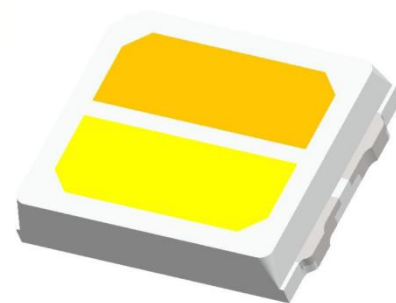


Lumileds 2835R Dual Color Series



Lumileds 2835R Dual Color Series is a complementary portfolio with optimized performance and bin construction for the retrofit space. With an industry standard footprint, it provides the perfect balance between performance and cost efficiency for a variety of applications.

CHARACTERISTICS

- Flexible voltage configurations to comply with various different system solutions
- Industry standard footprint for drop-in replacement designs
- High maximum drive current to allow for reduction of LED count

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Part Number Nomenclature

Part numbers for the 2835R Dual Color Series follow the convention below:

L 1 2 8 – **A A B B R C 3 5 D D E E E**

Where:

A A - designates nominal CCT (27=2700K, 30=3000K, 35=3500K, 40=4000K, 50=5000K, 57=5700K, 65=6500K)

B B - designates nominal CRI (70=70CRI, 75=75CRI, 80=80CRI and 90=90CRI)

C - designates voltage (A=3V, B=6V, C=9V, G=12V, D=18V, E=36V)

D D - designates nominal CCT (27=2700K, 30=3000K, 35=3500K, 40=4000K, 50=5000K, 57=5700K, 65=6500K)

E E E - designates Lumileds internal code (0A1, 0B1, 0C1, etc.=shares the same base part)

Therefore, the following part number is used for a 2835R Dual Color 2700K & 6500K, 80CRI, 3V LED:

L 1 2 8 – **2 7 8 0 R A 3 5 6 5 0 B 1**

Lumen Maintenance

Please contact your local Sales Representative or Lumileds Technical Solutions Manager for more information about the long- term performance of this product.

Environmental Compliance

Lumileds LLC is committed to providing environmentally friendly products to the solid-state lighting market. The 2835R Dual Color Series is compliant to the European Union directives on the restriction of hazardous substances in electronic equipment, namely the RoHS Directive 2011/65/EU and REACH Regulation (EC) 1907/2006. Lumileds LLC will not intentionally add the following restricted materials to its products: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).

Part Number List

Product	Ra	CCT	Product Number
2835R Dual Color 3V	80	White1:2200; White2:5700K	L128-2280RA35570B1
	80	White1::2700; White2:6500K	L128-2780RA35650B1

Mass Production List of 2835R Dual Color Series

CCT	Luminous flux (Lm)			FORWARD VOLTAGE (Vf)			Color Index	Test conditions
	Min	Typ	Max	Min	Typ	Max	Ra	
2200	50	55	-	3.0	3.20	3.4	80	25°C IF=150mA
2700	56	62	-	3.0	3.20	3.4	80	
5700	62	69	-	3.0	3.20	3.4	80	
6500	62	69	-	3.0	3.20	3.4	80	

Notes:

- 1.Tolerance of Color Rendering Index: ± 2 .
- 2.Tolerance of Luminous flux: $\pm 5\%$.
- 3.The measurement of forward voltage maintains a tolerance of $\pm 0.1V$

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Value	Unit	Test Condition
Power dissipation	Pd	510	mW	-
Forward current	IF	150	mA	-
Pulsed Forward Current	IPF	225	mA	Duty 1/10, pulse width 10ms
Operating temperature range	Top	-35~+105	°C	-
Storage temperature range	Tstg	-35~+85	°C	-
Heatresistance	Rth	28	°C/W	-
Junction temperature	Tj	125	°C	-
Electrostatic Discharge	ESD	2000	V	-

Electro-optical Characteristics (Ta=25°C)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward voltage	Vf	3.0	-	3.4	V	IF=150mA
Viewing Angle	2 θ 1/2	-	120	-	Deg	IF=150mA
Reverse current	IR	-	-	10	μA	Vr=5V
Color Index	Ra	80	-	-	-	IF=150mA

NOTES:

- * The measurement of forward voltage maintains a tolerance of $\pm 0.1V$,
- * Ra measurement tolerance is ± 2 .
- * Rth j-sp is the thermal resistance from LED junction to solder point on MCPCB with electrical power.
- * the product is not designed to be used under reverse voltage.

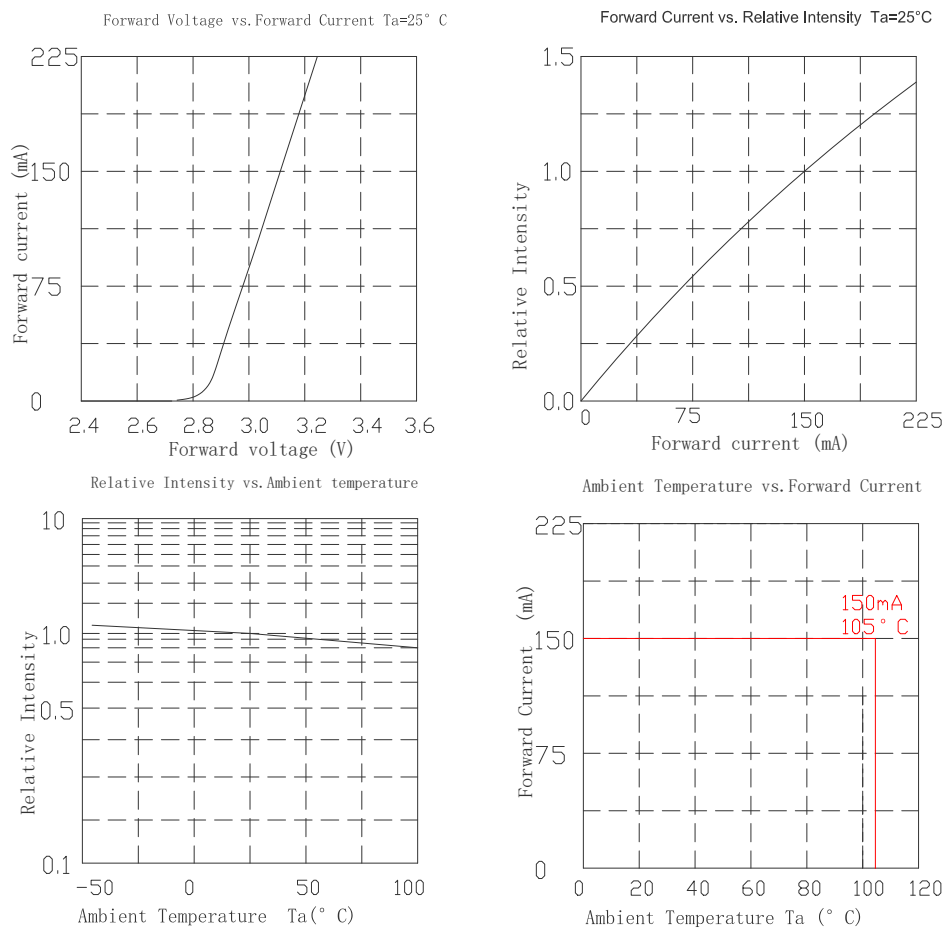
Reliability Test Items And Conditions

Test Items	Test condition	Time	Quantity	Ac/Re
Reflow Soldering	Temp. :260°C/10sec.	6Min.	22pcs	0/22
Thermal Shock	-40~125C, 15min dwell, 10sec transfer	100Cycles	22pcs	0/22
High Temperature High Humidity life Test	85°C,85%RH, IF=150mA	1000Hrs.	10pcs	0/10
Low Temperature Storage	Ta=-35°C	1000Hrs.	10pcs	0/10
High Temperature Storage	Ta=105°C	1000Hrs.	10pcs	0/10
High Temperature Operation Life Test	Ta=105°C, IF =150mA.	1000Hrs.	10pcs	0/10

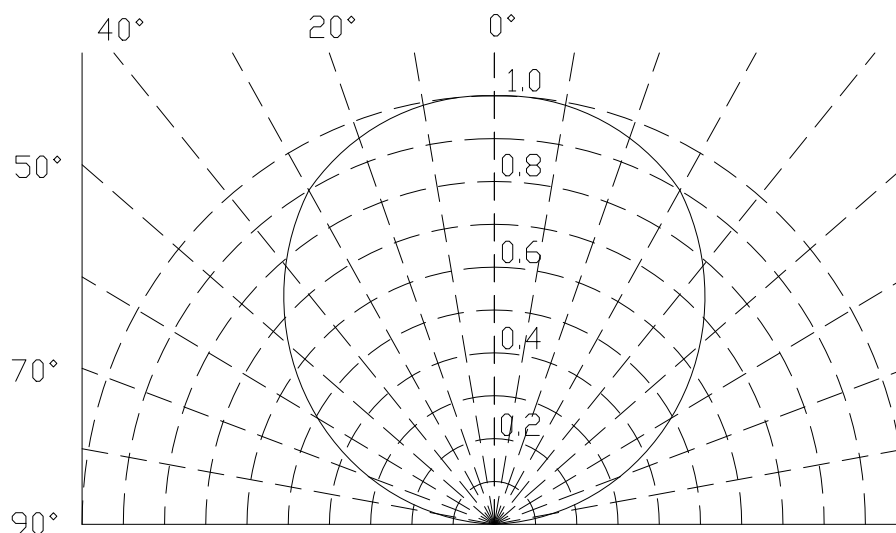
Failure Criteria

Item	Symbol	Failure Criteria
Luminous Flux	Lm	$\geq 70\%$
Forward voltage	VF	$\pm 10\%$
Colour	CIE_X CIE_y	± 0.01

Typical Optical Characteristics Curves

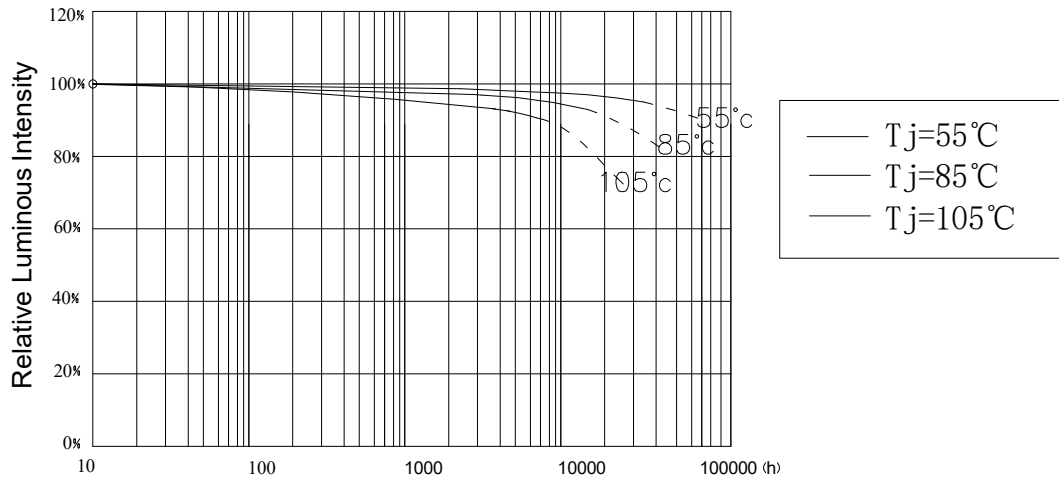


Curves of beam angle and relative brightness

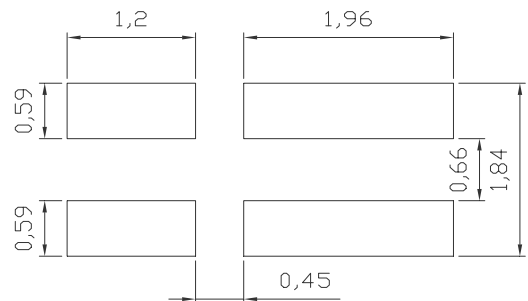
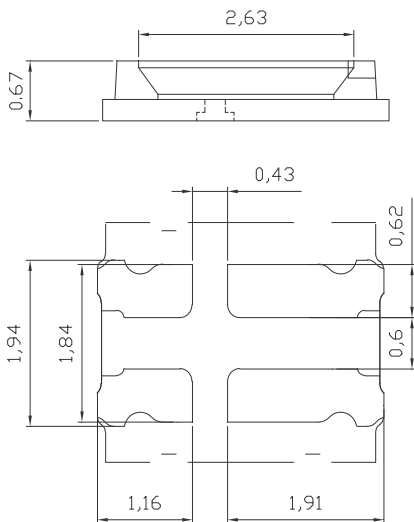
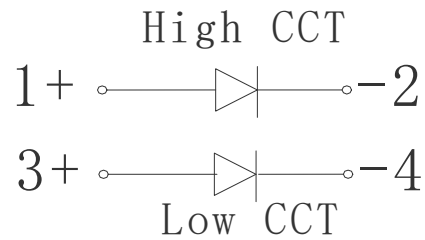
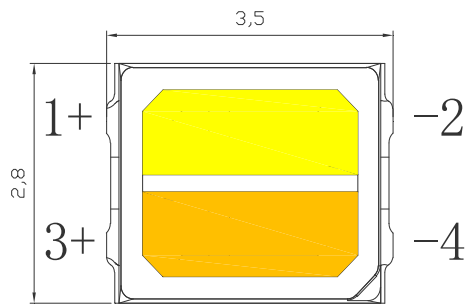


life test:

Affect of T_j on Luminous Maintenance
($I_f=150\text{mA}$)
(Dot line: Expected Life)



Mechanical Dimensions



For reflow soldering

Product Bin and Labeling Definitions

Decoding Product Bin Labeling

In the manufacturing of semiconductor products, there are variations in performance around the average values given in the technical datasheet. For this reason, Lumileds bins LED components for luminous flux or radiometric power, color point, peak or dominant wavelength and forward voltage.

2835R Dual Color Series Cat code following the format below

A	B	CDE	FGH	L	J
Low color temperature light flux	High color temperature light flux	Low color temperature BIN	High color temperature BIN	Low color temperature voltage	High color temperature voltage

Where:

AB CDE FGH L J

AB - designates luminous flux bin (example: Low CCT D=55 to 60 lm, High CCT F=65 to 70 lm)

CDE FGH - designates correlated color bin (example: 273403, 303503, 305505)

LJ - designates forward voltage bin (example: Low CCTC=3.0 to 3.2V, High CCT C=3.0 to 3.2V)

2835 dual color low color temperature light flux 55-60lm, American standard A27 three step color tolerance, voltage 3.0-3.2V, high color temperature light flux 65-70lm, A65 three step color tolerance, voltage 3.0-3.2V translation:

D F 273 653 C C

Luminous Flux Bins

Luminous flux bin definitions for 2835R Dual Color Series at rated current, Ta=25°C .

Product Number	Bin	Min	Max
L128-XX80RA35XX0B1	B	45.0	50.0
	C	50.0	55.0
	D	55.0	60.0
	E	60.0	65.0
	F	65.0	70.0
	G	70.0	75.0

Notes

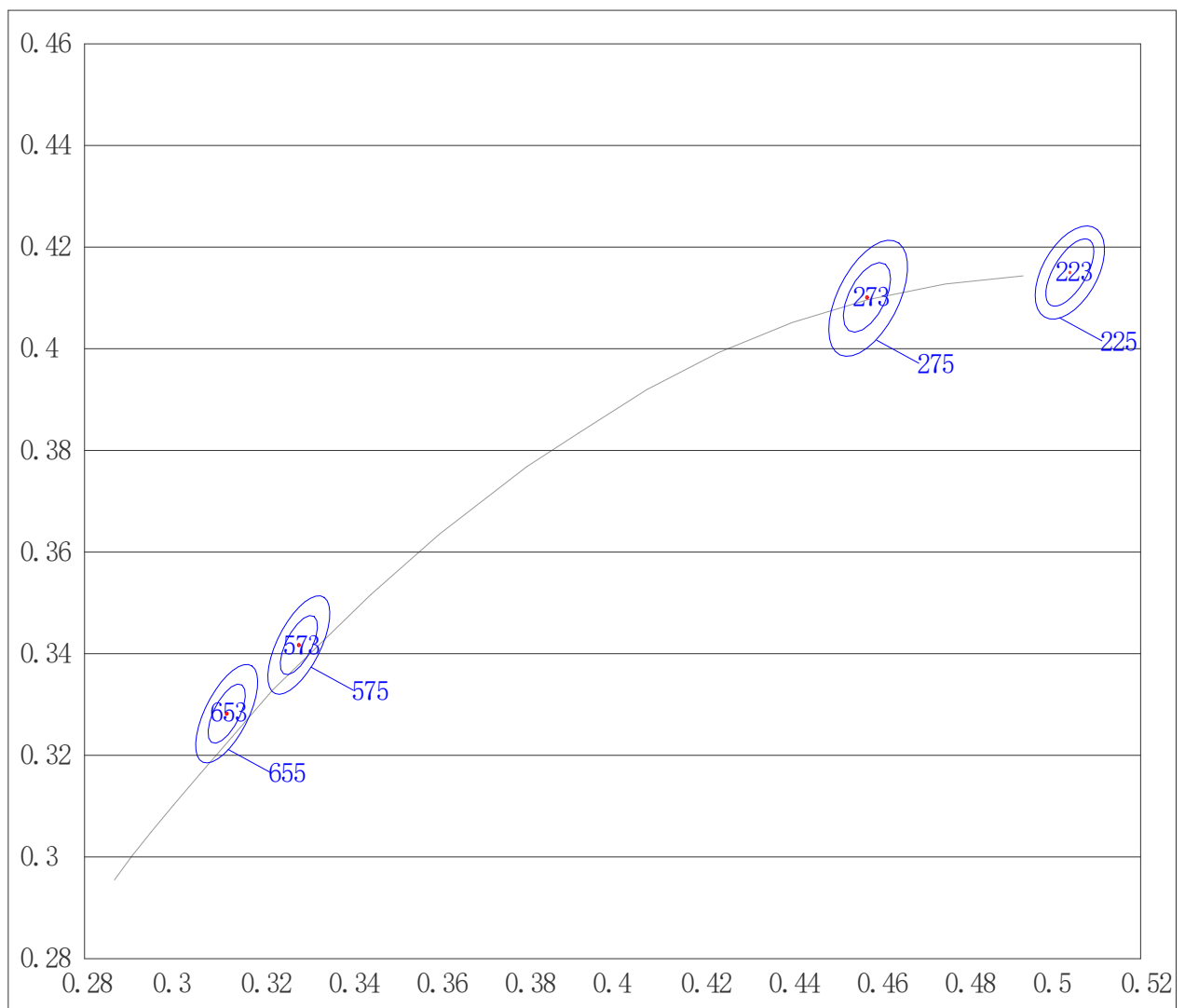
Lumileds Maintains a tolerance of $\pm 5\%$ on luminous flux measurements

Forward Voltage Bins

Forward voltage bin definitions for 2835R Dual Color Series at rated current, $T_a=25^{\circ}\text{C}$.

Product Number	Bin	Min	Max
L128-XX80RA35XX0B1	C	3.0	3.2
	D	3.2	3.4

Color Bin Definition



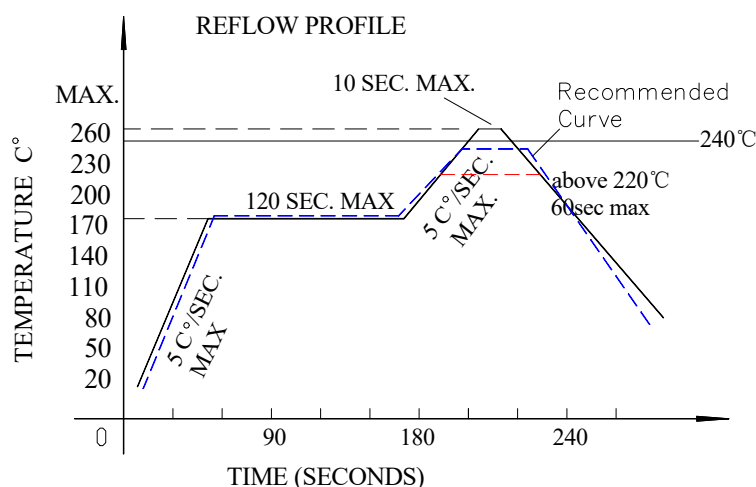
Correlated color temperature bin definitions for 2835R Dual Color Series at rated current, Ta=25°C

White Bin Code	Target Center Point		Major Axis a	Major Axis b	Ellipse Rotation Angle	Color Temperature Range
	X	Y				
223	0.5039	0.415	0.0078	0.0036	54	2190-2280K
225	0.5039	0.415	0.0105	0.006	54	2160-2315K
273	0.4578	0.4101	0.007733	0.004011	57.28	2670-2810K
275	0.4578	0.4101	0.012889	0.006685	57.28	2650-2850K
573	0.3287	0.3417	0.006617	0.002855	58.38	5480-5860K
575	0.3287	0.3417	0.011029	0.004758	58.38	5350-6000K
653	0.3123	0.3282	0.006617	0.002855	58.38	6280-6800K
655	0.3123	0.3282	0.011029	0.004758	58.38	6130-7000K

Notes

Tester tolerance: ± 0.01 in x and y coordinates

Requirements for Application and Reflow Soldering



Reflow soldering curve

(Product is highest resistant to 260°C reflow but suggested the highest temperature of 240°C within)

■ Notes for reflow soldering :

1. No more than twice for reflow soldering.
2. To ensure the quality of our LEDs, we encapsulate them with silica gels. So please do not put pressure on the LEDs.
3. Please choose the right nozzle(try to learn from the plastic products parts) to avoid the damage to products due to the pressure.
4. Please put on the antistatic hand loop during the use. The worktable should be with antistatic finish. The equipments must be contacted with ground.

■ Handwork soldering:

1. During the soldering, the electronic soldering iron must be kept under the temperature of 300°C and the soldering time must not be beyond 3 seconds. No touch between the electronic soldering iron and colloid.
2. Handwork soldering is only allowed once. We won't take responsibility for more than that.
3. Avoid using sharp objects to compress products Colloidal Part directly.
4. Please put on the antistatic hand loop during the use. The worktable should be with antistatic finish. The equipments must be contacted with ground.

About Lumileds

Companies developing automotive, mobile, IoT and illumination lighting applications need a partner who can collaborate with them to push the boundaries of light. With over 100 years of inventions and industry firsts, Lumileds is a global lighting solutions company that helps customers around the world deliver differentiated solutions to gain and maintain a competitive edge. As the inventor of Xenon technology, a pioneer in halogen lighting and the leader in high performance LEDs, Lumileds builds innovation, quality and reliability into its technology, products and every customer engagement. Together with its customers, Lumileds is making the world better, safer, more beautiful—with light.

To learn more about our lighting solutions, visit lumileds.com

Lumileds 2835R Dual Color Product Datasheet

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