DATASHEET

EVERLIGHT AUTOMOTIVE

EL ALFS series

ALFS1BD-C007001L1-AM

Features

- Package：SMD ceramic package
- Typ. Color Temperature：5850K
- Typ. Luminous Flux：245 lm @ 700mA
- Viewing angle：120º
- ESD：up to 8KV
- MSL：2
- Qualifications：According to AEC-Q102
- The product itself will remain within RoHS compliant version.
- Compliance with EU REACH.
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm).
- Sulfur robustness

Applications

- Automotive Exterior Lighting
- Headlamp
- Daytime running light (DRL)
- Fog lamp

Contents

1. Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward current[1]	I_F	50	700	1500	mA	
Luminous Flux[2][3]	Φ_v	200	245	280	lm	I_F=700mA
Forward Voltage[4][5]	V_F	2.90	3.40	3.75	V	I_F=700mA
Viewing Angle	ϕ	---	120	---	deg	I_F=700mA
Color	K	5180	---	6680	K	I_F=700mA
Thermal Resistance (Junction to Solder)	$R_{th\ JS\ real}$	---	4.4	4.8	K/W	I_F=700mA
	$R_{th\ JS\ el}$	---	3.4	3.8		

Notes:

1. Forward conditon by each of LED.
2. Luminous flux measurement tolerance: ±8%.
3. The data of luminous flux measured at thermal pad=25°C
4. Forward voltage measurement tolerance: ±0.05V
5. The Vf range shown in the table above indicates 99% output.

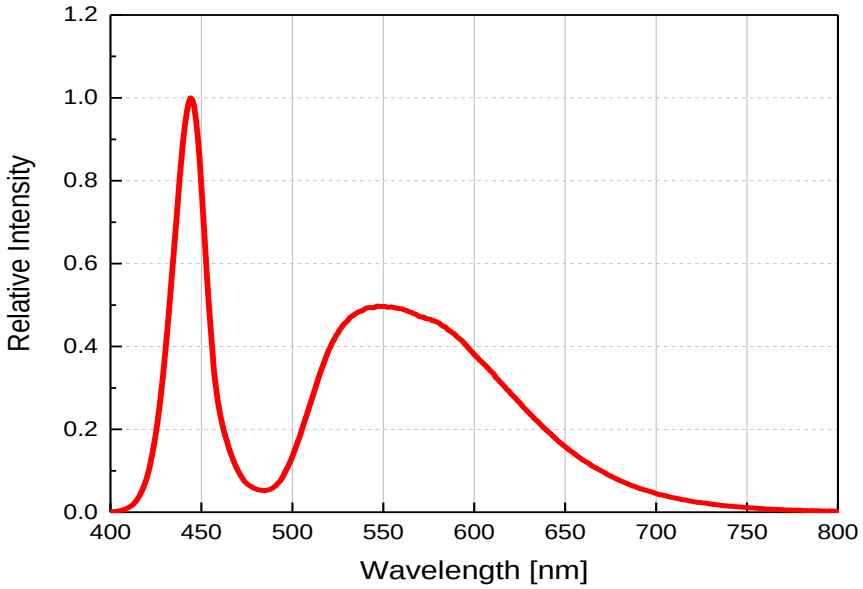
2. Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Reverse Voltage	V_R	Not designed for reverse operation	V
Power Dissipation	P_d	5625	mW
Forward Current	I_F	1500	mA
Junction Temperature	T_J	150	°C
Operating Temperature	T_{opr}	-40 ~ +125	°C
Storage Temperature	T_{stg}	-40 ~ +125	°C
ESD Sensitivity (R=1.5kΩ, C= 100pF)	ESD_{HBM}	8	KV
Soldering Temperature	Reflow	260	°C

3. Characteristics Graph

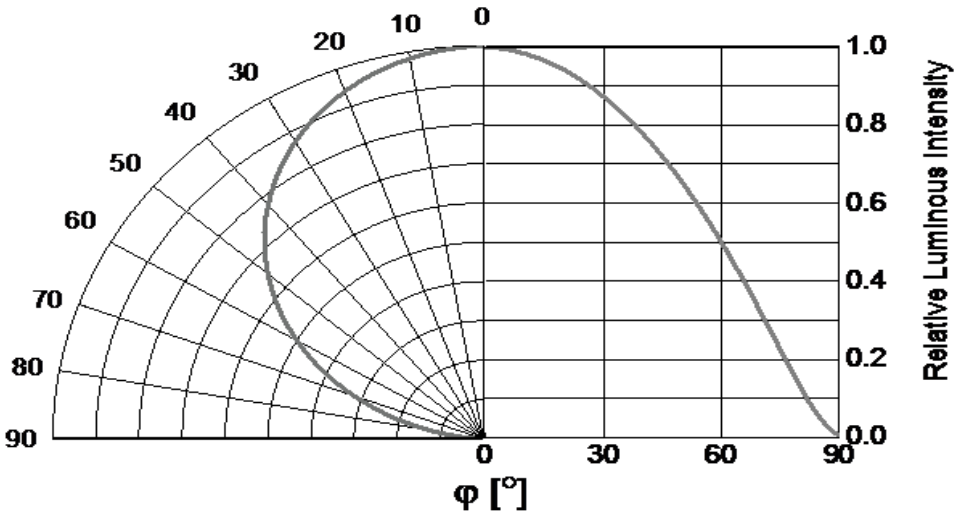
Wavelength Characteristics Relative Spectral Distribution @ T_S = 25°C、I_F = 700mA

$$\Phi_V/\Phi_V\,(Max.) = f(\lambda)$$



Typical Diagram Characteristics of Radiation

$$\Phi_V/\Phi_V\,(0^\circ) = f(\varphi)$$

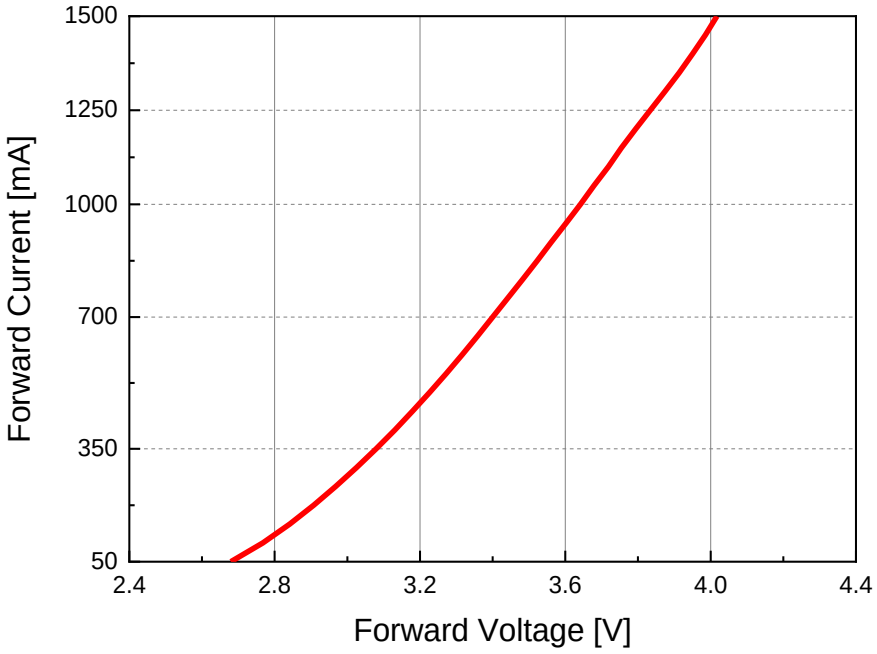


Notes:

1. φ is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value.
2. View angle tolerance is ± 5°

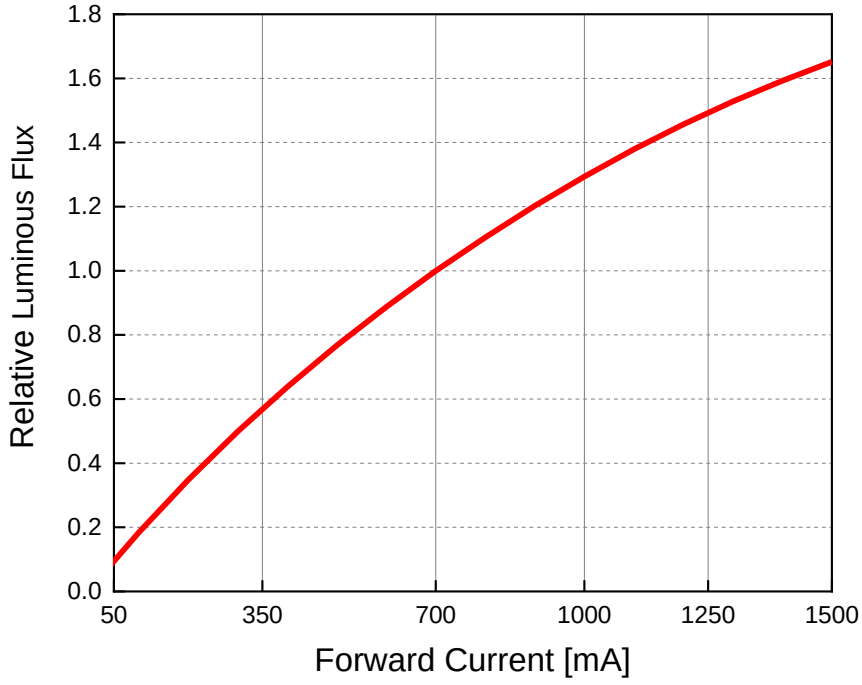
Forward Current vs. Forward Voltage @ T_S = 25°C

$$I_F = f(V_F)$$



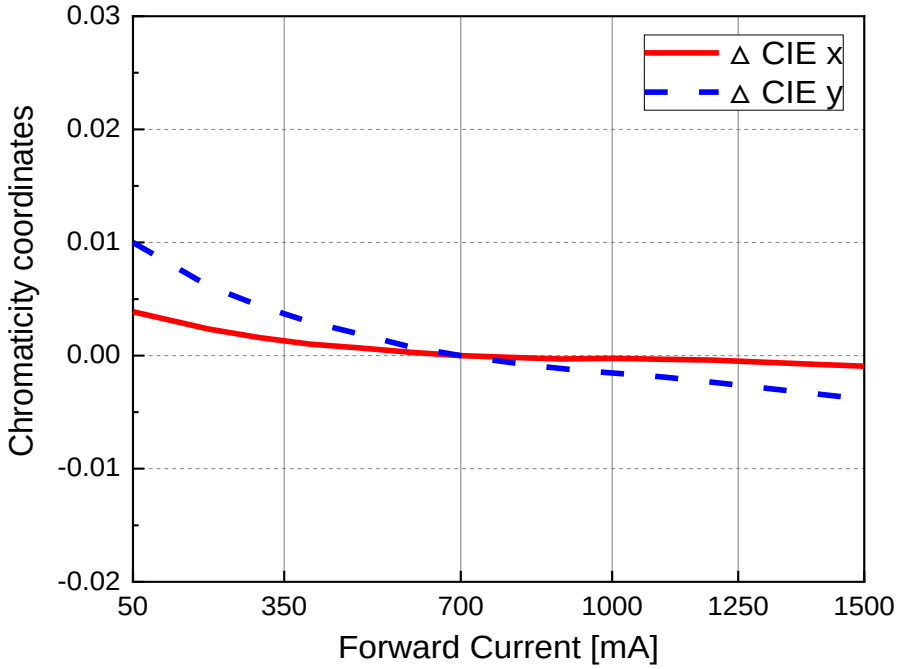
Relative Luminous Flux vs. Forward Current @ T_S = 25°C

$$\Phi_V / \Phi_V\,(700mA) = f(I_F)$$



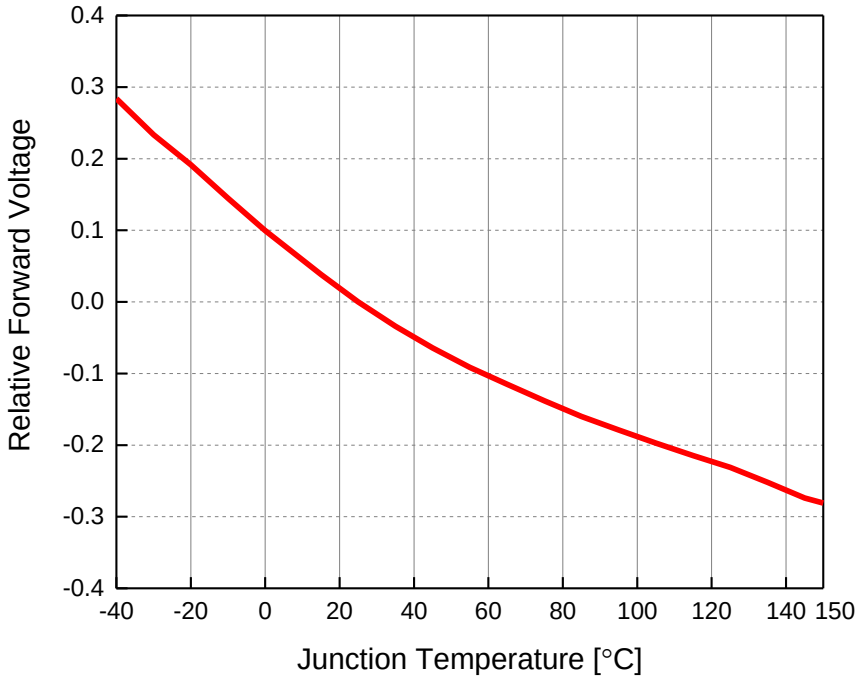
Chromaticity Coordinates vs. Forward Current @ T_S = 25°C

$$\Delta CIE\,x, \Delta CIE\,y = f(I_F)$$



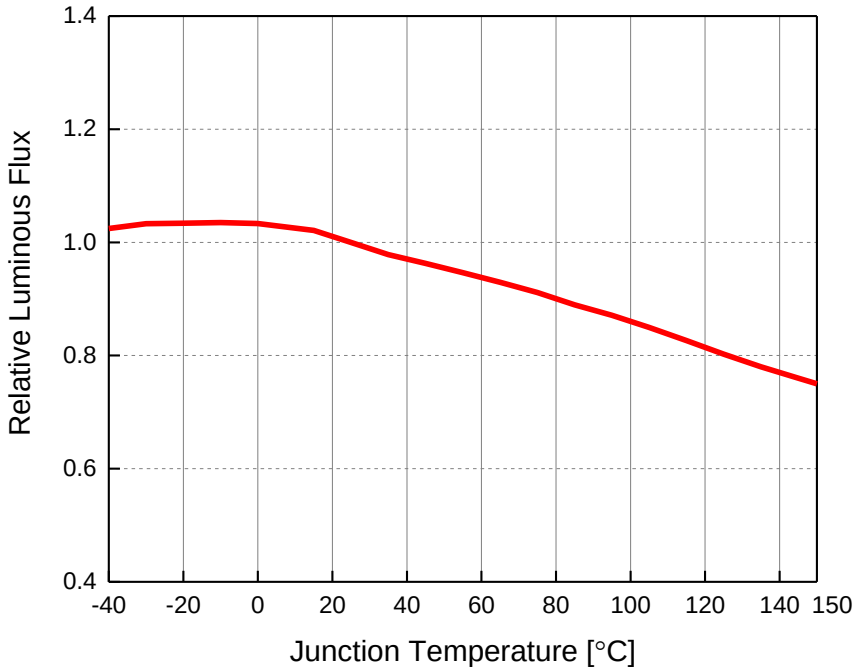
Relative Forward Voltage vs. Junction Temperature @ I_F = 700mA

$$\Delta V_F = V_F - V_F(25^oC) = f(T_j)$$



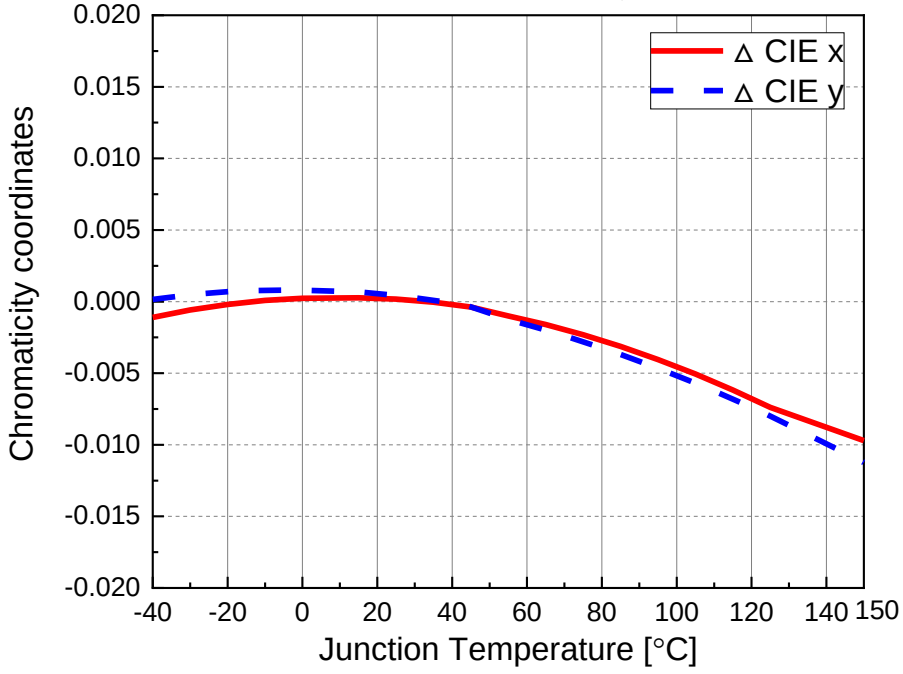
Relative Luminous Flux vs. Junction Temperature @ I_F = 700mA

$$\Phi_V / \Phi_V(25^\circ C) = f(T_j)$$



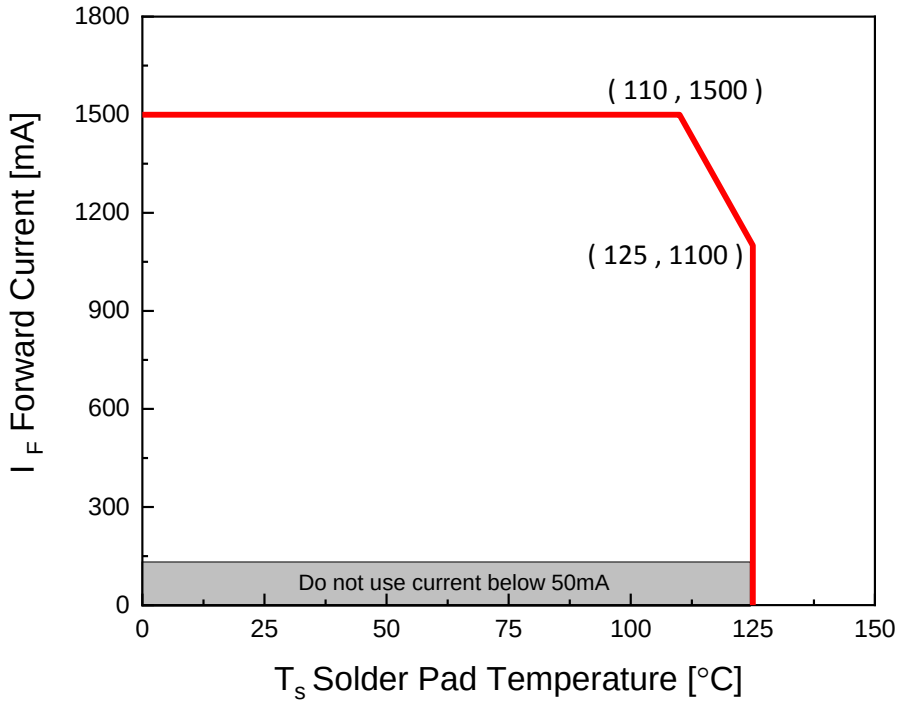
Chromaticity Coordinates Shift vs. Junction Temperature @ I_F = 700mA

$$\Delta CIE\,x, \Delta CIE\,y = f(T_j)$$



Forward Current Derating Curve

$$I_F = f(T_S)$$



4. Binning Information

Luminous Intensity Bins

[Cool White]			
Group	Bin	Minimum Photometric Flux (lm)	Maximum Photometric Flux (lm)
B	6	200	220
	7	220	240
	8	240	260
	9	260	280

Notes:

1. Luminous flux measurement tolerance: ±8%.
2. Highlighted Black Box is available bins.

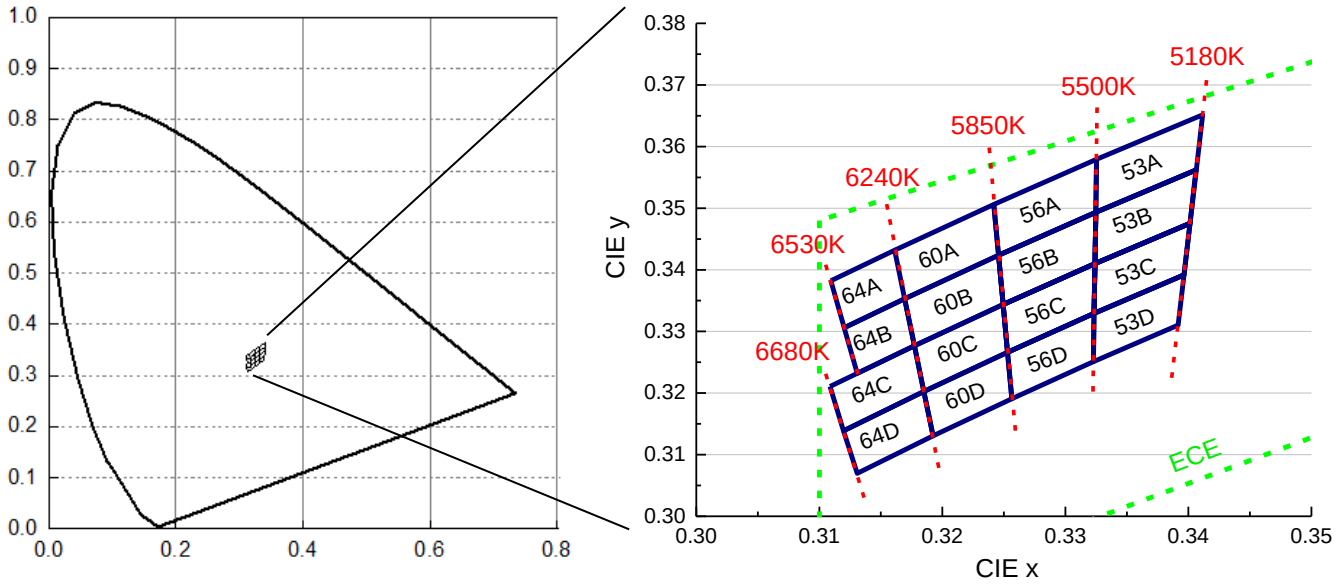
Forward Voltage Bins

Group	Minimum Forward Voltage(V)	Maximum Forward Voltage(V)
1A	2.90	3.20
1B	3.20	3.50
1C	3.50	3.80

Notes:

1. Forward Voltage measurement tolerance: ±0.05V.

Color Bin Structure
ECE Bin Structure



Cool White Bin Coordinates

Bin	CIE x	CIE y
64A	0.3109	0.3382
	0.3161	0.3432
	0.3169	0.3353
	0.3120	0.3306
Reference Range: 6240~6530K		

Bin	CIE x	CIE y
64B	0.3120	0.3306
	0.3169	0.3353
	0.3177	0.3277
	0.3131	0.3232
Reference Range: 6240~6530K		

Bin	CIE x	CIE y
64C	0.3109	0.3211
	0.3177	0.3277
	0.3185	0.3203
	0.3120	0.3139
Reference Range: 6240~6680K		

Bin	CIE x	CIE y
64D	0.3120	0.3139
	0.3185	0.3203
	0.3192	0.3131
	0.3131	0.3070
Reference Range: 6240~6680K		

Bin	CIE x	CIE y
60A	0.3161	0.3432
	0.3242	0.3506
	0.3246	0.3424
	0.3169	0.3353
Reference Range: 5850~6240K		

Bin	CIE x	CIE y
60B	0.3169	0.3353
	0.3246	0.3424
	0.3249	0.3344
	0.3177	0.3277
Reference Range: 5850~6240K		

Bin	CIE x	CIE y
60C	0.3177	0.3277
	0.3249	0.3344
	0.3253	0.3266
	0.3185	0.3203
Reference Range: 5850~6240K		

Bin	CIE x	CIE y
60D	0.3185	0.3203
	0.3253	0.3266
	0.3256	0.3191
	0.3192	0.3131
Reference Range: 5850~6240K		

Bin	CIE x	CIE y
56A	0.3242	0.3506
	0.3325	0.3579
	0.3325	0.3493
	0.3246	0.3424
Reference Range: 5500~5850K		

Bin	CIE x	CIE y
56B	0.3246	0.3424
	0.3325	0.3493
	0.3324	0.3410
	0.3249	0.3344
Reference Range: 5500~5850K		

Bin	CIE x	CIE y
56C	0.3249	0.3344
	0.3324	0.3410
	0.3323	0.3329
	0.3253	0.3266
Reference Range: 5500~5850K		

Bin	CIE x	CIE y
56D	0.3253	0.3266
	0.3323	0.3329
	0.3323	0.3251
	0.3256	0.3191
Reference Range: 5500~5850K		

Bin	CIE x	CIE y
53A	0.3325	0.3579
	0.3412	0.3652
	0.3406	0.3562
	0.3325	0.3493
Reference Range: 5180~5500K		

Bin	CIE x	CIE y
53B	0.3325	0.3493
	0.3406	0.3562
	0.3401	0.3476
	0.3324	0.3410
Reference Range: 5180~5500K		

Bin	CIE x	CIE y
53C	0.3324	0.3410
	0.3401	0.3476
	0.3396	0.3392
	0.3323	0.3329
Reference Range: 5180~5500K		

Bin	CIE x	CIE y
53D	0.3323	0.3329
	0.3396	0.3392
	0.3392	0.3310
	0.3323	0.3251
Reference Range: 5180~5500K		

Notes:

1. Color coordinates measurement tolerance: ±0.005.

5. Part Number

ALFS1BD-C007001L1-AM

Part number is designated with below details.

ALFS = product family name.

1 = chip number

B = Product type

D = Device

C = Color [1]

0 = CRI (0=N/A ; >70%=7 ; >80%=8 ; >90%=9)

0700 = test current [mA]

1 = internal code

L1 = Brightness Level

AM = automotive application

Note：

[1] Color：

Symbol	Description
C	Cool White
N	Neutral White
W	Warm White
PA	Phosphor Converted Amber
PR	Phosphor Converted Red
UB	Blue
IB	Ice Blue
SB	Sky Blue
UP	Purple
UG	Green
UY	Yellow
UYG	Brilliant Yellow Green
UPG	Pale Green
UA	Amber
UR	Red
SR	Super Red
RGB	RGB-Color

6. Ordering Information

ALFS1BD-C007001L1-ABC-DE-AM

Part Number of the ALFS	Order Code
ALFS1BD-C007001L1-AM	ALFS1BD-C007001L1-ABC-DE-AM

Order code contains information with below details：

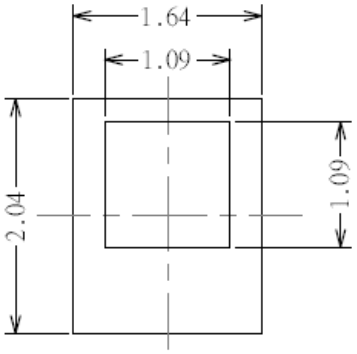
A= min/max wavelength or CCT

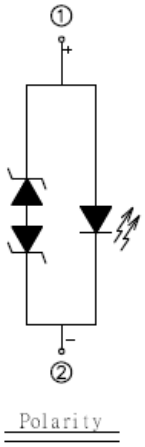
B= min./max. luminous flux in [lm] or luminous intensity in [mcd]

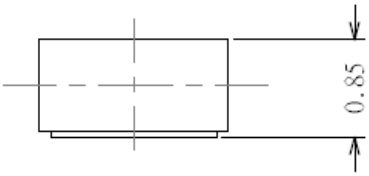
C = min./max. Forward Voltage

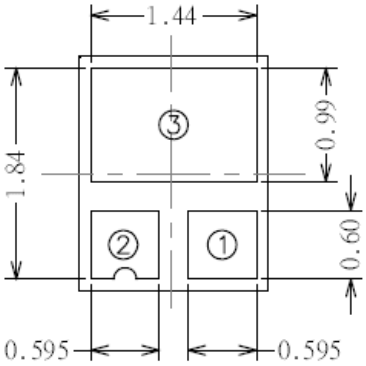
DE = Packing quantity (Minimum package)

7. Mechanical Dimension









①	Anode
②	Cathode
③	Thermal pad

Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are ± 0.1mm.