AUK Semiconductor

SW1314E-H

White Chip LED

Features

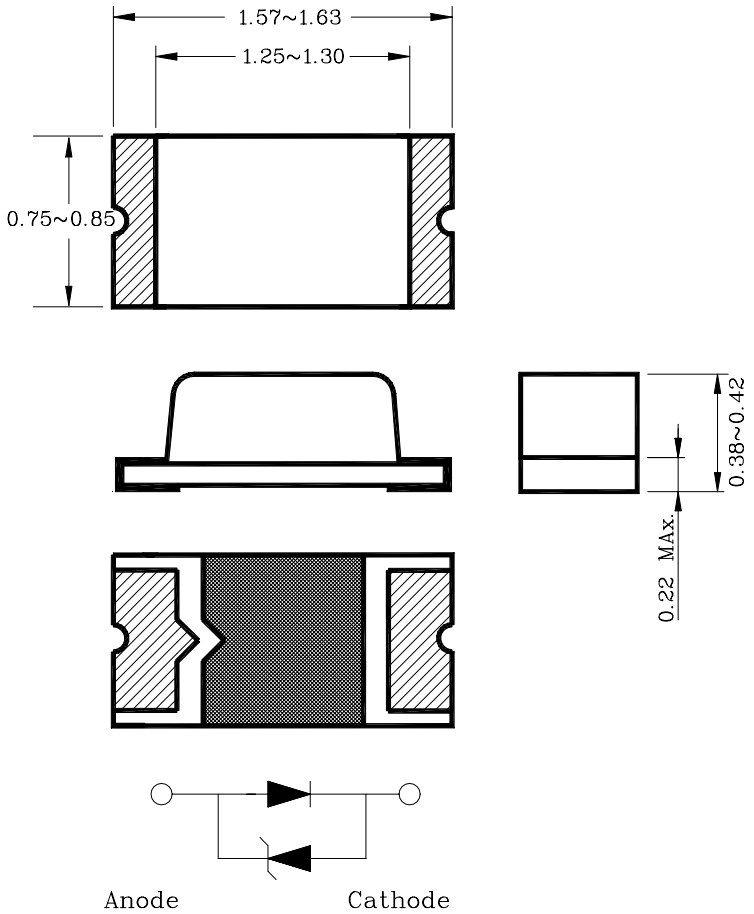
- 1.6mm(L)×0.8mm small size surface mount type
- Thin package of 0.4mm(H) thickness
- Transparent clear lens optic
- Low power consumption type chip LED
- **E ; ESD Protected (±2.0kv, 3 times @100pF, 1.5kΩ)**

Applications

- LCD backlighting
- Keypad backlighting
- Symbol backlighting
- Front panel indicator lamp

Outline Dimensions

unit : mm



Absolute Maximum Ratings

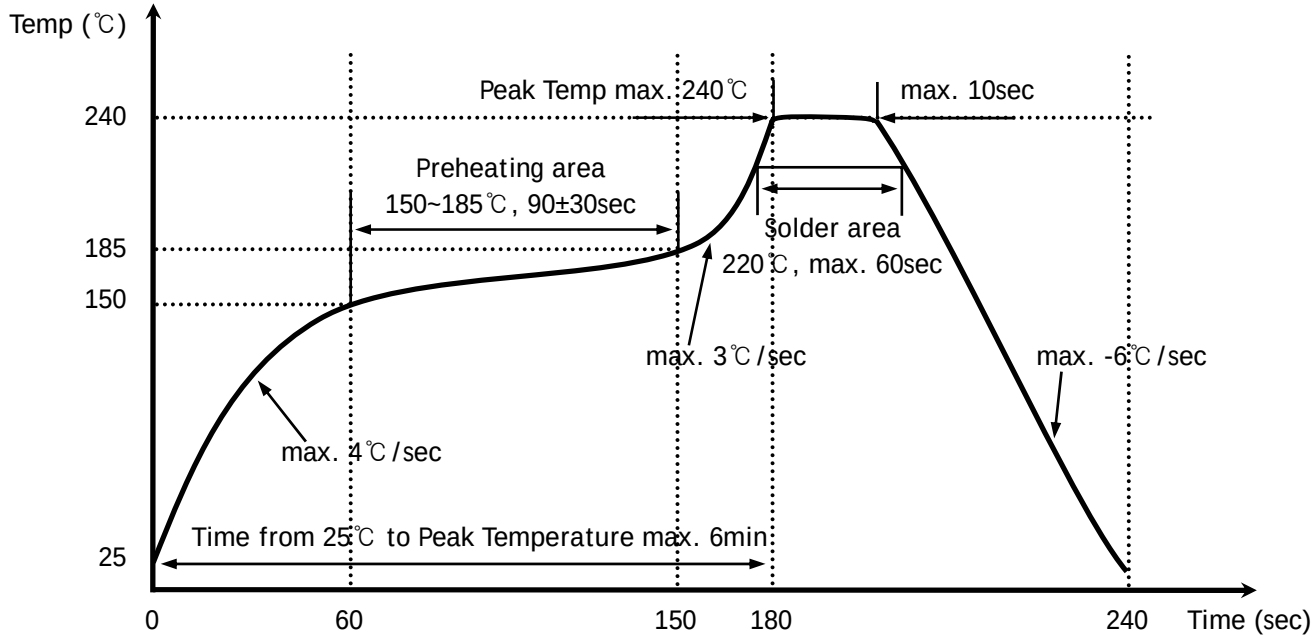
(Ta=25°C)

Characteristic	Symbol	Rating	Unit
Power dissipation	P_D	80	mW
Forward current	I_F	20	mA
*1Peak forward current	I_{FP}	50	mA
Operating temperature range	T_{opr}	-25～80	℃
Storage temperature range	T_{stg}	-30～100	℃
*2Soldering temperature	T_{sol}	240℃ for 10 seconds	

*1. Duty ratio = 1/16, Pulse width = 0.1ms

*2. Recommended reflow soldering temperature profile

- Preheating 150℃ to 185℃ within 120 seconds soldering 240℃ within 10 seconds
  Gradual cooling (Avoid quenching)



Electrical / Optical Characteristics

(Ta=25°C)

Characteristic	Symbol		Test Condition	Min	Typ	Max	Unit
Forward voltage	V_F		I_F= 5mA	2.6	-	3.4	V
*3Luminous intensity	I_V		I_F= 5mA	15	-	75	mcd
*4Chromaticity coordinates	X		I_F= 5mA	0.21	-	0.33	-
	Y			0.18	-	0.36	-
*5Half angle	$\theta 1/2$	X	I_F= 5mA	-	±65	-	deg
		Y		-	±70	-	

*4. Luminous intensity maximum tolerance for each grade classification limit is ±18%

(The test result of I_F=5mA is only for reference)

*5. CIE Coordinates bin limits will have ±0.02 tolerance

*6. $\theta_{1/2}$ is the off-axis angle where the luminous intensity is 1/2 the peak intensity

● V_F / I_V Grade Classification (Ta=25℃)

Test Condition @I_F = 5mA	
Forward Voltage [V]	Luminous Intensity [mcd]
1 : 2.6~2.8	A : 15~22
2 : 2.8~3.0	B : 22~33
3 : 3.0~3.2	C : 33~50
4 : 3.2~3.4	D : 50~75

(Do not use to combine grade classification. It must be used separately grade classification)

Characteristic Diagrams

Fig. 1 I_F - V_F

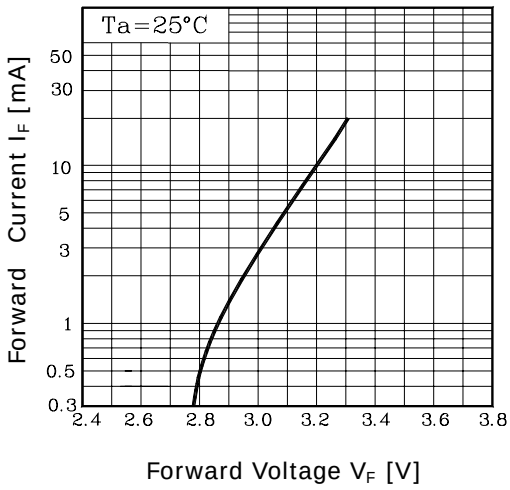


Fig. 2 I_V - I_F

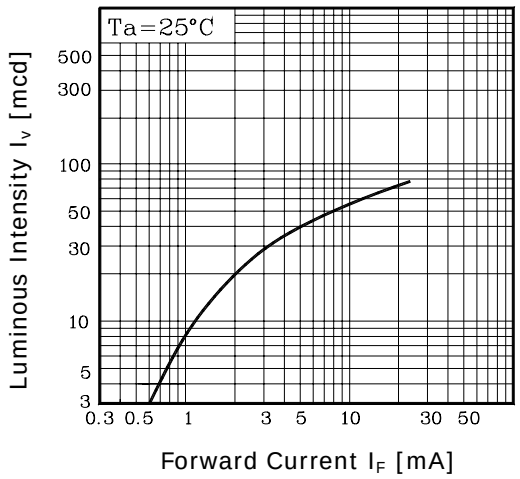


Fig. 3 I_F – Ta

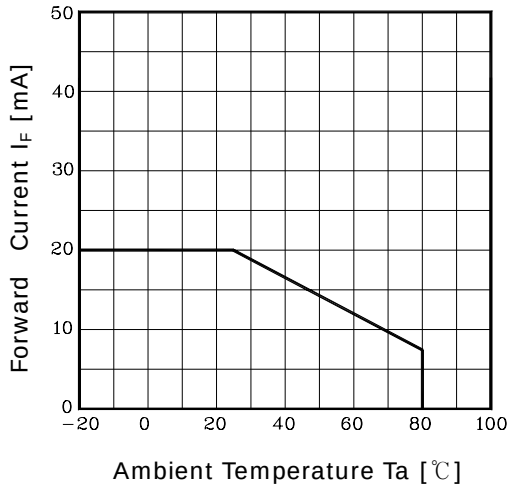


Fig.4 Spectrum Distribution

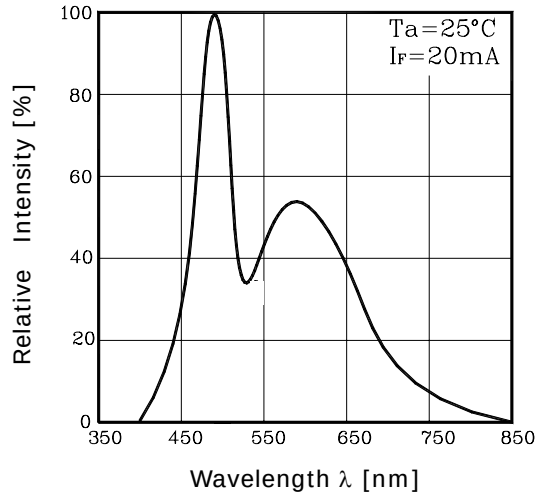


Fig. 5-1 Radiation Diagram(X)

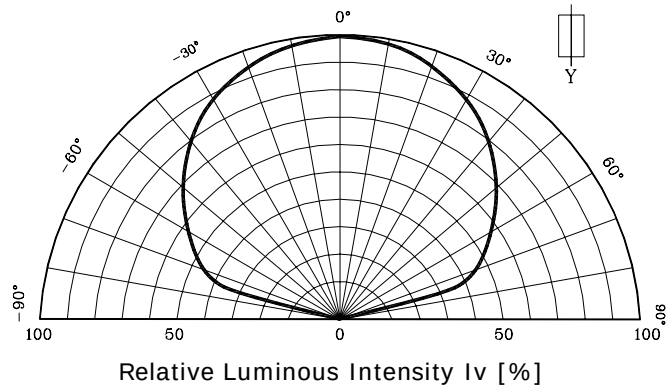
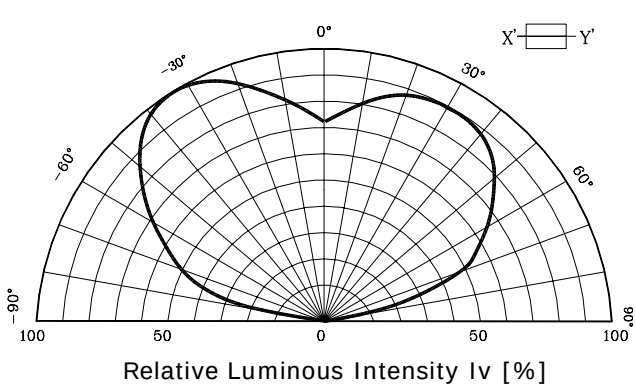
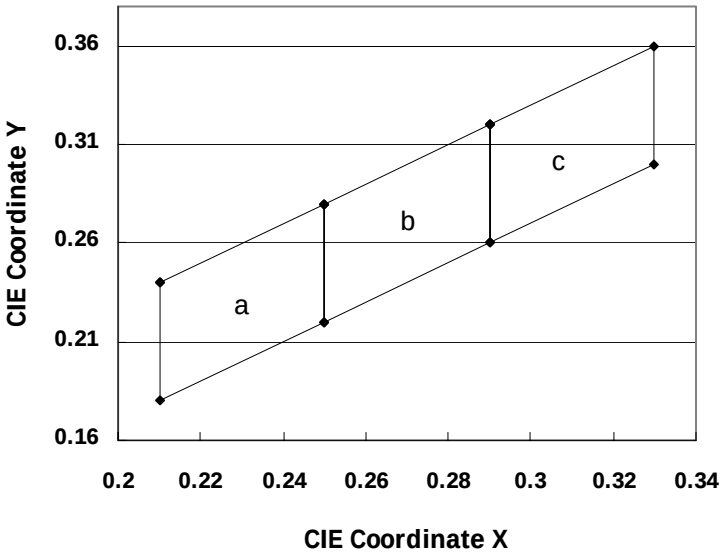
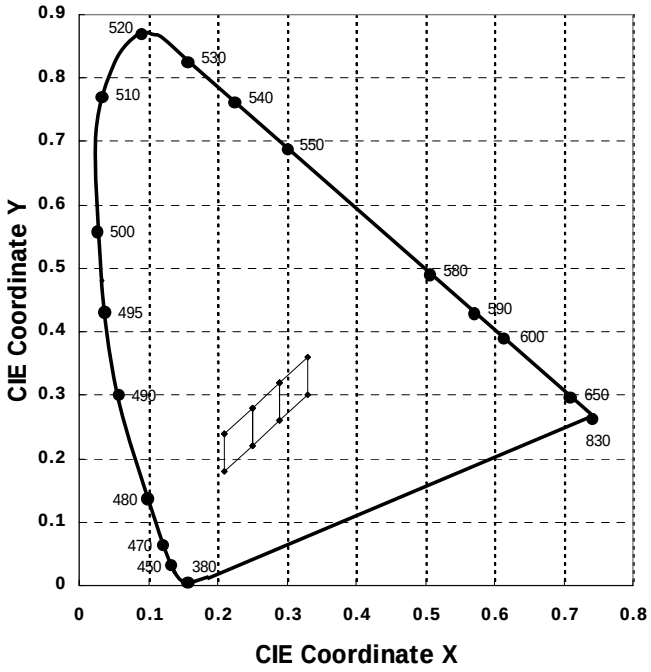


Fig. 5-2 Radiation Diagram(Y)



♦ CIE 1931 UCS Diagram





● CIE Coordinates Grade Classification (Ta=25℃, I_F=5mA)

Color Bin	CIE Coodinates		Color Bin	CIE Coodinates		Color Bin	CIE Coodinates	
	X	Y		X	Y		X	Y
a	0.21	0.24	b	0.25	0.28	c	0.29	0.32
	0.21	0.18		0.25	0.22		0.29	0.26
	0.25	0.22		0.29	0.26		0.33	0.30
	0.25	0.28		0.29	0.32		0.33	0.36

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