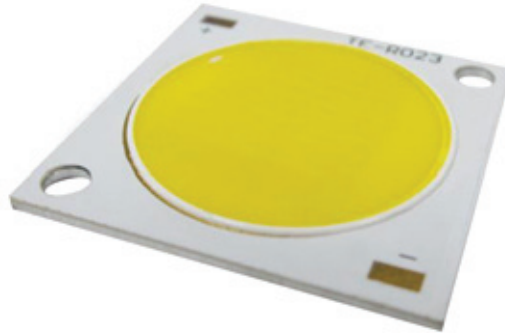
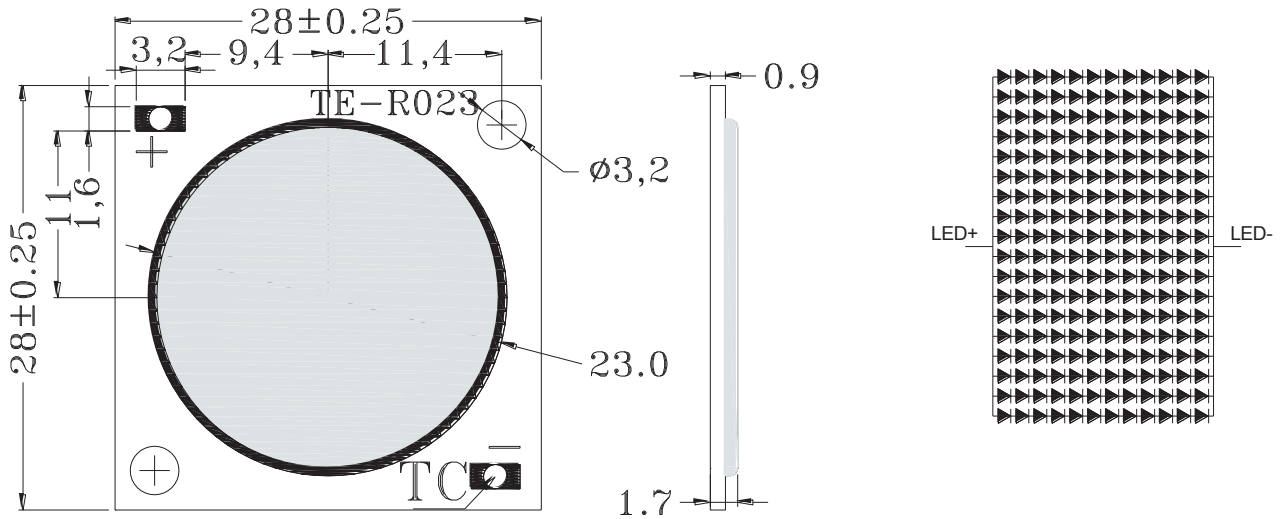


**SPECIFICATION** **TE-R23 SERIES**
**1. PRODUCT APPEARANCE**

**2. OUTLINE DRAWING**

**Notes:**

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25\text{mm}$  (0.01") unless otherwise noted.
3. Specifications are subject to change without notice.

Part Number	Chip Material	Color of Emission	Lens Type	Viewing Angle
TE-R23	GaN	White	Yellow Tint	120°



ChromeLED Corp. reserves the right to make changes at any time in order to supply the best product possible. The most current version of this document will always be available at: [www.chromeled.com](http://www.chromeled.com)

### 3. PERFORMANCE PARAMETERS

#### 3-1. ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	RATING	UNIT
Power Dissipation	P	70.2	W
Forward Current	I <sub>F</sub>	1800	mA
Reverse Voltage	V <sub>R</sub>	60	V
Operating Temperature	T <sub>opr</sub>	- 30 ~ + 65	°C
Storage Temperature	T <sub>stg</sub>	- 40 ~ + 100	°C
Junction Temperature	T <sub>jmax</sub>	+ 125	°C
Thermal Resistance	RJ-C	3.5	°C/W

Note:

\*1. Forward current allows maximum surge current ≤ 10ms.

\*2. Power dissipation and forward current are the values when the LED is used within the range of the derating curve in this data sheet.



ChromeLED Corp. reserves the right to make changes at any time in order to supply the best product possible. The most current version of this document will always be available at: [www.chromeled.com](http://www.chromeled.com)

**ELECTRICAL-OPTICAL CHARACTERISTICS**
**3-2. ELECTRICAL-OPTICAL CHARACTERISTICS**

 (T<sub>a</sub>=25°C)

**	PARAMETER	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT	
common	Forward Voltage <sup>*1</sup>	V <sub>F</sub>	I <sub>F</sub> =1080mA	34	36	39	V	
	Beam Angle	Deg		—	120	—	Deg	
W	** Color Temp.	T <sub>C</sub>	I <sub>F</sub> =1080mA	2870	3045	3220	K	
	** Color Rendering Index <sup>*3</sup>	R <sub>a</sub>		80	—	—	—	
	W <sub>1</sub>	Luminous Flux <sup>*2</sup>		Φ	3200	3500	—	lm
		Luminous Efficiency		η	80	90	—	lm/W
	W <sub>2</sub>	Luminous Flux <sup>*2</sup>		Φ	3501	3800	—	lm
		Luminous Efficiency		η	91	97	—	lm/W
	W <sub>3</sub>	Luminous Flux <sup>*2</sup>		Φ	3801	4200	—	lm
		Luminous Efficiency		η	98	105	—	lm/W
D	** Color Temp.	T <sub>C</sub>	I <sub>F</sub> =1080mA	4745	5028	5311	K	
	** Color Rendering Index <sup>*3</sup>	R <sub>a</sub>		80	—	—	—	
	D <sub>1</sub>	Luminous Flux <sup>*2</sup>		Φ	3500	3800	—	lm
		Luminous Efficiency		η	91	97	—	lm/W
	D <sub>2</sub>	Luminous Flux <sup>*2</sup>		Φ	3801	4100	—	lm
		Luminous Efficiency		η	98	105	—	lm/W
	D <sub>3</sub>	Luminous Flux <sup>*2</sup>		Φ	4101	4400	—	lm
		Luminous Efficiency		η	106	110	—	lm/W
C	** Color Temp.	T <sub>C</sub>	I <sub>F</sub> =1080mA	6020	6530	7040	K	
	** Color Rendering Index <sup>*3</sup>	R <sub>a</sub>		80	—	—	—	
	C <sub>1</sub>	Luminous Flux <sup>*2</sup>		Φ	3600	3900	—	lm
		Luminous Efficiency		η	92	99	—	lm/W
	C <sub>2</sub>	Luminous Flux <sup>*2</sup>		Φ	3901	4200	—	lm
		Luminous Efficiency		η	100	108	—	lm/W
	C <sub>3</sub>	Luminous Flux <sup>*2</sup>		Φ	4201	4500	—	lm
		Luminous Efficiency		η	109	115	—	lm/W

(Note) Parameters is formulated based on shipping samples

\*1. After 20ms drive, measurement tolerance: ±3%

\*2. Monitored by ChromeLED 1m integrating sphere, after 20ms drive, measurement tolerance: ±10%.

\*3. Monitored by ChromeLED 1m integrating sphere, after 20ms drive, measurement tolerance: ±2


 ChromeLED Corp. reserves the right to make changes at any time in order to supply the best product possible. The most current version of this document will always be available at: [www.chromeled.com](http://www.chromeled.com)

**RELIABILITY**
**TEST ITEMS AND TEST CONDITIONS**

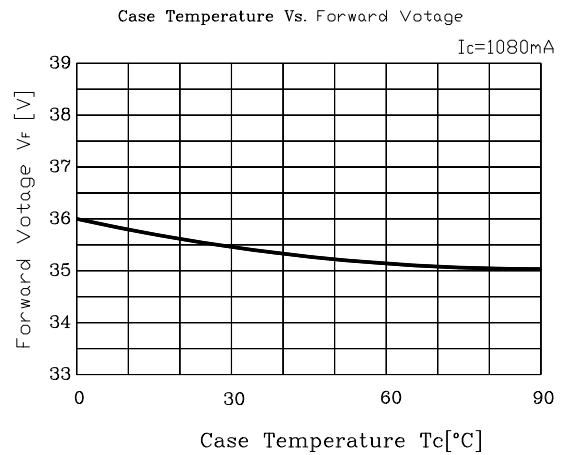
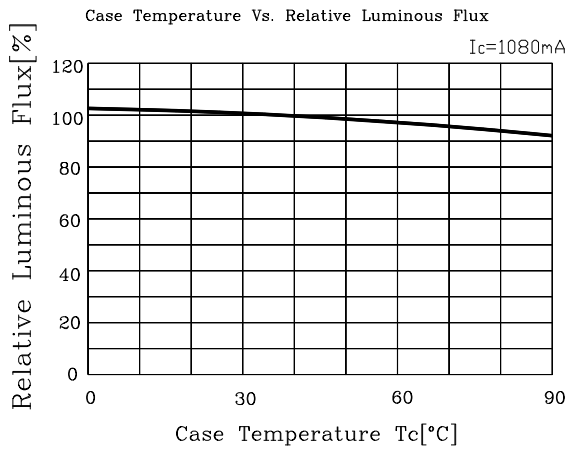
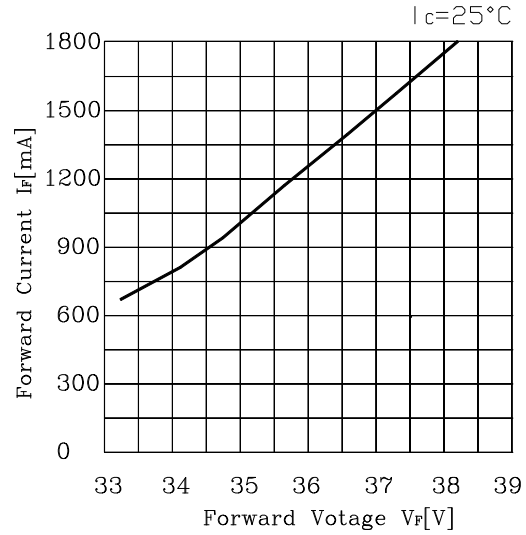
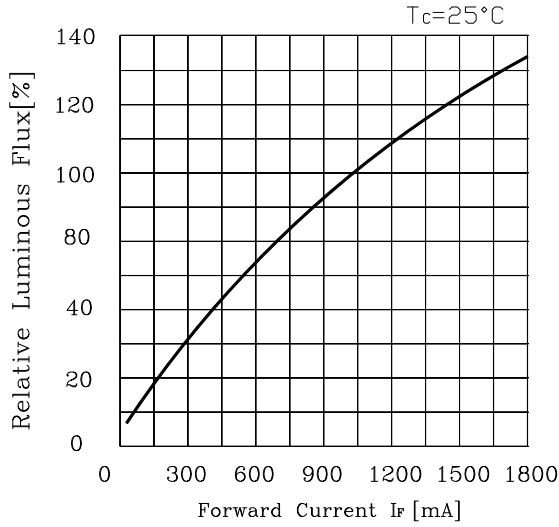
NO.	TEST ITEM	TEST CONDITIONS	RESULT
1	Continuous operation test	$T_a = 25^{\circ}\text{C}$ , $I_F = 1080\text{mA} \times 1000$ hours(with Al fin)	PASS
		$T_a = 80^{\circ}\text{C}$ , $T_j \cong 120^{\circ}\text{C}$ , $I_F = 1080 \text{ mA} \times 1000$ hours(with Al fin)	
2	Low temperature storage	$T_a = -40^{\circ}\text{C} \times 1000$ hours	PASS
3	High temperature storage	$T_a = 100^{\circ}\text{C} \times 1000$ hours	PASS
4	Moisture resistance	$T_a = 60^{\circ}\text{C}$ , 90%RH for 1000 hours	PASS
5	Thermal shock	$T_a = -40^{\circ}\text{C} \times 30$ minutes $\sim 100^{\circ}\text{C} \times 30$ minutes, 100 cycle	PASS

**FAILURE CRITERIA**

NO.	PARAMETER	SYMBOL	FAILURE CRITERIA
1	Forward Voltage	$V_F$	$V_F > \text{Initial value} \times 1.1$
2	Luminous Flux	$\Phi$	$\Phi < \text{Initial value} \times 0.7$



ChromeLED Corp. reserves the right to make changes at any time in order to supply the best product possible. The most current version of this document will always be available at: [www.chromeled.com](http://www.chromeled.com)

**CHARACTERISTICS DIAGRAM (TYP.)**
**3-3. Characteristics diagram (TYP.)**


ChromeLED Corp. reserves the right to make changes at any time in order to supply the best product possible. The most current version of this document will always be available at: [www.chromeled.com](http://www.chromeled.com)

# CHROMATICITY COORDINATES REGIONAL - 3000K

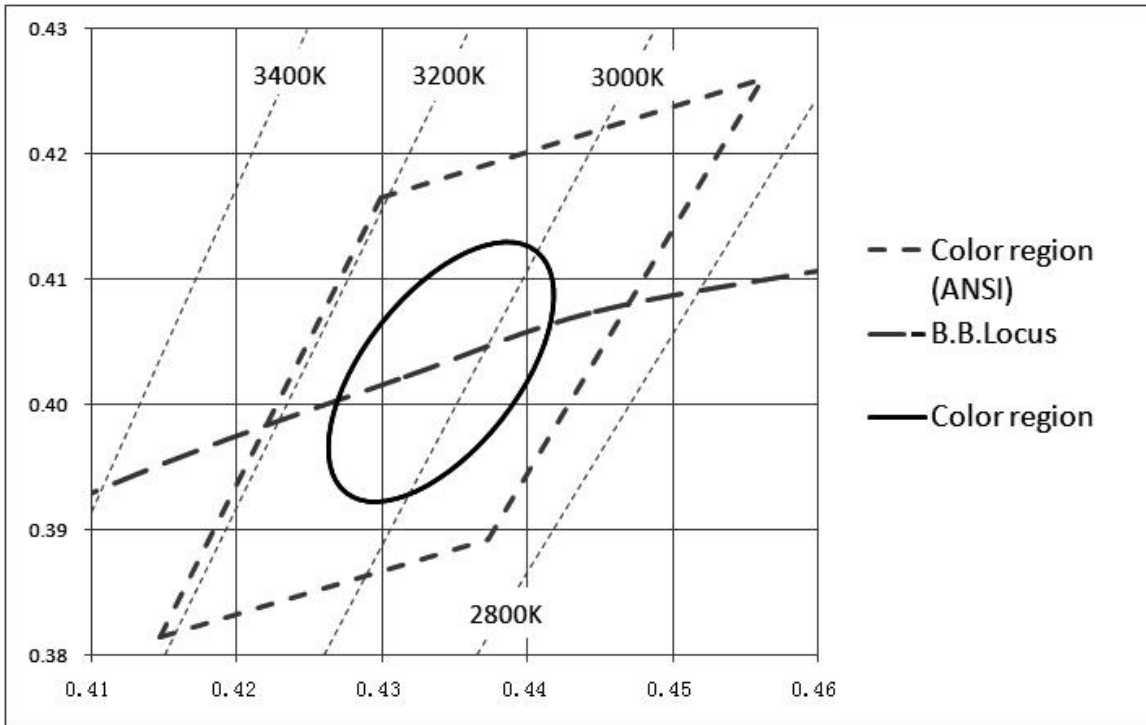
## 3000K CHROMATICITY COORDINATES

(Tolerance:  $x,y \pm 0.005$ )

( $I_F = 480\text{mA}$ ,  $T_c = 25^\circ\text{C}$ )

Range		Chromaticity coordinates				
		NO.1	NO.2	NO.3	NO.4	NO.5
	x	0.4363	0.4305	0.4320	0.4340	0.4377
	y	0.4201	0.4206	0.4201	0.4188	0.4180

Chromaticity Diagram



Note: The tolerance of measurement at our tester is  $V_F \pm 3\%$ ,  $D_v \pm 10\%$ , Chromaticity( $x,y$ )  $\pm 0.005$ .



ChromeLED Corp. reserves the right to make changes at any time in order to supply the best product possible. The most current version of this document will always be available at: [www.chromeled.com](http://www.chromeled.com)

# CHROMATICITY COORDINATES REGIONAL - 5000K

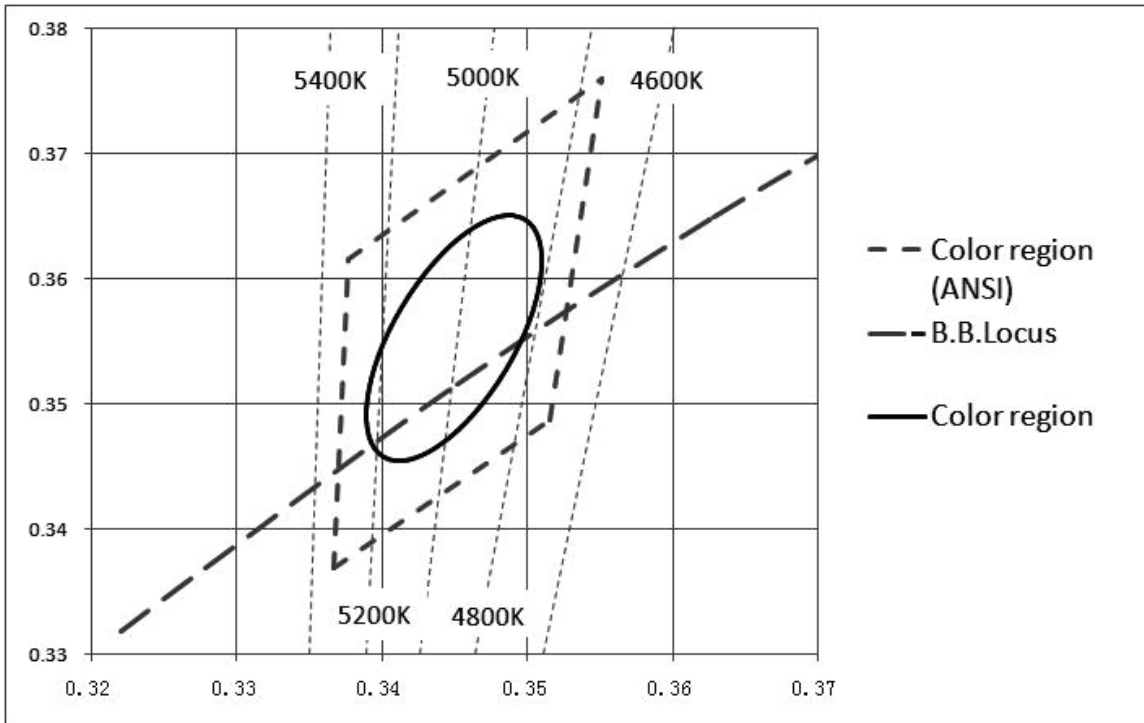
## 5000K CHROMATICITY COORDINATES

(Tolerance:  $x,y \pm 0.005$ )

( $I_F = 480\text{mA}$ ,  $T_c = 25^\circ\text{C}$ )

Range		Chromaticity coordinates				
		NO.1	NO.2	NO.3	NO.4	NO.5
	x	0.3551	0.3376	0.3366	0.3515	0.3551
	y	0.376	0.3616	0.3369	0.3487	0.376

Chromaticity Diagram



Note: The tolerance of measurement at our tester is  $V_F \pm 3\%$ ,  $D_v \pm 10\%$ , Chromaticity( $x,y$ ) $\pm 0.005$ .



ChromeLED Corp. reserves the right to make changes at any time in order to supply the best product possible. The most current version of this document will always be available at: [www.chromeled.com](http://www.chromeled.com)

## CHROMATICITY COORDINATES REGIONAL - 6500K

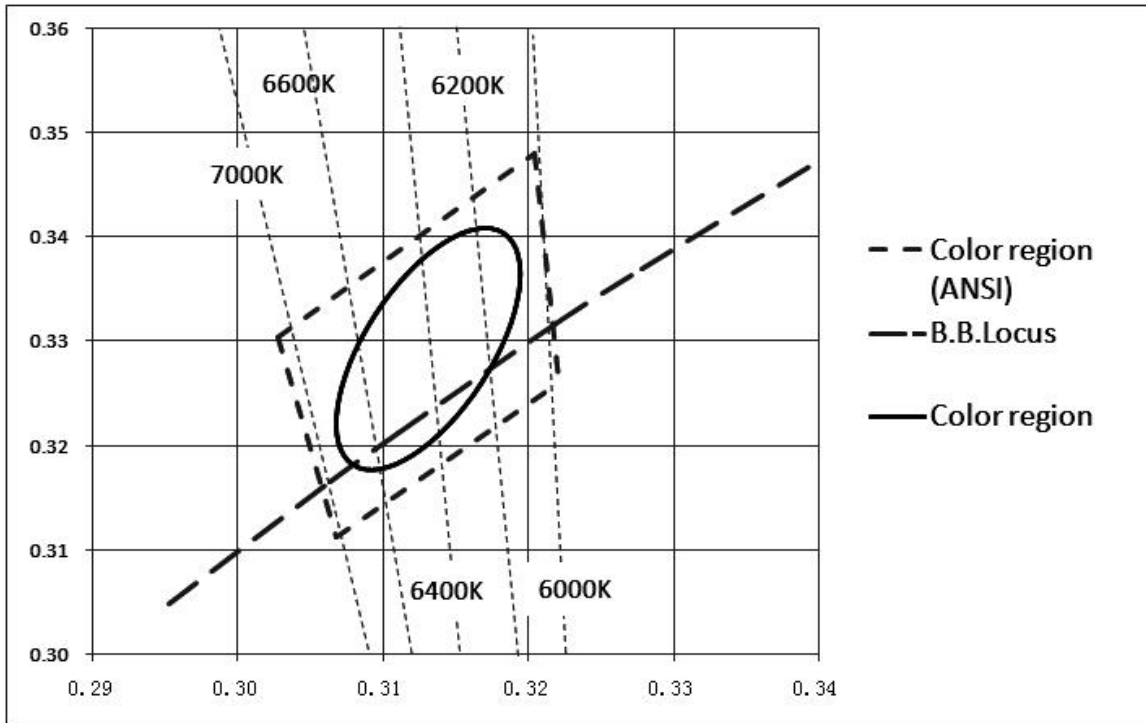
### 6500K CHROMATICITY COORDINATES

(Tolerance:  $x, y \pm 0.005$ )

( $I_F = 480\text{mA}$ ,  $T_c = 25^\circ\text{C}$ )

Range		Chromaticity coordinates				
		NO.1	NO.2	NO.3	NO.4	NO.5
	x	0.3205	0.3028	0.3068	0.3221	0.3205
	y	0.3481	0.3304	0.3113	0.3261	0.3481

Chromaticity Diagram



Note: The tolerance of measurement at our tester is  $V_F \pm 3\%$ ,  $D_v \pm 10\%$ , Chromaticity( $x, y$ )  $\pm 0.005$ .



ChromeLED Corp. reserves the right to make changes at any time in order to supply the best product possible. The most current version of this document will always be available at: [www.chromeled.com](http://www.chromeled.com)