120	Q65110A4385	30
	LR W5SM-HYJY-1			33000 ... 61000	13500			Q65110A4386	
	LA W5SM-HXJX-24	● amber (red)	617	28000 ... 52000	11400			Q65110A4277	
	LA W5SM-HZJZ-24			39000 ... 71000	15800			Q65110A4278	
	LY W5SM-GZJX-46	● yellow	590	24000 ... 52000	10600			Q65110A4388	
	LY W5SM-GYHZ-35			21000 ... 45000	9200	Q65110A4387			
	LW W5SM-HYJZ-5K8L	○ white	0.33 / 0.33	33000 ... 71000	14500	350	120	Q65110A7083	30
	LW W5SM-JXJZ-5K8L			45000 ... 71000	17000			Q65110A7082	
	LCW W5SM-HYJY-4U9X	○ warm white	0.4 / 0.42	33000 ... 61000	13500	350	120	Q65110A7613	30
	LCW W5SM-HYJX-4R9T			33000 ... 52000	12400			Q65110A7612	
	LCW W5SM-HZJZ-4O9Q			39000 ... 71000	15800			Q65110A7642	
	LCW W5SM-JXJZ-4L8N			45000 ... 82000	17000			Q65110A7640	
	LCW W5SM-JXKX-4J8K			45000 ... 71000	18200			Q65110A7639	
	LUW W5SM-JYKY-5P7R	○ ultra white	0.31 / 0.32	52000 ... 97000	21300	350	120	Q65110A7081	30
	LUW W5SM-JYKY-5F8G							Q65110A7575	
	LUW W5SM-JYKY-4C8E							Q65110A7574	
	LB W5SM-EYGX-24	● blue	470	8200 ... 21000	3900	350	120	Q65110A6496	30
	LB W5SM-FYGY-35-0-350			13000 ... 24000	5300			Q65110A7242	
	LT W5SM-HYJZ-25	● true green	528	33000 ... 71000	14500			Q65110A5876	
	LT W5SM-JXJZ-25			45000 ... 71000	17000			Q65110A7909	

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$\Phi_E$	at $I_F$	$2\varphi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				[mW]				



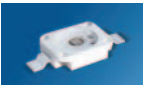
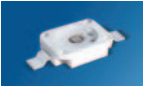
### Golden DRAGON® Silicone

	LD W5SM-1S2T-35	● deep blue	455	210 ... 355	350	120	Q65110A6457	30
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## Light Emitting Diodes | Lumineszenzdioden

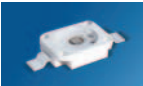
Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	at $I_F$			2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				$\Phi_V$ [mlm]	$I_V$ (typ) [mcd]				

### Platinum DRAGON® Silicone

	LR W5SN-JYKY-1	● red	625	52000 ... 97000	24800	700	120	Q65110A6011	30
	LA W5SN-JZKZ-24	● amber (red)	617	61000 ... 112000	28800			Q65110A6010	
	LY W5SN-JXKX-35	● yellow	587	45000 ... 82000	21200			Q65110A5711	
	LY W5SN-JYKY-46		52000 ... 97000	24800	Q65110A5712				
	LW W5SN-JYKZ-5K8L	○ white	0.33 / 0.33	52000 ... 112000	27000	700	120	Q65110A5557	30
	LCW W5SN-KYLY-4L8N	○ white	0.4 / 0.42	82000 ... 150000	31200	700	120	Q65110A7706	30
	LCW W5SN-JZKZ-4U9X			61000 ... 112000	24500			Q65110A7709	
	LCW W5SN-JZKZ-4R9T			71000 ... 130000	26300			Q65110A7710	
	LCW W5SN-KXLX-4O9Q			82000 ... 150000	29800			Q65110A7708	
	LCW W5SN-KYLY-4J8K			82000 ... 150000	32400			Q65110A7707	
	LB W5SN-FZHX-25	● blue	470	15000 ... 33000	8000	700	120	Q65110A7243	30
	LB W5SN-GZJX-35		24000 ... 52000	12700	Q65110A7464				
	LT W5SN-JYKZ-25	● true green	525	52000 ... 112000	27500			Q65110A5877	
	LT W5SN-KXKZ-25		71000 ... 112000	30100	Q65110A7901				

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	at $I_F$		2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				$\Phi_E$ [mW]				






### Platinum DRAGON® Silicone

	LD W5SN-1T2U-35	● deep blue	455	280 ... 560	700	120	Q65110A6720	30
	LD W5SN-3T4U-35			355 ... 710			Q65110A7356	

## Light Emitting Diodes | Lumineszenzdioden


Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$\Phi_V$			2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				[mlm]	$I_V$ (typ) [mcd]	at $I_F$ [mA]			

### Diamond DRAGON®

	LR W5AP-KZMX-1	● red	625	97000 ... 210000	45000	1400	140	Q65110A7158	51
	LA W5AP-LXMY-24	● amber (red)	617	112000 ... 240000	51000			Q65110A7159	
	LY W5AP-KYLZ-36	● yellow	590	82000 ... 180000	38000			Q65110A7156	
	LB W5AP-HZKX-23	● blue	470	39000 ... 82000	16300	1400	140	Q65110A7558	51
	LB W5AP-JYKY-35			52000 ... 97000	20100			Q65110A7557	
	LT W5AP-LYMZ-25	● true green	528	130000 ... 280000	55400			Q65110A7157	
	LW W5AP-LZMZ-5K8L	○ white	0.33 / 0.33	150000 ... 280000	57800	1400	140	Q65110A7506	
	LCW W5AP-LZMZ-4J8K	○ warm white	0.42 / 0.4	150000 ... 280000	53700	1400	140	Q65110A7876	
	LCW W5AP-LZMZ-4L8N			130000 ... 240000	46200			Q65110A7877	
	LCW W5AP-LYMY-4O9Q			112000 ... 210000	40200			Q65110A7875	
	LCW W5AP-LXMX-4R9T							Q65110A7873	
	LCW W5AP-LXMX-4U9X							Q65110A7874	
	LUW W5AP-MXNX-5F8G	○ ultra white	0.33 / 0.33	180000 ... 330000	63700	1400	140	Q65110A7820	
	LUW W5AP-MXNX-4C8E							Q65110A7819	
	LUW W5AP-MXNX-5P7R							Q65110A7821	

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$\Phi_E$		2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				[mW]	at $I_F$ [mA]			




### Diamond DRAGON®

	LD W5AP-3V8A-35	● deep blue	455	900 ... 1800	1400	140	Q65110A7165	51
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## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	at $I_F$			2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				$\Phi_V$ [mlm]	$I_V$ (typ) [mcd]				

### Golden DRAGON® Plus

	LW W5AM-JYKY-5K8L	○ white	0.33 / 0.33	52000 ... 97000	21300	350	170	Q65110A7373	52
	LUW W5AM-KXKZ-5P7R	○ ultra white	0.31 / 0.32	71000 ... 112000	26800	350	170	Q65110A7565	52
	LUW W5AM-KXKZ-5F8G							Q65110A7566	
	LCW W5AM-HZJZ-4U9X	○ warm white	0.4 / 0.42	39000 ... 71000	15800	350	170	Q65110A7606	52
	LCW W5AM-HZJY-4R9T			39000 ... 61000	14600			Q65110A7605	
	LCW W5AM-JXKX-4O9Q			45000 ... 82000	18200			Q65110A7608	
	LCW W5AM-JYKX-4L8N			52000 ... 82000	19600			Q65110A7604	
	LCW W5AM-JYKY-4J8K			52000 ... 97000	21300			Q65110A7603	

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	at $I_F$			2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				$\Phi_V$ [mlm]	$I_V$ (typ) [mcd]				





### Golden DRAGON® Silicone with 20° lens | Golden DRAGON® Silicone mit 20° Linse

	LR W51M-HXJY-1	● red	625	28000 ... 61000	20700	400	20°, narrow viewing angle	Q65110A6045	43
	LA W51M-HYJZ-24	● amber (red)	617	33000 ... 71000	24200			Q65110A6046	
	LY W51M-HXJY-36	● yellow	590	28000 ... 61000	20700			Q65110A6047	
	LB W51M-EZGX-35	● blue	470	9700 ... 21000	7100	350	20°, narrow viewing angle	Q65110A6049	43
	LT W51M-HYJZ-36	● true green	528	33000 ... 71000	24200			Q65110A6048	
	LW W51M-HZKX-5K8L	○ white	0.33 / 0.33	39000 ... 82000	28300	350	20°, narrow viewing angle	Q65110A7016	43
	LCW W51M-HZJZ-4U9X	○ warm white	0.4 / 0.42	39000 ... 71000	13800	350	20°, narrow viewing angle	Q65110A7893	43
	LCW W51M-HZJY-4R9T			39000 ... 61000	12500			Q65110A7892	
	LCW W51M-JXKX-4O9Q			45000 ... 82000	15900			Q65110A7894	
	LCW W51M-JYKX-4L8N			16800	Q65110A7896				
	LCW W51M-JYKY-4J8K			52000 ... 97000	18600			Q65110A7895	

## Light Emitting Diodes | Lumineszenzdioden




Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$\Phi_V$			2 $\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				[mlm]	[mcd]	at $I_F$ [mA]			

### Golden DRAGON® Silicone with 40° lens | Golden DRAGON® Silicone mit 40° Linse

	LR W55M-HYJZ-1	● red	625	33000 ... 71000	29000	400	40°, nar- row viewing angle	Q65110A6042	44
	LB W55M-FXGY-35	● blue	470	11200 ... 24000	10800	350	40°, nar- row viewing angle	Q65110A6043	44
	LW W55M-HZKX-5K8L	○ white	0.33 / 0.33	39000 ... 82000	37300	350	40°, nar- row viewing angle	Q65110A7015	44
	LCW W55M-HZJZ-4U9X LCW W55M-HZJZ-4R9T LCW W55M-JXKX-4O9Q LCW W55M-JYKY-4L8N LCW W55M-JYKY-4J8K	○ warm white	0.4 / 0.42	39000 ... 71000 45000 ... 82000 52000 ... 97000	13800 12500 15900 16800 18600	350	40°, nar- row viewing angle	Q65110A7898 Q65110A7897 Q65110A7900 Q65110A7903 Q65110A7902	44



Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$\Phi_V$		2 $\phi$ (typ.) (100% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				[mlm]	at $I_F$ [mA]			

### Golden DRAGON® Silicone with ARGUS® lens | Golden DRAGON® Silicone mit ARGUS® Linse

	LR W5KM-HXJX-1 LR W5KM-HZJZ-1	● red	625	28000 ... 52000 39000 ... 71000	400		Q65110A4392 Q65110A4393	45
	LY W5KM-HYJZ-36	● yellow	590	33000 ... 71000			Q65110A6032	
	LB W5KM-EZGY-35 LT W5KM-HZKX-25	● blue ● true green	470 528	9700 ... 24000 39000 ... 82000	350	160°, Opti- mized for display backlighting	Q65110A4398 Q65110A5875	45
	LW W5KM-HZKX-5K8L	○ white	0.33 / 0.33	39000 ... 82000	350	160°, Opti- mized for display backlighting	Q65110A7013	45




## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$\Phi_V$	at $I_F$	2 $\phi$ (typ.) (100% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				[mlm]				
	LCW W5KM-HZJZ-4U9X	○ warm white	0.4 / 0.42	39000 ... 71000	350	160°, Optimized for display backlighting	Q65110A7905	45
	LCW W5KM-HZJZ-4R9T			45000 ... 82000			Q65110A7904	
	LCW W5KM-JXKX-4O9Q			45000 ... 82000			Q65110A7906	
	LCW W5KM-JYKY-4J8K			52000 ... 97000			Q65110A7907	
	LCW W5KM-JYKY-4L8N			52000 ... 97000			Q65110A7908	
	LUW W5KM-JZKZ-5P7R	○ ultra white	0.31 / 0.32	61000 ... 112000	350		Q65110A7899	45




Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$\Phi_E$	at $I_F$	2 $\phi$ (typ.) (100% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				[mW]				

### Golden DRAGON® Silicone with ARGUS® lens | Golden DRAGON® Silicone mit ARGUS® Linse








	LD W5KM-1S2T-35	● deep blue	455	210 ... 355	350	160°, Optimized for display backlighting	Q65110A6508	45
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Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$\Phi_V$	at $I_F$	2 $\phi$ (typ.) (100% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				[mlm]				

### Golden DRAGON® Silicone with oval lens | Golden DRAGON® Silicone mit ovaler Linse

	LY W5JM-HYJZ-36	● yellow	590	33000 ... 71000	400	horizontal 120°, vertical 80°, oval viewing angle	Q65110A6034	46
	LW W5JM-HZKX-5K8L	○ white	0.33 / 0.33	39000 ... 82000	350	horizontal 120°, vertical 80°, oval viewing angle	Q65110A7014	46
	LUW W5JM-JZKZ-5P7R	○ ultra white	0.31 / 0.32	61000 ... 112000	350	horizontal 120°, vertical 80°, oval viewing angle	Q65110A7687	46

## Light Emitting Diodes | Lumineszenzdioden




Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.)  [nm]	$I_V$ [mcd]		at $I_F$  [mA]	$2\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				color 1	color 2				
<b>Multi TOPLED®</b>									
	LOP T670-JL+GJ-1*	orange pure green	606 / 560	4.5 ... 18	1.8 ... 7.1	10	120	Q65110A2436	14
	LSG T670-JL+JL-1*	super red green	628 / 570		4.5 ... 18			Q65110A2437	
	LSP T670-HK+GJ-1	super red pure green	628 / 560	2.8 ... 11.2	1.8 ... 7.1			Q65110A2438	
	LYG T670-JL-1-0+JL*	yellow green	587 / 570	4.5 ... 18	4.5 ... 18			Q65110A2440	
	LOG T671-JL+KM-1*	orange green	606 / 570	4.5 ... 18	7.1 ... 28	10	120	Q65110A2434	14
	LSY T676-P2R1-1-0+Q2S1-35	super red yellow	633 / 587	56 ... 140	90 ... 224	20	120	Q65110A2446	14
	LSG T676-P7Q7-1+N7P7-24-ZB	super red green	633 / 570	56 ... 140	35.5 ... 90	20	120	Q65110A4186	14
	LSB T676-N1P2+K1L2-1	super red blue	633 / 467	28 ... 71	7.1 ... 18	10	120	Q65110A2441	14
	LAY T67B-T2V1-1-1+U2V2-45	amber (red) yellow	617 / 587	355 ... 900	560 ... 1120	50	120	Q65110A2433	14
	LSY T67B-R2S2+S2T2-1			140 ... 280	224 ... 450			Q65110A2447	
	LSY T67B-R2T2+S2U2-1	super red yellow	633 / 587	140 ... 450	224 ... 710	30	120	Q65110A2449	14
	LSY T67B-S1T2+T1U2-1			180 ... 355	280 ... 710			Q65110A2448	
	LAY T67F-AABB-1-1+AABA-45-1	amber (red) yellow	617 / 590	1120 ... 2800	1120 ... 2240	50	120	Q65110A7526	32
<b>Multi TOPLED® RG</b>									
	LSG T770-JL+JL-1*	super red green	628 / 570	4.5 ... 18	4.5 ... 18	10	120	Q65110A2443	31
	LOG T77K-JL-1-0+GJ-1	orange green	606 / 570	4.5 ... 18	1.8 ... 7.1	2	120	Q65110A3338	31

\*not for new design




## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm]	$I_V$ [mcd]				$2\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				color 1	color 2	color 3	at $I_F$ [mA]			

### Multi TOPLED® black surface


	LATBT66B-ST-1+TU7-35+QS-36	<ul style="list-style-type: none"> <li><span style="color: orange;">●</span> amber (red)</li> <li><span style="color: green;">●</span> true green</li> <li><span style="color: blue;">●</span> blue</li> </ul>	617	180 ... 450	280 ... 900	71 ... 280	20	120	Q65110A7282	32
	LATBT686-QR-1+RS-78+KL-1-ZB	<ul style="list-style-type: none"> <li><span style="color: orange;">●</span> amber (red)</li> <li><span style="color: green;">●</span> true green</li> <li><span style="color: blue;">●</span> blue</li> </ul>	617 / 528 / 465	71 ... 180	112 ... 280	7.1 ... 18	20	120	Q65110A2609	32
	LATBT66C-RS-1+SU7-35+P7S-35	<ul style="list-style-type: none"> <li><span style="color: orange;">●</span> amber (red)</li> <li><span style="color: green;">●</span> true green</li> <li><span style="color: blue;">●</span> blue</li> </ul>	615 / 528 / 470	112 ... 280	180 ... 900	56 ... 280	20	120	Q65110A7284	32

### 6-lead MULTILED®

	LATBG66B-ST-1+T7V-35+QS-35	<ul style="list-style-type: none"> <li><span style="color: orange;">●</span> amber (red)</li> </ul>	617 / 528 / 470	180 ... 450	355 ... 1120	71 ... 280	20	120	Q65110A7280	33
	LRTBG6TG-TV-1+VV7-36+ST7-69	<ul style="list-style-type: none"> <li><span style="color: red;">●</span> red</li> <li><span style="color: green;">●</span> true green</li> <li><span style="color: blue;">●</span> blue</li> </ul>	625 / 528 / 465	280 ... 1120	710 ... 1400	180 ... 560	20	120	Q65110A7287	33
	LYYYG6SF-CADB-35	<ul style="list-style-type: none"> <li><span style="color: yellow;">●</span> yellow</li> </ul>	590	2800 ... 7100			50	120	Q65110A5713	34

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	Color coordinates Cx/Cy typ.	$I_V$ [mcd]				$2\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				color 1	color 2	color 3	at $I_F$ [mA]			

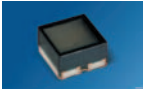
### 6-lead MULTILED®

	LRTBG6SF-V2BA-4D7F	<ul style="list-style-type: none"> <li><span style="color: white;">○</span> white</li> </ul>	0.31 / 0.31	900 ... 2240	-	-	13 (red) 20 (true green) 8 (blue)	120	Q65110A7501	34
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## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm]	$I_V$ [mcd]			at $I_F$ [mA]	$2\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				color 1	color 2	color 3				

### Multi CHIPLED<sup>®</sup>, black, 6-lead




	LATBR98G-Q5R9-1+S7U-37+P7R-26	<ul style="list-style-type: none"> <li><span style="color: orange;">●</span> amber (red)</li> <li><span style="color: green;">●</span> true green</li> <li><span style="color: blue;">●</span> blue</li> </ul>	617 / 528 / 470	80 ... 250	224 ... 710	56 ... 180	20	120	Q65110A5816	53
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### Multi Micro SIDELED<sup>®</sup>, 0.6 mm, 6-lead Silicone

	LRTBY3SG-T2V1-1+V1AB-25+QS-23	<ul style="list-style-type: none"> <li><span style="color: red;">●</span> red</li> <li><span style="color: green;">●</span> true green</li> <li><span style="color: blue;">●</span> blue</li> </ul>	625 / 528 / 460	355 ... 900	710 ... 1800	71 ... 280		120	Q65110A7027	54
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Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$I_V$		at $I_F$ [mA]	$2\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				[mcd]	$\Phi_V$ [mlm]				

### Mini TOPLED<sup>®</sup>








	LS M670-H2K1-1*	<span style="color: red;">●</span> super red	628	3.55 ... 9	19	10	120	Q65110A2381	15
	LS M670-J2L1-1*			5.6 ... 14	30			Q65110A2382	
	LS M670-H2L1-1*			3.55 ... 14	26			Q65110A2383	
	LO M670-H2K1-24*	<span style="color: orange;">●</span> orange	606	3.55 ... 9	19			Q65110A2375	
	LO M670-J2L1-24*			5.6 ... 14	30			Q65110A2376	
	LO M670-H2L1-24*			3.55 ... 14	26			Q65110A2377	
	LG M670-J2L1-1*	<span style="color: green;">●</span> green	570	5.6 ... 14	30			Q65110A2372	
	LG M670-K2M1-1*			9 ... 22.4	50			Q65110A2373	
	LG M670-J2M1-1*			5.6 ... 22.4	42			Q65110A2374	
LP M670-G1H2-1*	<span style="color: green;">●</span> pure green	560	1.8 ... 4.5	9.5	Q65110A2378				
LP M670-H1J1-1*			2.8 ... 5.6	12	Q65110A2379				
LP M670-G1J1-1*			1.8 ... 5.6	11	Q65110A2380				
	LS M67K-H2K1-1	<span style="color: red;">●</span> super red	630	3.55 ... 9	18	2	120	Q65110A2026	15
	LS M67K-J2L1-1			5.6 ... 14	28			Q65110A2027	
	LS M67K-H2L1-1			3.55 ... 14	25			Q65110A2028	
	LO M67K-J2L1-24	<span style="color: orange;">●</span> orange	606	5.6 ... 14	28			Q65110A2053	
	LO M67K-K2M1-24			9 ... 22.4	45			Q65110A2054	
	LO M67K-J2M1-24			5.6 ... 22.4	40			Q65110A2055	
LY M67K-J1K2-26	<span style="color: yellow;">●</span> yellow	587	4.5 ... 11.2	22	Q65110A2074				
LY M67K-K1L2-26			7.1 ... 18	35	Q65110A2075				
LY M67K-J1L2-26			4.5 ... 18	30	Q65110A2076				
	LG M67K-G1H2-24	<span style="color: green;">●</span> green	570	1.8 ... 4.5	9.5	2	120	Q65110A2393	15
	LG M67K-H1J2-24			2.8 ... 7.1	15			Q65110A2394	
	LG M67K-G1J2-24			1.8 ... 7.1	13			Q65110A2395	
	LP M67K-D2F1-25	<span style="color: green;">●</span> pure green	560	0.56 ... 1.4	3			Q65110A2396	
	LP M67K-E2G1-25			0.9 ... 2.24	4.8			Q65110A2397	
	LP M67K-D2G1-25			0.56 ... 2.24	4.2			Q65110A2398	

\*not for new design

## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	at $I_F$			2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				$I_V$ [mcd]	$\Phi_V$ [mlm]	[mA]			
	LA M67B-T2V1-1	● amber (red)	617	355 ... 900	1900	30	120	Q65110A2368	15
	LS M676-P2R1-1	● super red	633	56 ... 140	300	20	120	Q65110A1897	15
	LS M676-Q2S1-1			90 ... 224	480			Q65110A2363	
	LS M676-P2S1-1			56 ... 224	420			Q65110A2364	
	LA M676-Q2S1-1	● amber (red)	615	90 ... 224	480	2	120	Q65110A2356	
	LA M676-R2T1-1			140 ... 355	760			Q65110A2357	
	LA M676-Q2T1-1			90 ... 355	660			Q65110A2358	
	LA M676-K1M1-24			7.1 ... 22.4				Q65110A7561	
	LO M676-Q2S1-24	● orange	606	90 ... 224	480	20	120	Q65110A2359	
	LO M676-R2T1-24			140 ... 355	760			Q65110A2360	
	LO M676-Q2T1-24			90 ... 355	660			Q65110A2361	
LY M676-Q2S1-26	● yellow	587	90 ... 224	480	20	120	Q65110A1898		
LY M676-R2T1-26			140 ... 355	760			Q65110A2366		
LY M676-Q2T1-26			90 ... 355	660			Q65110A2367		
	LG M676-N2Q1-24	● green	570	35.5 ... 90	190	20	120	Q65110A2389	15
	LP M676-L1M2-25	● pure green	560	11.2 ... 28				Q65110A7809	
	LB M676-J1K2-1	● blue	465	4.5 ... 11.2	24	10	120	Q65110A2369	15
	LB M676-K1L2-1			7.1 ... 18	40			Q65110A2370	
	LB M676-J1L2-1			4.5 ... 18	33			Q65110A2371	
	LP M675-M2P1-25	● pure green	560	22.4 ... 56	120	30	120	Q65110A2399	15
	LB M673-L1M2-35	● blue	471	11.2 ... 28	60	10	120	Q65110A1951	15
	LB M673-M1N2-35			18 ... 45	95			Q65110A1952	
	LB M673-L1N2-35			11.2 ... 45	80			Q65110A1953	
	LT M673-N2Q1-25	● true green	532	35.5 ... 90	190	Q65110A5929			
	LT M673-P2R1-25			56 ... 140	300	Q65110A1964			
	LT M673-N1R2-25			28 ... 180	310	Q65110A5930			
	LW M673-P1Q2-5K8L	○ white	0.33 / 0.33	45 ... 112	240	10	120	Q65110A1933	15
	LW M673-Q1R2-5K8L			71 ... 180	380			Q65110A1934	
	LW M673-N2R2-5K8L			35.5 ... 180	320			Q65110A1935	
	LW M673-P1Q2-3K6L			45 ... 112	240			Q65110A4099	

## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy				2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				$I_V$ [mcd]	$\Phi_V$ [mlm]	at $I_F$ [mA]			
	LW M67C-S1T2-5K8L	○ white	0.33 / 0.33	180 ... 450	950	20	120	Q65110A1936	15
	LW M67C-T1U2-5K8L			280 ... 710	1500			Q65110A1937	
	LW M67C-S1U2-5K8L			180 ... 710	1330			Q65110A1938	
	LCG M67S-P1R1	○ color on demand green	0.23 / 0.42	45 ... 140	275	10	120	on request	15
	LCL M67S-P2Q2	○ color on demand lagune	0.17 / 0.365	56 ... 112	250	10	120	on request	15
	LCB M67S-K1M1	○ color on demand blue	0.2 / 0.3	7.1 ... 22.4	45	2	120	on request	15
<b>Mini TOPLED Santana®</b>									
	LS M47K-H2K1-1	● super red	630	3.55 ... 9	19	2	120	Q65110A2021	16
	LS M47K-J2L1-1			5.6 ... 14	30			Q65110A2022	
	LS M47K-H2L1-1			3.55 ... 14	25			Q65110A2023	
	LO M47K-J2L1-24	● orange	606	5.6 ... 14	30			Q65110A2047	
	LO M47K-K2M1-24			9 ... 22.4	50			Q65110A2048	
	LO M47K-J2M1-24			5.6 ... 22.4	40			Q65110A2049	
	LY M47K-J1K2-26	● yellow	587	4.5 ... 11.2	24			Q65110A2068	
	LY M47K-K1L2-26			7.1 ... 18	40			Q65110A2069	
	LY M47K-J1L2-26			4.5 ... 18	30			Q65110A2070	
	LG M47K-G1H2-24	● green	570	1.8 ... 4.5	9	2	120	Q65110A2402	16
LG M47K-H1J2-24	2.8 ... 7.1			14	Q65110A2086				
LG M47K-G1J2-24	1.8 ... 7.1			13	Q65110A2403				
	LB M47C-P1Q2-35-1	● blue	470	45 ... 112	240	20	120	Q65110A1584	16
LB M47C-Q1R2-35-1	71 ... 180			380	Q65110A1856				
LB M47C-P1R2-35-1	45 ... 180			330	Q65110A1976				



## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy				2 $\phi$ (typ.) (50% I <sub>V</sub> )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				I <sub>V</sub> [mcd]	$\Phi_V$ [mlm]	at I <sub>F</sub> [mA]			
<b>PointLED® reverse mount</b>									
	LS P47K-H1J2-1	● super red	630	2.8 ... 7.1	15	2	120	Q65110A1455	17
	LS P47K-J1K2-1			4.5 ... 11.2	25			Q65110A1464	
	LS P47K-H1K2-1			2.8 ... 11.2	20			Q65110A2733	
	LY P47K-J1K2-26	● yellow	587	4.5 ... 11.2	25			Q65110A1450	
	LY P47K-K1L2-26			7.1 ... 18	35			Q65110A1449	
	LY P47K-J1L2-26			4.5 ... 18	30			Q65110A2738	
	LG P47K-G2J1-24	● green	570	2.24 ... 5.6	10	2	120	Q65110A1467	17
	LG P47K-H2K1-24			3.55 ... 9	19			Q65110A1468	
	LG P47K-G2K1-24			2.24 ... 9	15			Q65110A2730	
	LA P47B-T2V1-24-1	● amber (red)	617	355 ... 900	1500	30	120	Q65110A3764	17
	LA P47B-S2U1-24-1			224 ... 560	1050			Q65110A5329	
	LY P47B-T2V1-26-1	● yellow	587	355 ... 900	1500			Q65110A4726	
	LS P47F-U1AA-1-1	● super red	633	450 ... 1400	2780	30	120	Q65110A4859	47
	LR P47F-U2AB-1-1	● red	625	560 ... 1800	3540			Q65110A4861	
	LA P47F-V2BB-24-1	● amber (red)	617	900 ... 2800	5550			Q65110A4857	
	LY P47F-U2AB-36-1	● yellow	590	560 ... 1800	3540			Q65110A4860	
	LW P473-Q2S1-3K8L-1	○ white	0.32 / 0.31	90 ... 224	470	10	120	Q65110A1453	17
	LW P4SG-V2AB-5K8L-1	○ white	0.33 / 0.33	900 ... 1800	2600	20	120	Q65110A6932	47
	LCB P473-P1R1	○ color on demand blue	0.2 / 0.3	28 ... 71	150	10	120	on request	17
	LO P476-R2T1-24-F	● orange	606	140 ... 355	760	20	120	Q65110A7019	17
	LO P476-R2T1-24			90 ... 224	480			Q65110A7018	
	LY P476-Q2S1-26	● yellow	587	140 ... 355	760			Q65110A3955	
	LY P476-R2T1-26			90 ... 355	675			Q65110A3956	
	LY P476-Q2T1-26			90 ... 355	675			Q65110A4881	
	LB P4SG-S1T2-35-1-20-R18	● blue	470	180 ... 450	850	20	120	Q65110A7068	47
	LT P4SG-V1AB-36-1	● true green	528	710 ... 1800	3010			Q65110A7127	

## Light Emitting Diodes | Lumineszenzdioden



Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy				2 $\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				$I_V$ [mcd]	$\Phi_V$ [mlm]	at $I_F$ [mA]			

### PointLED® top mount



	LA P47B-T2V1-24-1	<span style="color: red;">●</span> amber (red)	617	355 ... 900	1500	30	120	Q65110A1749	17
	LY P47B-T2V1-26-1-F	<span style="color: yellow;">●</span> yellow	587					Q65110A4727	
	LB P4SG-S1T2-35-1-F	<span style="color: blue;">●</span> blue	470	180 ... 450	850	20	120	Q65110A6028	47
	LT P4SG-V1AB-36-F	<span style="color: green;">●</span> true green	528	710 ... 1800	3010			Q65110A6029	

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy				2 $\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				$I_V$ [mcd]	$\Phi_V$ [mlm]	at $I_F$ [mA]			

### SmartLED® 0603 0.2 mm








	LB L49G-N2R1-35	<span style="color: blue;">●</span> blue	470	35.5 ... 140	350	5	horizontal 130°, vertical 120°	on request	56
	LW L48G-Q2S2-3K5L-1	<span style="color: white;">○</span> white	0.3 / 0.28	90 ... 280	990	5	horizontal 170°, vertical 135°	Q65110A6452	57

### SmartLED® 0603 0.6 mm

	LS L29K-G1H2-1	<span style="color: red;">●</span> super red	630	1.8 ... 4.5	13	2	extre- mely wide viewing angle 160	Q65110A1758	18
	LS L29K-H1J2-1			2.8 ... 7.1	20			Q65110A1756	
	LS L29K-G1J2-1			1.8 ... 7.1	17			Q65110A1757	
	LO L29K-H2K1-24	<span style="color: orange;">●</span> orange	606	3.55 ... 9	25			Q65110A1747	
	LO L29K-J2L1-24	587	587	5.6 ... 14	40			Q65110A1752	
	LO L29K-H2L1-24			3.55 ... 14	35			Q65110A1751	
	LY L29K-H1J2-26	<span style="color: yellow;">●</span> yellow	587	2.8 ... 7.1	20	2	horizon- tal 160°, vertical 135°	Q65110A1765	18
	LY L29K-J1K2-26			4.5 ... 11.2	32			Q65110A1748	
	LY L29K-H1K2-26			2.8 ... 11.2	28			Q65110A1766	
	LG L29K-F2H1-24	<span style="color: green;">●</span> green	570	1.4 ... 3.55	8			Q65110A1744	
	LG L29K-G2J1-24			2.24 ... 5.6	12			Q65110A1746	
LG L29K-F2J1-24			1.4 ... 5.6	10	Q65110A1745				







## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$I_V$	$\Phi_V$	at $I_F$	$2\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				[mcd]	[mlm]				
	LS L296-N2Q1-1	● super red	633	35.5 ... 90	250	20	horizontal 160°, vertical 135°	Q65110A1753	18
	LS L296-P2Q2-1			56 ... 112	320			Q65110A1755	
	LS L296-N1Q2-1			28 ... 112	275			Q65110A1754	
	LA L296-P2R1-1	● amber (red)	615	56 ... 140	400			Q65110A3236	
	LA L296-Q2R2-1			90 ... 180	500			Q65110A3237	
	LA L296-P1R2			45 ... 180	445			Q65110A3235	
	LO L296-P2R1-24	● orange	606	56 ... 140	400			Q65110A1906	
	LO L296-Q2S1-24			90 ... 224	640			Q65110A1904	
	LO L296-P1S1-24			45 ... 224	530			Q65110A1905	
	LY L296-P2R1-26	● yellow	587	56 ... 140	400			Q65110A1763	
	LY L296-Q2R2-26			90 ... 180	500			Q65110A1762	
	LY L296-P1R2-26			45 ... 180	445			Q65110A1764	
	LP L296-J2L2-25	● pure green	560	5.6 ... 18	35	20	horizontal 160°, vertical 135°	Q65110A3342	18
	LT L29S-N1R2-25	● true green	528	28 ... 180	420	10	horizontal 155°, vertical 135°	Q65110A3218	18
	LT L29S-N2Q1-25			35.5 ... 90	250			Q65110A3219	
	LT L29S-P2R1-25			56 ... 140	400			Q65110A3220	
	LB L293-L2N1-25-1	● blue	470	14 ... 35.5	100	10	horizontal 155°, vertical 135°	Q65110A1788	18
	LB L293-M2P1-36-1			22.4 ... 56	160			Q65110A1791	
	LW L283-P2R1-3K8L-1	○ white	0.31 / 0.28	56 ... 140	400	10	horizontal 170°, vertical 130°	Q65110A1550	18
	LW L28G-R2S2-3K6L-1	○ white	0.3 / 0.28	140 ... 280	990	10	horizontal 170°, vertical 130°	Q65110A2460	35
	LCW L28G-R1S2-4F6G-1	○ warm white	0.42 / 0.4	112 ... 280	950	10	horizontal 170°, vertical 130°	Q65110A4185	35

## Light Emitting Diodes | Lumineszenzdioden


Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	at $I_F$			2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				$I_V$ [mcd]	$\Phi_V$ [mlm]				

### CHIPLED 0603 0.4 mm



	LB Q39E-L2N2-35-1	● blue	470	14 ... 45	90	5	horizontal 155°, verti- cal 135°	Q65110A7212	36
	LT Q39E-Q1S2-35	● true green	528	71 ... 280	530			on request	
	LW Q38E-Q1S2-3K6L-1	○ white	0.3 / 0.28	71 ... 280	520	5	horizontal 155°, verti- cal 135°	Q65110A7210	58
	LB Q39G-L2N2-35-1	● blue	470	14 ... 45	90	5	horizontal 155°, verti- cal 135°	Q65110A7211	36
	LT Q39G-Q1S2-35	● true green	528	71 ... 280	530			on request	
	LW Q38G-Q1S2-3K6L-1	○ white	0.3 / 0.28	71 ... 280	520	5	horizontal 155°, verti- cal 135°	Q65110A7209	58

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	at $I_F$			2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				$I_V$ (min) [mcd]	$I_V$ (typ) [mcd]				

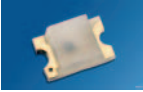
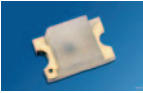
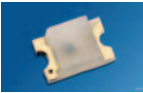
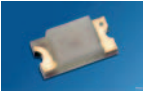

### CHIPLED 0603 0.6 mm

	LH Q974	● hyper-red	645	7.1	15	20	extremely wide viewing angle 160	Q65110A4922	39
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### CHIPLED 0603 0.8 mm

	LS Q971	● super red	628	7.1	11	20	extremely wide viewing angle 160°	Q65110A4282	36
	LO Q971	● orange	606	4.5	9			Q65110A4285	
	LG Q971	● green	570	7.1	10			Q62702P5189	
	LY Q971-H1L2-36	● yellow	587	2.8	6			Q62703Q4699	
	LS Q976	● super red	633	28	70	20	extremely wide viewing angle 160°	Q62702P5187	36
	LO Q976	● orange	606	45	110			Q62702P5188	
	LY Q976	● yellow	587					Q62702P5276	








## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	at $I_F$			2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				$I_V$ (min) [mcd]	$I_V$ (typ) [mcd]	[mA]			
<b>CHIPLED 0805</b>									
	LO R971	● orange	605	2.8	7	20	extremely wide viewing angle 160°	Q62702P5180	19
	LY R971	● yellow	590					Q62702P5181	
	LG R971	● green	570	7.1	18			Q62702P5179	
	LS R976	● super red	633	28	70	20	extremely wide viewing angle 160°	Q62702P5178	19
	LO R976	● orange	606	45	110			Q62702P5101	
	LY R976	● yellow	587					Q62702P5177	
	LH R974	● hyper-red	645	11.2	15	20	extremely wide viewing angle 160°	Q62702P5182	40
<b>CHIPLED 1206</b>									
	LG N971	● green	570	7.1	18	20	160°, extremely wide	Q62702P5191	20
	LY N971	● yellow	587	2.8	7			Q62702P5193	
	LH N974	● hyper-red	645	7.1	15	20	160°, extremely wide	Q62702P5192	41

## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy			at $I_F$	$2\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				$I_V$ [mcd]	$\Phi_V$ [mlm]				
<b>SIDELED®</b>									
	LS A67K-K1L2-1	● super red	630	7.1 ... 18	35	2	120	Q65110A2017	21
	LS A67K-J1L2-1			4.5 ... 18	30			Q65110A2018	
	LS A67K-J1K2-1			4.5 ... 11.2	22			Q65110A2016	
	LO A67K-K1L2-24	● orange	606	7.1 ... 18	40			Q65110A4968	
	LO A67K-K1M2-24			7.1 ... 28	50			Q65110A4969	
	LO A67K-L1M2-24			11.2 ... 28	60			Q65110A4970	
	LY A67K-J2L1-26	● yellow	587	5.6 ... 14	30			Q65110A2065	
	LY A67K-K2M1-26			9 ... 22.4	45			Q65110A2066	
	LY A67K-J2M1-26			5.6 ... 22.4	40			Q65110A2067	
	LG A67K-G2J1-24	● green	570	2.24 ... 5.6	11.76	2	120	Q65110A2289	21
	LG A67K-H2K1-24			3.55 ... 9	18.825			Q65110A2290	
	LG A67K-G2K1-24			2.24 ... 9	16.86			Q65110A2291	
	LP A67K-E1F2-25	● pure green	560	0.71 ... 1.8	3.765			Q65110A2292	
	LP A67K-F1G2-25			1.12 ... 2.8	5.88			Q65110A2293	
	LP A67K-E1G2-25			0.71 ... 2.8	5.265			Q65110A2294	
	LS A676-Q1R2-1	● super red	633	71 ... 180	350	20	120	Q65110A2259	21
	LS A676-R1S1-1			112 ... 224	470			Q65110A2260	
	LS A676-P2S1-1			56 ... 224	400			Q65110A2261	
	LA A676-R1S2-1	● amber (red)	615	112 ... 280	550			Q65110A2253	
	LA A676-S1T1-1			180 ... 355	750			Q65110A2254	
	LA A676-Q2T1-1			90 ... 355	630			Q65110A2255	
	LO A676-R1S2-24	● orange	606	112 ... 280	550			Q65110A2256	
	LO A676-S1T1-24			180 ... 355	750			Q65110A2257	
	LO A676-Q2T1-24			90 ... 355	630			Q65110A2258	
LY A676-R1S2-26	● yellow	587	112 ... 280	550	Q65110A2262				
LY A676-S1T1-26			180 ... 355	750	Q65110A2263				
LY A676-Q2T1-26			90 ... 355	630	Q65110A2264				
	LG A676-P1Q2-24	● green	570	45 ... 112	240	20	120	Q65110A2285	21
	LP A676-L1M2-25	● pure green	560	11.2 ... 28	60			Q65110A2286	
	LB A676-J2K2-1	● blue	465	5.6 ... 11.2	25	10	120	Q65110A2265	21
	LB A676-K2L2-1			9 ... 18	40			Q65110A2266	
	LB A676-J2L2-1			5.6 ... 18	30			Q65110A2267	
	LB A676-M1N2-1			18 ... 45	85			Q65110A5427	
	LS A67B-S2U1-1	● super red	633	224 ... 560	1200	30	120	Q65110A2308	21
	LO A67B-T2V1-24	● orange	606	355 ... 900	1900			Q65110A2307	
	LY A67B-T1V1-26	● yellow	587	280 ... 900	1800			Q65110A2309	




## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy			at $I_F$	2 $\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				$I_V$ [mcd]	$\Phi_V$ [mlm]				
	LS A67F-U1AA-1	● super red	633	450 ... 1400	2780	30	120	Q65110A4723	21
	LR A67F-U2AB-1	● red	625	560 ... 1800	3540			Q65110A4729	
	LA A67F-V2BB-24	● amber (red)	617	900 ... 2800	5550			Q65110A4863	
	LO A67F-V2BB-24	● orange	606					Q65110A4867	
	LY A67F-U2AB-36	● yellow	590	560 ... 1800	3540			Q65110A4722	
	LB A673-L2N1-35	● blue	471	14 ... 35.5	75	10	120	Q65110A1948	21
	LB A673-M2P1-35			22.4 ... 56	120			Q65110A1949	
	LB A673-L2P1-35			14 ... 56	100			Q65110A1950	
	LT A673-P1Q2-25	● true green	532	45 ... 112	240			Q65110A1960	
	LT A673-Q1R2-25			71 ... 180	380			Q65110A1961	
	LT A673-N2S1-25			35.5 ... 224	350			Q65110A1962	
	LW A673-P2R1-5K8L	○ white	0.33 / 0.33	56 ... 140	300	10	120	Q65110A1924	21
	LW A673-Q2S1-5K8L			90 ... 224	480			Q65110A1925	
	LW A673-P1S1-5K8L			45 ... 224	400			Q65110A1926	
	LW A673-P2R1-3K6L			56 ... 140	300			Q65110A4097	
	LB A67C-P2R1-35	● blue	470	56 ... 140	300	20	120	Q65110A1850	21
	LB A67C-Q2S1-35			90 ... 224	480			Q65110A1851	
	LB A67C-P2S1-35			56 ... 224	420			Q65110A1972	
	LT A67C-S2U1-35	● true green	528	224 ... 560	1200			Q65110A1864	
	LT A67C-T2V1-35			355 ... 900	1900			Q65110A1865	
	LT A67C-S2V1-35			224 ... 900	1680			Q65110A1980	
	LCB A67C-R1S2	○ color on demand blue	0.155 / 0.1	112 ... 280	590	20	120	on request	21
	LW A67C-S2U1-5K8L	○ white	0.33 / 0.33	224 ... 560	1200	20	120	Q65110A1927	21
	LW A67C-T2U2-5K8L			355 ... 710	1600			Q65110A1928	
	LW A67C-S2U2-5K8L			224 ... 710	1400			Q65110A1929	
	LW A67C-S2U1-3K6L			224 ... 560	1200			Q65110A4101	
	LP A675-N1P2-25	● pure green	560	28 ... 71	150	30	120	Q65110A2310	21

## Light Emitting Diodes | Lumineszenzdioden


Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$I_V$			2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				[mcd]	$\Phi_V$ [mlm]	at $I_F$ [mA]			

### SIDELED® Silicone

	LB A6SG-S2U1-35	<span style="color: blue;">●</span> blue	470	224 ... 560	1050	20	120	Q65110A7882	48
	LT A6SG-V2AB-35	<span style="color: green;">●</span> true green	528	900 ... 1800	3650			Q65110A7884	
	LW A6SG-V2AB-5K8L	<span style="color: white;">○</span> white	0.33 / 0.33	900 ... 1800	4000	20	120	Q65110A7886	48
	LCB A6SG-U2AB	<span style="color: white;">○</span> color on demand blue	0.2 / 0.3	560 ... 1800	2950	20	120	on request	48








Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm]	$I_V$ [mcd]		at $I_F$ [mA]	2 $\phi$ (typ.) (50% $I_V$ ) [°]	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				color 1	color 2				

### Multi SIDELED®

	LSG A671-JL+KM-1*	<span style="color: red;">●</span> super red <span style="color: green;">●</span> green	628 / 570	4.5 ... 18	7.1 ... 28	10	120	Q65110A2431	22
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\*not for new design

## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy				2 $\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				$I_V$ [mcd]	$\Phi_V$ [mlm]	at $I_F$ [mA]			
<b>Micro SIDELED®</b>									
	LS Y876-P2R1-1*	● super red	633	56 ... 140	300	20	120	Q65110A2411	23
	LS Y876-Q2S1-1*			90 ... 224	480			Q65110A1628	
	LS Y876-P2S1-1*			56 ... 224	420			Q65110A2412	
	LO Y876-Q2S1-24	● orange	606	90 ... 224	480			Q65110A2408	
	LO Y876-R2T1-24			140 ... 355	760			Q65110A2409	
	LO Y876-Q2T1-24			90 ... 355	665			Q65110A2410	
	LY Y876-Q2S1-26	● yellow	587	90 ... 224	480			Q65110A2413	
	LY Y876-R2T1-26			140 ... 355	760			Q65110A2414	
	LY Y876-Q2T1-26			90 ... 355	665			Q65110A2415	
	LB Y87S-L1M2-35	● blue	470	11.2 ... 28	60	10	120	Q65110A2416	23
	LB Y87S-M1N2-35			18 ... 45	95			Q65110A2417	
	LT Y87S-N1P2-35	● true green	528	28 ... 71	150			Q65110A2419	
	LT Y87S-P1Q2-35			45 ... 112	235			Q65110A2420	
	LB Y87C-P1Q2-35	● blue	470	45 ... 112	240	20	120	Q65110A1862	23
	LB Y87C-Q1R2-35			71 ... 180	380			Q65110A1863	
	LB Y87C-P1R2-35			45 ... 180	340			Q65110A1979	
	LW Y87C-S1T2-3K8L	○ white	0.32 / 0.31	180 ... 450	950	20	120	Q65110A1946	23
	LW Y87C-T1U1-3K8L			280 ... 560	1200			Q65110A1947	
<b>Micro SIDELED® 1 mm Silicone</b>									
	LW Y8SG-U1V1-3K6L-1	○ white	0.3 / 0.28	450 ... 900	1900	20	120	Q65110A1709	24
<b>Micro SIDELED® 0.8 mm Silicone</b>									
	LW Y1SG-VHAF-EKJM-1	○ white	0.3 / 0.28	720 ... 1400	3000	20	120	Q65110A4283	25
	LW Y2SG-VHAF-EKJM-1	○ white	0.3 / 0.28	800 ... 1400	3000	20	120	Q65110A4583	37

\*not for new design

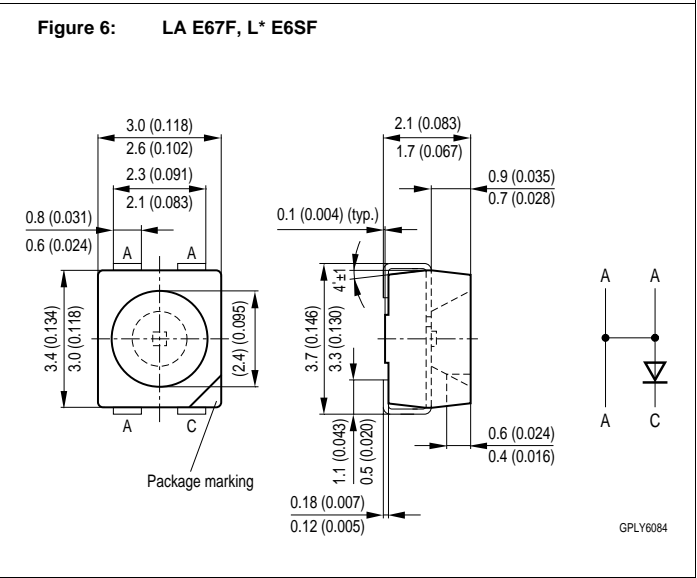
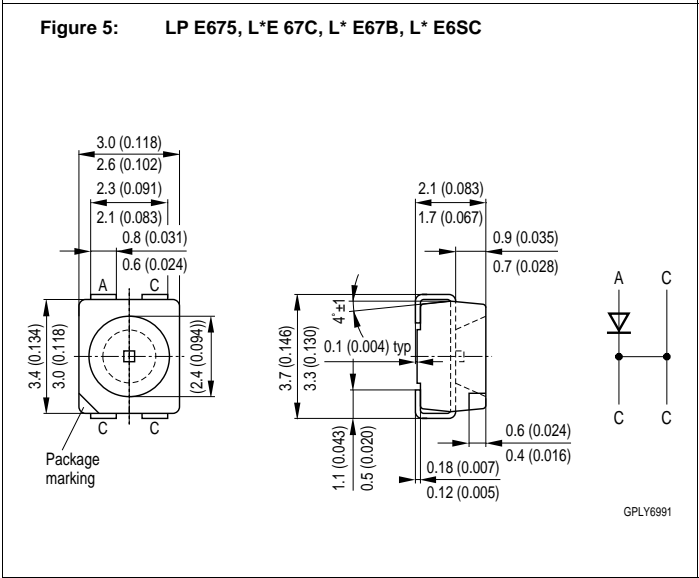
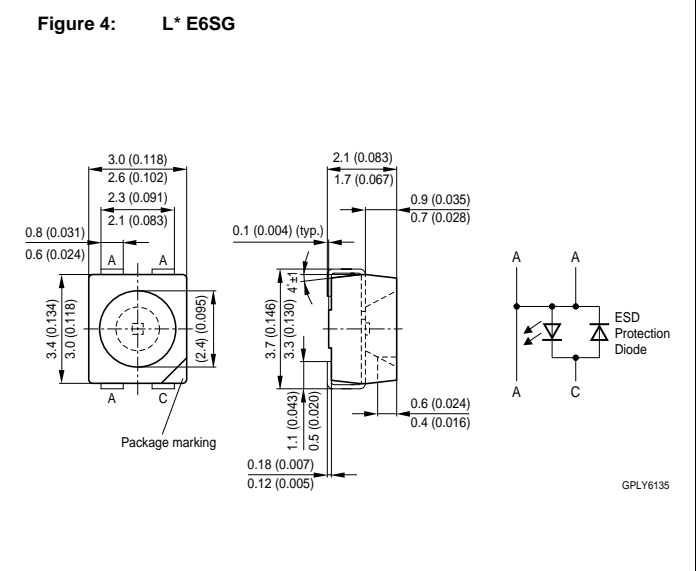
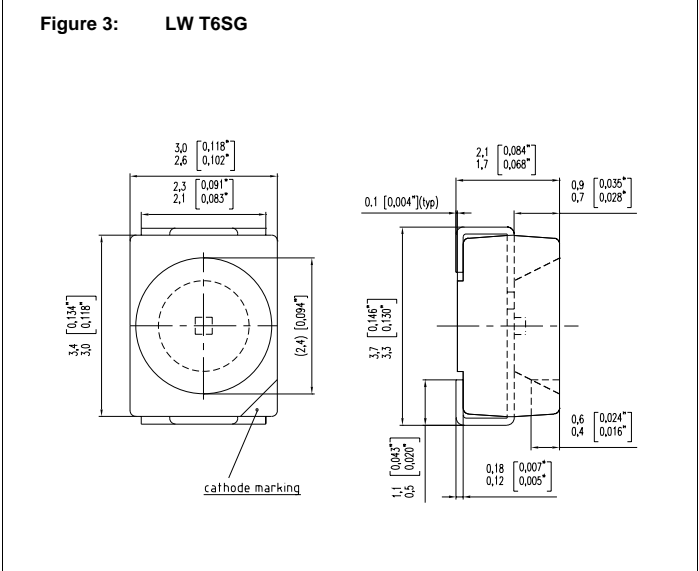
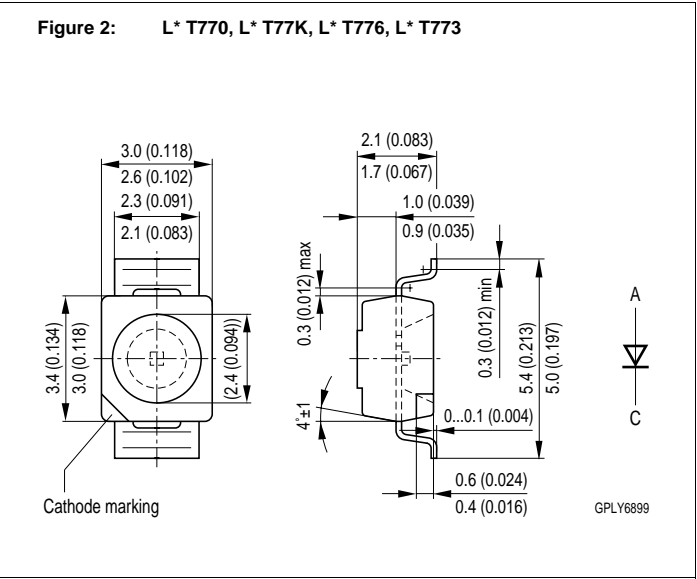
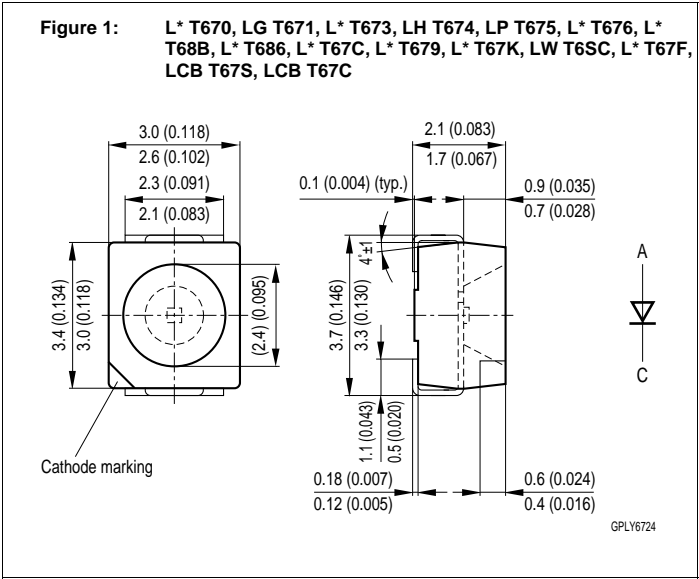
## Light Emitting Diodes | Lumineszenzdioden

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy				2 $\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeich- nung
				$I_V$ [mcd]	$\Phi_V$ [mlm]	at $I_F$ [mA]			
<b>FIREFLY® 0.5 mm</b>									
	LS V196-N2Q1-1	<span style="color: red;">●</span> super red	633	35.5 ... 90	250	20	horizontal 140°, vertical 135°	Q65110A1847	26
	LO V196-P2R1-24	<span style="color: orange;">●</span> orange	606	56 ... 140	400			Q65110A3464	
	LY V196-P1Q2-26	<span style="color: yellow;">●</span> yellow	587	45 ... 112	315			Q65110A3468	
	LG V196-N1P2-24	<span style="color: green;">●</span> green	570	28 ... 71	200			Q65110A3462	
	LB V19G-P2R1-35	<span style="color: blue;">●</span> blue	470	56 ... 140	455	10	horizontal 155°, vertical 135°	Q65110A3341	27
	LW V18C-Q1S1-3K6L-1	<span style="color: white;">○</span> white	0.3 / 0.28	71 ... 224	530	10	horizontal 130°, vertical 180°	Q65110A2592	26
	LW V18G-R2T1-3K6L-1	<span style="color: white;">○</span> white	0.3 / 0.28	140 ... 355	1100	10	horizontal 130°, vertical 180°	Q65110A4878	27
<b>FIREFLY® 0.6 mm</b>									
	LS V296-N2Q1-1	<span style="color: red;">●</span> super red	633	35.5 ... 90	250	20	horizontal 140°, vertical 135°	Q65110A3466	38
	LO V296-P2R1-24	<span style="color: orange;">●</span> orange	606	56 ... 140	400			Q65110A3465	
	LY V296-P1Q2-26	<span style="color: yellow;">●</span> yellow	587	45 ... 112	315			Q65110A3469	
	LG V296-N1P2-24	<span style="color: green;">●</span> green	570	28 ... 71	200			Q65110A3463	
	LW V28G-R2T1-3K6L-1	<span style="color: white;">○</span> white	0.3 / 0.28	140 ... 355	1100	10	horizontal 130°, vertical 180°	Q65110A2747	28



# Light Emitting Diodes | Lumineszenzdioden

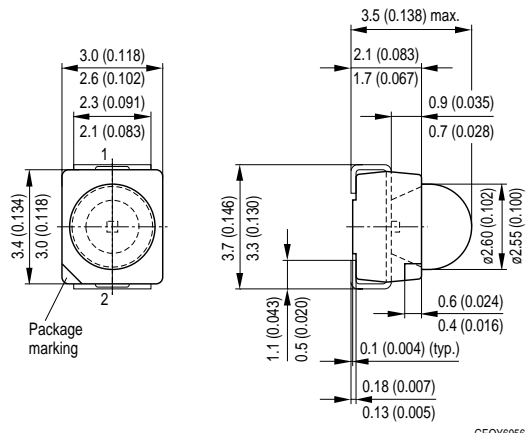
Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)



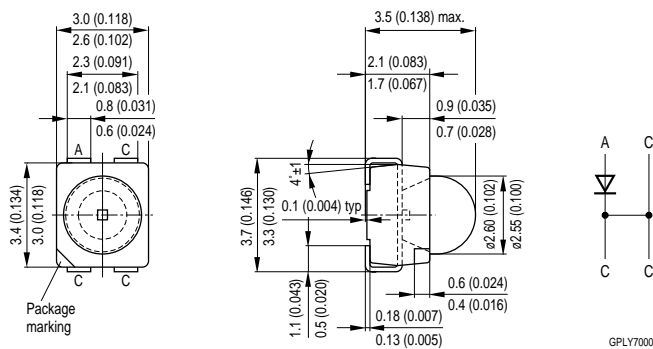
# Light Emitting Diodes | Lumineszenzdioden

Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)

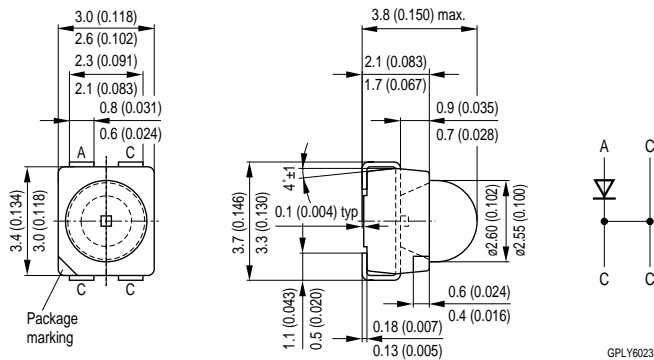
**Figure 7: LP T655**



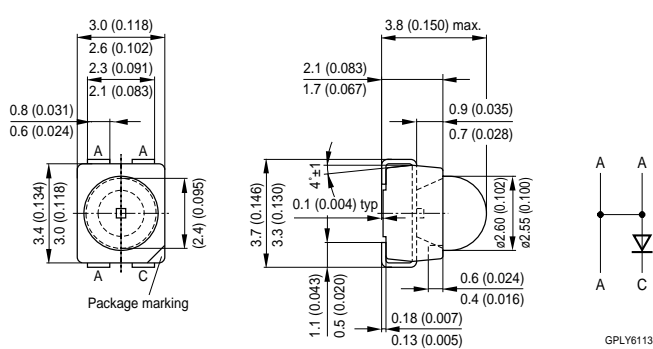
**Figure 8: L\* E65B, L\* E63C**



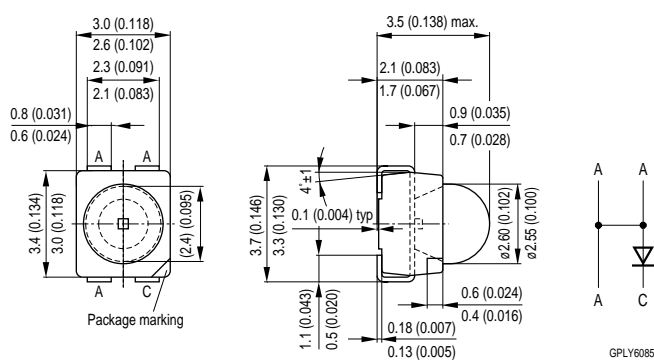
**Figure 9: L\* E63B**



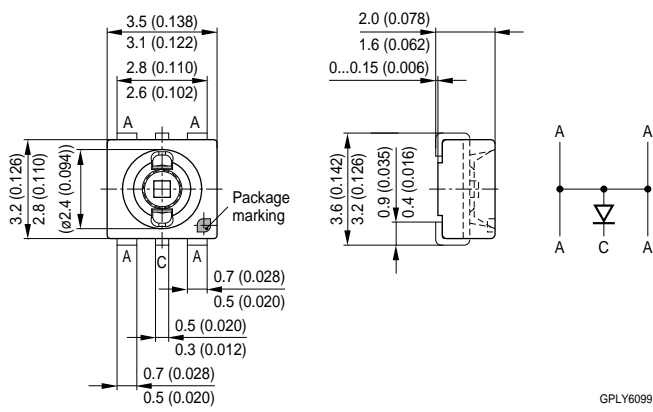
**Figure 10: LA E63F**



**Figure 11: LA E65F**



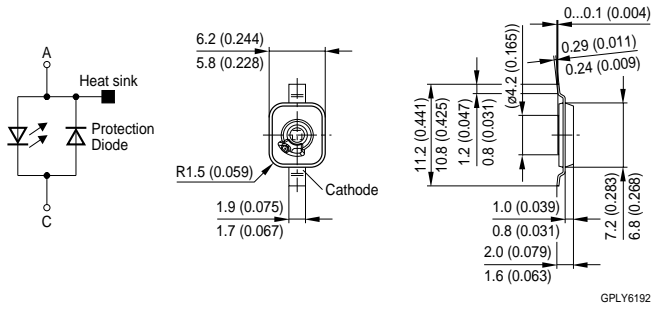
**Figure 12: LA G6SP, LR G6SP, LY G6SP**



# Light Emitting Diodes | Lumineszenzdioden

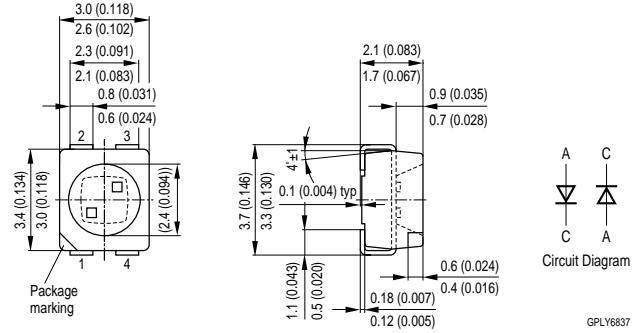
Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)

**Figure 13: L\* W5SG**



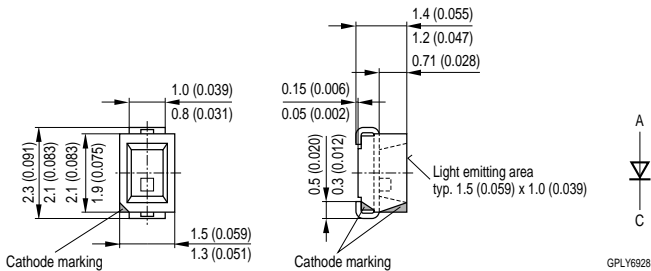
GPLY6192

**Figure 14: L\*\* T671, L\*\* T676, L\*\* T670, L\*\*T67B, L\*\* T67C**



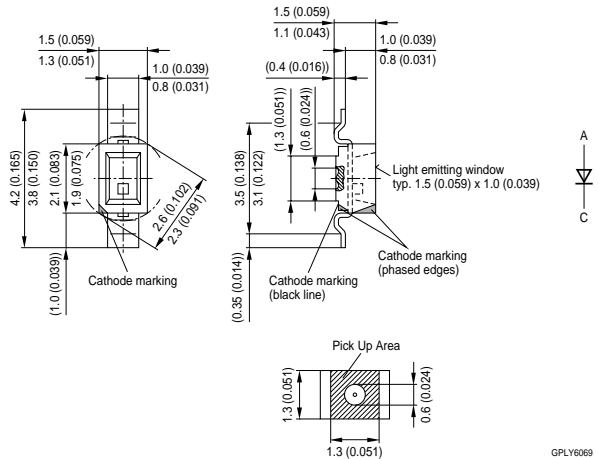
GPLY6837

**Figure 15: L\* M670, L\* M676, L\* M673, L\* M67K, LP M675, L\*M67B, L\*M67C**



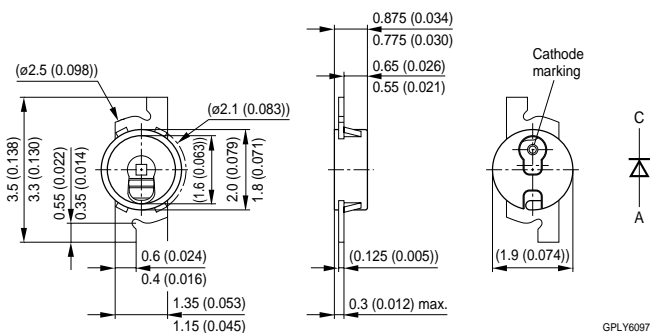
GPLY6928

**Figure 16: L\* M47K, L\* M47C**



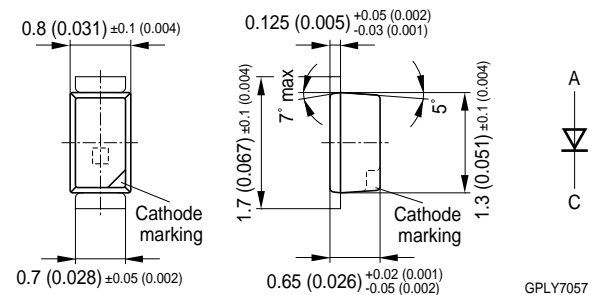
GPLY6069

**Figure 17: L\* P47K, L\*P47B, L\* P473**



GPLY6097

**Figure 18: L\* L296, L\* L29S, L\* L293, L\* 29K, LW L283**

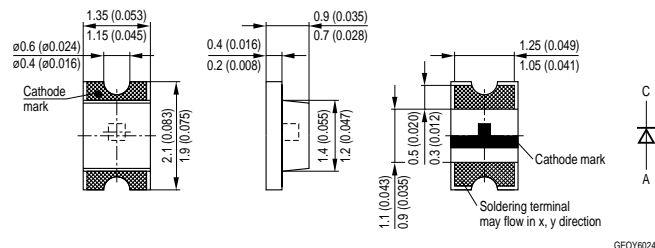


GPLY7057

# Light Emitting Diodes | Lumineszenzdioden

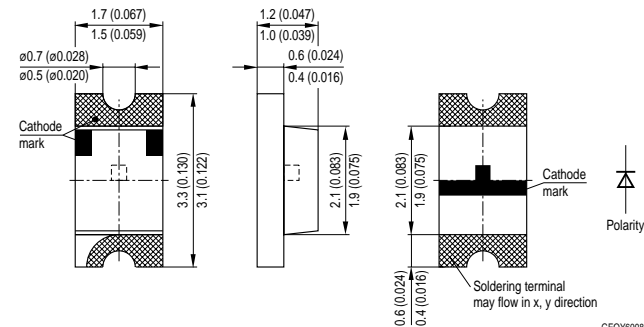
Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)

**Figure 19: L\* R971, L\* R976**



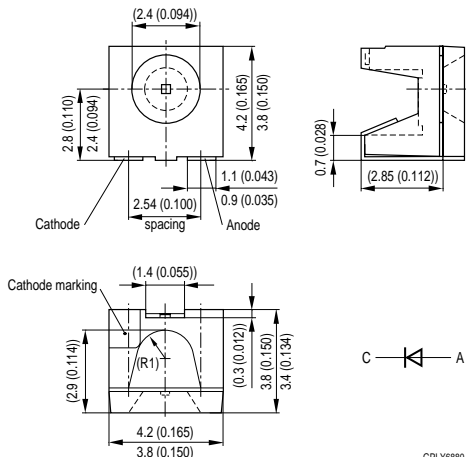
GE0Y6024

**Figure 20: L\* N971**



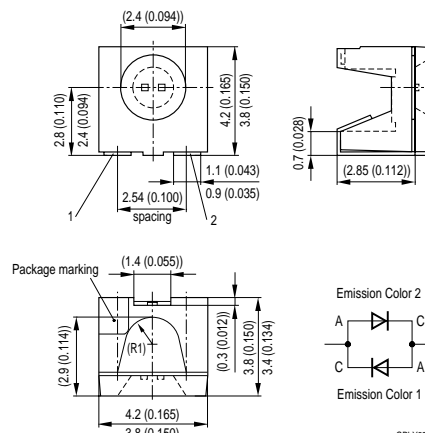
GE0Y6008

**Figure 21: L\* A676, L\* A673, L\* A67B, L\* A67F, L\* A67K, L\* A67C, LP A675**



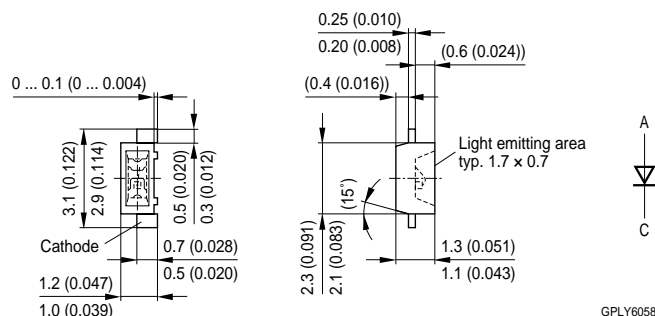
GPLY6880

**Figure 22: L\*\* A671**



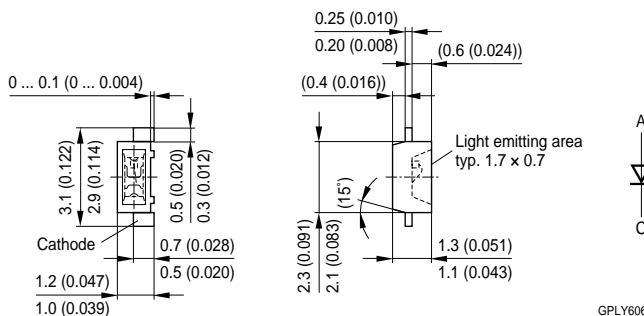
GPLY6950

**Figure 23: L\* Y870, L\* Y876, L\* Y87S, L\* Y87C**



GPLY6058

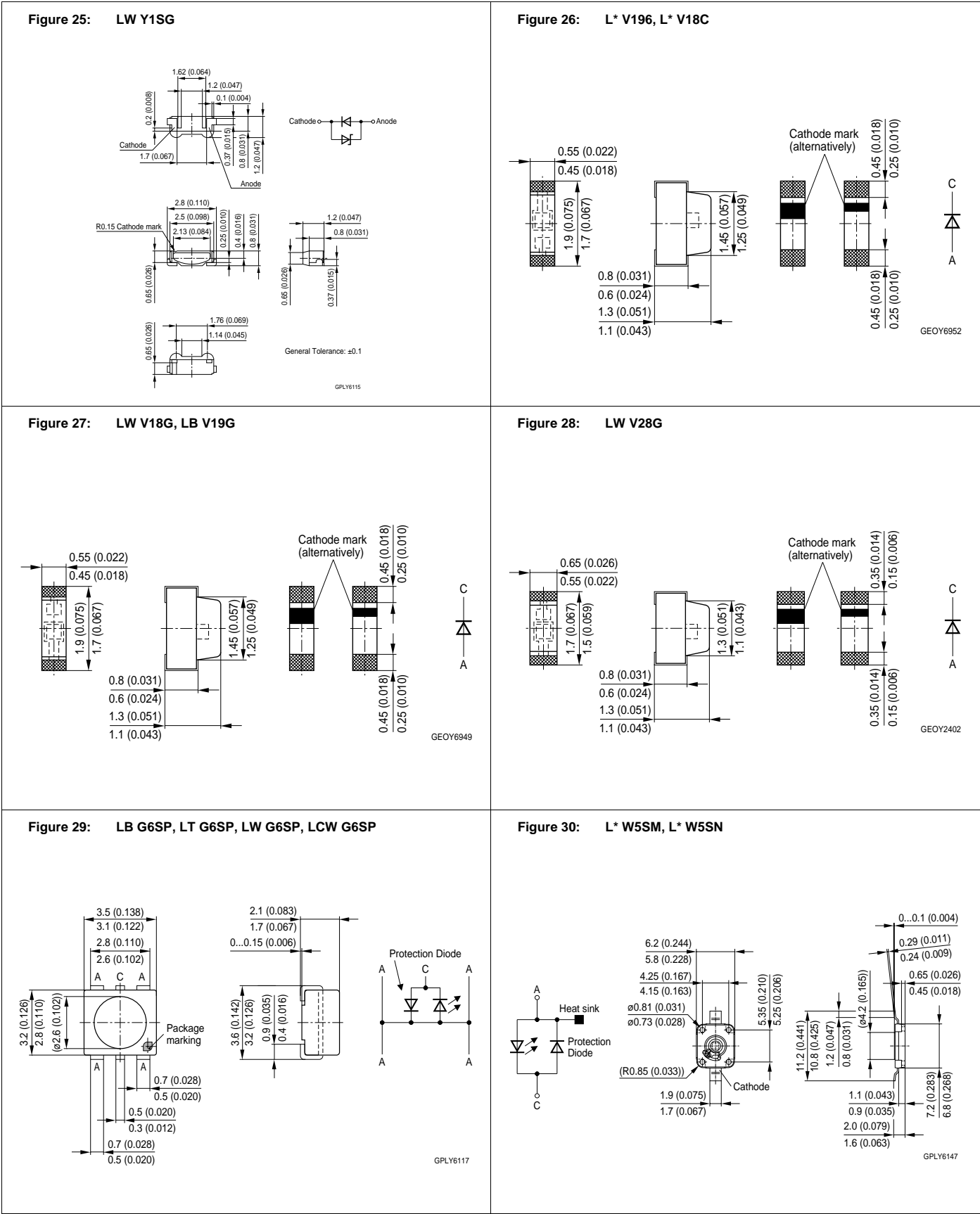
**Figure 24: LW Y8SG**



GPLY6065

# Light Emitting Diodes | Lumineszenzdioden

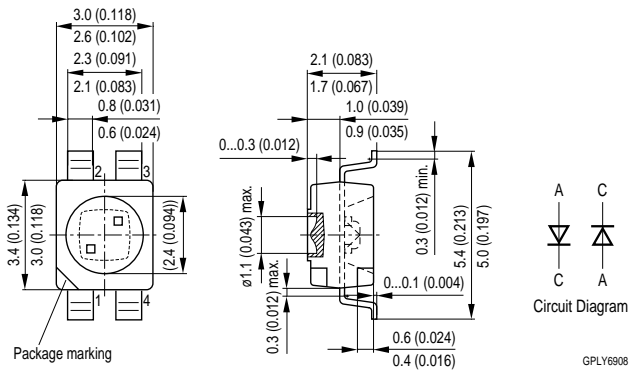
Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)



# Light Emitting Diodes | Lumineszenzdioden

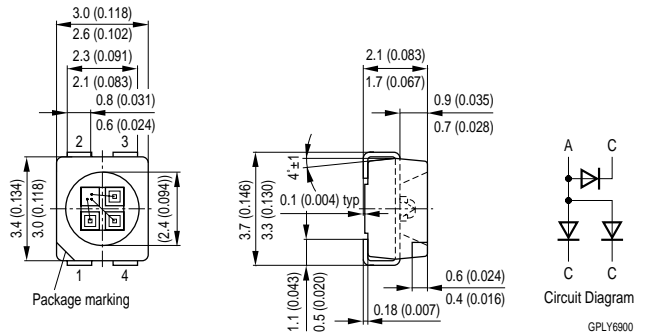
Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)

**Figure 31: L\*\* T770, L\*\* T77K**



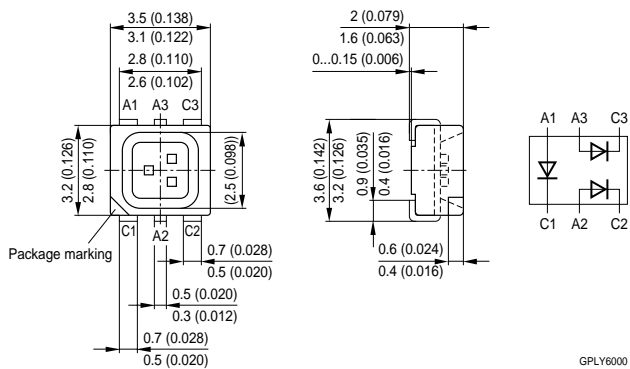
GPLY6908

**Figure 32: LATB T686, LATB T66B, LATB T66C**



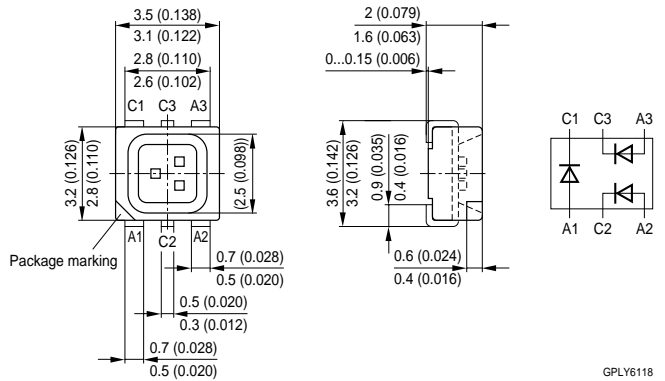
GPLY6900

**Figure 33: LATB G66B**



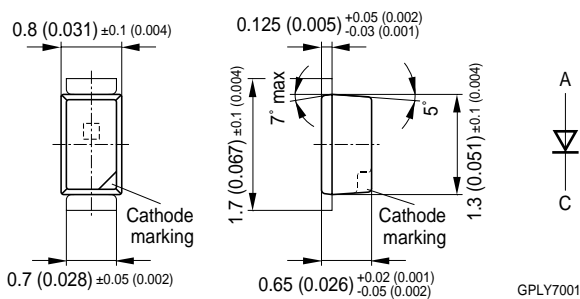
GPLY6000

**Figure 34: LRTB G6SG, LRTB G6TG, LWWW G6SG, LYYY G6SF**



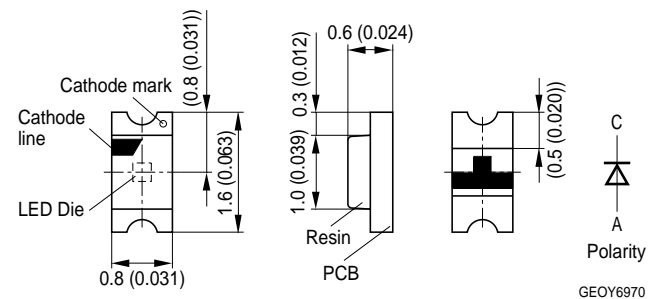
GPLY6118

**Figure 35: LB L29G, LW L28G, LCW L28G**



GPLY7001

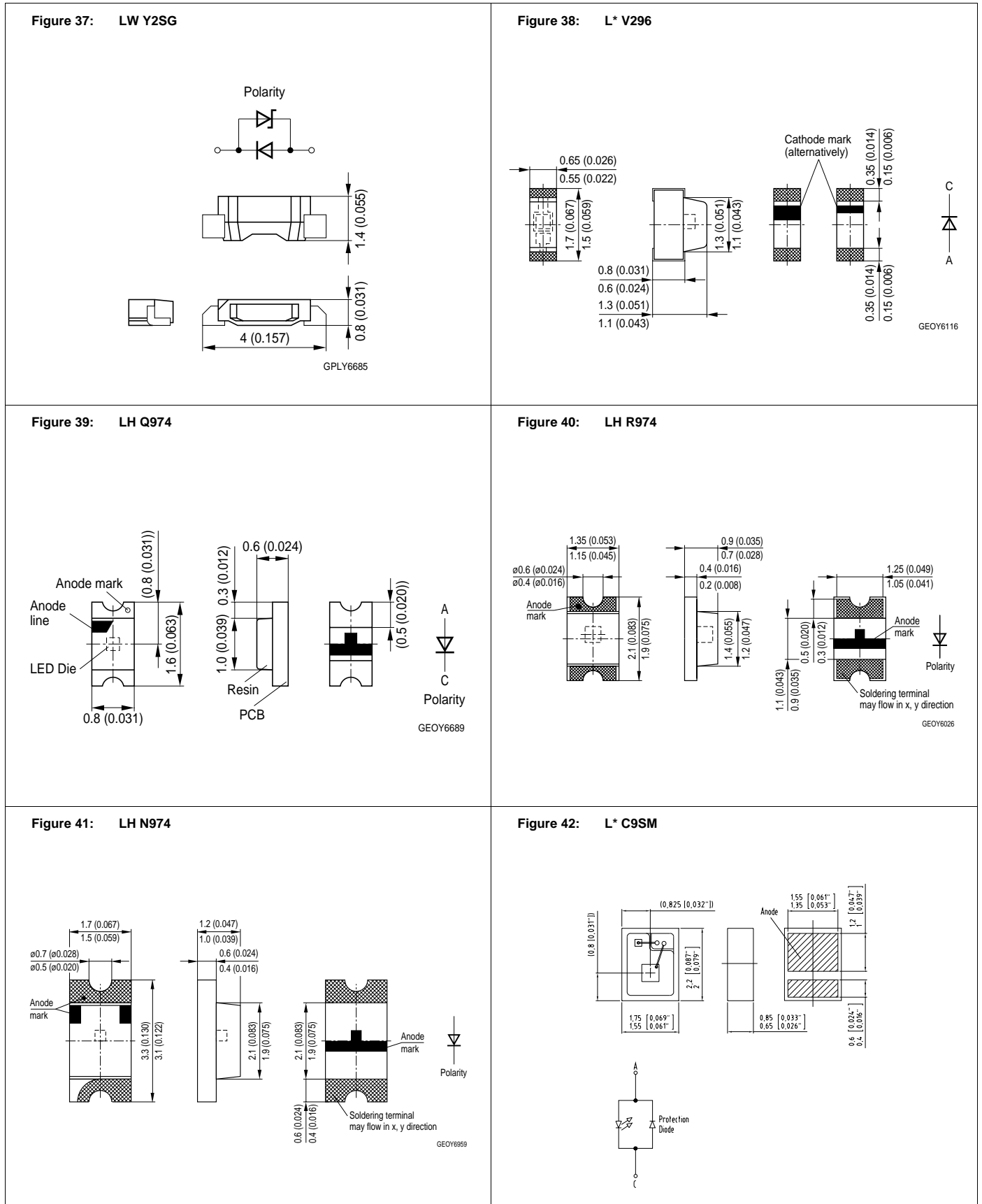
**Figure 36: L\* Q971, L\* Q976**



GEQY6970

# Light Emitting Diodes | Lumineszenzdioden

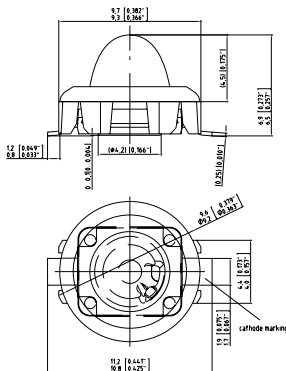
Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)



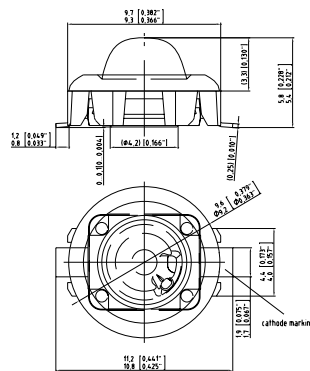
# Light Emitting Diodes | Lumineszenzdioden

Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)

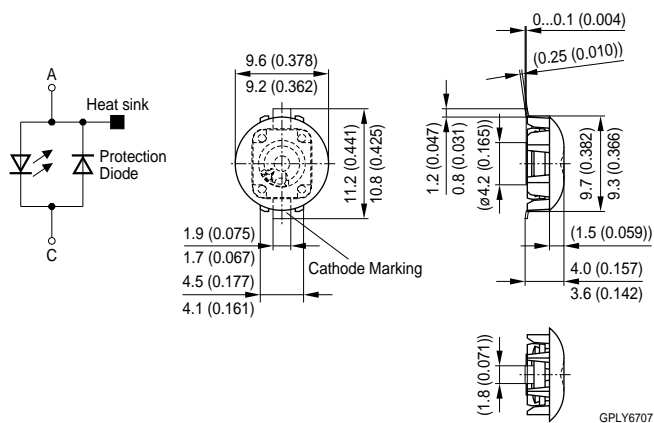
**Figure 43: L\* W51M, LCW W51M**



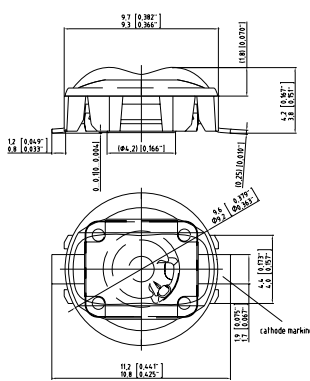
**Figure 44: L\* W55M, LCW W55M**



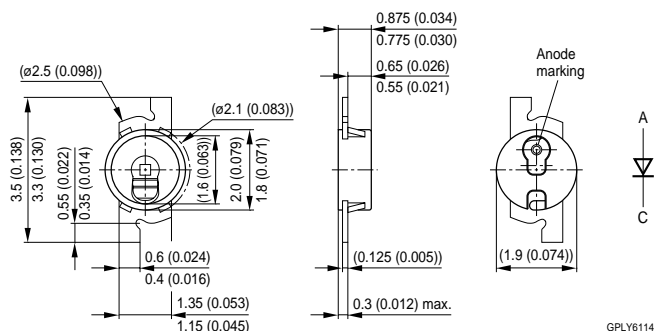
**Figure 45: L\* W5KM**



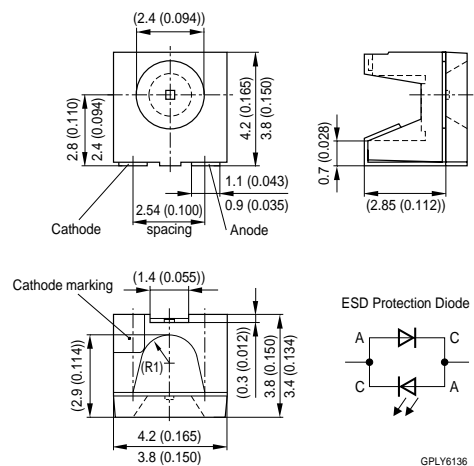
**Figure 46: L\* W5JM**



**Figure 47: L\* P47F, LW P4SG**



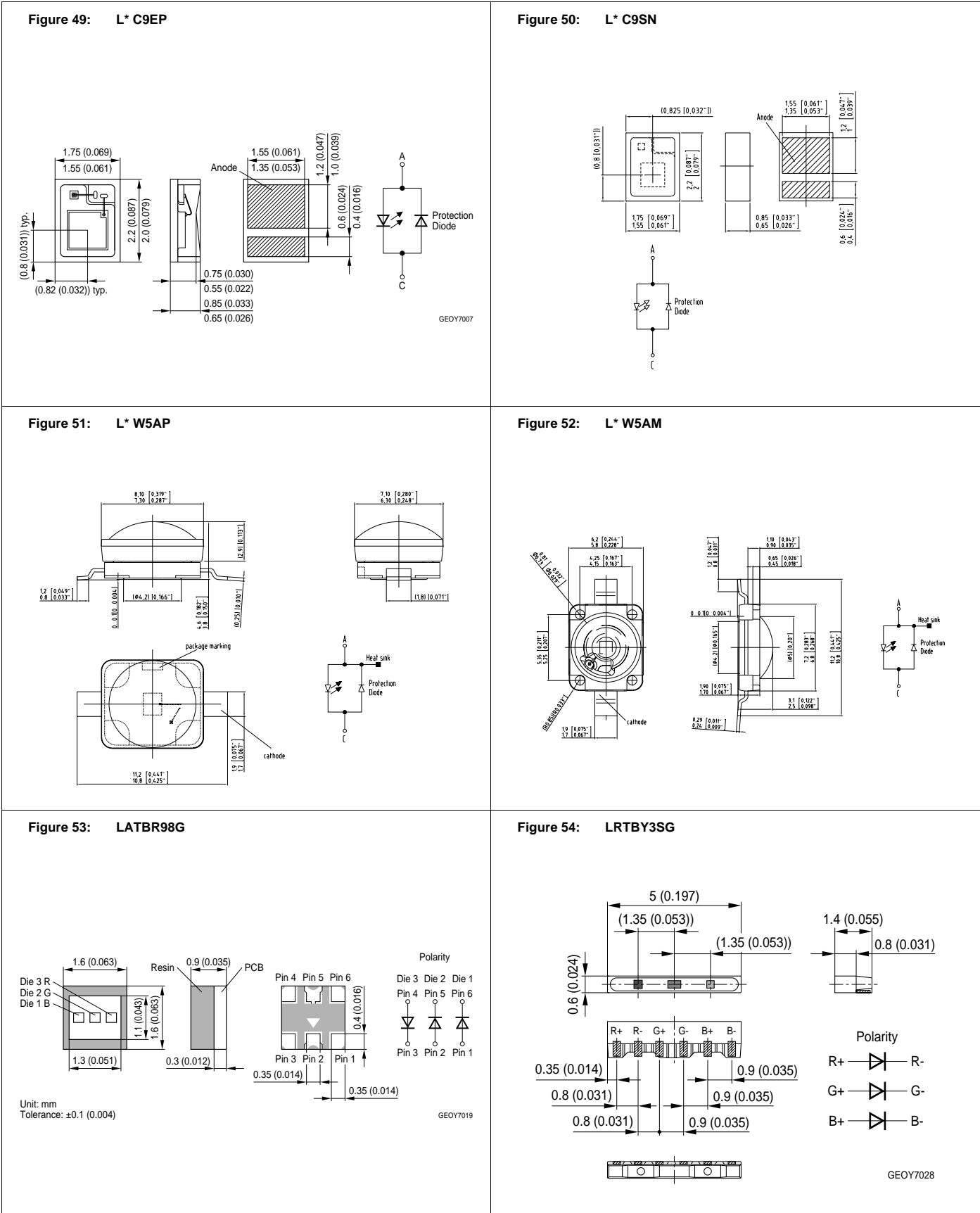
**Figure 48: L\* A6SG**





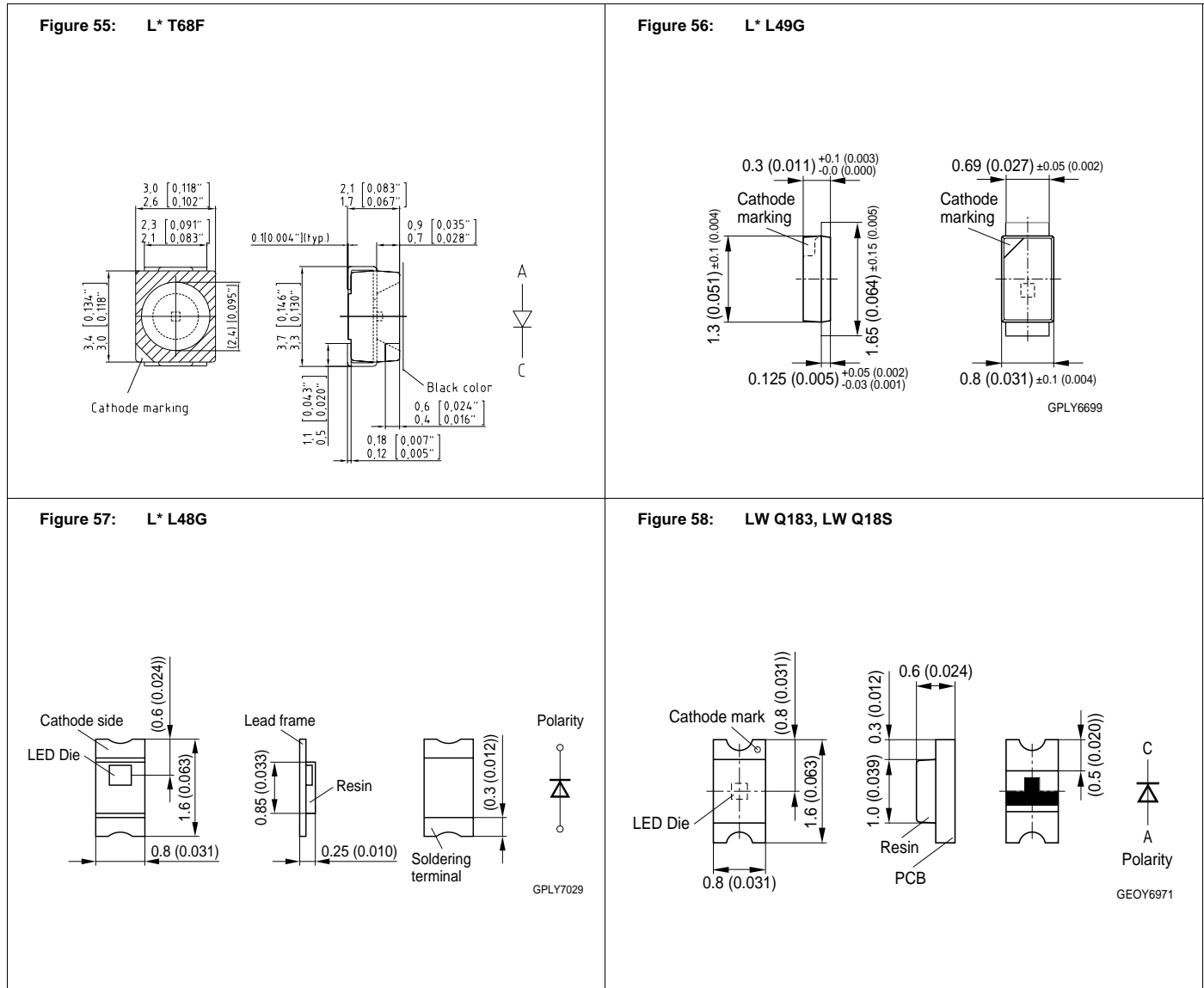
# Light Emitting Diodes | Lumineszenzdioden

Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)






# Light Emitting Diodes | Lumineszenzdioden

Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)







## Radial Packages

Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	Package Colour Gehäusefarbe	$I_V$	$\Phi_V$	at $I_F$	$2\varphi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
					[mcd]	[mlm]	[mA]			
<b>4 mm oval Packages</b>										
	LY O286-T1V1-46	<span style="color: yellow;">●</span> yellow	587	colorless clear	280 ... 900	1300	20	90	Q65110A4050	1
<b>5 mm oval Packages</b>										
	LY O266-U1AB-46	<span style="color: yellow;">●</span> yellow	587	colorless clear	450 ... 1800	750	20	90	Q65110A4049	2
	LT O58G-A7CW-36-AN18	<span style="color: green;">●</span> true green	528	colorless clear	1400 ... 4500	3890	20	100	Q65110A6228	3
	LB O58G-TU7-69-AN18	<span style="color: blue;">●</span> blue	470		280 ... 900	780			Q65110A6226	
	LR O58F-VBW-1-AN18	<span style="color: red;">●</span> red	625		710 ... 2800	1360			Q65110A6227	

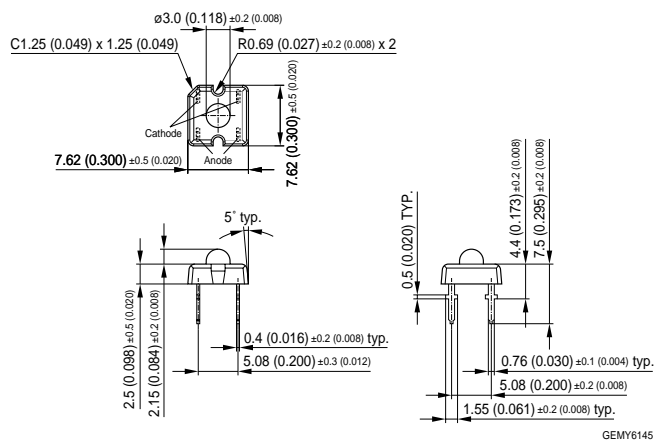


## UltraFlux

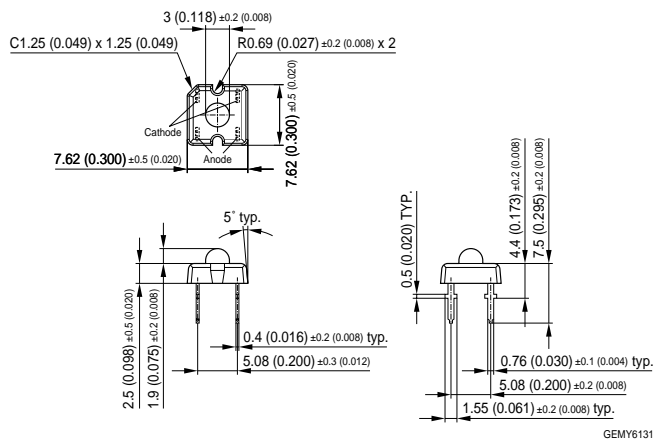
Package Gehäuse	Type Bezeichnung	Emission color Emissionsfarbe	$\lambda_{\text{dom}}$ (typ.) [nm] / Color coord. Cx/Cy	$\Phi_V$	$I_V$ (typ)	at $I_F$	2 $\phi$ (typ.) (50% $I_V$ )	Ordering Code Bestellnummer	Package Fig. Bauteilzeichnung
				[mlm]	[mcd]				
	LA S33B-BBDA-24-1	● amber (red)	617	2240 ... 5600	3630	70	40	Q65110A5505	1
	LY S33B-BBDA-45-1	● yellow	587					Q65110A5514	
	LA S35B-BBDA-24-1	● amber (red)	617	2240 ... 5600	2690	70	70	Q65110A5507	2
	LY S35B-BBDA-45-1	● yellow	587					Q65110A5516	
	LA S33F-DBFA-24-1	● amber (red)	617	5600 ... 14000	7680	70	40	Q65110A5506	3
	LY S33F-DAEB-45-1	● yellow	590	4500 ... 11200	6160			Q65110A5515	
	LA S35F-DBFA-24-1	● amber (red)	617	5600 ... 14000	5640	70	70	Q65110A5508	4
	LY S35F-DAEB-45-1	● yellow	590	4500 ... 11200	4520			Q65110A5517	

Outline drawings - Dimensions in mm (inch) | Outline drawings - Dimensions in mm (inch)

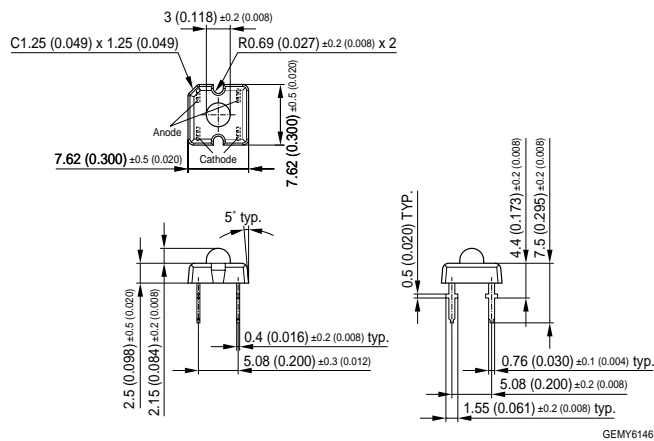
**Figure 1: L\* S33B**



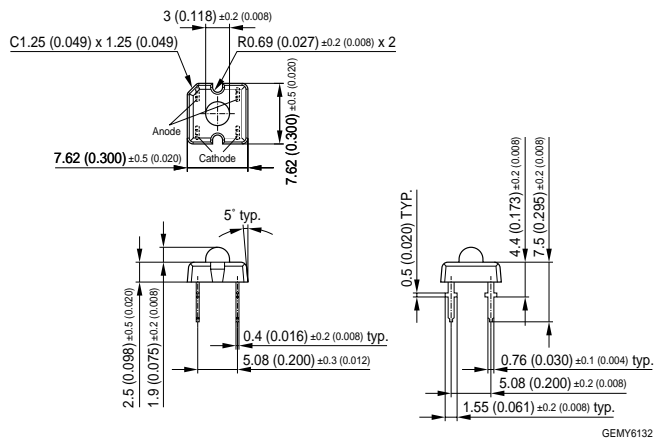
**Figure 2: L\* S35B**



**Figure 3: L\* S33F**



**Figure 4: L\* S35F**



## Light Emitting Diodes | Lumineszenzdioden

### Soldering conditions and profiles

When soldering the component into position, make sure that it is not thermally overloaded. The maximum junction temperature may only be exceeded briefly (for no more than 1 min.).

Permissible soldering methods and preconditioning for in this catalog stated LED are:

### Lötbedingungen und -Profile

Beim Einlöten ist darauf zu achten, dass das Bauelement thermisch nicht überlastet wird. Die maximale Sperrschichttemperatur darf nur kurzzeitig (max. 1 min) überschritten werden.

Zulässige Lötverfahren und Vorbehandlung für im Katalog enthaltene LED siehe Tabelle:

Package	IR Reflow Soldering	TTW Soldering <sup>1)</sup>	Preconditioning acc. to Jedec Level
TOPLED®	X	X	4/2
Power TOPLED®	X	X	4/2 <sup>2)</sup>
Advanced Power TOPLED®	X	–	4/2
Golden DRAGON®	X	–	4
Golden DRAGON® with lens	– <sup>3)</sup>	– <sup>3)</sup>	4
Platinum DRAGON®	X	–	4
OSLUX®	X	–	4
CERAMOS®	X	–	4
Multi TOPLED®	X	X	2
6-lead MULTILED®	X	–	4/2
Mini TOPLED /Santana®	X	X	2
PointLED®	X	–	4/2
SmartLED® 0603	X	x	2
CHIPLED	X	–	3/2
SIDELED®	X	X	4/2
Multi SIDELED®	X	–	2
Micro SIDELED® 1.0 mm	X	X	4/3/2 <sup>2)</sup>
Micro SIDELED® 0.8 mm	X	–	4/3/2 <sup>2)</sup>
Micro SIDELED® 0.6 mm	X	–	4/3/2 <sup>2)</sup>
FIREFLY®	X	–	2
5mm (T1 3/4) LED	–	X	n.a.
3mm (T1) LED	–	X	n.a.
ARGUS®	–	X	n.a.
UltraFlux®	–	X	n.a.

<sup>1)</sup> except reverse mount packages

<sup>2)</sup> for details refer to product datasheet

<sup>3)</sup> suitable for selective soldering

<sup>1)</sup> ausgenommen reverse mount Gehäuse

<sup>2)</sup> Details siehe Produktdatenblatt

<sup>3)</sup> für Selektivlöten geeignet

### Cleaning solvents for soldered-in LEDs

OSRAM LEDs can be cleaned with isopropyl alcohol. When applying other solvents it has to be tested beforehand if the LED is damaged or not. FREON and other Fluoro-chloro Carbon Hydrogen solvents should not be used due to worldwide regulation.

We do not recommend cleaning LEDs in an ultrasonic bath. The influence of ultrasound on our devices depends on the ultrasonic power, temperature, treatment time and solvent applied. If ultrasonic cleaning can not be avoided it has to be determined beforehand if the device is damaged.

Recommended solder pads can be found in the related datasheet on <http://catalog.osram-os.com>

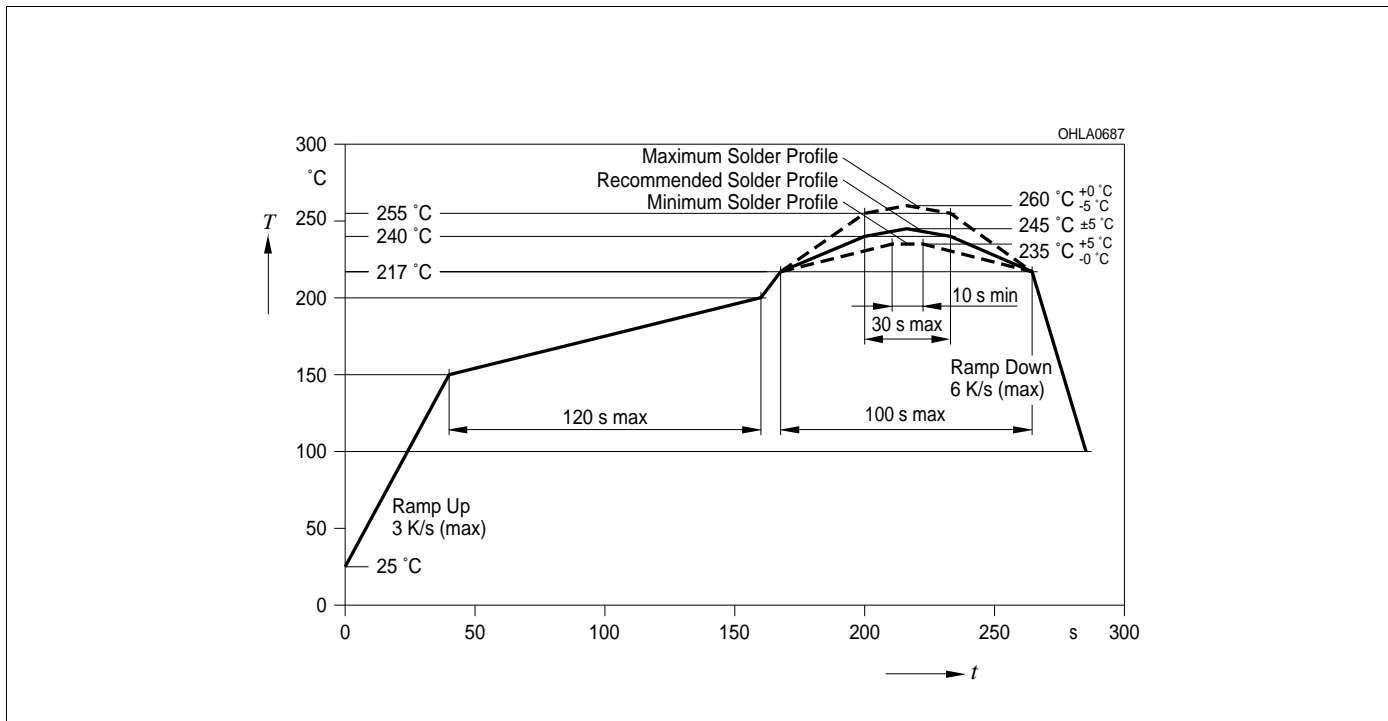
### Lösungsmittel zum Reinigen von eingelöteten LED

OSRAM LEDs können mit Isopropanol gereinigt werden. Wenn andere Lösungsmittel angewendet werden sollen, muss zuvor überprüft werden, ob die LEDs durch diese Chemikalien angegriffen werden oder nicht. FREON und andere Fluorchlorkohlenwasserstoffe (FCKWs) sollten wegen der weltweit geltenden gesetzlichen Bestimmungen nicht benutzt werden.

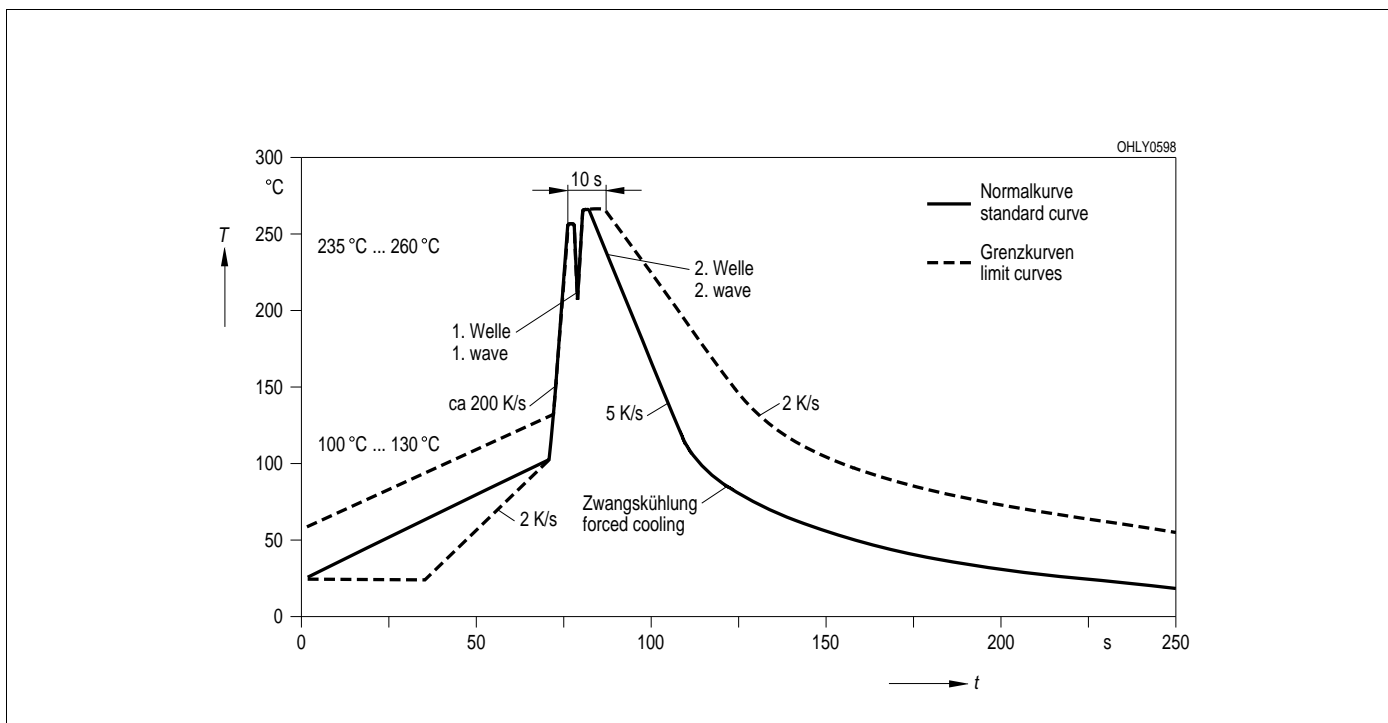
Wir empfehlen nicht, die LEDs im Ultraschallbad zu reinigen. Ob Ultraschall die LEDs schädigt oder nicht hängt von der Leistung, der Temperatur und der Einwirkzeit ab. Wenn Ultraschall zur Reinigungsunterstützung eingesetzt werden muss, muss zuvor sicher gestellt werden, dass die gewählten Parameter die LED nicht schädigen.

Lötpaddingvorschläge finden Sie in den Datenblättern unter <http://catalog.osram-os.com>

IR-reflow-soldering-profile acc. to J-STD-020C



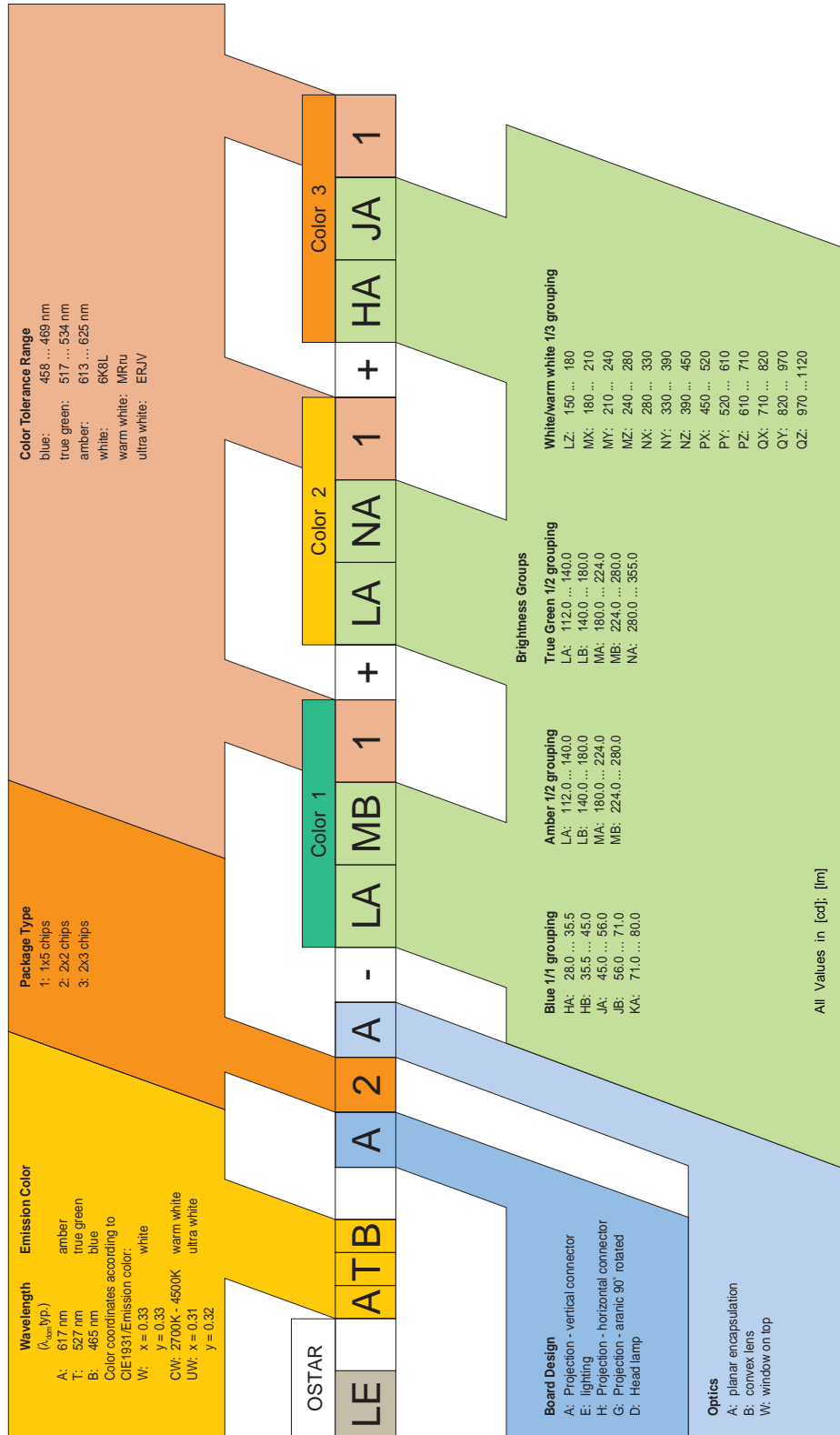
Wave soldering (dual wave) profile acc. to CECC 00802





OSTAR® type designation system

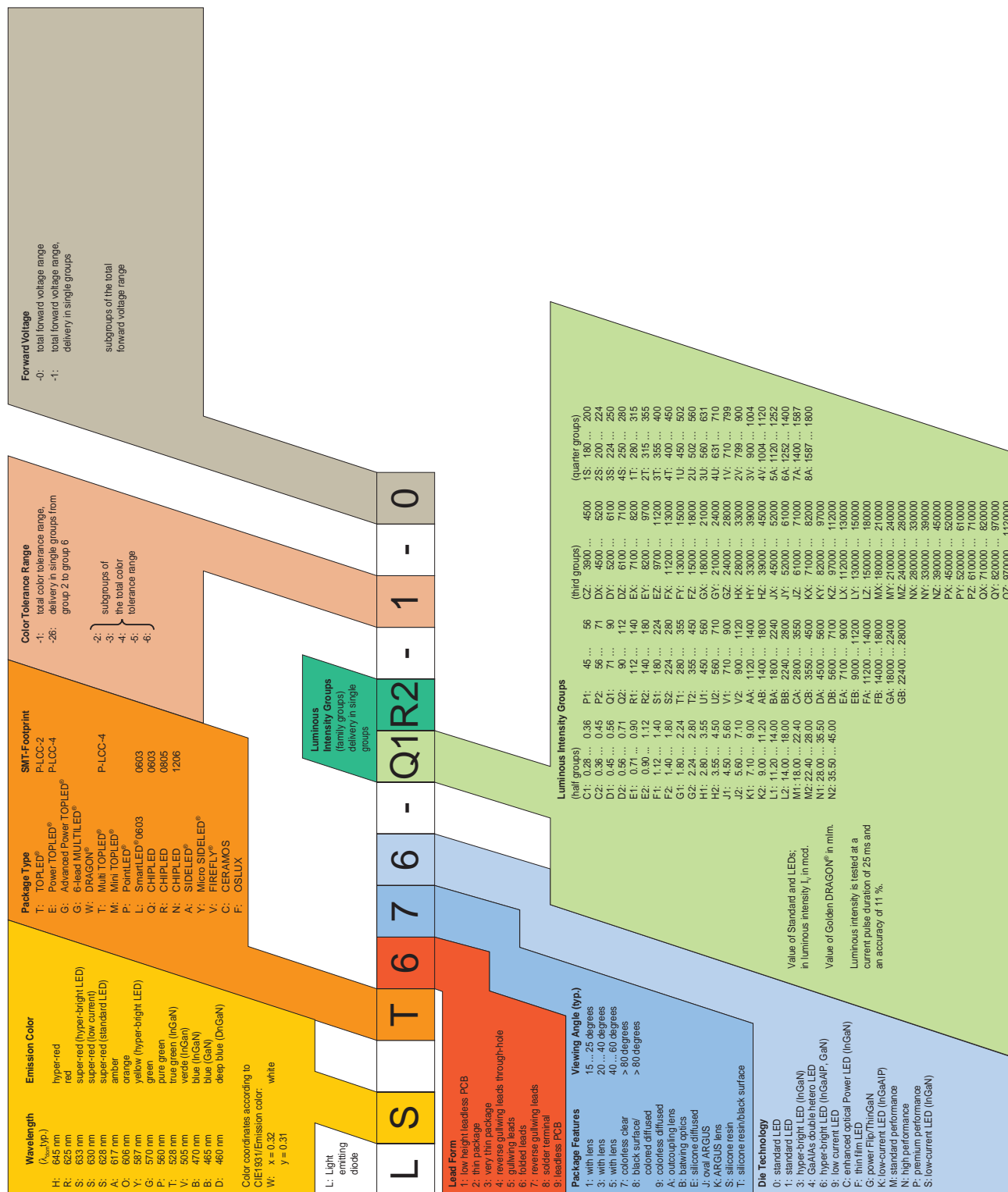
OSTAR® Typenbezeichnungsschema



# Light Emitting Diodes | Lumineszenzdioden

## SMT LED type designation system

## SMT-LED-Typenbezeichnungsschema



### Taping of LEDs

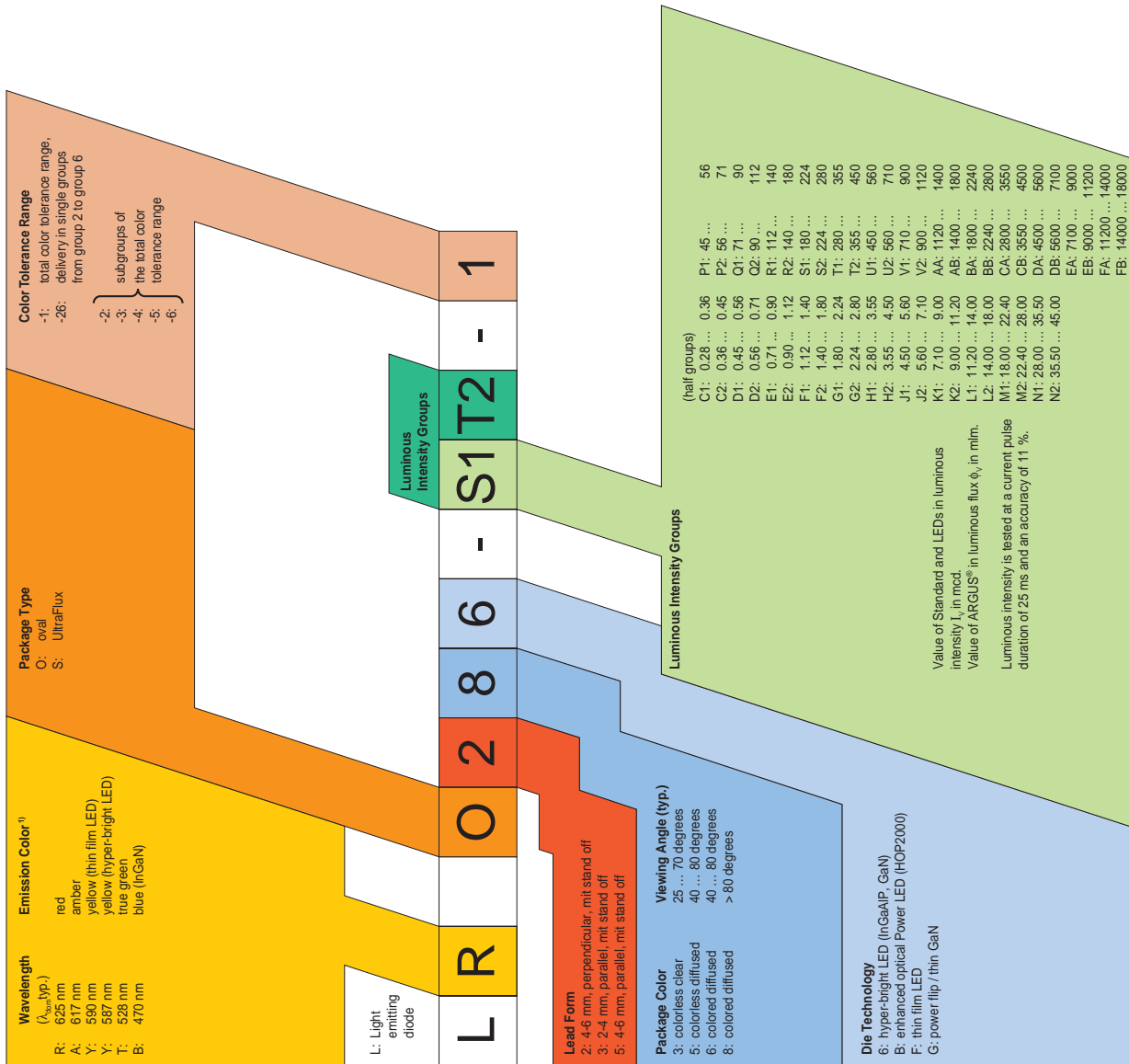
All SMT LEDs are available in 8 mm resp. 12 mm tapes.

### Gurtung von Lumineszenzdioden

Alle SMT-LED werden im 8- bzw. 12-mm Gurt geliefert.

## Radial LED type designation system

## Radial-LED-Typenbezeichnungsschema



### Taping of LEDs

All unidirectional LEDs are available in various tape forms, including IEC publication 286.2 and 3 or special tape specifications (see also chapter "Tape and Reel").

### Gurtung von Lumineszenzdioden

Alle radialen LED können in verschiedenen Gurtvarianten, sowohl nach IEC-Norm 286.2 und 3 als auch nach speziellen Gurtspezifikationen geliefert werden (siehe Kapitel „Gurtung und Verpackung“).

## Parameters for OSRAM LED Luminous Intensity Group System for LEDs

### 1. Measurement and grouping in full groups

**Radial LEDs** are normally measured in luminous intensity groups. The luminosity variation in one full group (e. g. M) is  $\pm 23\%$ . As luminous intensity is tested at a tolerance of  $\pm 11\%$ , the variation range in one packing unit amounts to  $\pm 34\%$ .

No packing unit / tape ever contains more than one luminous intensity group!

#### Matching factor of brightness within one packaging unit

$I_v \text{ min} : I_v \text{ max}$  bzw.  $\Phi_v \text{ min} : \Phi_v \text{ max} = 1 : 2$

For luminous intensity groups and values see type designation system.

Example of grouping scheme:

LO 3340-LM-24: lower family group

LO 3340-MN-24: upper family group

LO 3340-KP-24: total group

The above type numbers represent the order groups, which include only a few brightness groups.

Only one group will be shipped on each reel (there will be no mixing of two groups on each reel). E.g. LO 3340-MN-24 means that only one group M or N will be shippable for any one reel. In order to ensure availability, single brightness groups will not be orderable.

*Lower family group:* Scope of delivery includes luminous intensity groups L, M

*Upper family group:* Scope of delivery includes luminous intensity groups M, N

*Total family group:* Scope of delivery includes luminous intensity groups K, L, M, N, and P

Individual groups:

Luminosity variations caused by the technology used in current LED manufacturing processes over a protracted manufacturing period (semiconductor material - chip fabrication - assembly process) mean that it is not possible to assign LEDs to a single luminous intensity group.

Owing to continuous improvements in our chip and LED manufacturing processes, LED luminous intensity values are set to increase. We will inform you in good time of any necessary changes to the luminous intensity groups.

### 2. Measurement and grouping in half groups

SMT LEDs are normally measured in luminous intensity half groups (except for MULTILED®, CHIPLEd and Golden DRAGON®). The luminosity variation in one half group is  $\pm 12\%$ . As luminous intensity is tested at a tolerance of  $\pm 11\%$ , the variation range in one packing unit amounts to  $\pm 23\%$ .

For luminous intensity groups and values see type designation system.

Example of grouping scheme:

LA E67B-T2V1-24-1: lower family group

LA E67B-U2AA-24-1: upper family group

LA E67B-T2AA-24-1: total group

The above type numbers represent the order groups, which include only a few brightness groups.

Only one group will be shipped on each reel (there will be no mixing of two groups on each reel). E.g. LA E67B-T2V1-24-1 means that only one group T2, U1, U2 or V1 will be shippable for any one reel. In order to ensure availability, single brightness groups will not be orderable.

## Parameter des OSRAM LED-Helligkeitsgruppen-Schemas für LEDs

### 1. Messung und Gruppierung in Vollgruppen

**Radiale LEDs** werden in der Regel in Helligkeitsgruppen gemessen. Die Streuung der Helligkeit in einer Vollgruppe (z. B. M) beträgt  $\pm 23\%$ . Da die Helligkeit mit einer Toleranz von  $\pm 11\%$  gemessen wird, beträgt die max. Schwankungsbreite in einer Verpackungseinheit  $\pm 34\%$ .

In einer Verpackungseinheit / Gurt ist immer nur eine Helligkeitsgruppe enthalten!

#### Max. Streubreite der Helligkeit innerhalb einer Verpackungseinheit

$I_v \text{ min} : I_v \text{ max}$  bzw.  $\Phi_v \text{ min} : \Phi_v \text{ max} = 1 : 2$  Helligkeitsgruppen und Werte siehe Typenbezeichnungsschema.

Beispiel für Gruppierungsschema

LO 3340-LM-24: untere Familiengruppe

LO 3340-MN-24: obere Familiengruppe

LO 3340-KP-24: Sammelgruppe

Die oben genannten Typenbezeichnungen umfassen die bestellbaren Selektionen. Diese bestehen aus wenigen Helligkeitsgruppen.

Es wird nur eine einzige Helligkeitsgruppe pro Verpackungseinheit geliefert. Z.B.: LO 3340-MN-24 bedeutet, dass auf dem Gurt nur eine der Helligkeitsgruppen M oder N enthalten ist. Um die Liefersicherheit zu gewährleisten, können einzelne Helligkeitsgruppen nicht bestellt werden.

*Untere Familiengruppe:* Der mögliche Lieferumfang beinhaltet die Helligkeitsgruppen L, M

*Obere Familiengruppe:* Der mögliche Lieferumfang beinhaltet die Helligkeitsgruppen M, N

*Sammelgruppe:* Der mögliche Lieferumfang beinhaltet die Helligkeitsgruppen K, L, M, N, P

Einzelgruppen:

Die technologiebedingte Helligkeits-Streuung der heutigen LED-Herstellprozesse über einen längeren Fertigungszeitraum (Halbleitermaterial - Chipherstellung - Montageprozess), erlaubt keine Zusage einer einzelnen Helligkeitsgruppe.

Auf Grund von kontinuierlichen Verbesserungen unserer Chip- und LED Herstellungsprozesse werden sich die LED-Helligkeiten nach oben entwickeln. Über dadurch notwendige Anpassungen der Helligkeitsgruppen werden wir Sie rechtzeitig informieren.

### 2. Messung und Gruppierung in Halbgruppen

**SMT LEDs** werden in der Regel in Helligkeitshalbgruppen gemessen (Ausnahme sind MULTILED®, CHIPLEd und Golden DRAGON®). Die Streuung der Helligkeit in einer Halbgruppe beträgt  $\pm 12\%$ . Da die Helligkeit mit einer Toleranz von  $\pm 11\%$  gemessen wird, beträgt die max. Schwankungsbreite in einer Verpackungseinheit  $\pm 23\%$ .

Helligkeitsgruppen und Werte siehe Typenbezeichnungsschema.

Beispiel für Gruppierungsschema:

LA E67B-T2V1-24-1: untere Familiengruppe

LA E67B-U2AA-24-1: obere Familiengruppe

LA E67B-T2AA-24-1: Sammelgruppe

Die oben genannten Typenbezeichnungen umfassen die bestellbaren Selektionen. Diese bestehen aus wenigen Helligkeitsgruppen.

Es wird nur eine einzige Helligkeitsgruppe pro Gurt geliefert. Z.B.: LA E67B-T2V1-24-1 bedeutet, dass auf dem Gurt nur eine der Helligkeitsgruppen T2, U1, U2 oder V1 enthalten ist. Um die Liefersicherheit zu gewährleisten, können einzelne Helligkeitsgruppen nicht bestellt werden.

*Lower family group:* Scope of delivery includes luminous intensity groups T2, U1, U2, V1

*Upper family group:* Scope of delivery includes luminous intensity groups U2, V1, V2, AA

*Total family group:* Scope of delivery includes luminous intensity groups T2, U1, U2, V1, V2, AA

In a similar manner for colors where wavelength groups / chromaticity coordinate groups are measured and binned, single wavelength groups will be shipped on any one reel. E.g. LA E67B-T2V1-24-1 means that only 1 wavelength group -2, -3, or -4 will be shippable.

Types which are labelled with -1, e. g. LS T676-R1S1-1-0, are not available in wavelength / chromaticity coordinate selections. A tolerance range is ensured.

In a similar manner for LED, where forward voltage groups are measured and binned, single forward voltage groups will be shipped on any one reel. E.g. LA E67B-T2V1-24-1 means that only 1 forward voltage group according to datasheet will be shippable. In this case -3A, -3B, -4A or -4B.

In order to ensure availability, single forward voltage groups will not be shippable. Types which are labelled with -0, e. g. LS T676-R1S1-1-0, are not available in forward voltage selections. A tolerance range is ensured.

### 3. Special case: Grouping for SMT MULTILED®

All colors will be grouped according to luminous intensity (mcd) in line with the luminous intensity group system (see type designation system).

Example: LSY T676-P2R1-1+Q2S1-1

Luminous Intensity Groups

The luminosity distribution of the individual colors results in the following some individual groups for Multi TOPLED® / Multi SIDELED®:

Example: LSY T676 order group

- P2 + Q2	- Q2 + Q2	
- P2 + R1	- Q2 + R1	
- P2 + R2	- Q2 + R2	
- P2 + S1	- Q2 + S1	possible
- Q1 + Q2	- R1+ Q2	shipment
- Q1 + R1	- R1+ R1	groups
- Q1 + R2	- R1+ R1	
- Q1 + S1	- R1+ S1	

Only one combination is included in any packing unit.

*Untere Familiengruppe:* Der mögliche Lieferumfang beinhaltet die Helligkeitsgruppen T2, U1, U2, V1

*Obere Familiengruppe:* Der mögliche Lieferumfang beinhaltet die Helligkeitsgruppen U2, V1, V2, AA

*Sammelgruppe:* Der mögliche Lieferumfang beinhaltet die Helligkeitsgruppen T2, U1, U2, V1, V2, AA

Gleichbedeutend gilt dies auch für LEDs, bei denen die Farben nach Wellenlängengruppen / Farbort gemessen und gruppiert werden. Pro Gurt wird nur eine Wellenlänge geliefert. Z.B.: LA E67B-T2V1-24-1 bedeutet, dass auf dem Gurt nur eine der Wellenlängen -2, -3 oder -4 enthalten ist.

Typen, die mit -1 bezeichnet sind, z.B. LS T676-R1S1-1-0, sind nicht in Wellenlängengruppen / Farbortgruppen erhältlich. Ein Toleranzbereich wird abgesichert.

Gleichbedeutend gilt dies auch für die LEDs, bei denen die Durchlassspannungsgruppen gemessen und gruppiert werden. Pro Gurt wird nur eine Durchlassspannungsgruppe geliefert. Z.B.: LA E67B-T2V1-24-1 bedeutet, dass nach Durchlassspannung gruppiert wird. Auf einem Gurt ist nur eine der Durchlassspannungsgruppen laut Datenblatt enthalten. In diesem Fall -3A, -3B, -4A oder -4B. Um die Liefersicherheit zu gewährleisten, können einzelne Durchlassspannungsgruppen nicht direkt bestellt werden.

Typen, die mit -0 bezeichnet sind, z.B. LS T676-R1S1-1, sind nicht in Durchlassspannungsgruppen erhältlich. Ein Toleranzbereich wird abgesichert.

### 3. Sonderfall: Gruppierung bei SMT MULTILED®

Alle Farben werden nach dem Helligkeitsgruppierungsschema (siehe Typenbezeichnungsschema) in Lichtstärke (mcd) gruppiert.

Beispiel: LSY T676-P2R1-1+Q2S1-1

Helligkeitsgruppen

Durch die Helligkeitsverteilung der Einzelfarben ergeben sich mehrere Einzelgruppen bei Multi TOPLED® / Multi SIDELED®:

Beispiel: LSY T676 Bestellgruppen

- P2 + Q2	- Q2 + Q2	
- P2 + R1	- Q2 + R1	
- P2 + R2	- Q2 + R2	
- P2 + S1	- Q2 + S1	mögliche
- Q1 + Q2	- R1+ Q2	Liefergruppen
- Q1 + R1	- R1+ R1	
- Q1 + R2	- R1+ R1	
- Q1 + S1	- R1+ S1	

In einer Verpackungseinheit ist immer nur eine Kombination enthalten.

# Light Emitting Diodes | Lumineszenzdioden

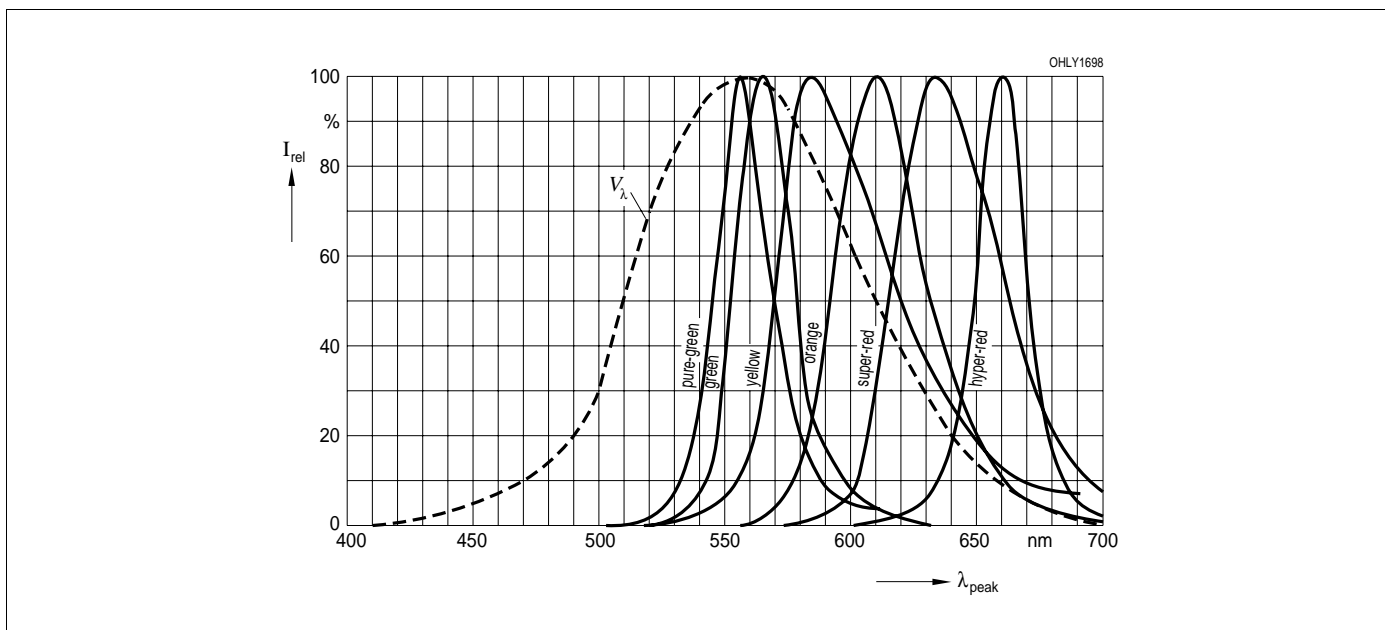
Typical values ( $T_A = 25\text{ °C}$ )

Kenndaten ( $T_A = 25\text{ °C}$ )

Standard-current LED			● hyper-red	● super-red	● orange	● yellow	● green	● pure green	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	$I_F = 10\text{ mA}$	$\lambda_{\text{peak}}$	661	635	610	586	572	557	nm
Dominantwellenlänge/ Dominant wavelength <sup>1)</sup>	$I_F = 10\text{ mA}$	$\lambda_{\text{dom}}$	645	628	606	587	570	560	nm
Durchlassspannung/ Forward voltage <sup>2)</sup>	$I_F = 10\text{ mA}$	$V_F$	1.9 ( $\leq 2.3$ )	2.0 ( $\leq 2.5$ )	2.0 ( $\leq 2.5$ )	2.0 ( $\leq 2.5$ )	2.0 ( $\leq 2.5$ )	2.0 ( $\leq 2.5$ )	V

Low-current LED			● super-red	● orange	● yellow	● green	● pure green	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	$I_F = 2\text{ mA}$	$\lambda_{\text{peak}}$	643	610	591	572	562	nm
Dominantwellenlänge/ Dominant wavelength <sup>1)</sup>	$I_F = 2\text{ mA}$	$\lambda_{\text{dom}}$	630	606	587	570	560	nm
Durchlassspannung/ Forward voltage <sup>2)</sup>	$I_F = 2\text{ mA}$	$V_F$	1.8 ( $\leq 2.2$ )	1.8 ( $\leq 2.2$ )	1.8 ( $\leq 2.2$ )	1.8 ( $\leq 2.2$ )	1.8 ( $\leq 2.2$ )	V

## Standard-current LED, low-current LED, high-current LED



- 1) Wavelengths are tested at current pulse duration of 25 ms and a tolerance of  $\pm 1\text{ nm}$ .
- 2) Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of  $\pm 0.1\text{ V}$ .

- 1) Wellenlängen werden mit einer Stromeinprägedauer von 25 ms und einer Genauigkeit von  $\pm 1\text{ nm}$  ermittelt.
- 2) Spannungswerte werden mit einer Stromeinprägedauer von 1 ms und einer Genauigkeit von  $\pm 0,1\text{ V}$  ermittelt.

# Light Emitting Diodes | Lumineszenzdioden

Typical values ( $T_A = 25\text{ }^\circ\text{C}$ )

Kenndaten ( $T_A = 25\text{ }^\circ\text{C}$ )

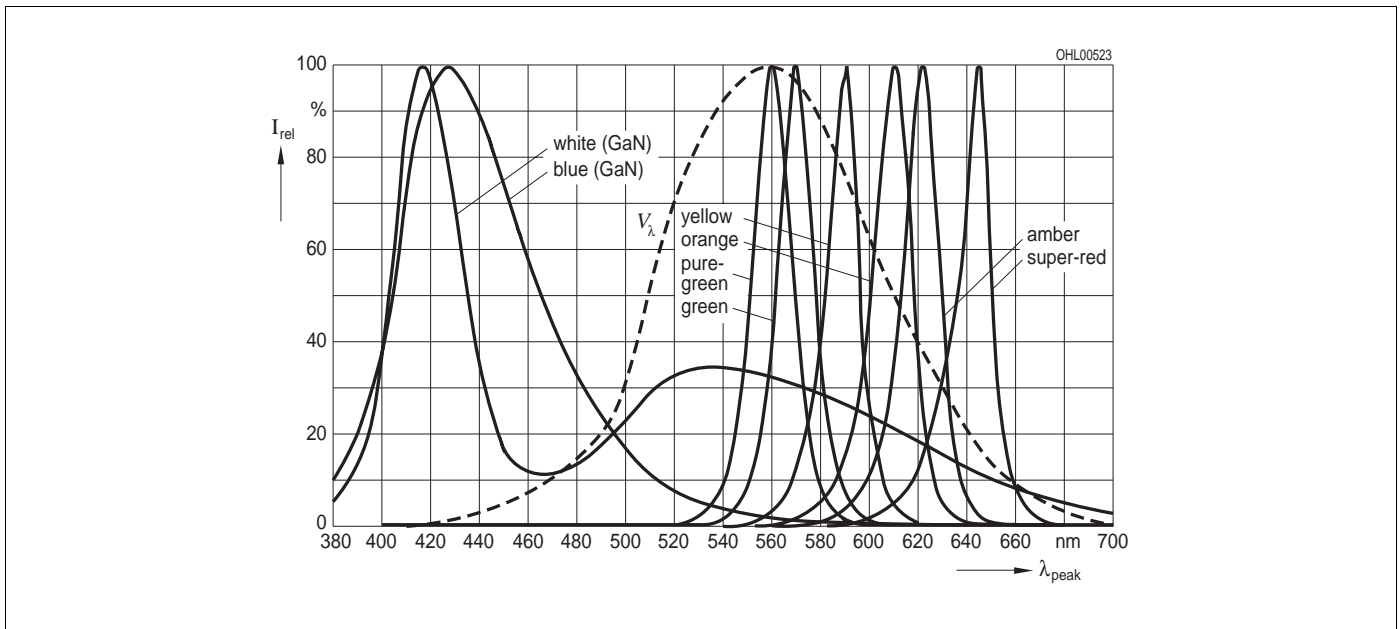
Hyper-bright LED			● super-red	● amber	● orange	● yellow	● blue	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	$I_F = 20\text{ mA}$	$\lambda_{\text{peak}}$	645	622	610	591	428	nm
Dominantwellenlänge/ Dominant wavelength <sup>1)</sup>	$I_F = 20\text{ mA}$	$\lambda_{\text{dom}}$	633	615	606	587	465	nm
Durchlassspannung/ Forward voltage <sup>2)</sup>	$I_F = 20\text{ mA}$	$V_F$	2.0 (2.3)	2.0 (2.33)	2.0 (2.35)	2.0 (2.4)	3.5* (4.1)	V

Hyper-bright LED			● green	● pure green	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	$I_F = 20\text{ mA}$	$\lambda_{\text{peak}}$	572	562	nm
Dominantwellenlänge/ Dominant wavelength <sup>1)</sup>	$I_F = 20\text{ mA}$	$\lambda_{\text{dom}}$	570	560	nm
Durchlassspannung/ Forward voltage <sup>2)</sup>	$I_F = 20\text{ mA}$	$V_F$	2.0 ( $\leq 2.4$ )	2.0 ( $\leq 2.4$ )	V

Single chip white LED		white (GaN)	
Farbort des emittierten Lichts/ Color coordinate at peak emission <sup>3)</sup>		x = 0.30 y = 0.32	
Durchlassspannung/ Forward voltage <sup>2)</sup>	$V_F$	3.5 ( $\leq 4.1$ )	V

\* $I_F = 10\text{ mA}$

## Hyper-bright LED



1) Wavelengths are tested at current pulse duration of 25 ms and a tolerance of  $\pm 1\text{ nm}$ .  
2) Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of  $\pm 0.1\text{ V}$ .

1) Wellenlängen werden mit einer Stromeinprägungsdauer von 25 ms und einer Genauigkeit von  $\pm 1\text{ nm}$  ermittelt.  
2) Spannungswerte werden mit einer Stromeinprägungsdauer von 1 ms und einer Genauigkeit von  $\pm 0,1\text{ V}$  ermittelt.

# Light Emitting Diodes | Lumineszenzdioden

Typical values ( $T_A = 25\text{ °C}$ )

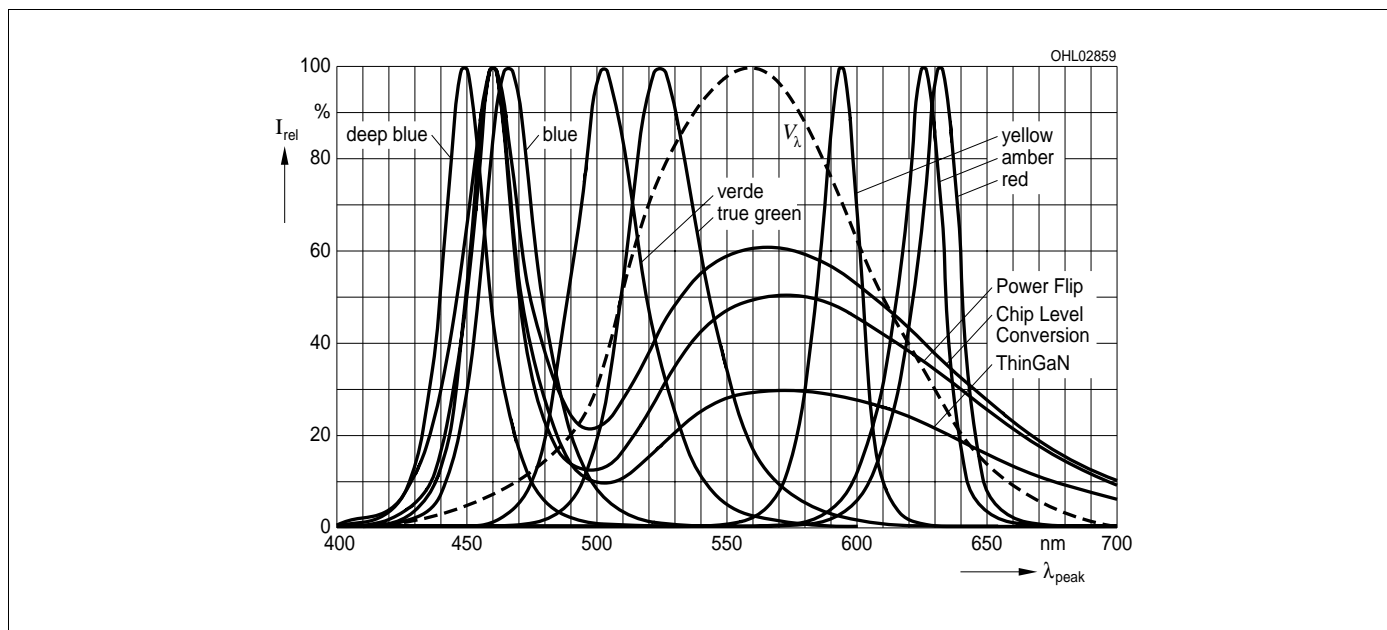
Kenndaten ( $T_A = 25\text{ °C}$ )

Single chip white LED		LW T673 (InGaN) $I_F = 10\text{ mA}$	LW T67C (InGaN) $I_F = 20\text{ mA}$	
Farbort des emittierten Lichts/ Color coordinate at peak emission <sup>3)</sup>		x = 0.32 y = 0.31	x = 0.33 y = 0.33	
Durchlassspannung/ Forward voltage <sup>2)</sup>	$V_F$	3.1 ( $\leq 3.7$ )	3.6 ( $\leq 4.1$ )	V

Standard InGaN LED			● blue	● verde	● true green	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	$I_F = 20\text{ mA} / 10\text{ mA}$	$\lambda_{\text{peak}}$	465/466	501	523/527	nm
Dominantwellenlänge/ Dominant wavelength <sup>1)</sup>	$I_F = 20\text{ mA} / 10\text{ mA}$	$\lambda_{\text{dom}}$	470/471	503*	528/532	nm
Durchlassspannung/ Forward voltage <sup>2)</sup>	$I_F = 20\text{ mA} / 10\text{ mA}$	$V_F$	3.6/3.2 ( $\leq 4.1$ )( $\leq 3.7$ )	3.8* ( $\leq 4.4$ )	3.5/3.0 ( $\leq 4.1$ )( $\leq 3.7$ )	V

HOP 2000(High Optical Power)			● super-red	● amber	● orange	● yellow	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	$I_F = 50\text{ mA}$	(typ.) $\lambda_{\text{peak}}$	645	624	610	594	nm
Dominantwellenlänge/ Dominant wavelength <sup>1)</sup>	$I_F = 50\text{ mA}$	$\lambda_{\text{dom}}$	633 -6/+6	617* -5/+7	606* -6/+3	587* -7/+8	nm
Durchlassspannung/ Forward voltage <sup>2)</sup>	$I_F = 50\text{ mA}$	(min.) (typ.) $V_F$	2.2 ( $\leq 2.5$ )	2.2 ( $\leq 2.5$ )	2.2 ( $\leq 2.5$ )	2.2 ( $\leq 2.5$ )	V

## Single chip white LED, standard-InGaN LED, HOP 2000 LED



- 1) Wavelengths are tested at current pulse duration of 25 ms and a tolerance of  $\pm 1\text{ nm}$ .
- 2) Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of  $\pm 0.1\text{ V}$ .
- 3) Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of  $\pm 0.1\text{ V}$ .

- 1) Wellenlängen werden mit einer Stromeinprägungsdauer von 25 ms und einer Genauigkeit von  $\pm 1\text{ nm}$  ermittelt.
- 2) Spannungswerte werden mit einer Stromeinprägungsdauer von 1 ms und einer Genauigkeit von  $\pm 0,1\text{ V}$  ermittelt.
- 3) Spannungswerte werden mit einer Stromeinprägungsdauer von 1 ms und einer Genauigkeit von  $\pm 0,1\text{ V}$  ermittelt.



# Light Emitting Diodes | Lumineszenzdioden

Typical values ( $T_A = 25\text{ °C}$ )

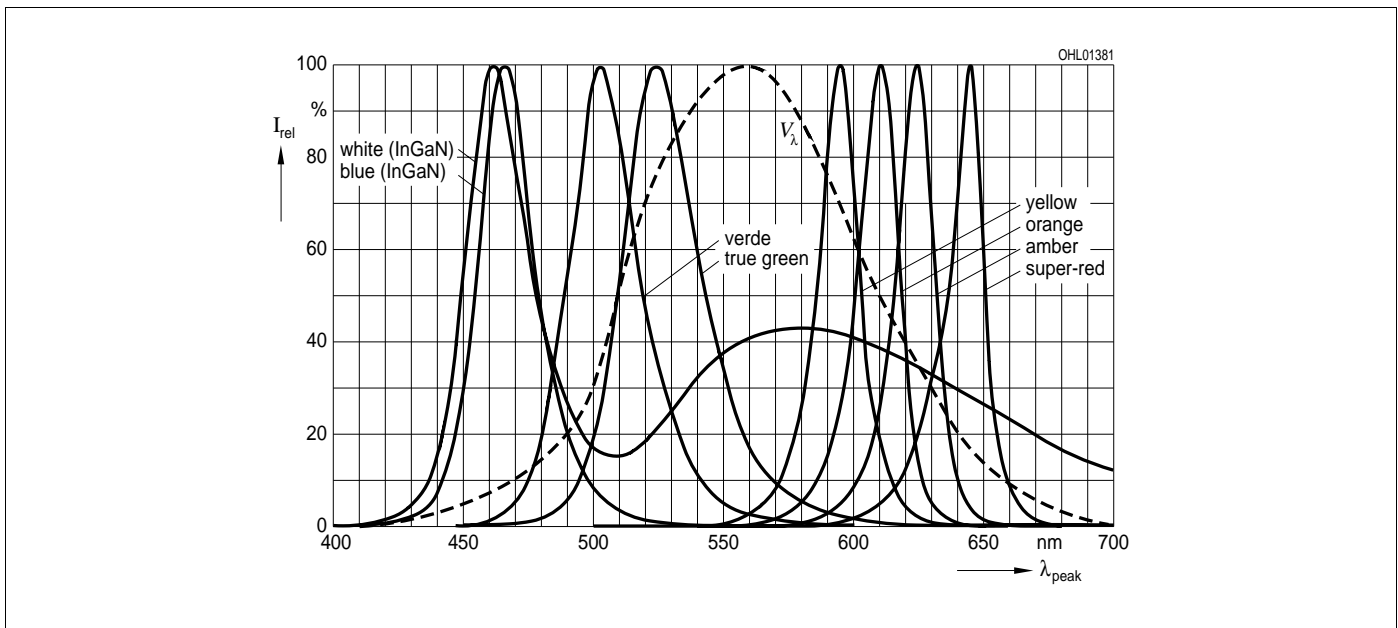
Kenndaten ( $T_A = 25\text{ °C}$ )

<b>Single chip white LED</b>		Power Flip $I_F = 350\text{ mA}$	ThinGaN $I_F = 140\text{ mA}$	Chip Level Conversion $I_F = 350/700\text{ mA}$	
Farbort des emittierten Lichts/ Color coordinate at peak emission <sup>3)</sup>		x = 0.33 y = 0.33	x = 0.33 y = 0.33	x = 0.33 y = 0.33	
Durchlassspannung/ Forward voltage <sup>2)</sup>	$V_F$	3.8 ( $\leq 4.1$ )	3.6 ( $\leq 4.1$ )	3.8 ( $\leq 4.5$ )	V

<b>ThinGaN / Power Flip</b>			● deep blue	● blue	● verde	● true green	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	$I_F = 350\text{ mA} / 140\text{ mA}$	$\lambda_{\text{peak}}$	449	465	501	520	nm
Dominantwellenlänge/ Dominant wavelength <sup>1)</sup>	$I_F = 350\text{ mA} / 140\text{ mA}$	$\lambda_{\text{dom}}$	455 -6/+6	470 -6/+6	505*	528 -9/+15	nm
Durchlassspannung/ Forward voltage <sup>2)</sup>	$I_F = 350\text{ mA} / 140\text{ mA}$	$V_F$	3.2 ( $\leq 3.8$ )	3.6 ( $\leq 4.1$ )	3.6* ( $\leq 4.1$ )	3.6 ( $\leq 4.1$ )	V

<b>Thinfilm (High Optical Power)</b>			● amber	● orange	● yellow	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	$I_F = 50\text{ mA}$ (typ.)	$\lambda_{\text{peak}}$	624	632	594	nm
Dominantwellenlänge/ Dominant wavelength <sup>1)</sup>	$I_F = 50\text{ mA}$	$\lambda_{\text{dom}}$	617* -5/+7	625* -5/+4	590* -7/+5	nm
Durchlassspannung/ Forward voltage <sup>2)</sup>	$I_F = 50\text{ mA}$ (min.) (typ.)	$V_F$	2.2 ( $\leq 2.65$ )	2.2 ( $\leq 2.65$ )	2.2 ( $\leq 2.65$ )	V

## Single chip white LED, standard-InGaN LED, HOP 2000 LED



- 1) Wavelengths are tested at current pulse duration of 25 ms and a tolerance of  $\pm 1\text{ nm}$ .
- 2) Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of  $\pm 0.1\text{ V}$ .
- 3) Chromaticity coordinate groups are tested at a current pulse duration of 25 ms and a tolerance of  $\pm 0.01$ .

- 1) Wellenlängen werden mit einer Stromeinprägungsdauer von 25 ms und einer Genauigkeit von  $\pm 1\text{ nm}$  ermittelt.
- 2) Spannungswerte werden mit einer Stromeinprägungsdauer von 1 ms und einer Genauigkeit von  $\pm 0,1\text{ V}$  ermittelt.
- 3) Farbkoordinaten werden mit einer Stromeinprägungsdauer von 25 ms und einer Genauigkeit von  $\pm 0,01$  ermittelt.