Light Emitting Diodes

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 Leuchter 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:

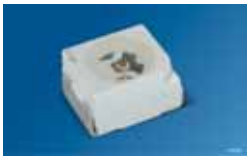
Der Anwender darf keinen Ausbau oder Analyse der LEDs vornehmen, ohne die vorherige schriftliche Zustimmung von OSRAM Opto Semiconductors GmbH zu haben. Wenn defekte LEDs gefunden werden, soll der Anwender baldmöglichst OSRAM Opto Semiconductors GmbH informieren, bevor er einen Ausbau oder eine Analyse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

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

Summary of Types

TOPLED

TOPLED



TOPLED
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TOPLED white
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TOPLED black surface
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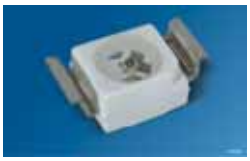

TOPLED RG (Reverse Gullwing)
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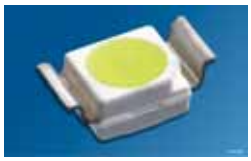

TOPLED RG (Reverse Gullwing) white
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TOPLED with lens

TOPLED with lens
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TOPLED with lens black package
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Mini TOPLED

Mini TOPLED

Mini TOPLED
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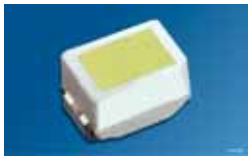

Mini TOPLED white
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Summary of Types

Power TOPLED

Power TOPLED

Power TOPLED
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Power TOPLED white
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Power TOPLED Silicone
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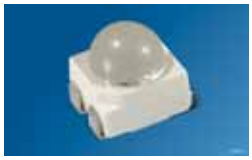
Power TOPLED with lens



Power TOPLED with lens
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Power TOPLED with lens
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Advanced Power TOPLED

Advanced Power TOPLED

Advanced Power TOPLED
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Advanced Power TOPLED white
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Advanced Power TOPLED Plus

Advanced Power TOPLED Plus
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Summary of Types

DRAGON Family

Golden DRAGON

Golden DRAGON
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Golden DRAGON white
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Golden DRAGON Plus

Golden DRAGON Plus
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Golden DRAGON Plus white
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Platinum DRAGON

Platinum DRAGON
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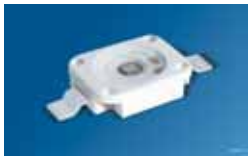

Platinum DRAGON
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Diamond DRAGON

Diamond DRAGON
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Diamond DRAGON white
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Golden DRAGON oval Plus

Golden DRAGON oval Plus
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Summary of Types

PointLED

PointLED

PointLED
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PointLED white
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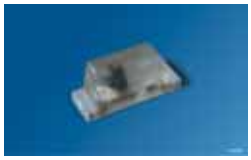
SmartLED

SmartLED



SmartLED 0603 0.6 mm
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SmartLED 0603 0.6 mm white
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CHIPLED

CHIPLED 1206

CHIPLED 1206
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CHIPLED 1206 with lens

CHIPLED 1206 with lens
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Summary of Types

CHIPLED

CHIPLED 0805

CHIPLED 0805
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CHIPLED 0603 0.4 mm

CHIPLED 0603 0.4 mm
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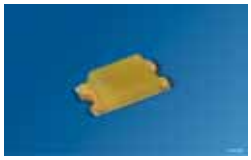

CHIPLED 0603 0.4 mm white
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CHIPLED 0603 0.6 mm

CHIPLED 0603 0.6 mm
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CHIPLED 0603 0.8 mm

CHIPLED 0603 0.8 mm
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CHIPLED 0402

CHIPLED 0402
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CHIPLED 0402 white
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Summary of Types

Multicolor Packages

Multi TOPLED

Multi TOPLED
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Multi TOPLED
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Multi TOPLED RG
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MULTILED

MULTILED inline
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MULTILED inline, black package
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MULTILED inline, black surface
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MULTILED
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MULTILED 6-lead Silicone / diffusor
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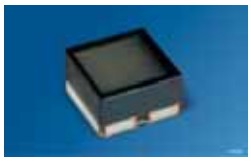
Multi CHIPLED



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Multi CERAMOS

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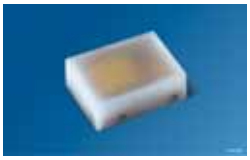
Summary of Types

CERAMOS

CERAMOS



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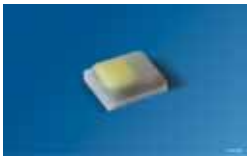

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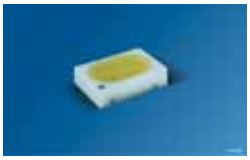

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OSLUX

OSLUX

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Summary of Types

OSLON Family

OSLON SX

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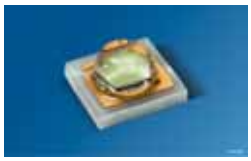
OSLON LX



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OSLON SSL

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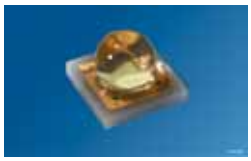

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OSLON SX ECE

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OSLON MX ECE

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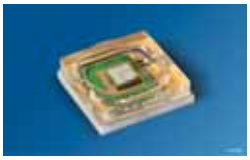
Summary of Types

OSTAR Family

OSTAR Compact



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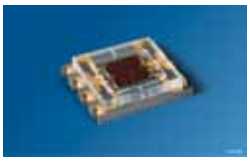
OSTAR SMT



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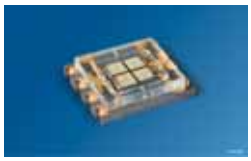

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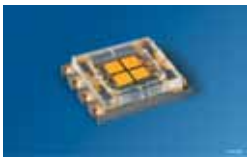

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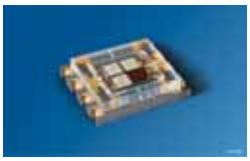

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OSTAR Projection

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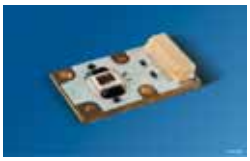

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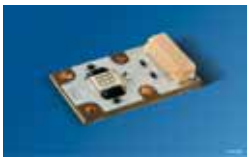

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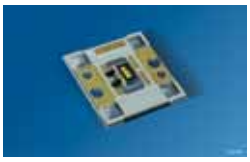
OSTAR Headlamp



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TOPLED

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
TOPLED									
	LS T67K-J1K2-1			4.5 ... 11.2	25			Q65110A2011	
	LS T67K-K1L2-1	super red	630	7.1 ... 18	40			Q65110A2012	
	LS T67K-J1L2-1			4.5 ... 18	30			Q65110A2013	
	LO T67K-K1L2-24			7.1 ... 18	40			Q65110A2035	
	LO T67K-L1M2-24	orange	606	11.2 ... 28	60			Q65110A2036	
	LO T67K-K1M2-24			7.1 ... 28	50			Q65110A2037	
	LY T67K-J2L1-26			5.6 ... 14	30			Q65110A2059	
	LY T67K-K2M1-26	yellow	587	9 ... 22.4	50	2	120	Q65110A2060	1
	LY T67K-J2M1-26			5.6 ... 22.4	40			Q65110A2061	
	LG T67K-G2J1-24			2.24 ... 5.6	12			Q65110A2182	
	LG T67K-H2K1-24	green	570	3.55 ... 9	19			Q65110A2183	
	LG T67K-G2K1-24			2.24 ... 9	16			Q65110A2184	
	LP T67K-E1F2-25			0.71 ... 1.8	4			Q65110A2185	
	LP T67K-F1G2-25	pure green	560	1.12 ... 2.8	6			Q65110A2186	
	LP T67K-E1G2-25			0.71 ... 2.8	5			Q65110A2187	
	LS T676-Q1R2-1			71 ... 180	380			Q65110A2151	
	LS T676-R1S1-1	super red	633	112 ... 224	480			Q65110A2152	
	LS T676-P2S1-1			56 ... 224	420			Q65110A2153	
	LA T676-Q2T1-24			90 ... 355	600			Q65110A9273	
	LA T676-R1S2-24	amber-red	615	112 ... 280	760			Q65110A9274	
	LA T676-S1T1-24			180 ... 355	665			Q65110A9275	
	LO T676-R1S2-24			112 ... 280	600			Q65110A2148	
	LO T676-S1T1-24	orange	605	180 ... 355	760	20	120	Q65110A2149	1
	LO T676-Q2T1-24			90 ... 355	665			Q65110A2150	
	LY T676-R1S2-26			112 ... 280	600			Q65110A2154	
	LY T676-S1T1-26	yellow	587	180 ... 355	760			Q65110A2155	
	LY T676-Q2T1-26			90 ... 355	665			Q65110A2156	
	LG T676-P1Q2-24	green	570	45 ... 112	240			Q65110A2178	
	LG T676-P2R1-24			56 ... 140	265			Q65110A4007	
	LP T676-L1M2-25	pure green	560	11.2 ... 28	60			Q65110A2179	
	LP T675-N1Q1-25	pure green	560	28 ... 90	180	30	120	Q65110A9017	1
	LS T67F-T2V2-1-1	super red	633	355 ... 1120	2200			Q65110A9233	
	LR T67F-U1AA-1-1	red	625	450 ... 1400	2700			Q65110A9232	
	LA T67F-U2AB-24-1	amber-red	617	560 ... 1800	3500	20	120	Q65110A9268	1
	LO T67F-V1AB-24-1	orange	606	710 ... 1800	3700			Q65110A9230	
	LY T67F-U1AA-36-1	yellow	587	450 ... 1400	2700			Q65110A9231	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LT T673-P1Q2-25			45 ... 112	240			Q65110A1966	
	LT T673-Q1R2-25	true green	532	71 ... 180	380	10		Q65110A1967	
	LT T673-N2S1-25			35.5 ... 224	350			Q65110A1968	
	LT T673-L2N2-35			14 ... 45	90	2		Q65110A5953	
	LB T673-L2N1-35			14 ... 35.5	75			Q65110A1954	
	LB T673-M2P1-35	blue	471	22.4 ... 56	120	10		Q65110A1955	
	LB T673-L2P1-35			14 ... 56	100			Q65110A1956	
	LT T67C-S2U1-35			224 ... 560	1200		120	Q65110A1870	1
	LT T67C-T2V1-35	true green	528	355 ... 900	1900			Q65110A1871	
	LT T67C-S2V1-35			224 ... 900	1680			Q65110A1983	
	LV T67C-S1T2-35			180 ... 450	950			Q65110A1878	
	LV T67C-T1U2-35	verde green	505	280 ... 710	1500	20		Q65110A1879	
	LV T67C-S1U2-35			180 ... 710	1330			Q65110A1987	
	LB T67C-P2R1-35			56 ... 140	300			Q65110A1857	
	LB T67C-Q2S1-35	blue	470	90 ... 224	480			Q65110A1858	
	LB T67C-P2S1-35			56 ... 224	420			Q65110A1977	
	LW T673-P2R1-5K8L			56 ... 140	300			Q65110A1939	
	LW T673-Q2R2-5K8L	white	0.33 / 0.33	90 ... 180	380	10	120	Q65110A1940	1
	LW T673-P1S1-5K8L			45 ... 224	480			Q65110A1941	
	LW T673-P2R1-3K6L			56 ... 140	300			Q65110A4100	
	LW T67C-S2U1-5K8L			224 ... 560	1200			Q65110A1743	
	LW T67C-T2U2-5K8L	white	0.33 / 0.33	355 ... 710	1600	20	120	Q65110A1742	1
	LW T67C-S2V1-5K8L			224 ... 900	1550			Q65110A1942	
	LCG T67C-S2U2	color on demand green	0.23 / 0.42	224 ... 710	1400	20	120	on request	1
	LCB T67S-P1R1-3J7L	color on demand blue	0.2 / 0.3	45 ... 140	240	10			
TOPLED Silicone									
	LW T6SG-V2BA-JKPL			900 ... 2240	4700			Q65110A8982	
	LW T6SG-V1AA-JKPL	white	0.33 / 0.33	710 ... 1400	3150	20	120	Q65110A8981	2
	LUW T6SG-AABA-4N7Q			1120 ... 2240	5040			Q65110A7881	
	LUW T6SG-ABBB-4N7Q	ultra white	0.31 / 0.32	1400 ... 2800	5880	20	120	Q65110A8477	2
TOPLED black surface									
	LY T686-R1S2-26			112 ... 280	590			Q65110A2211	
	LY T686-S1T1-26	yellow	587	180 ... 355	800	20	120	Q65110A2212	1
	LY T686-Q2T1-26			90 ... 355	665			Q65110A2213	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LR T68F-U1AA-1-1	red	625	450 ... 1400	2800	20	120	Q65110A7321	3
	LY T68F-U1AA-46-1	yellow	590					Q65110A7730	
	LY T68F-T2V2-35-1			355 ... 1120	2200			Q65110A7796	
TOPLED RG (Reverse Gullwing)									
	LS T77K-J1K2-1	super red	630	4.5 ... 11.2	24	2	120	Q65110A2029	4
	LS T77K-K1L2-1			7.1 ... 18	40			Q65110A2030	
	LS T77K-J1L2-1			4.5 ... 18	30			Q65110A2031	
	LO T77K-K1L2-24	orange	606	7.1 ... 18	40			Q65110A2041	
	LO T77K-L1M2-24			11.2 ... 28	60			Q65110A2042	
	LO T77K-K1M2-24			7.1 ... 28	50			Q65110A2043	
	LY T77K-J2L1-26	yellow	587	5.6 ... 14	30			Q65110A2769	
	LY T77K-K2M1-26			9 ... 22.4	50			Q65110A2767	
	LY T77K-J2M1-26			5.6 ... 22.4	40			Q65110A2768	
	LS T776-Q1R2-1	super red	633	71 ... 180	380	20		Q65110A2220	
	LS T776-R1S1-1			112 ... 224	480			Q65110A2221	
	LS T776-P2S1-1			56 ... 224	420			Q65110A2222	
	LA T776-R1S2-1	amber-red	615	112 ... 280	600			Q65110A2214	
	LA T776-S1T1-1			180 ... 355	760			Q65110A2215	
	LA T776-Q2T1-1			90 ... 355	665			Q65110A2216	
	LO T776-R1S2-24	orange	606	112 ... 280	600			Q65110A2217	
	LO T776-S1T1-24			180 ... 355	760			Q65110A2218	
	LO T776-Q2T1-24			90 ... 355	665			Q65110A2219	
	LY T776-R1S2-26	yellow	587	112 ... 280	600			Q65110A2223	
	LY T776-S1T1-26			180 ... 355	760			Q65110A2224	
	LY T776-Q2T1-26			90 ... 355	665			Q65110A2225	
	LP T776-L1M2-25	pure green	560	11.2 ... 28	60			Q65110A2247	
	LT T773-P1Q2-25	true green	532	45 ... 112	240	10	120	Q65110A1969	4
	LT T773-Q1R2-25			71 ... 180	380			Q65110A1970	
	LT T773-N2S1-25			35.5 ... 224	350			Q65110A1971	
	LB T773-L2N1-35	blue	471	14 ... 35.5	75			Q65110A1957	
	LB T773-M2P1-35			22.4 ... 56	120			Q65110A1958	
	LB T773-L2P1-35			14 ... 56	100			Q65110A1959	
	LW T773-P2R1-5K8L	white	0.33 / 0.33	56 ... 140	300	10	120	Q65110A1943	4
	LW T773-Q2R2-5K8L			90 ... 180	400			Q65110A1944	
	LW T773-P1S1-5K8L			45 ... 224	380			Q65110A1945	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
TOPLED with lens									
	LP T655-Q1R2-25	pure green	560	71 ... 180	140	30	60	Q65110A2355	5
TOPLED with lens black series									
	LR T66F-ABBB-1-1	red	625	1400 ... 2800	1900	20	60	Q65110A8571	5
	LY T66F-ABBB-46-1	yellow	587	1120 ... 2240				Q65110A8570	
	LY T66F-AABA-35-1			1400 ... 2800	2200			Q65110A8569	

Mini TOPLED

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
Mini TOPLED									
	LS M67K-H2K1-1			3.55 ... 9	18	2	120	Q65110A2026	6
	LS M67K-J2L1-1	super red	630	5.6 ... 14	28			Q65110A2027	
	LS M67K-H2L1-1			3.55 ... 14	25			Q65110A2028	
	LO M67K-J2L1-24			5.6 ... 14	28			Q65110A2053	
	LO M67K-K2M1-24	orange	606	9 ... 22.4	45			Q65110A2054	
	LO M67K-J2M1-24			5.6 ... 22.4	40			Q65110A2055	
	LY M67K-J1K2-26			4.5 ... 11.2	22			Q65110A2074	
	LY M67K-K1L2-26	yellow	587	7.1 ... 18	35			Q65110A2075	
	LY M67K-J1L2-26			4.5 ... 18	30			Q65110A2076	
	LG M67K-G1H2-24			1.8 ... 4.5	9.5			Q65110A2393	
	LG M67K-H1J2-24	green	570	2.8 ... 7.1	15			Q65110A2394	
	LG M67K-G1J2-24			1.8 ... 7.1	13			Q65110A2395	
	LP M67K-D2F1-25			0.56 ... 1.4	3			Q65110A2396	
	LP M67K-E2G1-25	pure green	560	0.9 ... 2.24	4.8			Q65110A2397	
	LP M67K-D2G1-25			0.56 ... 2.24	4.2			Q65110A2398	
	LS M676-P2R1-1			56 ... 140	300	20	120	Q65110A1897	6
	LS M676-Q2S1-1	super red	633	90 ... 224	480			Q65110A2363	
	LS M676-P2S1-1			56 ... 224	420			Q65110A2364	
	LA M676-Q2S1-1			90 ... 224	480			Q65110A2356	
	LA M676-R2T1-1	amber-red	615	140 ... 355	760			Q65110A2357	
	LA M676-Q2T1-1			90 ... 355	660			Q65110A2358	
	LO M676-Q2S1-24			90 ... 224	480			Q65110A2359	
	LO M676-R2T1-24	orange	606	140 ... 355	760			Q65110A2360	
	LO M676-Q2T1-24			90 ... 355	660			Q65110A2361	
	LY M676-Q2S1-26			90 ... 224	480			Q65110A1898	
	LY M676-R2T1-26	yellow	587	140 ... 355	760			Q65110A2366	
	LY M676-Q2T1-26			90 ... 355	660			Q65110A2367	
	LG M676-N2Q1-24	green	570	35.5 ... 90	190			Q65110A2389	
	LP M676-L1M2-25	pure green	560	11.2 ... 28	60			Q65110A7809	
	LP M675-M2P1-25	pure green	560	22.4 ... 56	120	30	120	Q65110A2399	6
	LS M67F-S2U2-1	super red	633	224 ... 710	1400	20	120	Q65110A8888	7
	LO M67F-U2AB-24	orange	606	560 ... 1800	3300			Q65110A8973	
	LY M67F-T2V2-36	yellow	590	355 ... 1120	2400			Q65110A8980	
	LT M673-N2Q1-25			35.5 ... 90	190	10	120	Q65110A5929	6
	LT M673-P2R1-25	true green	532	56 ... 140	300			Q65110A1964	
	LT M673-N1R2-25			28 ... 180	310			Q65110A5930	
	LB M673-L1M2-35			11.2 ... 28	60			Q65110A1951	
	LB M673-M1N2-35	blue	471	18 ... 45	95			Q65110A1952	
	LB M673-L1N2-35			11.2 ... 45	80			Q65110A1953	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LW M673-P1Q2-5K8L	◯ white	0.33 / 0.33	45 ... 112	240	10	120	Q65110A1933	6
	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	
	LW M67C-S1T2-5K8L			180 ... 450	950	20		Q65110A1936	
	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	6
	LCL M67S-N2Q2	● color on demand lagune	0.17 / 0.365	35.5 ... 112	220				
	LCB M67S-K1M1	● color on demand blue	0.2 / 0.3	7.1 ... 22.4	45	2			

Power TOPLED

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
Power TOPLED									
	LP E675-P1Q2-25	pure green	560	45 ... 112	240	50	120	Q65110A2334	24
	LP E675-P2R1-25			56 ... 140	300			Q65110A7298	
	LT E67C-T1U2-35-1	true green	525	280 ... 710	1500	30	120	Q65110A1868	24
	LT E67C-U1V2-35-1			450 ... 1120	2400			Q65110A1869	
	LT E67C-T1V2-35-1			280 ... 1120	2100			Q65110A1982	
	LB E67C-Q1R2-35-1	blue	469	71 ... 180	380			Q65110A9138	
	LB E67C-Q1S2-35-1			71 ... 280	520			Q65110A9140	
	LB E67C-R1S2-35-1			112 ... 280	600			Q65110A9141	
	LW E67C-T2V1-5K8L-1	white	0.33 / 0.33	355 ... 900	1900	30	120	Q65110A1930	24
	LW E67C-U2V2-5K8L-1			560 ... 1120	2400			Q65110A1931	
	LW E67C-T1V2-5K8L-1			280 ... 1120	2100			Q65110A1932	
	LA E67F-BACA-24-3A4B	amber-red	617	1120 ... 3550	8000	50	120	Q65110A9090	25
	LA E67F-BACA-24-3B5A							Q65110A9089	
	LY E67F-AABA-35-1	yellow	587	1120 ... 2240	5040			Q65110A9019	
	LY E67F-ABBB-46-1			1120 ... 2800	6300			Q65110A9018	
Power TOPLED Silicone									
	LS E6SF-V2BA-1-1	super red	633	900 ... 2240	4650	50	120	Q65110A4135	25
	LR E6SF-BACA-1-1	red	625	1800 ... 3550	7925			Q65110A9739	
	LA E6SF-BBCB-24-1	amber-red	617	2240 ... 4500	10110			Q65110A6262	
	LO E6SF-ABCB-24-1	orange	606	1400 ... 4500	8800			Q65110A7524	
	LY E6SF-V2AB-35-1	yellow	590	900 ... 1800	4030			Q65110A7525	
	LY E6SF-AABA-46-1			1120 ... 2240	4980			Q65110A6209	
	LA ETSF-AABA-24-1	amber-red	617	1120 ... 2240	4980	50	120	Q65110A9776	25
	LA ETSF-BACB-24-1			1800 ... 9450	9450			Q65110A9777	
	LY ETSF-AABA-35-1	yellow	587	1120 ... 2240	4980			Q65110A9778	
	LY ETSF-ABCA-46-1			1400 ... 3550	7425			Q65110A9779	
	LT E6SG-AABA-35	true green	525	1120 ... 2240	5050	30	120	Q65110A7885	26
	LB E6SG-T1U2-35	blue	469	280 ... 710	1500			Q65110A7883	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LW E6SG-AABA-JKPL-1	◯ white	0.33 / 0.33	1120 ... 2240	5050	30	120	Q65110A8964	26
	LCW E6SG-V1AB-4U9X	◯ warm white	0.42 / 0.4	710 ... 1800	3200			Q65110A7736	
	LCW E6SG-V1AB-4R9T				3500			Q65110A7737	
	LCW E6SG-V2BA-4O9Q				3800			Q65110A7733	
	LCW E6SG-V2BA-4L8N			900 ... 2240	4100			Q65110A7734	
	LCW E6SG-V2BA-4J8K				4200			Q65110A7735	
	LUW E6SG-BACA-4N7Q-1	◯ ultra white	0.31 / 0.32	1800 ... 3550	6700			Q65110A8458	
	LUW E6SG-ABBB-4N7Q-1			1400 ... 2800	5900			Q65110A7880	
	LCP E6SC-S2U1-45	● color on demand pure green	0.39 / 0.58	224 ... 560	1200	30	120	on request	24
	LCP E6SC-T2V1-45			355 ... 900	1900				
	LCB E6SG-V1AB	● color on demand blue	0.2 / 0.3	710 ... 1800	3770				
	LCR E6SG-U1V2-DMDQ-46	● color on demand crystal pink	0.38 / 0.24	450 ... 1120	2360			Q65110A7166	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
Power TOPLED with lens									
	LS E65F-BBDA-1	super red	633	2240 ... 5600	4480	50	60	Q65110A4106	27
	LA E65F-CBEA-24-3A4B	amber-red	617	3550 ... 9000	7170			Q65110A4104	
	LA E65F-CADA-24-3B5A			2800 ... 5600	4800			Q65110A2335	
	LY E65F-BBCB-35-1	yellow	587	2240 ... 4500	3850			Q65110A4110	
	LY E65F-CADA-46-1			2800 ... 5600	4800			Q65110A4109	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	E_V [lux]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LS E63F-DBFA-1	super red	633	5600 ... 14000	3750	50	30	Q65110A4105	28
	LA E63F-EBGA-24-3A4B	amber-red	617	9000 ... 22400	6000			Q65110A4103	
	LA E63F-EAFA-24-3B5A			7100 ... 14000	4200			Q65110A1845	
	LY E63F-DBEB-35-1	yellow	590	5600 ... 11200	3350			Q65110A4108	
	LY E63F-EAFA-46-1			7100 ... 14000	4200			Q65110A4107	
	LT E63C-BACB-35-1	true green	525	1800 ... 4500	1850	30	20	Q65110A1866	29
	LT E63C-CADB-35-1			2800 ... 7100	2900			Q65110A1867	
	LT E63C-BADB-35-1			1800 ... 7100	2610			Q65110A1981	
	LV E63C-ABCA-35-1	verde green	503	1400 ... 3550	1450			Q65110A1874	
	LV E63C-BBDA-35-1			2240 ... 5600	2300			Q65110A1875	
	LV E63C-ABDA-35-1			1400 ... 5600	2050			Q65110A1985	
	LB E63C-T2V1-35-34	blue	469	355 ... 900	370			Q65110A1852	
	LB E63C-U2V2-35-34			560 ... 1120	490			Q65110A1973	
	LB E63C-T2V2-35-34			355 ... 1120	430			Q65110A1974	

Advanced Power TOPLED

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
Advanced Power TOPLED									
	LR G6SP-CADB-1-1	red	625	2800 ... 7100	13400	140	120	Q65110A4728	30
	LA G6SP-CBEA-24-1	amber-red	617	3550 ... 9000	16800			Q65110A4732	
	LY G6SP-BBDB-36-1	yellow	590	2240 ... 7100	12600			Q65110A4721	
	LT G6SP-CBEB-25-1	true green	528	3550 ... 11200	18700	140	120	Q65110A5874	31
	LB G6SP-V2BB-35-1	blue	470	900 ... 2800	4950			Q65110A4678	
	LW G6CP-EAFA-JKQL-1	white	0.34 / 0.34	7100 ... 14000	31600	140	120	Q65110A8947	31
	LCY G6SP-CADB-4E	color on demand yellow	0.56 / 0.42	2800 ... 9000	14900	140	120	Q65110A8813	31

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
Advanced Power TOPLED Plus									
	LR G5AP-BZCZ-1-1	red	623	2400 ... 4500	13800	100	145	Q65110A8036	32
	LT G5AP-CZEX-36-1	true green	527	3900 ... 8200	24200			Q65110A8431	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_E [mW/sr]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LD G5AP-2M2N-35-1	deep blue	457	20.1 ... 35.5	100	145	Q65110A8037	32

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	I_V (typ.) [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
Advanced Power TOPLED Plus									
	LCW G5GP-FZHX-5L8N	◯ warm white	0.42 / 0.4	15000 ... 33000	6400	100	135	Q65110A9081	32
	LCW G5GP-FYHX-5O8Q			13000 ... 33000	6100			Q65110A9078	
	LCW G5GP-FYGY-5R8T			13000 ... 24000	5000			Q65110A9079	
	LUW G5GP-GXHY-5C8E	◯ ultra white	0.31 / 0.32	18000 ... 39000	7600			Q65110A9093	
	LUW G5GP-GXHY-5F8G							Q65110A9091	

DRAGON Family

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	I_V (typ.) [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
Golden DRAGON									
	LR W5SM-HYJY-1	red	625	33000 ... 61000	15600	400	120	Q65110A4386	34
	LA W5SM-HZJZ-24	amber-red	617	39000 ... 71000	18300			Q65110A4278	
	LY W5SM-HZJZ-35	yellow	590					Q65110A9644	
	LY W5SM-HZJZ-46							Q65110A9645	
	LT W5SM-JXKX-36	true green	528	45000 ... 82000	21000	350	120	Q65110A8417	34
	LT W5SM-JYKY-25			52000 ... 97000	24600			Q65110A9212	
	LB W5SM-FYGZ-24	blue	470	13000 ... 28000	6800			Q65110A9224	
	LB W5SM-FZHX-35			15000 ... 33000	7900			Q65110A9221	
	LW W5SM-JYKY-JKQL	white	0.33 / 0.33	52000 ... 97000	213063	350	120	Q65110A9133	34
	LCW W5SM-JXKX-4U9X	warm white	0.42 / 0.4	45000 ... 82000	18500			Q65110A9692	
	LCW W5SM-JYKY-4R9T			52000 ... 97000	24800			Q65110A9693	
	LCW W5SM-JXKY-4O9Q			39000 ... 97000	24000			Q65110A9681	
	LCW W5SM-JYKY-4L8N			52000 ... 97000	24800			Q65110A9694	
	LCW W5SM-JYKZ-4J8K			52000 ... 112000	27300			Q65110A9698	
	LUW W5SM-JZKY-5P7R	ultra white	0.31 / 0.32	61000 ... 97000	230700			Q65110A8112	
	LUW W5SM-JZKY-4C8E							Q65110A8110	
	LUW W5SM-JZKY-5F8G							Q65110A8111	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_E [mW]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LD W5SM-4S4T-35	deep blue	455	250 ... 450	350	120	Q65110A9216	34

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	I_V (typ.) [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
Golden DRAGON Plus									
	LR W5AM-HZJZ-1	red	625	39000 ... 71000	17600	400	170	Q65110A8618	35
	LA W5AM-JXKX-24	amber-red	617	45000 ... 82000	20000			Q65110A8616	
	LY W5AM-HYJZ-36	yellow	590	33000 ... 61000	16000			Q65110A8617	
	LT W5AM-JYKZ-36	true green	528	52000 ... 112000	28700	350	170	Q65110A8619	35
	LB W5AM-GYHY-25	blue	470	21000 ... 39000	10500			Q65110A8620	
	LCW W5AM-JZKY-4U9X	warm white	0.42 / 0.4	61000 ... 97000	19800	350	170	Q65110A9535	36
	LCW W5AM-KYKZ-4L8N			82000 ... 112000	26150			Q65110A8828	
	LCW W5AM-JZKZ-4O9Q			61000 ... 112000	21650			Q65110A9536	
	LCW W5AM-KXKY-4R9T			71000 ... 97000	21000			Q65110A8169	
	LCW W5AM-KXKZ-4J8K			71000 ... 112000	22800			Q65110A8986	
	LUW W5AM-KYLX-6P7Q	ultra white	0.31 / 0.32	82000 ... 130000	26500			Q65110A7564	
	LUW W5AM-KYLX-4E8G-ZN							Q65110A9533	
	LUW W5AM-KYLX-4C8E-ZN							Q65110A9531	
	LW W5AM-KXLX-5K8L	white	0.33 / 0.33	71000 ... 130000	25100			Q65110A9850	
	LW W5AM-KYLX-6K7L			82000 ... 130000	26500			Q65110A9529	36
	LW W5AM-KZLX-6K7L			97000 ... 130000	28400			Q65110A9530	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_E [mW]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LD W5AM-3T3U-35	deep blue	455	355 ... 630	350	170	Q65110A8621	35

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	I_V (typ.) [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
Platinum DRAGON									
	LR W5SN-JYKY-1	red	625	52000 ... 97000	24800	700	120	Q65110A6011	34
	LA W5SN-JZKZ-24	amber-red	617	61000 ... 112000	28800			Q65110A6010	
	LY W5SN-JYKY-46	yellow	590	52000 ... 97000	24800			Q65110A5712	
	LT W5SN-KYLY-25	true green	528	82000 ... 150000	38600			Q65110A9211	
	LV W5SN-JXKZ-25	verde green	505	45000 ... 112000	26200			Q65110A8309	
	LB W5SN-GZJX-35	blue	470	24000 ... 52000	12700			Q65110A7464	
	LB W5SN-GYHZ-25			21000 ... 45000	11000			Q65110A9222	
	LCW W5SN-KXLX-4U9X	warm white	0.42 / 0.4	71000 ... 130000	29800	700	120	Q65110A9713	34
	LCW W5SN-KYLY-4R9T			82000 ... 150000	31200			Q65110A9717	
	LCW W5SN-KXLX-4O9Q			71000 ... 130000	29800			Q65110A7708	
	LCW W5SN-KYLY-4L8N			82000 ... 150000	31200			Q65110A7706	
	LCW W5SN-KYLY-4J8K				32400			Q65110A7707	
	LW W5SN-KYLY-JKQL	white	0.33 / 0.33		38000			Q65110A8946	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_E [mW]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LD W5SN-1U2V-35	deep blue	455	450 ... 900	700	120	Q65111A0040	34

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	I_V (typ.) [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
Diamond DRAGON									
	LR W5AP-KZMX-1	red	625	97000 ... 210000	45000	1400	140	Q65110A7158	37
	LA W5AP-LXMY-24	amber-red	617	112000 ... 240000	51000			Q65110A7159	
	LY W5AP-KYLZ-36	yellow	590	82000 ... 180000	364470			Q65110A7156	
	LT W5AP-LYMZ-25	true green	528	130000 ... 280000	572360			Q65110A7157	
	LUW W5AP-MYNY-5P7R LUW W5AP-MYNY-5F8G LUW W5AP-MYNY-4C8E	ultra white	0.31 / 0.32	210000 ... 390000	80000	1400	140	Q65110A7821 Q65110A7820 Q65110A7819	37

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_E [mW]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LD W5AP-3V8A-35	deep blue	455	900 ... 1800	1400	140	Q65110A7165	37

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	at I_F [mA]	peak. Viewing angle at 100 % PhiV 2φ (typ.) [°]	Ordering Code	Package Fig.
Golden DRAGON oval Plus								
	LCW W5PM-JYKX-5U8X	◯ warm white	0.42 / 0.4	52000 ... 82000	350	120	Q65110A9012	38
	LCW W5PM-JYKY-5R8T			52000 ... 97000			Q65110A9005	
	LCW W5PM-JYKY-5O8Q						Q65110A9009	
	LCW W5PM-JZKY-5L7N			61000 ... 97000			Q65110A9001	
	LCW W5PM-JZKZ-5J7K			61000 ... 112000			Q65110A9003	
	LUW W5PM-KYLX-6P7R	◯ ultra white	0.31 / 0.32	82000 ... 130000	350	120	Q65110A9011	38
	LUW W5PM-KYLX-5P7R						Q65110A9004	
	LUW W5PM-KYKZ-5P7R			82000 ... 112000			Q65110A9010	
	LW W5PM-KXKZ-6K8L	◯ white	0.33 / 0.33	71000 ... 112000	350	120	Q65110A9000	38
	LW W5PM-KXLX-6K8L			71000 ... 130000			Q65110A9008	
	LW W5PM-KXKZ-5K8L			71000 ... 112000			Q65110A9013	

PointLED

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
PointLED									
	LS P47K-H1J2-1	super red	630	2.8 ... 7.1	15	2	120	Q65110A1455	8
	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			Q65110A1467	
	LG P47K-H2K1-24			3.55 ... 9	19			Q65110A1468	
	LG P47K-G2K1-24			2.24 ... 9	15			Q65110A2730	
	LO P476-R2T1-24	orange	606	140 ... 355	760	20		Q65110A7018	
	LY P476-Q2S1-26	yellow	587	90 ... 224	480			Q65110A3955	
	LY P476-R2T1-26			140 ... 355	760			Q65110A3956	
	LY P476-Q2T1-26			90 ... 355	675			Q65110A4881	
	LS P47F-U1AA-1-1	super red	633	450 ... 1400	2780	30	120	Q65110A4859	9
	LR P47F-U2AB-1-1	red	625	560 ... 1800	3540			Q65110A4861	
	LA P47F-V2BB-24-3A4B	amber	617	900 ... 2800	5550			Q65110A4857	
	LA P47F-V2BB-24-3B5A							Q65110A9267	
	LY P47F-U2AB-36-4A5B	yellow	587	560 ... 1800	3540			Q65110A9266	
	LY P47F-U2AB-36-3B5A							Q65110A4860	
	LB P4SG-S2U1-35	blue	470	224 ... 560	850	20	120	Q65110A8252	9
	LT P4SG-V1AB-36-1	true green	528	710 ... 1800	3010			Q65110A7127	
	LW P473-Q2S1-3K8L-1	white	0.32 / 0.31	90 ... 224	470	10	120	Q65110A1453	8
	LCB P473-P2R2	color on demand blue	0.2 / 0.3	56 ... 180	350	10	120	on request	8
PointLED Silicone									
	LB P4SG-S2U1-35	blue	470	224 ... 560	850	20	120	Q65110A8252	9
	LT P4SG-V1AB-36-1	true green	528	710 ... 1800	3010			Q65110A7127	
	LW P4SG-V2AB-JKPL-1	white	0.33 / 0.33	900 ... 1800	4050	20	120	Q65110A9047	8
	LW P4SG-V2AB-JKPL-1-F							Q65110A9048	

SmartLED

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
SmartLED 0603 0.6 mm									
	LS L29K-G1H2-1	super red	630	1.8 ... 4.5	13	2	extremely wide viewing angle 160	Q65110A1758	10
	LS L29K-H1J2-1			2.8 ... 7.1	20			Q65110A1756	
	LS L29K-G1J2-1			1.8 ... 7.1	17			Q65110A1757	
	LO L29K-H2K1-24	orange	606	3.55 ... 9	25			Q65110A1747	
	LO L29K-J2L1-24			5.6 ... 14	40			Q65110A1752	
	LO L29K-H2L1-24			3.55 ... 14	35			Q65110A1751	
	LY L29K-H1J2-26	yellow	587	2.8 ... 7.1	20			Q65110A1765	
	LY L29K-J1K2-26			4.5 ... 11.2	32			Q65110A1748	
	LY L29K-H1K2-26			2.8 ... 11.2	28			Q65110A1766	
	LG L29K-F2H1-24	green	570	1.4 ... 3.55	8		extremely wide viewing angle 160°	Q65110A1744	
	LG L29K-G2J1-24			2.24 ... 5.6	12			Q65110A1746	
	LG L29K-F2J1-24			1.4 ... 5.6	10			Q65110A1745	
	LS L296-N2Q1-1	super red	633	35.5 ... 90	250	20	extremely wide viewing angle 160°	Q65110A1753	10
	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			Q65110A3342	
	LB L293-L2N1-25-1	blue	470	14 ... 35.5	100	10	horizontal 155°, vertical 135°	Q65110A1788	10
	LB L293-M2P1-36-1			22.4 ... 56	160			Q65110A1791	
	LT L29S-N1R2-25	true green	528	28 ... 180	420	10	horizontal 155°, vertical 135°	Q65110A3218	10
	LT L29S-N2Q1-25			35.5 ... 90	250			Q65110A3219	
	LT L29S-P2R1-25			56 ... 140	400			Q65110A3220	
	LW L283-P2R1-3K8L-1	white	0.32 / 0.31	56 ... 140	400	10	horizontal 170°, vertical 130°	Q65110A1550	10
	LW L283-Q1R2-3K8L-1			71 ... 180	500			Q65110A1647	
	LW L28G-R2S2-3K6L-1		0.3 / 0.28	140 ... 280	990			Q65110A2460	11

CHIPLED

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
CHIPLED 1206									
	LH N974	hyper red	645	7.1 ... 45	15	20	extremly wide viewing angle 160°	Q62702P5192	13
	LY N971	yellow	587	2.8 ... 18	40	20	extremly wide viewing angle 160°	Q62702P5193	12
	LG N971	green	570	7.1 ... 45	105			Q62702P5191	
CHIPLED 1206 with lens									
	LA N91E-DBFB-24	amber-red	617	5600 ... 18000	3500	20	20 °	Q65110A8697	22
	LB N91E-AADA-35-1	blue	470	1120 ... 5600	1100			Q65110A8735	
	LT N91E-DBFB-25-1	true green	530	5600 ... 18000	3500			Q65110A8707	
	LA N91F-DBFB-24-1	amber-red	617	5600 ... 18000	3500	20	20 °	Q65110A8696	22
CHIPLED 0805									
	LO R971	orange	605	2.8 ... 18	28	20	extremly wide viewing angle 160°	Q62702P5180	14
	LY R971	yellow	590					Q62702P5181	
	LG R971	green	570	7.1 ... 45	100			Q62702P5179	
	LS R976	super red	633	28 ... 180	330	20	extremly wide viewing angle 160°	Q62702P5178	14
	LO R976	orange	606	45 ... 280	520			Q62702P5101	
	LY R976	yellow	588					Q62702P5177	
CHIPLED 0603 0.4 mm									
	LT Q39E-Q1S2-25-1	true green	530	71 ... 280	440	5	horizontal 155°, vertical 135°	Q65110A7998	16
	LB Q39E-L2N2-35-1	blue	470	14 ... 45	75			Q65110A7212	
	LT Q39G-Q1S2-25-1	true green	530	71 ... 280	550			Q65110A7997	18
	LB Q39G-L2N2-35-1	blue	470	14 ... 45	95			Q65110A7211	
	LB Q39G-N1P1-35-1			28 ... 56	140		horizontal 160°, vertical 135°	Q65110A7940	
	LW Q38G-Q1S1-3K6L-1	white	0.3 / 0.28	71 ... 224	440	5	horizontal 150°, vertical 130°	Q65110A7209	18
	LW Q38G-Q2R2-3K5L-1			90 ... 180	400			Q65110A7584	
	LW Q38E-Q1S2-3K6L-1			71 ... 280	520			Q65110A7210	16
	LW Q38E-Q2R2-3K5L			90 ... 180	400			Q65110A7939	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
CHIPLED 0603 0.6 mm									
	LG Q976-MP-24	green	572	5600 ... 18000	135	20	extremly wide viewing angle 160°	Q65110A8842	59
CHIPLED 0603 0.8 mm									
	LS Q971	super red	628	7.1 ... 45	11	20	extremly wide viewing angle 160°	Q65110A4282	20
	LO Q971	orange	606	4.5 ... 28	9			Q65110A4285	
	LY Q971-H1L2-36	yellow	587	2.8 ... 9	6			Q62703Q4699	
	LG Q971	green	570	7.1 ... 45	10			Q62702P5189	
	LS Q976	super red	633	28 ... 180	330	20	extremly wide viewing angle 160°	Q62702P5187	20
	LO Q976	orange	605	45 ... 280	520			Q62702P5188	
	LY Q976	yellow	587					Q62702P5276	
	LH Q974	hyper red	645	7.1 ... 45	15	20	extremly wide viewing angle 160°	Q65110A4922	21
CHIPLED 0402									
	LR QH9F-P2R1-1	red	625	56 ... 140	300	5	horizontal 120°, vertical 130°	Q65110A8031	23
	ZO QH9F-M2P2-24-1	orange	606	18 ... 71	140	2		Q65110A8074	
	LY QH9F-P1R1-36	yellow	590	45 ... 140	380	5		Q65110A8028	
	LT QH9G-Q2S2-25-1	true green	525	90 ... 280	550	5	horizontal 155°, vertical 170°	Q65110A9219	23
	LB QH9G-N1P2-35-1	blue	470	28 ... 71	150			Q65110A8032	
	LW QH8G-Q2S2-3K5L-1	white	0.29 / 0.27	90 ... 280	550	5	horizontal 120°, vertical 145°	Q65110A8029	23

Multicolor Packages

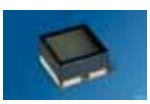
Package	Type	Emission color	λ_{dom} (typ.) [nm]	I_V [mcd] color 1	I_V [mcd] color 2	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
Multi TOPLED									
	LSY T676-P2R1-1-0+Q2S1-35	super red yellow	633 / 587	56 ... 140	90 ... 224	20	120	Q65110A2446	49
	LSG T676-P7Q7-1+N7P7-24	super red green	633 / 570		35.5 ... 90			Q65110A4186	
	LSY T67B-R2S2+S2T2-1	super red yellow	633 / 587	140 ... 280	224 ... 450	30	120	Q65110A2447	49
	LSY T67B-R2T2+S2U2-1			140 ... 450	224 ... 710			Q65110A2449	
	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	49
Multi TOPLED Reverse Gullwing									
	LOG T77K-JL-1-0+GJ-1	orange green	606 / 570	4.5 ... 18	1.8 ... 7.1	2	120	Q65110A3338	56

Package	Type	Emission color	Cx/Cy	I_V [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
MULTILED inline								
	LRTBGFSFF-ABCB-QKYO	white	0.31 / 0.31	1400 ... 4500	13 (R) 20 (T) 8 (B)	120	Q65110A9484	52

Package	Type	Emission color	λ_{dom} (typ.) [nm]	I_V [mcd] color 1	I_V [mcd] color 2	I_V [mcd] color 3	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
MULTILED inline, black package										
	LRTBGFUG-P9R7-1+S7U-29+M7Q-49	red true green blue	625 / 528 / 470	63 ... 224	224 ... 710	22.4 ... 112	10 (R) 20 (T) 10 (B)	120	Q65110A8176	53
MULTILED inline, black surface										
	LRTBGFTG-T7AW-1+V7A7-29+R5T9-49	red true green blue	625 / 528 / 470	355 ... 1800	900 ... 2240	125 ... 630	20	120	Q65110A8177 Q65110A9105	52
	LRTBGFTM-ST7-1+VV9-29+Q5R7-49-L LRTBGFTM-ST7-1+VV9-29+Q5R7-49-S	red true green blue	625 / 528 / 470	180 ... 560	710 ... 1590	80 ... 224	10 (R) 20 (T) 10 (B)	120	Q65110A9407 Q65110A9442	52

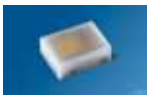
Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
MULTILED									
	LYYYG6SF-CADB-35	yellow	587	2800 ... 7100	14900	50	120	Q65110A5713	51

Package	Type	Emission color	Cx/Cy	I_V [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
MULTILED 6-lead Silicone / diffusor								
	LRTBG6SF-V2BA-3E7F	white	0.31 / 0.31	900 ... 2240	13 (R) 20 (T) 8 (B)	120	Q65110A7501	51

Package	Type	Emission color	λ_{dom} (typ.) [nm]	I_V [mcd] color 1	I_V [mcd] color 2	I_V [mcd] color 3	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
Multi CHIPLED										
	LRTBR98G-R7T5-1+S7U-37+P7R-26	red true green blue	625 / 528 / 470	140 ... 500	224 ... 710	56 ... 180	20	120	Q65110A8602	54

Package	Type	Emission color	λ_{dom} (typ.) [nm]	I_V [mcd] color 1	color 2	color 3	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
Multi CERAMOS										
	LRTBC9TP-CWD5-1+D5E7-25+A9C5-49	red true green blue	625 / 528 / 470	2800 ... 8000	5000 ... 14000	1400 ... 4000	140	120	Q65110A8879	55

CERAMOS

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	at I_F [mA]	peak. Viewing angle at 100 % PhiV 2φ (typ.) [°]	Ordering Code	Package Fig.
CERAMOS								
	LUW C9EP-N4N6-EG	◯ ultra white	0.31 / 0.32	75000 ... 105000	500	120	Q65110A7878	40
	LUW C9SP-N4N6-EG	◯ ultra white	0.31 / 0.32	75000 ... 105000	500	120	Q65110A7879	40
	LUW C9SM-N1N3-EG	◯ ultra white	0.31 / 0.32	40000 ... 70000	300	120	Q65110A9502	41
	LUW CAEP-LFLZ-G3	◯ ultra white	0.33 / 0.36	125000 ... 180000	500	120	Q65110A8628	40

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	I_V (typ.) [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
CERAMOS Reflector									
	LUW CHSN-DAEB-FPMR	◯ white	0.29 / 0.28	5600 ... 11200	26000	150	120	Q65110A8266	42

OSLUX

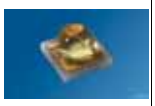
Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	at I_F [mA]	peak. Viewing angle at 100 % PhiV 2φ (typ.) [°]	Ordering Code	Package Fig.
OSLUX								
	LUW F65N-KYMX-5P7R	◯ ultra white	0.31 / 0.32	82000 ... 210000	700	horizontal 50°, vertical 38°	Q65110A7828	43

OSLON Family

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	I_V (typ.) [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
OSLON SX									
	LA CN5M-FBGB-24-1	amber-red	617	11200 ... 22400	12000	140	60	Q65110A8681	33
	LY CN5M-FAGA-36-1	yellow	590	14000 ... 28000	15000			Q65110A8680	
	LT CN5M-FBGB-25-1	true green	528					Q65110A8679	
	LT CN5M-GAHB-25-1			18000 ... 45000	22500			Q65110A9086	
	LUW CN5M-GAHA-5P7R-1	ultra white	0.29 / 0.28	18000 ... 35500	19100	140	60	Q65110A8682	33

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_E [mW]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LD CN5M-4Q4R-35-1	deep blue	453	100 ... 180	140	60	Q65110A8683	33
	LD CN5M-1R1S-35-1			112 ... 201			Q65110A9085	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	I_V (typ.) [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
OSLON LX									
	LMW CNAP-6J7K-37-DF-LH	multiphosphor white	0.27 / 0.23	50000 ... 100000	21000	350	125	Q65110A9161	33
	LUW CNAP-8J6L-BJ-P4P6-LH	ultra white	0.26 / 0.22	50000 ... 140000	27000	350	125	Q65111A0024	33

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	I_V (typ.) [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
OSLON SSL									
	LA CP7P-JXKX-24	amber-red	617	45000 ... 82000	36000	400	80	Q65110A9067	33
	LCW CP7P-KQKS-5R8T-35 LCW CP7P-KQKS-5L7N-35	warm white	0.42 / 0.4	76300 ... 97000	49000	350	80	Q65110A9765 Q65110A9864	33
	LT CP7P-JYKZ-26	true green	525	45000 ... 112000	44000	350	80	Q65110A9074	33
	LUW CP7P-KTLP-5E8G-35 LUW CP7P-KTLP-5C8E-35	ultra white	0.31 / 0.32	97000 ... 121000	56000	350	80	Q65110A9768 Q65110A9767	33

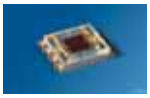
Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_E [mW]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LD CP7P-1T2U-35	deep blue	455	280 ... 560	350	80	Q65110A9068	33

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	I_V (typ.) [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
OSLON SX ECE									
	LUW CN7M-HYJY-EMKM-1	ultra white	0.32 / 0.32	33000 ... 61000	21000	200	90	Q65110A9509	33

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	I_V (typ.) [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
OSLON MX ECE									
	LUW CN7N-KYLX-EMKM-46	ultra white	0.31 / 0.32	82000 ... 130000	56000	350	80	Q65110A9810	33

OSTAR Family

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	L_V (typ.) [cd/m^2]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
OSTAR Compact									
	LE A Q9WN-JXJZ-1	amber	617	45000 ... 71000	30*10^6	700	120	Q65110A9135	60
	LE B Q9WN-HXJY-24	blue	470	28000 ... 61000	19*10^6			Q65110A9132	
	LE T Q9WN-KZLZ-25	true green	528	97000 ... 180000	59*10^6			Q65110A9134	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	Φ_V [mlm]	I_V (typ.) [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
OSTAR SMT									
	LE A S2W-MXMZ-34	amber-red	617	180000 ... 280000	75000	700	120	Q65110A8181	64
	LE T S2W-NYPY-35	true green	525	330000 ... 610000	140000	700	120	Q65110A8185	64
	LE B S2W-KYLY-23	blue	470	82000 ... 150000	35000			Q65110A8184	
	LE UW S2W-NZPZ-FRKV	ultra white	0.31 / 0.32	390000 ... 710000	170000	700	120	Q65110A8186	64

Package	Type	Emission color	λ_{dom} (typ.) [nm]	I_V [mcd] color 1	I_V [mcd] color 2	I_V [mcd] color 3	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LE ATB S2W-JW-1+LBMB-24+GWHW-23	amber-red true green blue	617	45000 ... 71000	140000 ... 280000	18000 ... 45000	700	120	Q65110A8183	64

Package	Type	Emission color	λ_{dom} (typ.) [nm]	I_V [mcd]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
OSTAR Projection								
	LE A G3W-LAMA-34	amber-red	617	112000 ... 224000	1000	120	Q65110A7698	62
	LE B G3W-JAKA-23	blue	464	45000 ... 90000	1000	120	Q65110A7701	62
	LE B G3W-KALA-23	blue	464	71000 ... 140000			Q65110A9027	
	LE T G3W-MANA-25	true green	520	180000 ... 355000			Q65110A7703	
	LE A H3W-LAMA-34	amber-red	617	112000 ... 224000	1000	120	Q65110A7699	63
	LE B H3W-JAKA-23	blue	464	45000 ... 90000	1000	120	Q65110A7702	63
	LE B H3W-KALA-23	blue	464	71000 ... 140000			Q65110A9026	
	LE T H3W-MANA-25	true green	520	180000 ... 355000			Q65110A7704	

Package	Type	Emission color	λ_{dom} (typ.) [nm]	I_V [mcd] color 1	I_V [mcd] color 2	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LE AB G3WB-KAMA-1+GBHB-23	amber-red blue	617	71000 ... 140000	22400 ... 45000	1000	120	Q65110A9006	62
	LE AB H3WB-KAMA-1+GBHB-23	amber-red blue	617	71000 ... 140000	22400 ... 45000	1000	120	Q65110A9007	63

Package	Type	Emission color	λ_{dom} (typ.) [nm]	L_V (typ.) [cd/m²]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
OSTAR Power Projection								
	LE A P3W-SYTZ-1	amber	617	97*10⁶	6000 / Chip	120	Q65110A9038	61
	LE T P3W-XTTZ-25	true green	520	110*10⁶			Q65110A9034	

Package	Type	Emission color	λ_{dom} (typ.) [nm]	L_E (typ.) [W/m²/sr]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LE B P3W-FYGZ-24	blue	464	1.7*10⁶	6000	120	Q65110A9036	61

Package	Type	Emission color	Color coordinates Cx/Cy typ.	Φ_V [mlm]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
OSTAR Headlamp									
	LE UW D1W1 01-5L6M-GMKM-T01	ultra white	0.335 / 0.345	112000 ... 224000	150000	700	120	Q65110A8591	
	LE UW D1W2 01-7M7N-GMKM-T01			224000 ... 400000	300000			Q65110A8590	
	LE UW D1W3 01-7N7P-GMKM-T01			630000 ... 355000	450000			Q65110A8588	
	LE UW D1W4 01-5P6Q-GMKM-T01			900000 ... 450000	600000			Q65110A8593	
	LE UW D1W5 01-7P8Q-GMKM-T01			1120000 ... 560000	750000			Q65110A8589	

SIDELED

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
SIDELED									
	LS A67K-K1L2-1	super red	630	7.1 ... 18	35	2	120	Q65110A2017	44
	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-H2K1-24	green	570	3.55 ... 9	19			Q65110A2290	
	LG A67K-G2K1-24			2.24 ... 9	17			Q65110A2291	
	LP A67K-E1F2-25	pure green	560	0.71 ... 1.8	4			Q65110A2292	
	LP A67K-F1G2-25			1.12 ... 2.8	6			Q65110A2293	
	LP A67K-E1G2-25			0.71 ... 2.8	5			Q65110A2294	
	LS A676-Q1R2-1	super red	633	71 ... 180	350	20	120	Q65110A2259	44
	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			Q65110A2285	
	LP A676-L1M2-25	pure green	560	11.2 ... 28	60			Q65110A2286	
	LP A675-N1P2-25	pure green	560	28 ... 71	150	30	120	Q65110A2310	44
	LS A67F-U1AA-1	super red	633	450 ... 1400	2780	30	120	Q65110A4723	44
	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	
	LT A673-P1Q2-25	true green	532	45 ... 112	240	10	120	Q65110A1960	44
	LT A673-Q1R2-25			71 ... 180	380			Q65110A1961	
	LT A673-N2S1-25			35.5 ... 224	350			Q65110A1962	
	LB A673-L2N1-35	blue	471	14 ... 35.5	75			Q65110A1948	
	LB A673-M2P1-35			22.4 ... 56	120			Q65110A1949	
	LB A673-L2P1-35			14 ... 56	100			Q65110A1950	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LW A673-P2R1-5K8L	◯ white	0.33 / 0.33	56 ... 140	300	10	120	Q65110A1924	44
	LW A673-Q2S1-5K8L			90 ... 224	480			Q65110A1925	
	LW A673-P1S1-5K8L			45 ... 224	400			Q65110A1926	
	LW A673-P2R1-3K6L			56 ... 140	300			Q65110A4097	
SIDELED Silicone									
	LT A6SG-V2AB-35	true green	528	900 ... 1800	4050	20	120	Q65110A7884	45
	LB A6SG-S2U1-35	blue	470	224 ... 560	1200			Q65110A7882	
	LW A6SG-V2BA-JKPL	◯ white	0.33 / 0.33	900 ... 2240	4700	20	120	Q65110A8994	45
	LCB A6SG-U2AB	color on demand blue	0.2 / 0.3	560 ... 1800	2400	20	120	on request	45

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
Micro SIDELED 1 mm									
	LS Y876-P2R1-1	super red	633	56 ... 140	300	20	120	Q65110A2411	46
	LS Y876-Q2S1-1			90 ... 224	480			Q65110A1628	
	LS Y876-P2S1-1			56 ... 224	420			Q65110A2412	
	LO Y876-Q2S1-24	orange	605	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	
	LG Y876-P1Q2-24	green	570	45 ... 112	240			Q65110A8025	
	LT Y87S-N1P2-35	true green	528	28 ... 71	150	10	120	Q65110A2419	46
	LT Y87S-P1Q2-35			45 ... 112	235			Q65110A2420	
	LB Y87S-L1M2-35	blue	470	11.2 ... 28	60			Q65110A2416	
	LB Y87S-M1N2-35			18 ... 45	95			Q65110A2417	
	LB Y87C-P1Q2-35	blue	470	45 ... 112	240	20	120	Q65110A1862	46
	LB Y87C-Q1R2-35			71 ... 180	380			Q65110A1863	
	LB Y87C-P1R2-35			45 ... 180	340			Q65110A1979	

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
	LW Y87C-S1T2-3K8L	◯ white	0.32 / 0.31	180 ... 450	950	20	120	Q65110A1946	46
	LW Y87C-T1U1-3K8L			280 ... 560	1200			Q65110A1947	
Micro SIDELED Silicone 1 mm									
	LW Y8SG-U1V1-3K6L-1	◯ white	0.3 / 0.28	450 ... 900	1900	20	120	Q65110A1709	47
	LR Y8SF-U1V2-1-R18	red	625	560 ... 1400	2750	20	120	Q65110A8972	47
	LY Y8SF-U1V2-36-R18	yellow	587					Q65110A8977	
	LT Y8SG-V1AB-36-1	true green	528	710 ... 1800	3500	20	120	Q65110A8975	47
	LB Y8SG-T1U2-35-1	blue	470	180 ... 710	1250			Q65110A8976	
Micro SIDELED Silicone 0.8 mm									
	LW Y1SG-VHAF-EKJM-1	◯ white	0.3 / 0.28	720 ... 1400	3000	20	120	Q65110A4283	48
	LW Y1SG-BEBF-EKJM-1							Q65110A9084	
	LW Y1SG-AEBE-EKFM-1			1000 ... 1600	3900			Q65110A9541	
	LW Y1SG-AEBE-GKJM-1							Q65110A9542	
	LW Y1SG-AFBF-EKFM-1			1200 ... 1800	4500			Q65110A9543	
	LW Y1SG-AFBF-GKJM-1							Q65110A9544	
	LW Y1SG-BFCF-EKFM-1			1600 ... 2200	5700			Q65110A9545	
	LW Y1SG-BFCF-GKJM-1							Q65110A9546	

FIREFLY

Package	Type	Emission color	λ_{dom} (typ.)/ Cx/Cy [nm / -]	I_V [mcd]	Φ_V (typ.) [mlm]	at I_F [mA]	2φ (typ.) (50% I_V) [°]	Ordering Code	Package Fig.
FIREFLY 0402 0.35 mm									
	LA VH9F-Q1R2-24	amber-red	617	71 ... 180	380	5	horizontal 140°, vertical 165°	Q65110A8082	58
	LR VH9F-P2R1-1	red	625	56 ... 140	300			Q65110A8088	
	LT VH9G-Q2S2-25-1	true green	525	90 ... 280	550	5	horizontal 140°, vertical 165°	Q65110A9228	58
	LB VH9G-N1P2-35-1	blue	470	28 ... 71	150			Q65110A8083	
	LW VH8G-Q2S2-4M6N-1	white	0.285 / 0.275	90 ... 280	550	5	horizontal 140°, vertical 180°	Q65110A8090	58

Outline drawings - Dimensions in mm (inch)

Figure 1: **L* T670, LG T671, L* T673, LH T674, LP T675, L* T676, L* T68B, L* T686, L* T67C, L* T679, L* T67K, LW T6SC, L* T67F, LCB T67S, LCB T67C**

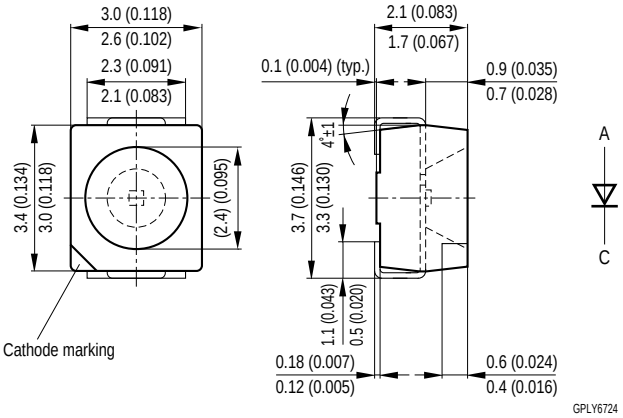


Figure 2: **LW T6SG**

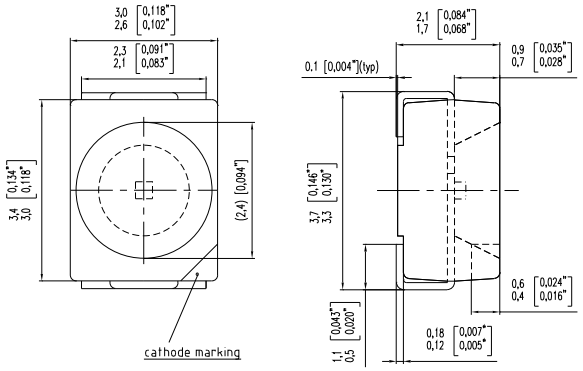


Figure 3: **L* T68F**

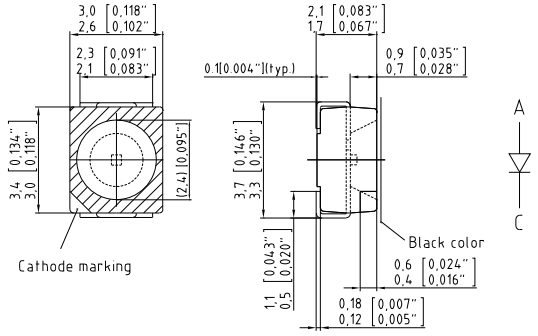


Figure 4: **L* T770, L* T77K, L* T776, L* T773**

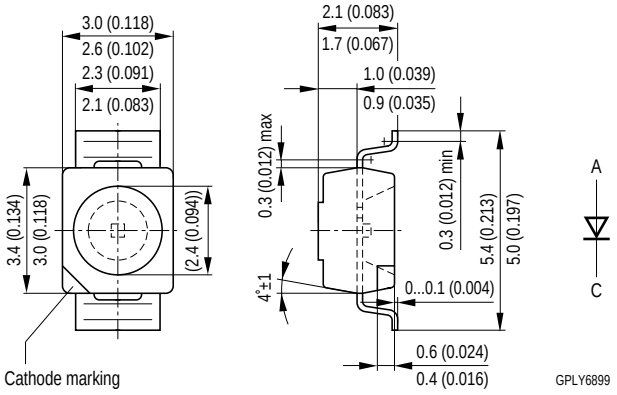


Figure 5: **LP T655, L* T656**

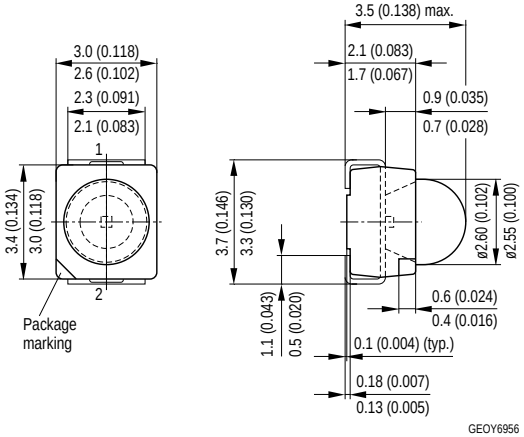
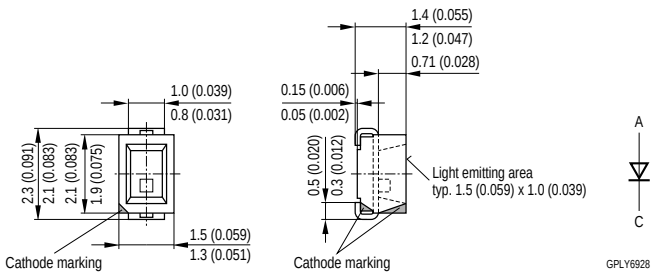


Figure 6: **L* M670, L* M676, L* M673, L* M67K, LP M675, L*M67B, L*M67C**



Outline drawings - Dimensions in mm (inch)

Figure 7:

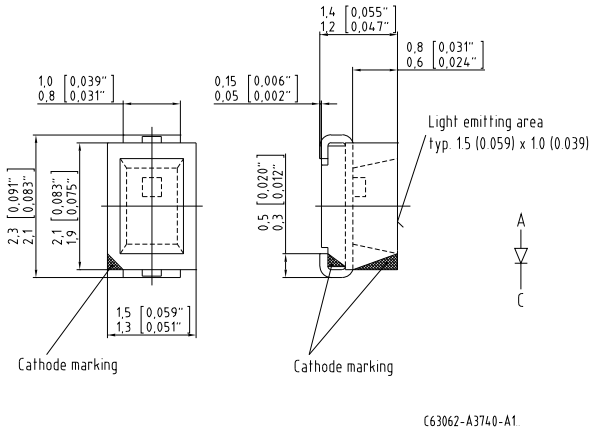


Figure 8: **L* P47K, L*P47B, L* P473**

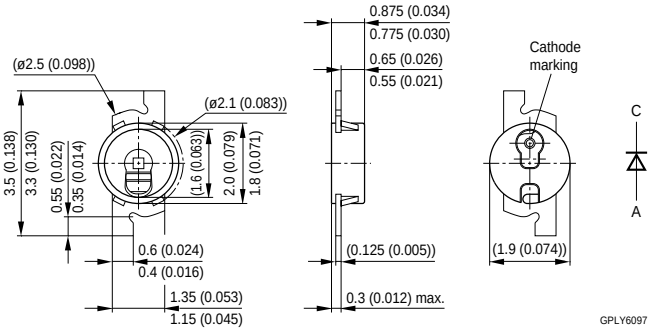


Figure 9: **L* P47F, LW P4SG**

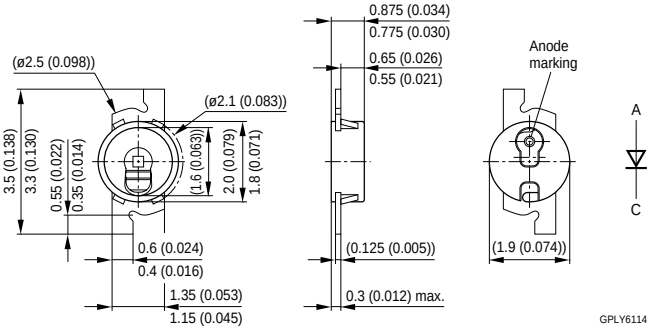


Figure 10: **L* L296, L* L29S, L* L293, L* 29K, LW L283**

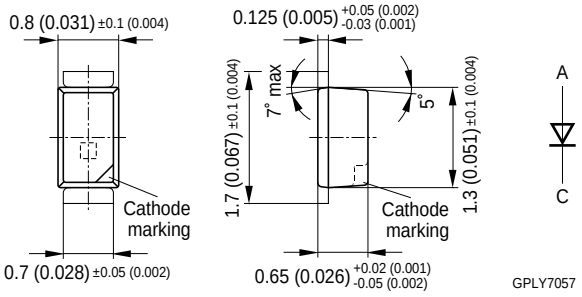


Figure 11: **LB L29G, LW L28G, LCW L28G**

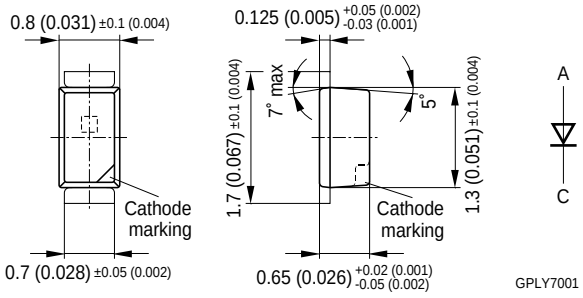
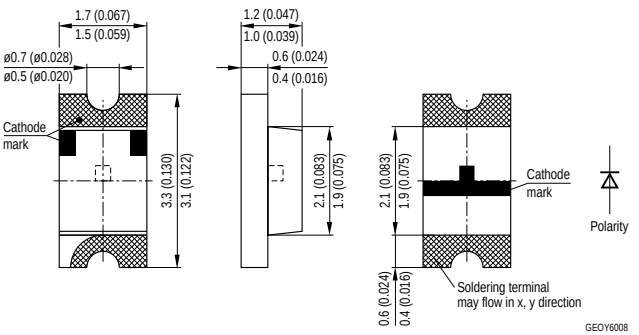


Figure 12: **L* N971**



Outline drawings - Dimensions in mm (inch)

Figure 13: LH N974

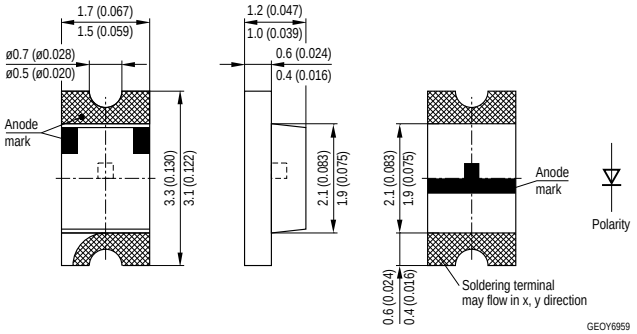


Figure 14: L* R971, L* R976

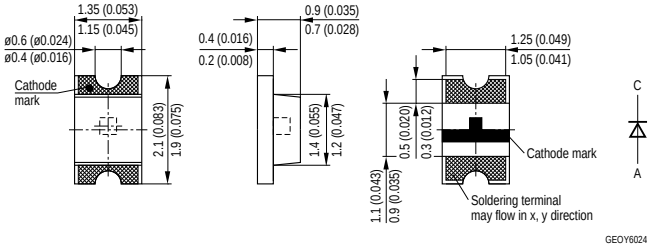


Figure 15: LH R974

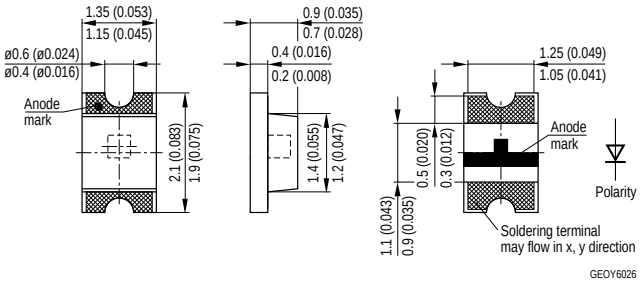


Figure 16: L* Q38E, L* Q39E

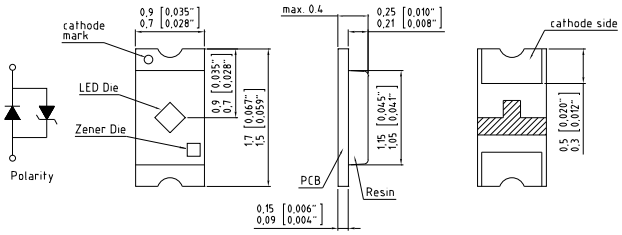


Figure 17: L* Q38E, L* Q39E

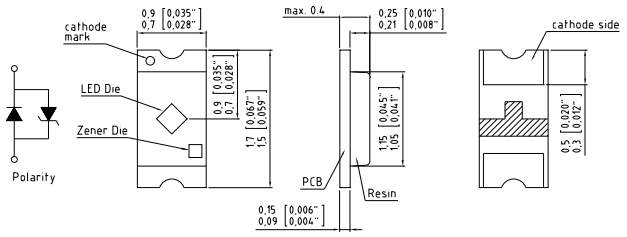
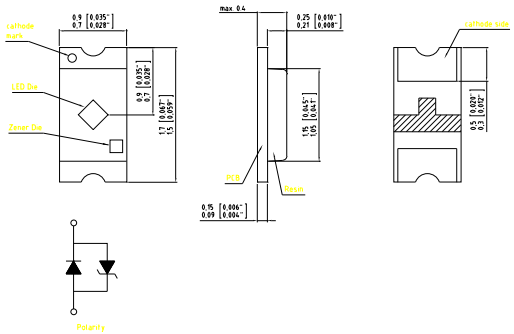


Figure 18: L* Q38G, L* Q39G



Outline drawings - Dimensions in mm (inch)

Figure 19: L* Q38G, L* Q39G

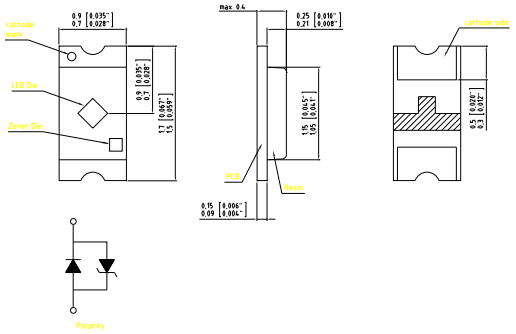


Figure 20: L* Q971, L* Q976

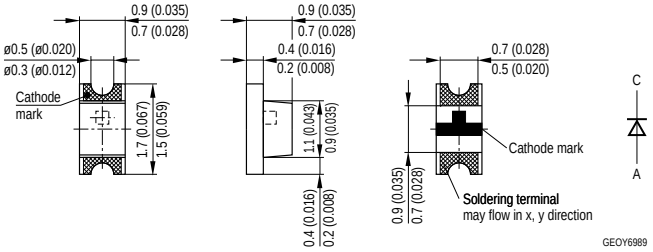


Figure 21: LH Q974

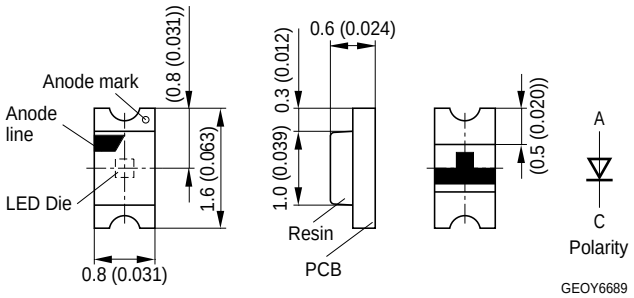


Figure 22: L* N91E, L* N91F

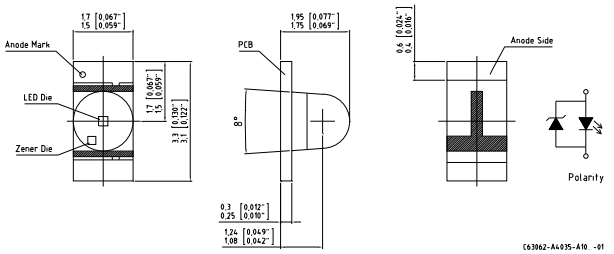


Figure 23: L* QH8G, L* QH9G, L* QH9F

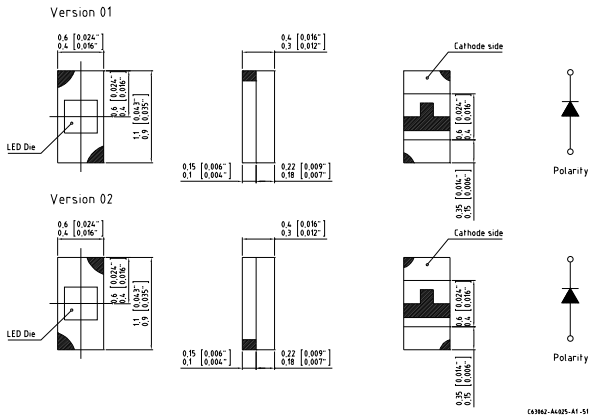
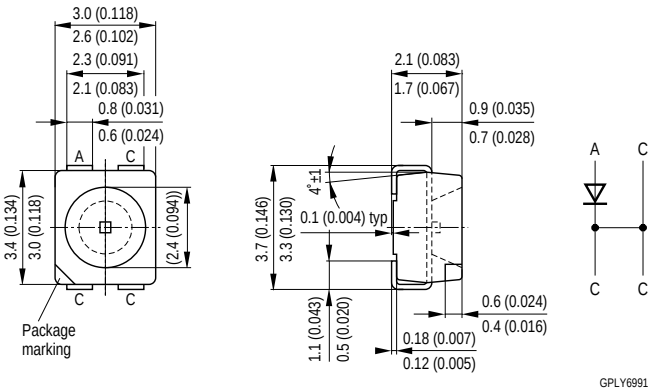


Figure 24: LP E675, L*E 67C, L* E67B, L* E6SC



Outline drawings - Dimensions in mm (inch)

Figure 25: LA E67F, L* E6SF

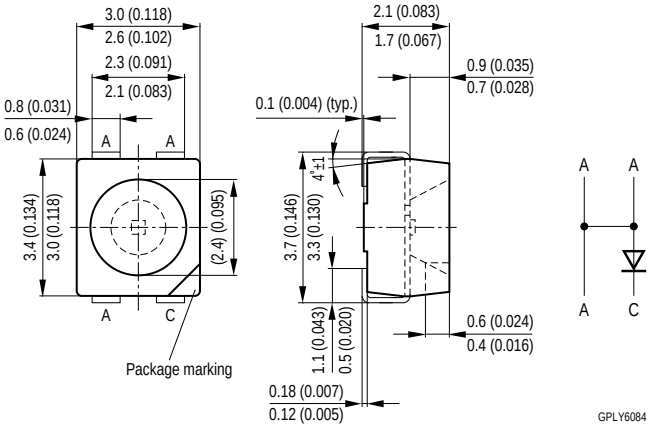


Figure 26: L* E6SG

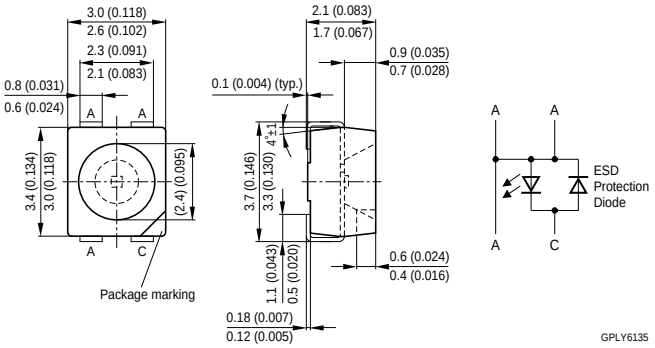


Figure 27: LA E65F

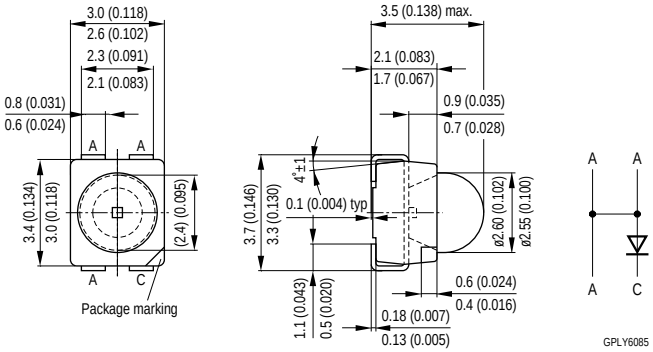


Figure 28: LA E63F

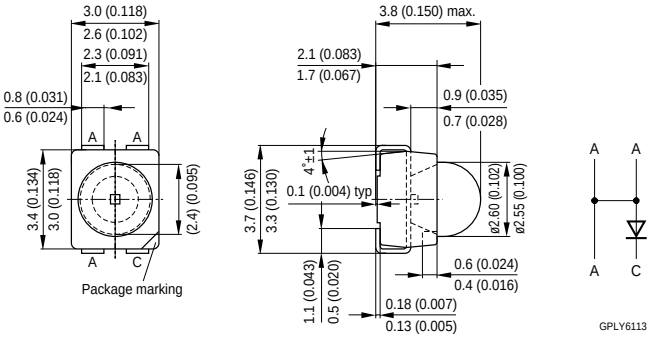


Figure 29: L* E65B, L* E63C

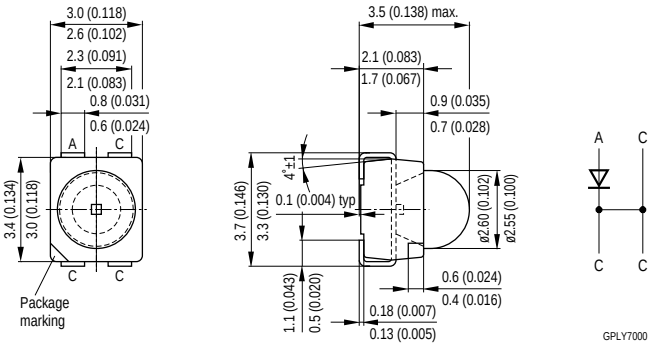
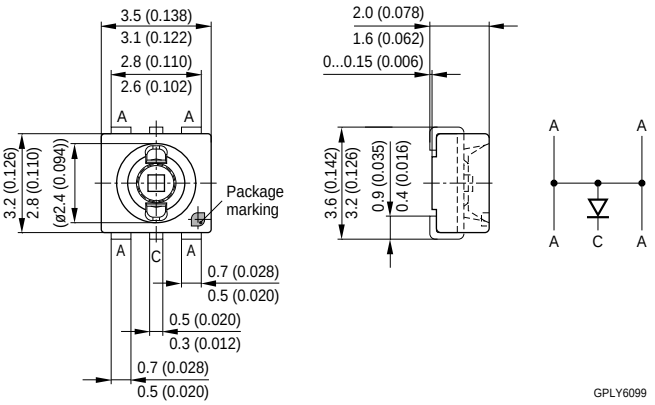


Figure 30: LA G6SP, LR G6SP, LY G6SP



Outline drawings - Dimensions in mm (inch)

Figure 31: LB G6SP, LT G6SP, LW G6SP, LCW G6SP, LCY G6SP

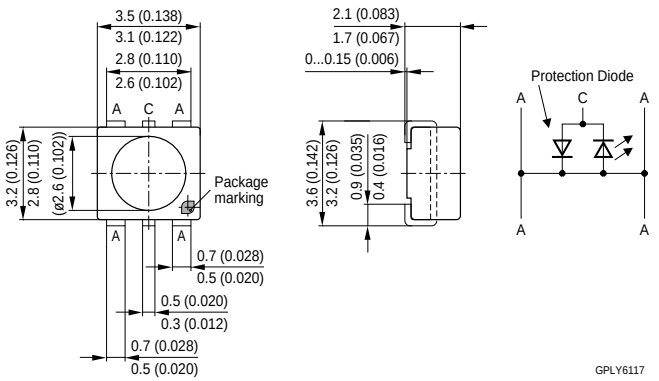


Figure 32: L* G5AP, LCW G5GP

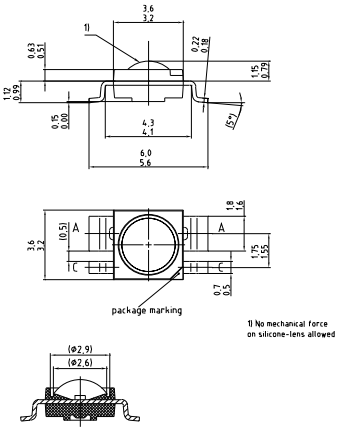


Figure 33: L* CN5M

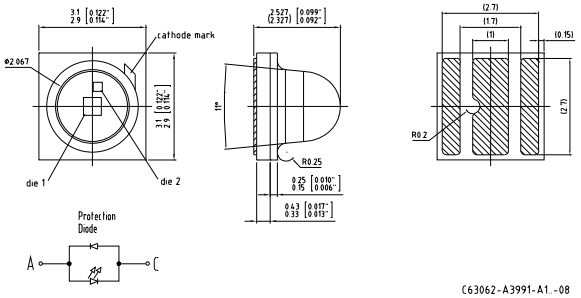


Figure 34: L* W5SM, L* W5SN

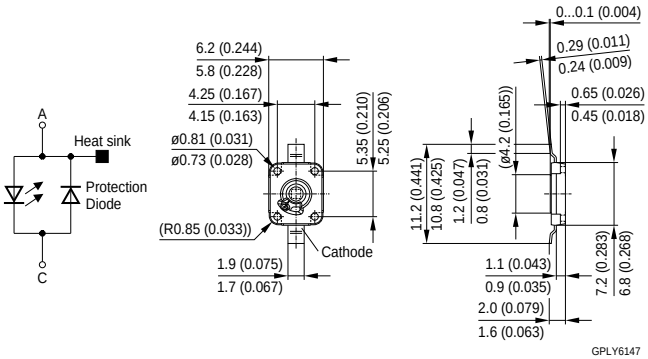


Figure 35: L* W5AM

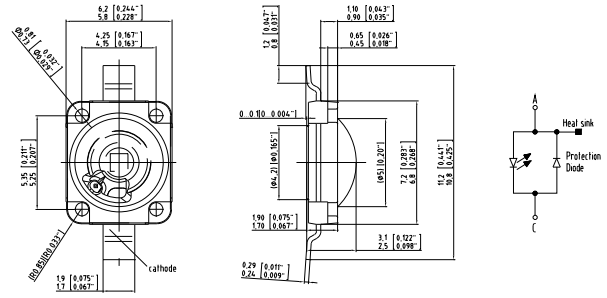
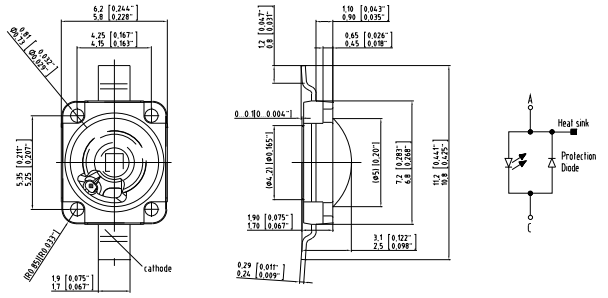


Figure 36: L* W5AM



Outline drawings - Dimensions in mm (inch)

Figure 37: L* W5AP

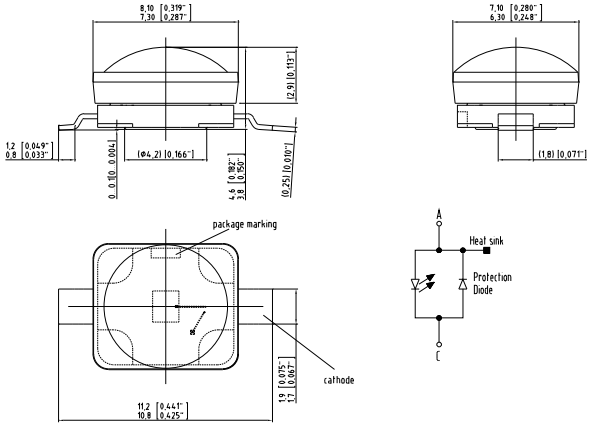


Figure 38:

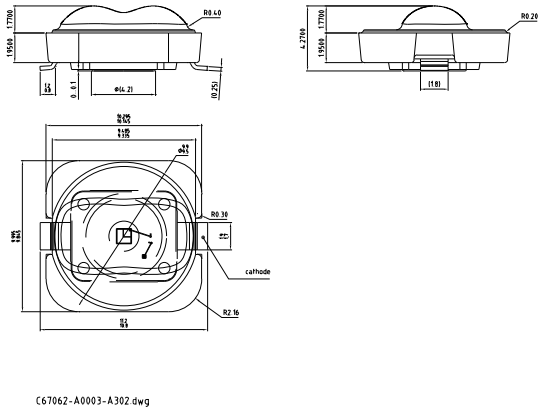


Figure 39: L* W5JM

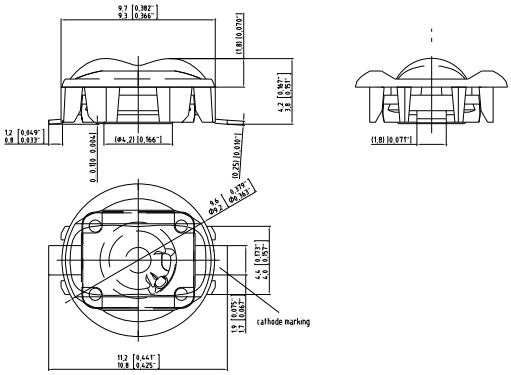


Figure 40: LUW C9EP, LUW C9SP

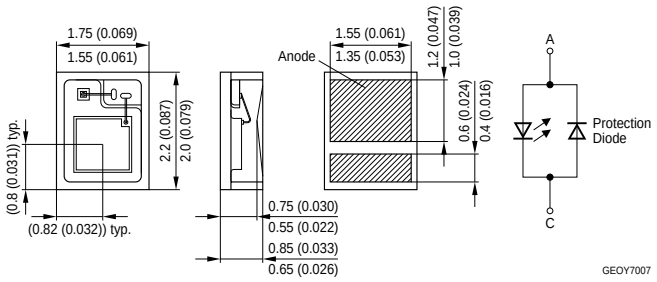


Figure 41: L* C9SM

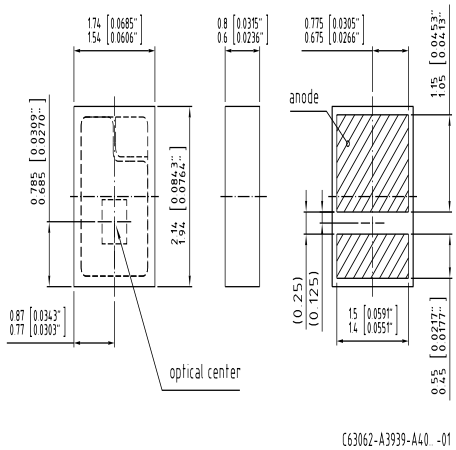
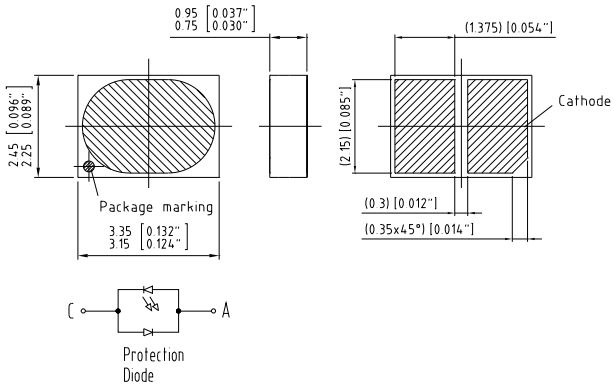


Figure 42: L* CHSN



Outline drawings - Dimensions in mm (inch)

Figure 43: LUW F65N

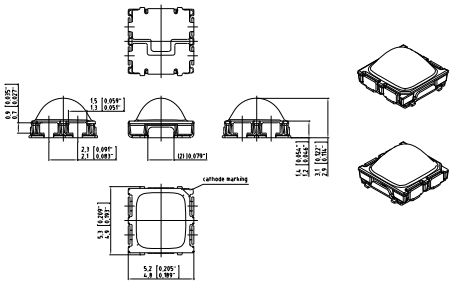


Figure 44: L* A676, L* A673, L* A67B, L* A67F, L* A67K, L*A67C, LP A675

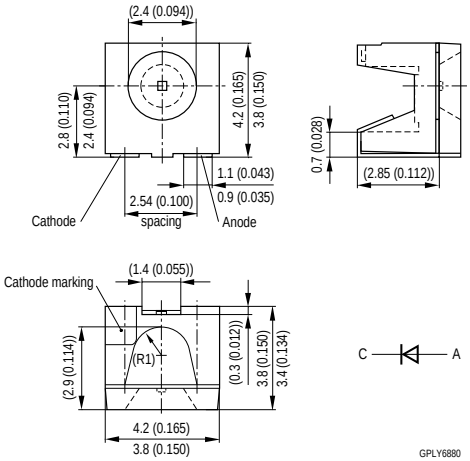


Figure 45: L* A6SG

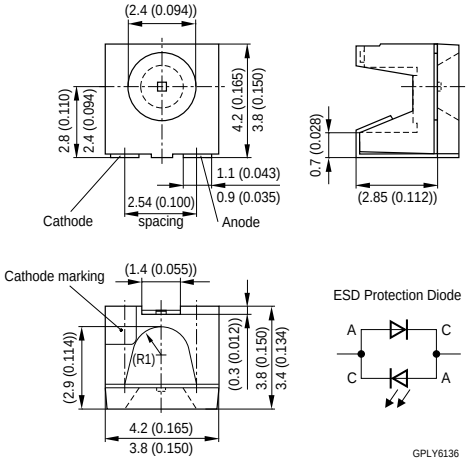


Figure 46: L* Y870, L* Y876, L* Y87S, L* Y87C

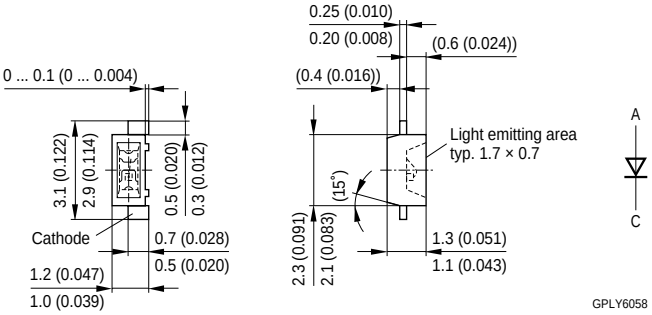


Figure 47: LW, LB, LT Y8SG, LR, LY Y8SF

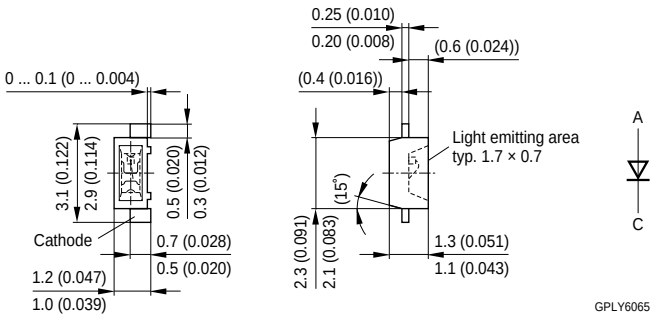
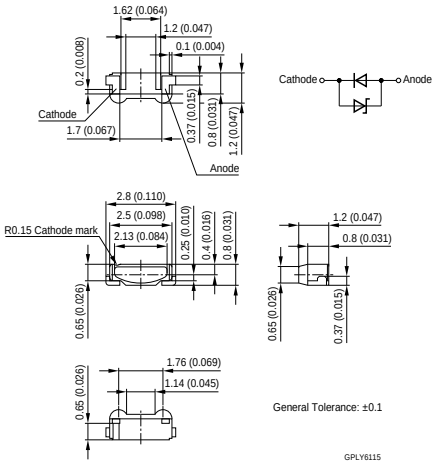


Figure 48: LW Y1SG



Outline drawings - Dimensions in mm (inch)

Figure 49: L T671, L** T676, L** T670, L**T67B, L** T67C**

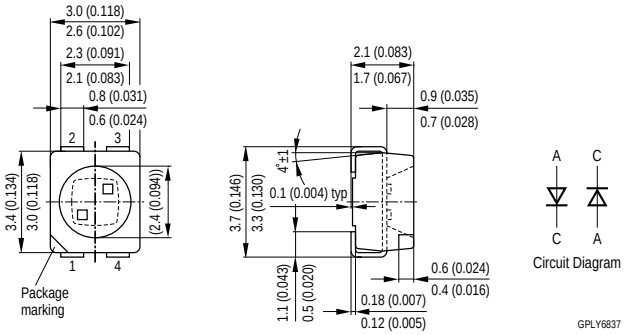


Figure 50: LATB G66B

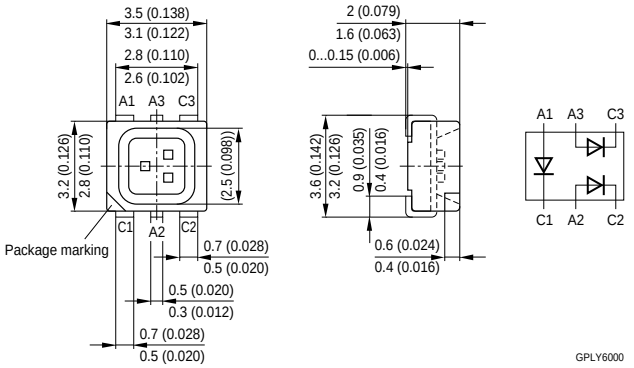


Figure 51: LRTB G6SG, LRTB G6TG, LWWW G6SG, LYYY G6SF, LRTB G6SF

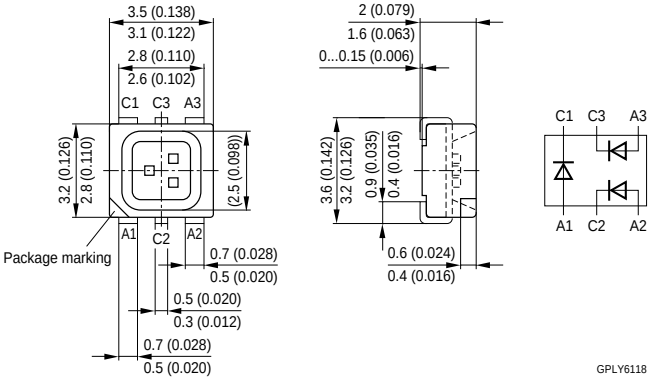


Figure 52: LRTB GFTG

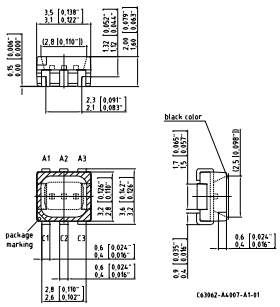


Figure 53: LRTB GFUG

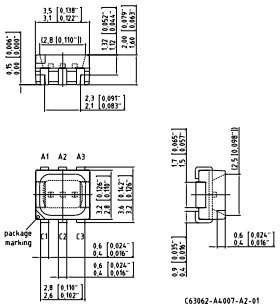
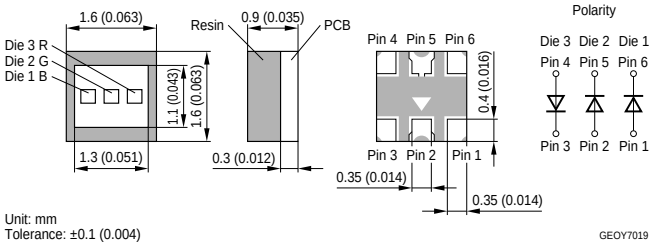


Figure 54: LATBR98G



Outline drawings - Dimensions in mm (inch)

Figure 55: LRTB C9TP

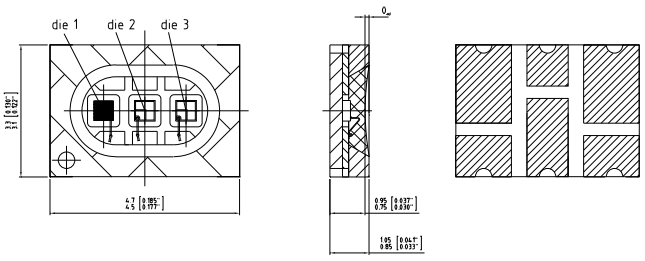


Figure 56: L T770, L** T77K**

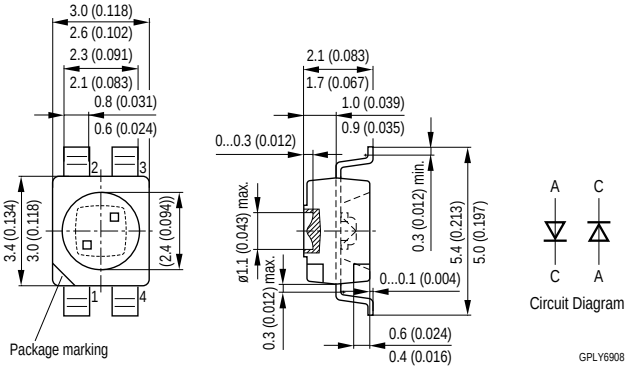


Figure 57: L* C9SN

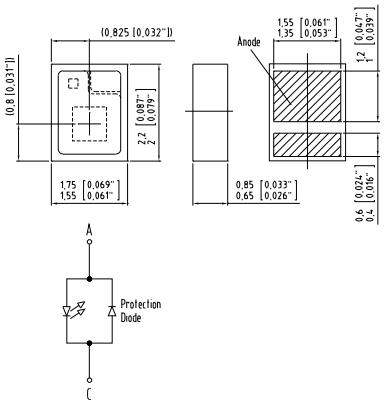


Figure 58: L* VH9F

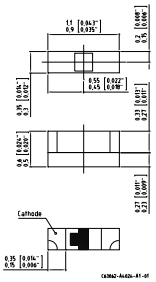


Figure 59: LG Q976

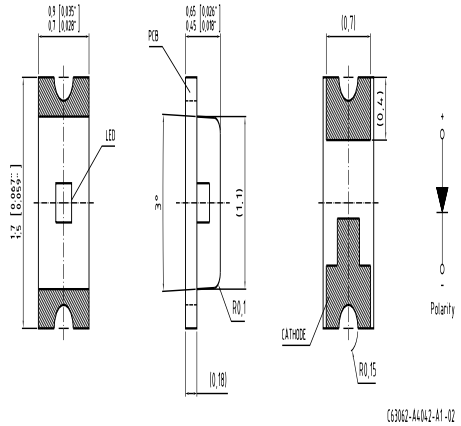
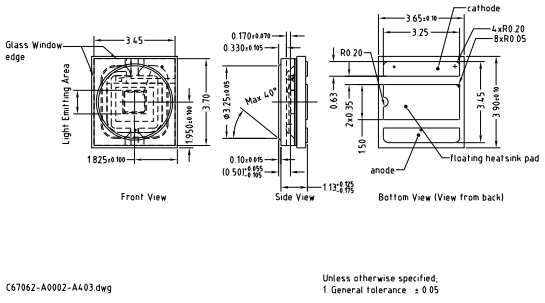


Figure 60: LE * Q9WN



Outline drawings - Dimensions in mm (inch)

Figure 61: LE * P3W

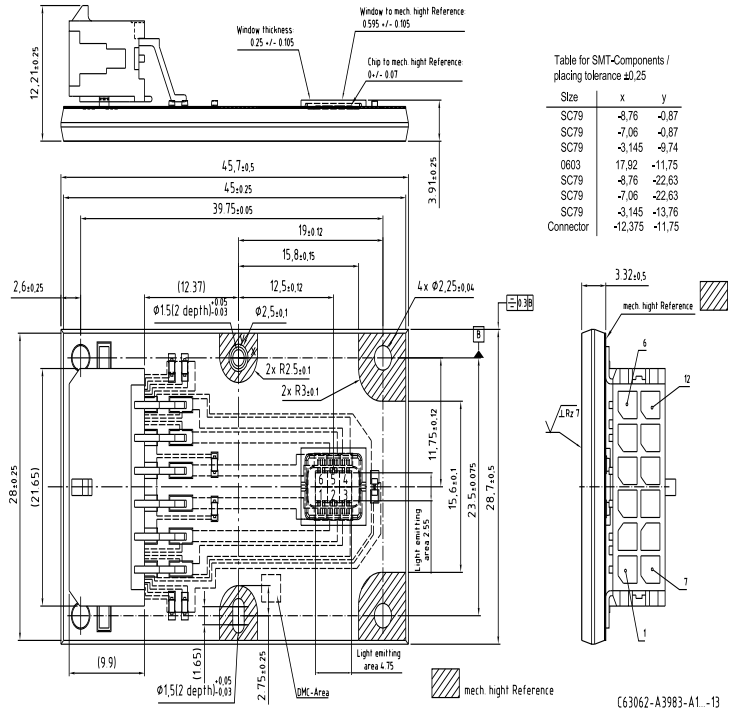


Table for SMT-Components / placing tolerance ±0,25

Size	x	y
SC79	-8,76	-0,87
SC79	-7,06	-0,87
SC79	-3,145	-9,74
0603	17,92	-11,75
SC79	-8,76	-22,63
SC79	-7,06	-22,63
SC79	-3,145	-13,76
Connector	-12,375	-11,75

Figure 62: LE * G3W

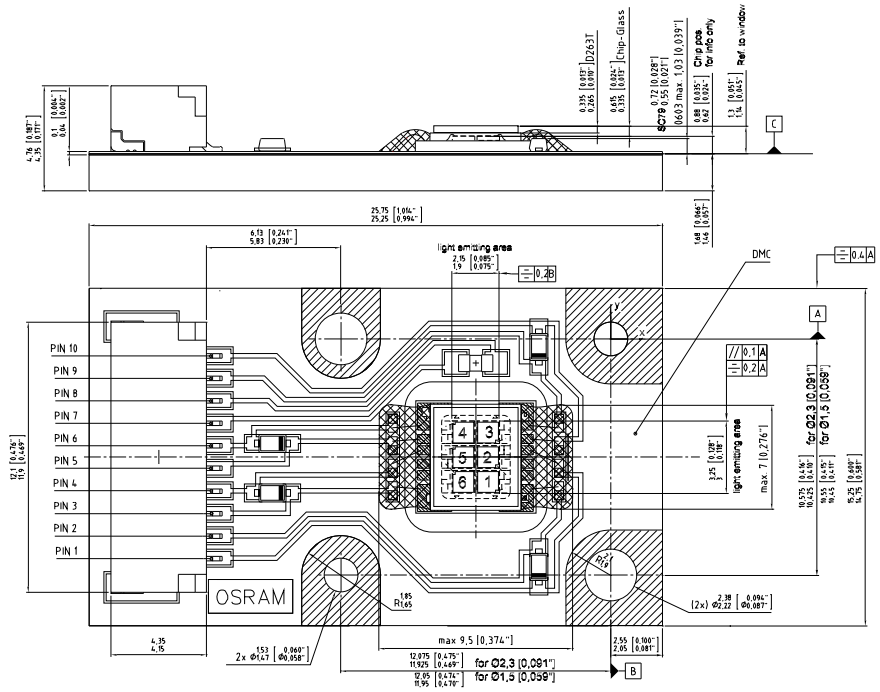


Table for SMT-Components / placing tolerance ±0,25

Size	x	y
SC79	-3,2	-0,36
SC79	-3,2	-10,14
0603	-6	-1,07
SC79	-15,05	-4,65
SC79	-15,05	-6,85
JST-Connector	-20,11	-5,25

area of removed solder resist (C)

Outline drawings - Dimensions in mm (inch)

Figure 63: LE * H3W

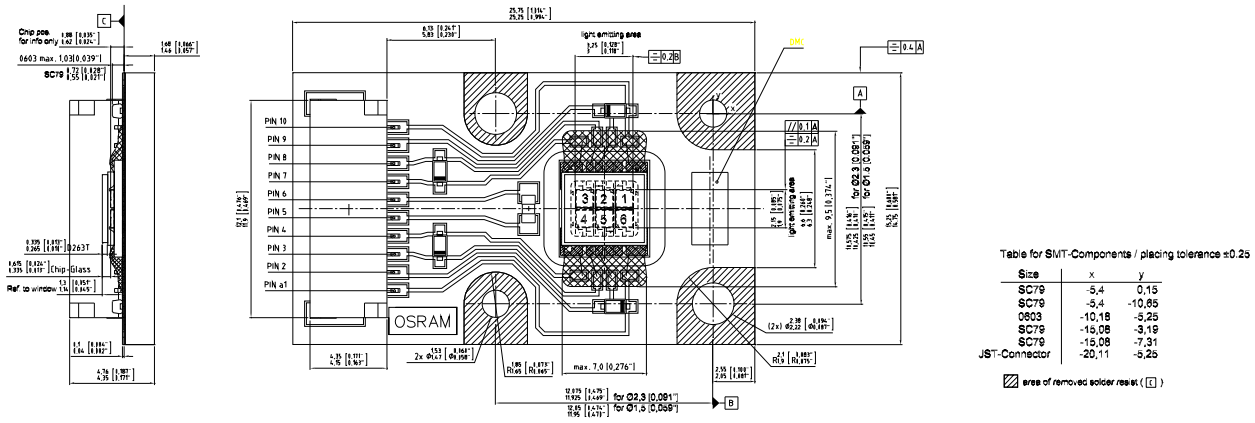
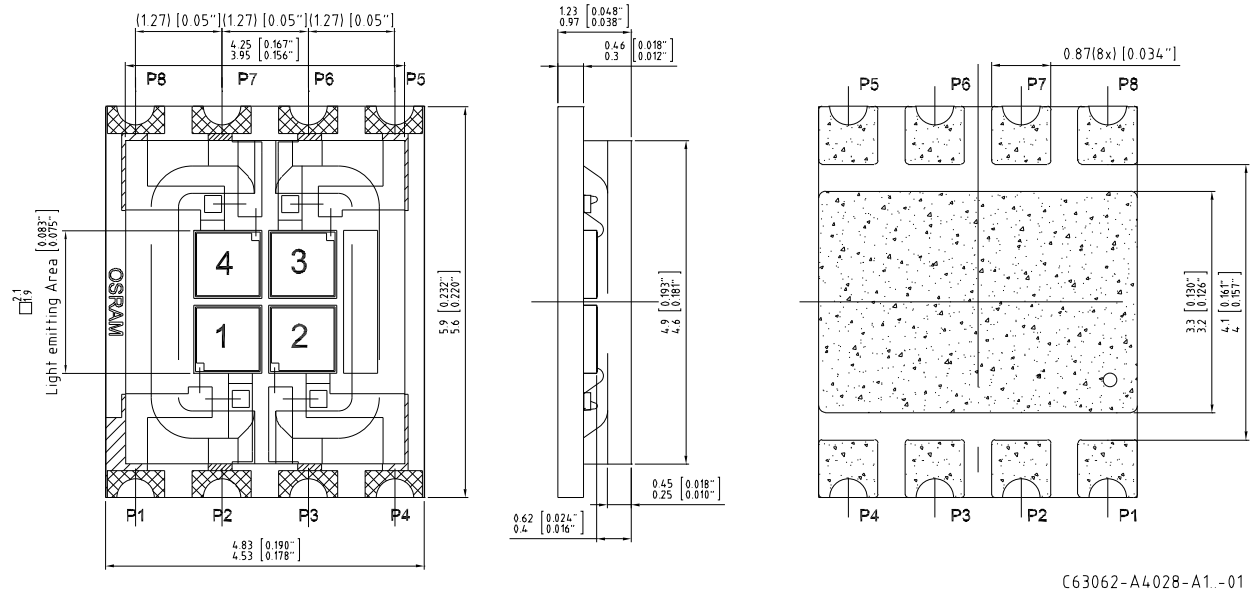


Figure 64: LE * S2W



Soldering conditions and profiles
When soldering the component into position, make sure that is 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	Reflow Soldering	TTW Soldering[1)]	Preconditioning acc. to Jedec Level
Standard Power Packages (SMT)			
TOPLED / TOPLED with lens	X	X	2
Mini TOPLED	X	X	2
PointLED / SmartLED	X		2
CHIPLED / CHIPLED with lens	X		2
Mid Power Packages (SMT)			
Power TOPLED / Power TOPLED with lens	X	X	2
Advanced Power TOPLED / Advanced Power TOPLED Plus	X		2
OSLON	X		1
High Power Packages (SMT)			
Golden DRAGON / Golden DRAGON Plus	X		2
Platinum DRAGON / Diamond DRAGON	X		2
Golden DRAGON ARGUS	X		2
Golden DRAGON with lens	[3)]		4
CERAMOS / OSLUX	X		2
OSTAR			
OSTAR SMT	X		2
Side Emitting (SMT)			
SIDELED	X	X	2
Micro SIDELED	X		2/3/4 [2)]
FIREFLY	X		2
Multicolor Packages (SMT)			
Multi TOPLED	X	X	2
MULTILED	X		2/4 [2)]
Multi CHIPLED / Multi CERAMOS	X		2
Multi Micro SIDELED	X		4

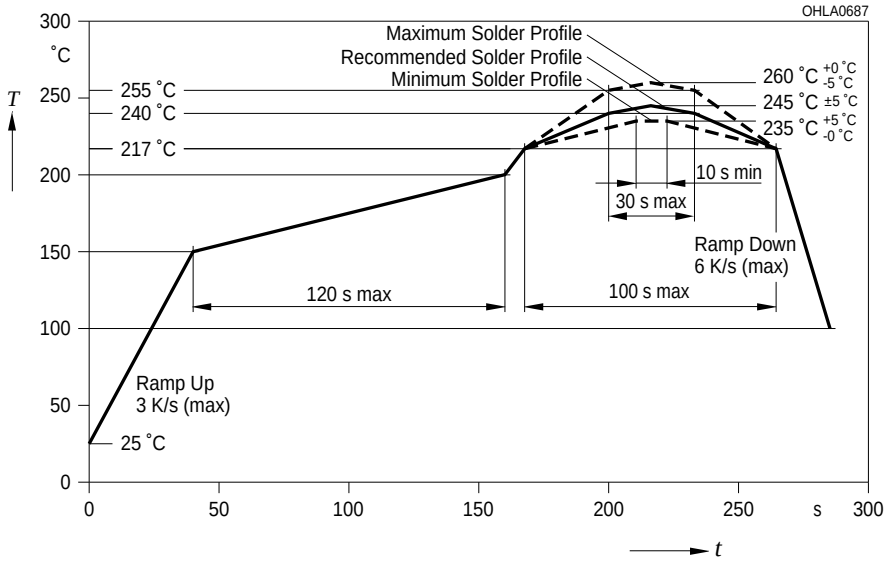
[1)] except reverse mount packages
[2)] for details refer to product datasheet
[3)] suitable for selective soldering

[1)] ausgenommen reverse mount Gehäuse
[2)] Details siehe Produktdatenblatt
[3)] für Selektivlöten geeignet

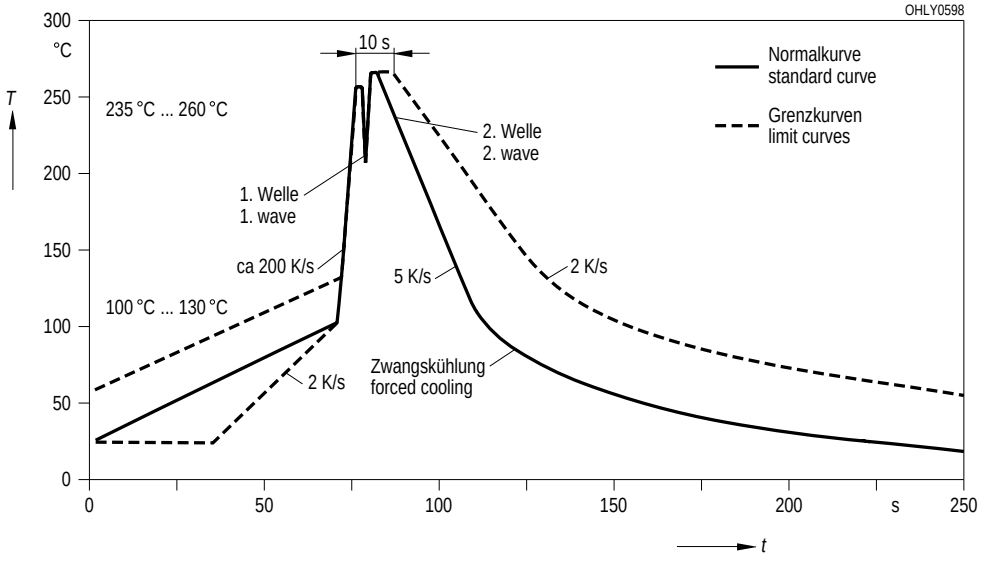
Cleaning solvents for soldered-in LEDs
OSRAM LEDs can be cleaned with isopropyl alcohol. When applying other solvents it has to be tested beforehand if the LED is damaged or not. FREON and other Fluoro-chloro Carbon Hydrogen solvents should not be used due to worldwide regulation.
We do not recommend 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 and der Einwirkzeit ab. Wenn Ultraschall zur Reinigungsunterstützung eingesetzt werden muss, muss zuvor sicher gestellt werden, dass die gewählten Parameter die LED nicht schädigen.
Lötpaddesignvorschläge finden Sie in den Datenblättern unter http://catalog.osram-os.com

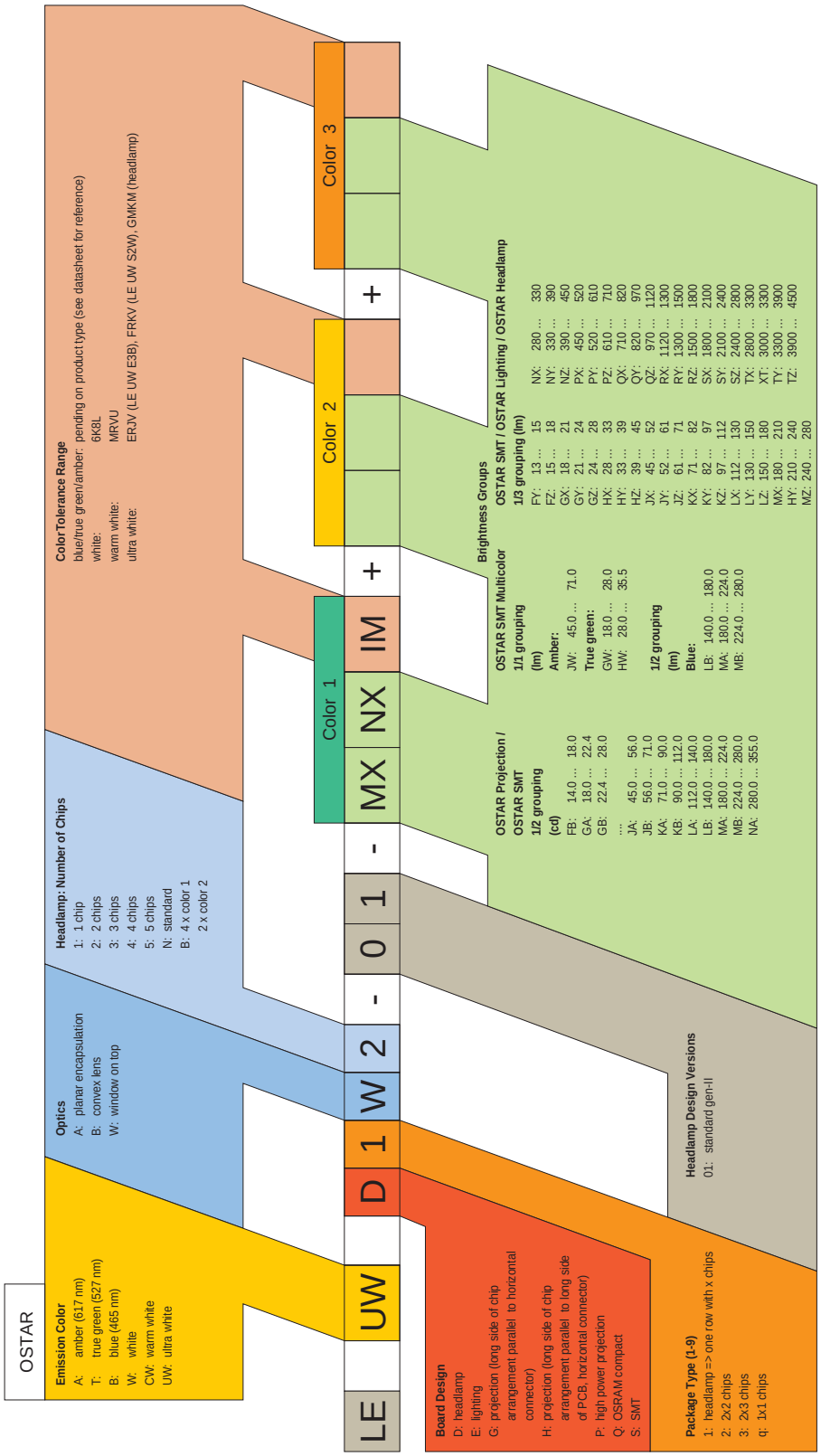
Reflow-soldering-profile acc. to J-STD-020C



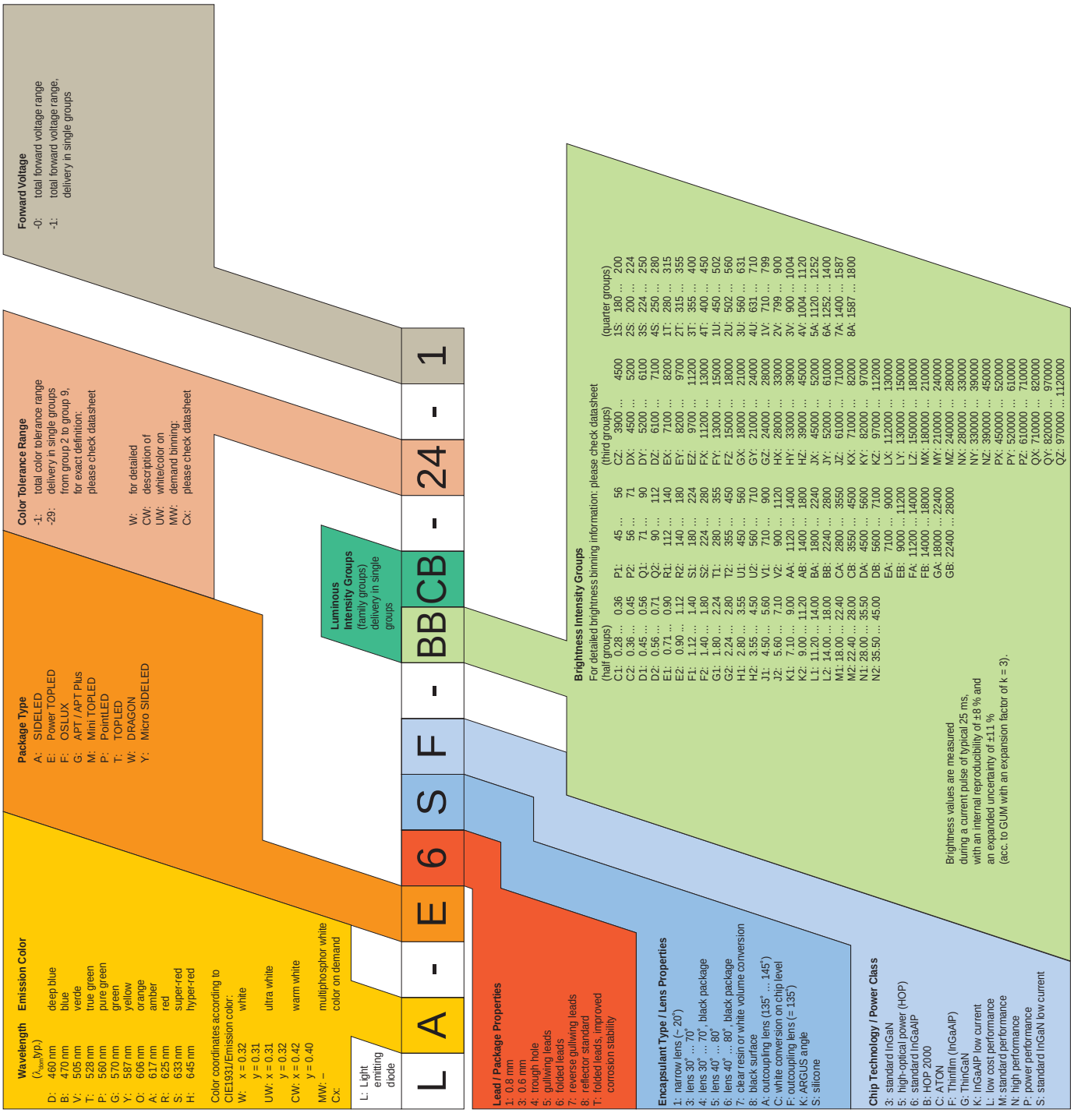
Wave soldering (dual wave) profile acc. to CECC 00802



OSTAR type designation system



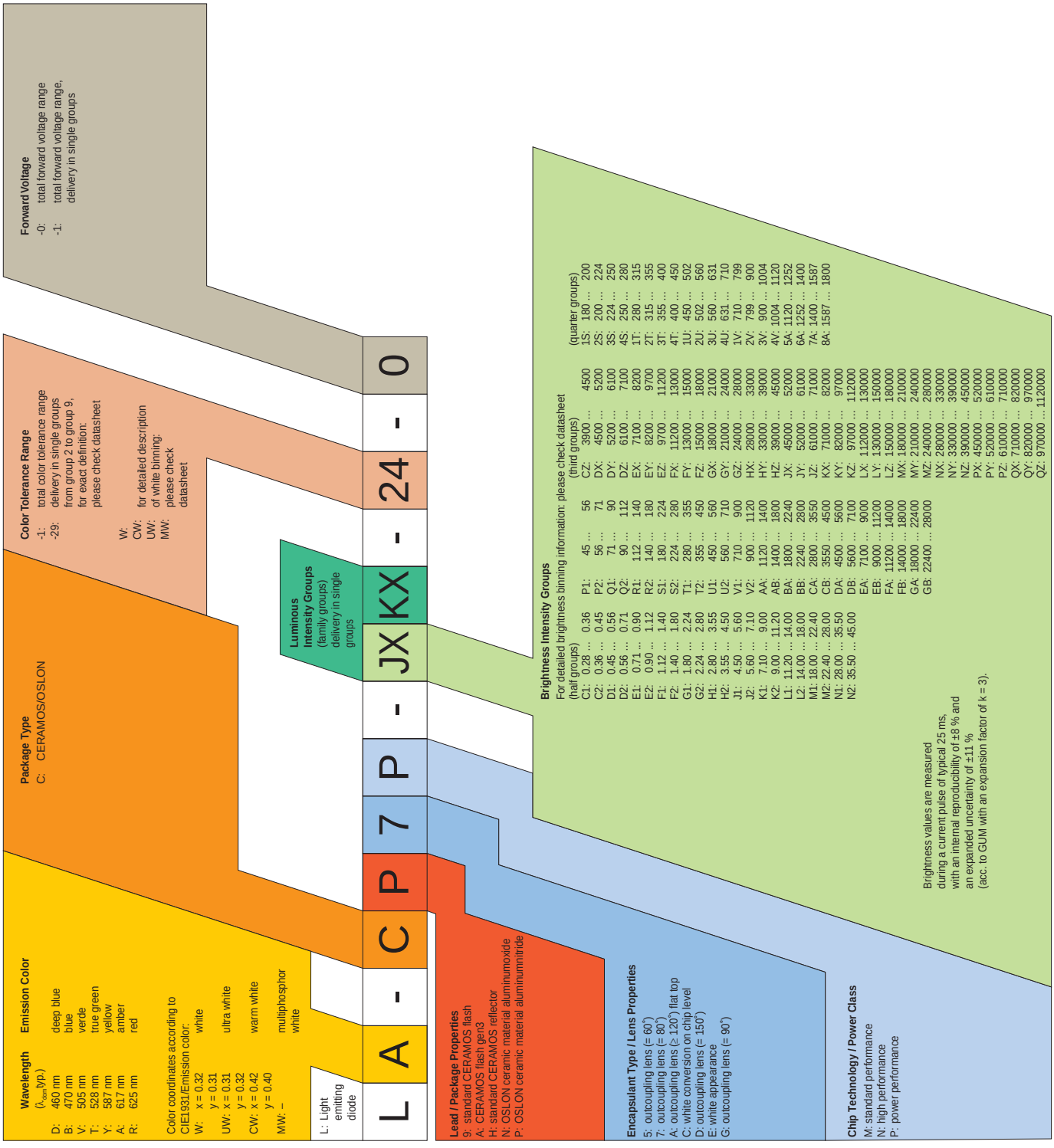
Premolded LED type designation system



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.

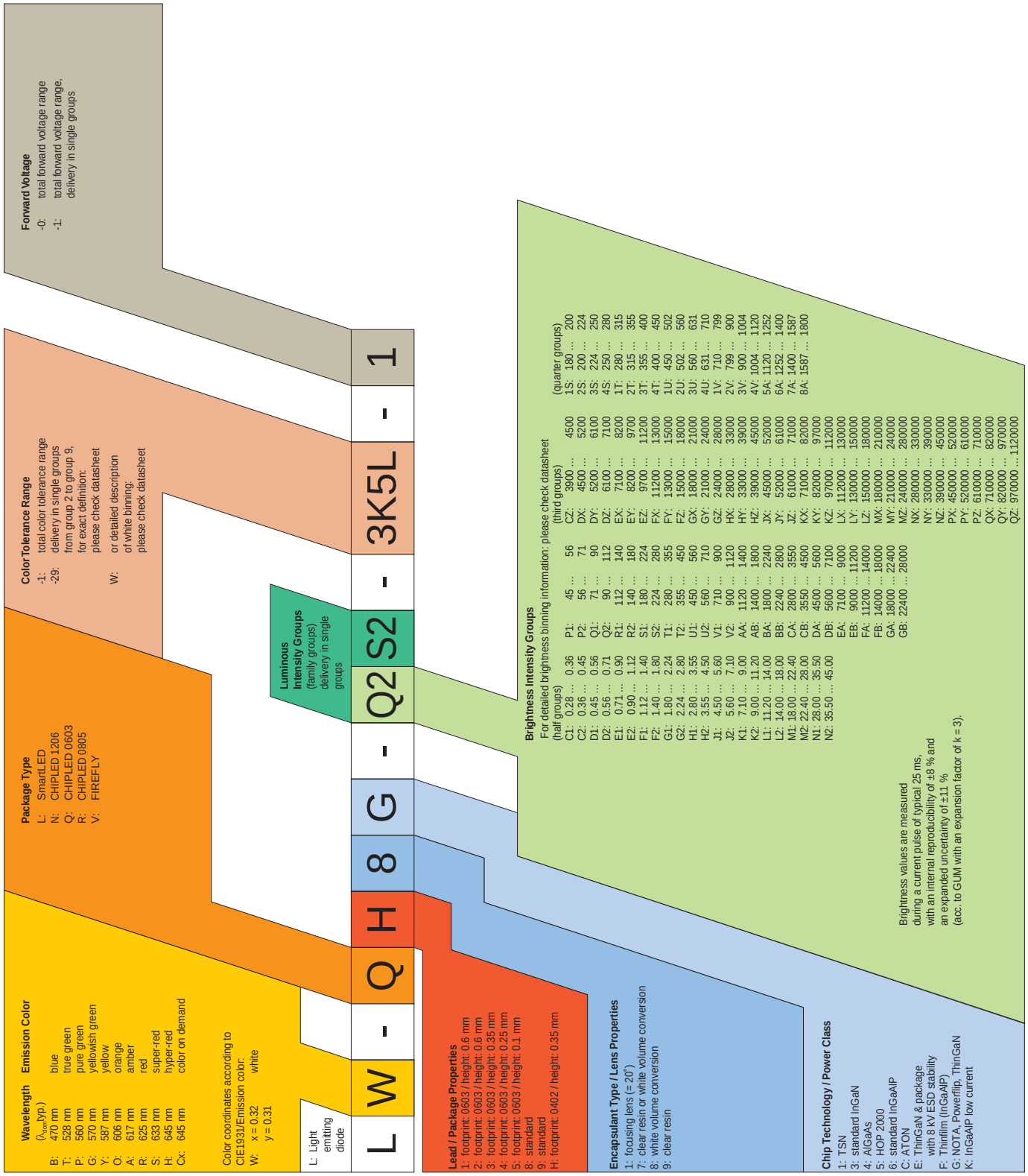
Ceramics based LED type designation system



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.

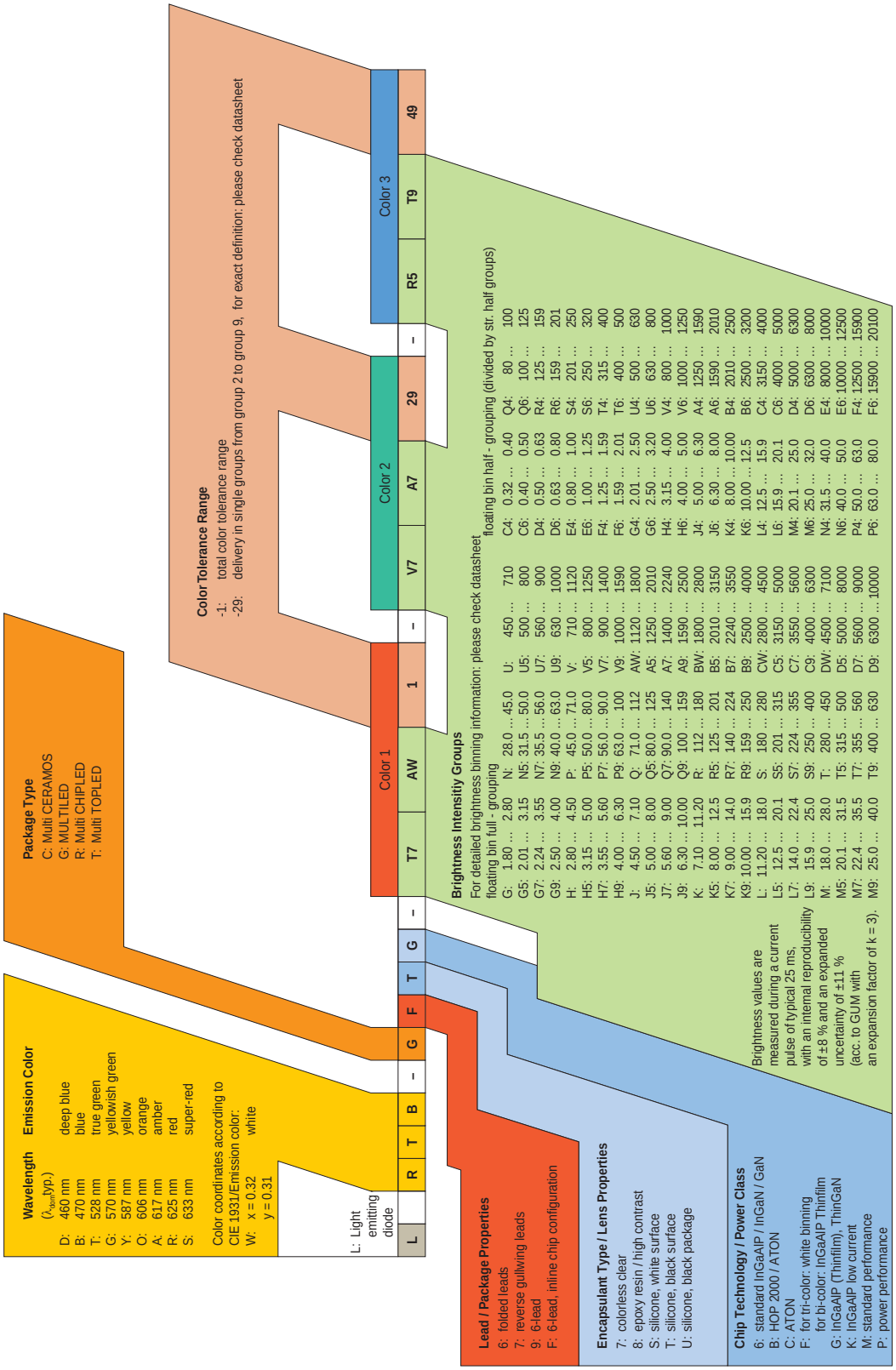
Miniature package LED type designation system



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.

Multi chip LED type designation system



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.

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 ± 23 %. As luminous intensity is tested at a tolerance of ± 11 %, the variation range in one packing unit amounts to ± 34 %.

No packing unit / tape ever contains more than one luminous intensity group!
Matching factor of brightness within one packaging unit
I_V min : I_V max bzw. Φ_V min : Φ_V 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 ± 12%. As luminous intensity is tested at a tolerance of ± 11%, the variation range in one packing unit amounts to ± 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 ± 23%. Da die Helligkeit mit einer Toleranz von ± 11% gemessen wird, beträgt die max. Schwankungsbreite in einer Verpackungseinheit ± 34%.

In einer Verpackungseinheit / Gurt ist immer nur eine Helligkeitsgruppe enthalten!
Max. Streubreite der Helligkeit innerhalb einer Verpackungseinheit
I_V min :I_V max bzw. Φ_V min : Φ_V max = 1 : 2Helligkeitsgruppen 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 Typenbezeichungen 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 ± 12%. Da die Helligkeit mit einer Toleranz von ± 11% gemessen wird, beträgt die max. Schwankungsbreite in einer Verpackungseinheit ± 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 Typenbezeichungen 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 Wellenlängegruppe 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 Wellenlängegruppen / 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	

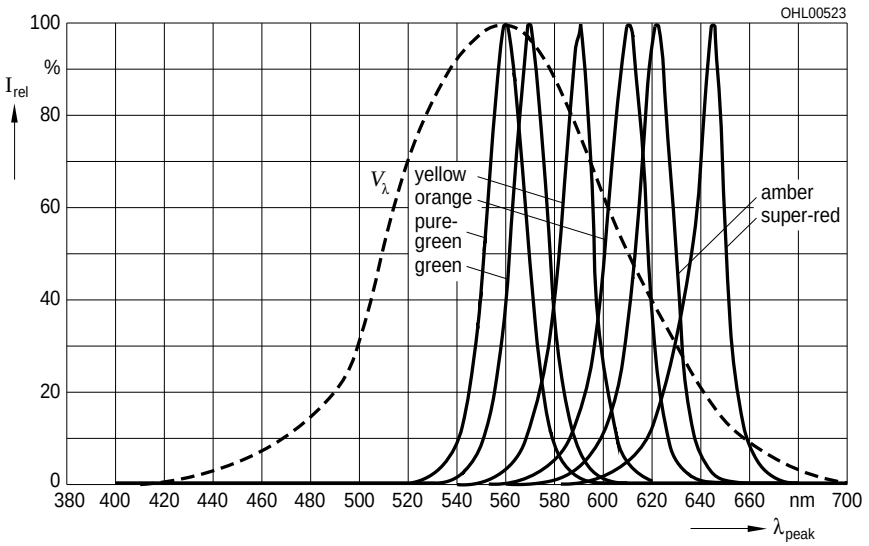
In einer Verpackungseinheit ist immer nur eine Kombination enthalten.

Typical values (T_A = 25 °C) **Kenndaten** (T_A = 25 °C)

Standard LED			hyper-red	super-red	orange	yellow	green	pure green	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	I_F = 10 mA	λ_{peak}	661	635	610	586	572	557	nm
Dominantwellenlänge/ Dominant wavelength[1)]	I_F = 10 mA	λ_{dom}	645	628	606	587	570	560	nm
Durchlassspannung/ Forward voltage[2)]	I_F = 10 mA	V_F	1.9 (≤ 2.3)	2.0 (≤ 2.5)	2.0 (≤ 2.5)	2.0 (≤ 2.5)	2.0 (≤ 2.5)	2.0 (≤ 2.5)	V

Low-current LED			super-red	orange	yellow	green	pure green	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	I_F = 2 mA	λ_{peak}	643	610	591	572	562	nm
Dominantwellenlänge/ Dominant wavelength[1)]	I_F = 2 mA	λ_{dom}	630	606	587	570	560	nm
Durchlassspannung/ Forward voltage[2)]	I_F = 2 mA	V_F	1.8 (≤ 2.2)	1.8 (≤ 2.2)	1.8 (≤ 2.2)	1.8 (≤ 2.2)	1.8 (≤ 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 ± 1 nm.
2) Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of ± 0.1 V.

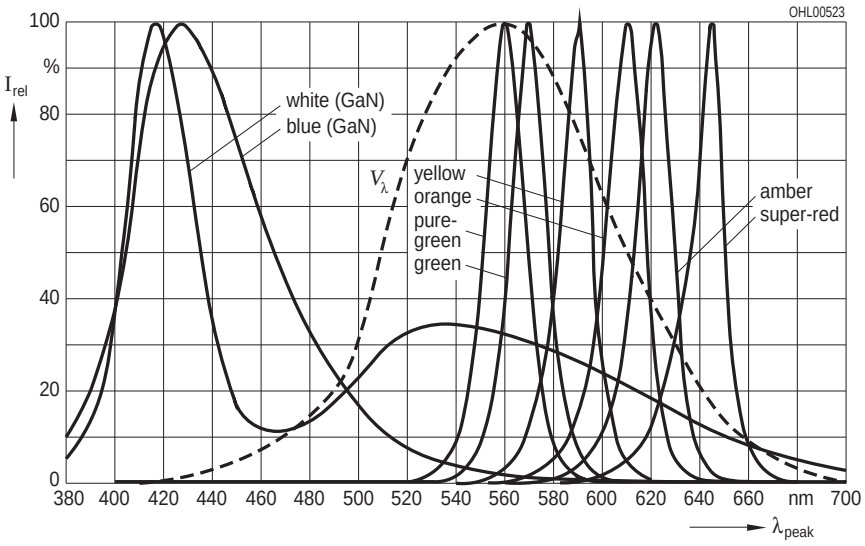
1) Wellenlängen werden mit einer Stromeinprägedauer von 25 ms und einer Genauigkeit von ± 1 nm ermittelt.
2) Spannungswerte werden mit einer Stromeinprägedauer von 1 ms und einer Genauigkeit von ± 0,1 V ermittelt.

Typical values (T_A = 25 °C) **Kenndaten** (T_A = 25 °C)

Standard LED (InGaAlP)			super-red	amber	orange	yellow	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	I_F = 20 mA	λ_{peak}	645	622	610	591	nm
Dominantwellenlänge/ Dominant wavelength[1)]	I_F = 20 mA	λ_{dom}	633	615	606	587	nm
Durchlassspannung/ Forward voltage[2)]	I_F = 20 mA	V_F	2.0 (2.3)	2.0 (2.33)	2.0 (2.35)	2.0 (2.4)	V

Standard LED (InGaAlP)			green	pure green	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	I_F = 20 mA	λ_{peak}	572	562	nm
Dominantwellenlänge/ Dominant wavelength[1)]	I_F = 20 mA	λ_{dom}	570	560	nm
Durchlassspannung/ Forward voltage[2)]	I_F = 20 mA	V_F	2.0 (≤ 2.4)	2.0 (≤ 2.4)	V

Hyper-bright LED



1) Wavelengths are tested at current pulse duration of 25 ms and a tolerance of ± 1 nm.
2) Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of ± 0.1 V.

1) Wellenlängen werden mit einer Stromeinprägedauer von 25 ms und einer Genauigkeit von ± 1 nm ermittelt.
2) Spannungswerte werden mit einer Stromeinpägedauer von 1 ms und einer Genauigkeit von ± 0,1 V ermittelt.

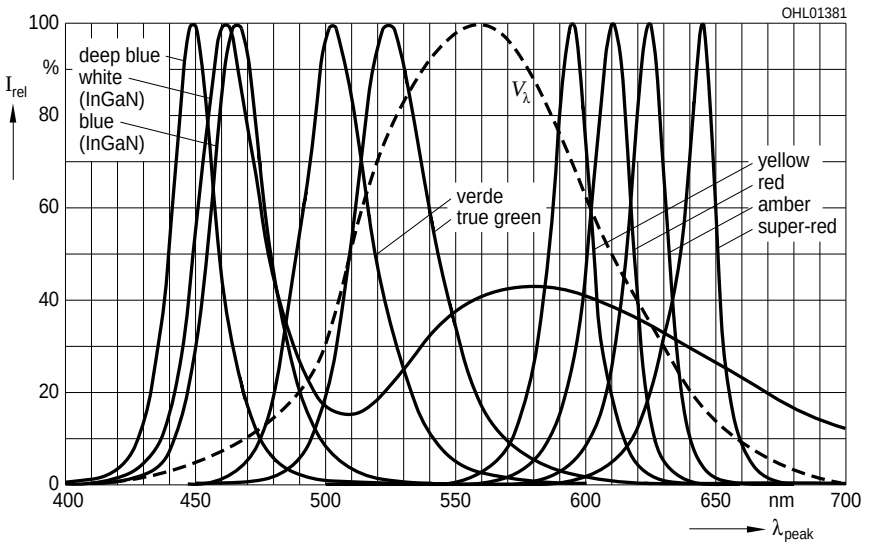
Typical values (T_A = 25 °C) **Kenndaten** (T_A = 25 °C)

Single chip white LED			LW T673 (InGaN) I_F = 10 mA	LW T67C (InGaN) I_F = 20 mA	
Farbort des emittierten Lichts/ Color coordinate at peak emission[1]			x = 0.32 y = 0.31	x = 0.33 y = 0.33	
Durchlassspannung/ Forward voltage[1]		V_F	3.1 (≤ 3.7)	3.6 (≤ 4.1)	V

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

HOP 2000(High Optical Power)				super-red	amber	orange	yellow	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	I_F = 50 mA	(typ.)	λ_{peak}	645	624	610	594	nm
Dominantwellenlänge/ Dominant wavelength[2]	I_F = 50 mA		λ_{dom}	633	617	606	587	nm
Durchlassspannung/ Forward voltage[1]	I_F = 50 mA	(min.) (typ.)	V_F	2.2 (≤ 2.5)	2.2 (≤ 2.5)	2.2 (≤ 2.5)	2.2 (≤ 2.5)	V

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



[1] Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of ± 0.1 V.
[2] Wavelengths are tested at current pulse duration of 25 ms and a tolerance of ± 1 nm.

[1] Spannungswerte werden mit einer Stromeinpägedauer von 1 ms und einer Genauigkeit von ± 0,1 V ermittelt.
[2] Wellenlängen werden mit einer Stromeinprägedauer von 25 ms und einer Genauigkeit von ± 1 nm ermittelt.

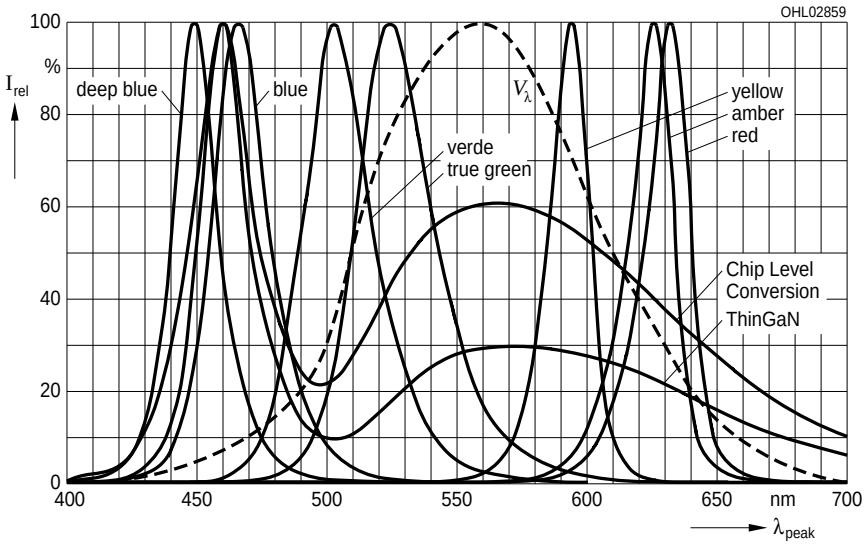
Typical values (T_A = 25 °C) **Kenndaten** (T_A = 25 °C)

Single chip white LED		ThinGaN I_F = 140 mA	Chip Level Conversion I_F = 350/ 700 mA	Chip Level Conversion I_F = 1400 mA	
Farbort des emittierten Lichts/ Color coordinate at peak emission[1]		x = 0.33 y = 0.33	x = 0.33 y = 0.33	x = 0.32 y = 0.31	
Durchlassspannung/ Forward voltage[2]	V_F	3.6 (≤ 4.1)	3.2 (≤ 3.8) 3.8 (≤ 4.5)	3.5 (≤ 4.3)	V

ThinGaN			deep blue	blue	verde	true green	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	I_F = 350 mA / 140 mA	λ_{peak}	449	465	501	520	nm
Dominantwellenlänge/ Dominant wavelength[3]	I_F = 350 mA / 140 mA	λ_{dom}	455	470	505	528	nm
Durchlassspannung/ Forward voltage[2]	I_F = 350 mA / 140mA	V_F	3.2 (≤ 3.8)	3.6 (≤ 4.1)	3.6 (≤ 4.1)	3.6 (≤ 4.1)	V

Thinfilm (High Optical Power)				amber	amber	yellow	
Wellenlänge des emittierten Lichts/ Wavelength at peak emission	I_F = 50 mA	(typ.)	λ_{peak}	624	632	594	nm
Dominantwellenlänge/ Dominant wavelength[3]	I_F = 50 mA		λ_{dom}	617	625	590	nm
Durchlassspannung/ Forward voltage[2]	I_F = 50 mA	(min.) (typ.)	V_F	2.2 (≤ 2.65)	2.2 (≤ 2.65)	2.2 (≤ 2.65)	V

Single chip LED, ThinGaN, Thinfilm (High Optical Power)



[1] Chromaticity coordinate groups are tested at a current pulse duration of 25 ms and a tolerance of ± 0.01.
[2] Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of ± 0.1 V.
[3] Wavelengths are tested at current pulse duration of 25 ms and a tolerance of ± 1 nm.

[1] Farbkoordinaten werden mit einer Stromeinpägedauer von 25 ms und einer Genauigkeit von ± 0,01 ermittelt.
[2] Spannungswerte werden mit einer Stromeinprägedauer von 1 ms und einer Genauigkeit von ± 0,1 V ermittelt.
[3] Wellenlängen werden mit einer Stromeinprägedauer von 25 ms und einer Genauigkeit von ± 1 nm ermittelt.