

# ***SPECIFICATIONS***

FOR TOPLITE COB MODULE

**MODEL: ATE-R11-5W**



**TOPLITE**

**TOPLITE INTERNATIONAL LLC.**

*[www.topliteusa.com](http://www.topliteusa.com)*

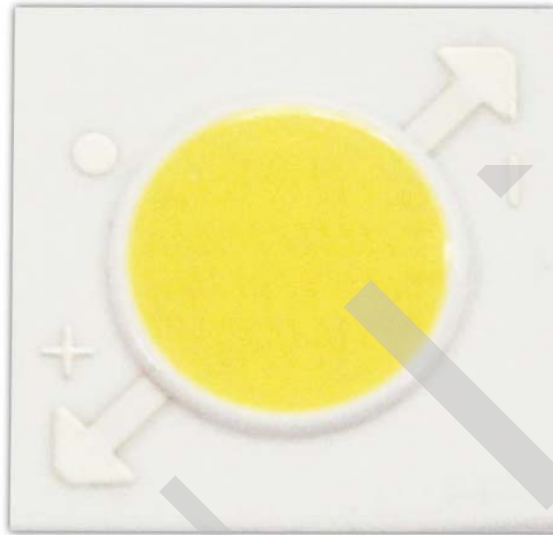


## TECHNICAL DATA SHEET

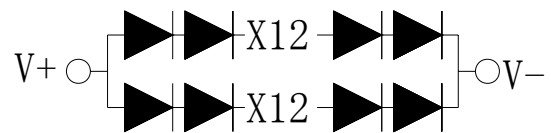
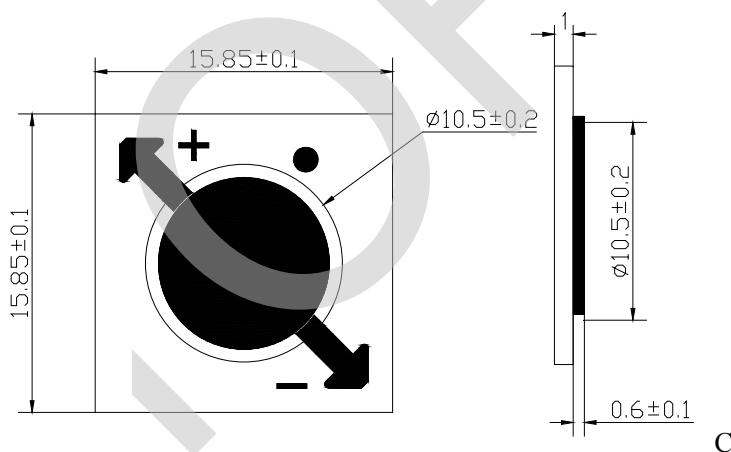
**ATE-R11-5W** <TOPLITE COB MODULE>

1 / 8

### 1. PRODUCT APPEARANCE



### 2. OUTLINE DRAWING



Unit: mm

Tolerance:  $\pm 0.25$

**TECHNICAL DATA SHEET****ATE-R11-5W** <TOPLITE COB MODULE>

2 / 8

**3. PERFORMANCE PARAMETERS****3-1. ABSOLUTE MAXIMUM RATINGS**

ITEM	SYMBOL	RATING	UNIT
Power Dissipation	P	7.12	W
Forward Current	I <sub>F</sub>	180	mA
Reverse Voltage	V <sub>R</sub>	60	V
Operating Temperature	T <sub>opr</sub>	- 30 ~ + 80	°C
Storage Temperature	T <sub>stg</sub>	- 40 ~ + 100	°C
Junction Temperature	T <sub>jmax</sub>	+ 125	°C

**Note:**

\*1. Forward Current allows maximum surge current  $\leq 10$ ms.

\*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.



**TECHNICAL DATA SHEET**

**ATE-R11-5W** <TOPLITE COB MODULE>

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

(T<sub>c</sub>=25°C)

**	PARAMETER	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT	
common	Forward Voltage <sup>*1</sup>	V <sub>F</sub>	I <sub>F</sub> =140mA	34.8	36	39.6	V	
	Beam Angle	—		—	120	—	Deg	
W	** Color Temp.	—	I <sub>F</sub> =140mA	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	400	450	—	lm
		Luminous Efficiency		η	80	90	—	lm/W
	W <sub>2</sub>	Luminous Flux <sup>*2</sup>		Φ	455	475	—	lm
		Luminous Efficiency		η	91	95	—	lm/W
D	** Color Temp.	—	I <sub>F</sub> =140mA	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	475	500	—	lm
		Luminous Efficiency		η	95	100	—	lm/W
	D <sub>2</sub>	Luminous Flux <sup>*2</sup>		Φ	505	525	—	lm
		Luminous Efficiency		η	101	105	—	lm/W
C	** Color Temp.	—	I <sub>F</sub> =140mA	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	500	525	—	lm
		Luminous Efficiency		η	100	105	—	lm/W
	C <sub>2</sub>	Luminous Flux <sup>*2</sup>		Φ	550	575	—	lm
		Luminous Efficiency		η	110	115	—	lm/W

(Note) Parameters is formulated based on shipping samples

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

\*2. Monitored by TOPLITE's 1m integrating sphere, after 20 ms drive, Measurement tolerance: ± 10 %

\*3. Monitored by TOPLITE's 1m integrating sphere, after 20 ms drive, Measurement tolerance:± 2



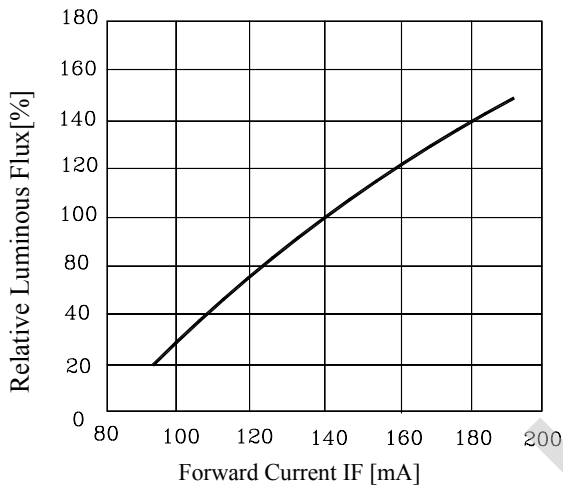
# TECHNICAL DATA SHEET

## ATE-R11-5W <TOPLITE COB MODULE>

### 3-3. Characteristics diagram (TYP.)

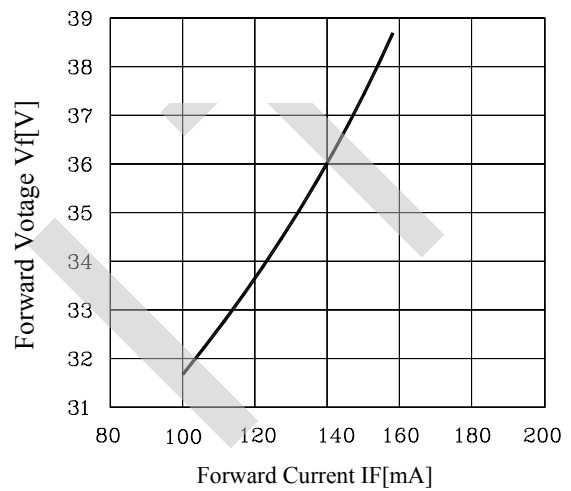
Forward Current Vs. Relative Luminous Flux

$T_c=25^{\circ}\text{C}$



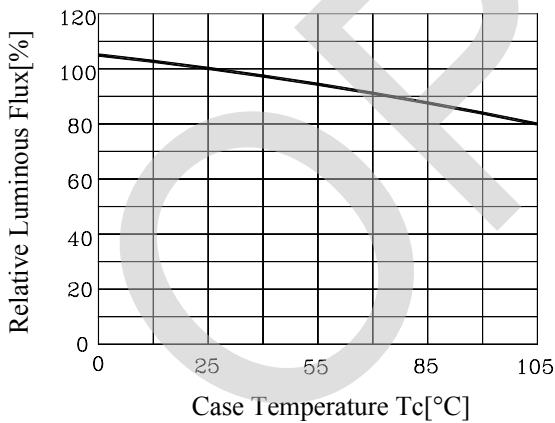
Forward Voltage Vs. Forward Current

$T_c=25^{\circ}\text{C}$



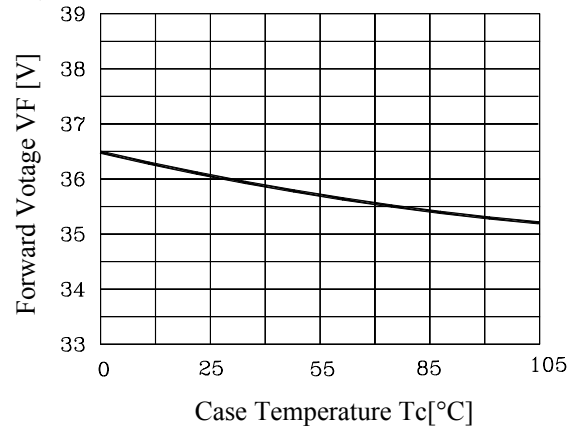
Case Temperature Vs. Relative Luminous Flux

$I_f=140\text{mA}$



Case Temperature Vs. Forward Voltage

$I_f=140\text{mA}$



**TECHNICAL DATA SHEET****ATE-R11-5W** <TOPLITE COB MODULE>

5 / 8

**4. RELIABILITY**

The reliability of products shall be satisfied with items listed below.

**4-1. TEST ITEMS AND TEST CONDITIONS**

NO.	TEST ITEM	TEST CONDITIONS	RESULT
1	Continuous operation test	$T_a = 25^\circ\text{C}$ , $I_F = 140\text{mA} \times 1000$ hours(with Al fin)	PASS
		$T_a = 80^\circ\text{C}$ , $T_j = 120^\circ\text{C}$ , $I_F = 140\text{mA} \times 1000$ 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

**4-2. FAILURE CRITERIA**

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



**TECHNICAL DATA SHEET**

**ATE-R11-5W** <TOPLITE COB MODULE>

**5. CHROMATICITY COORDINATES REGIONAL**

**5-1. 3000K CHROMATICITY COORDINATES**

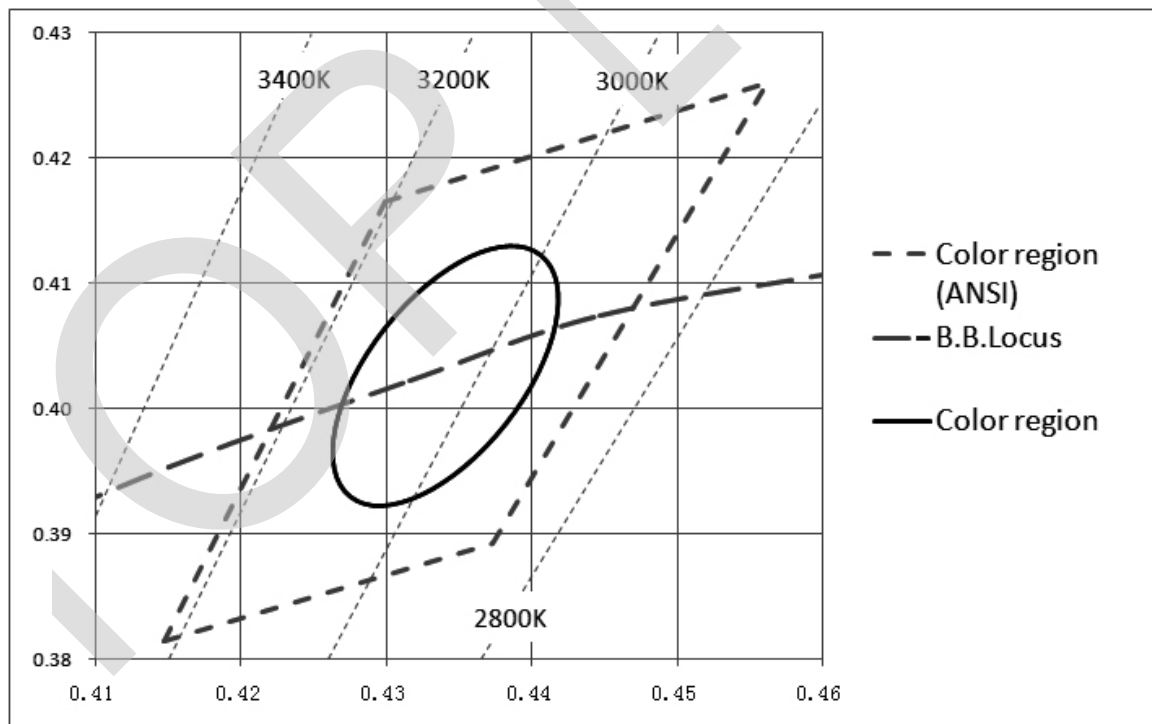
(Tolerance:  $x,y \pm 0.005$ )

( $I_F = 140\text{mA}$ ,  $T_c = 25^\circ\text{C}$ )

Range	Chromaticity coordinates					
		NO.1	NO.2	NO.3	NO.4	CENTER
	x	0.4562	0.4299	0.4147	0.4373	0.4338
	y	0.4260	0.4165	0.3814	0.3893	0.4030

\* The percentage of each rank in the shipment shall be determined by TOPLITE.

**Chromaticity Diagram**



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



**TECHNICAL DATA SHEET**

**ATE-R11-5W** <TOPLITE COB MODULE>

**5-2. 5000K CHROMATICITY COORDINATES**

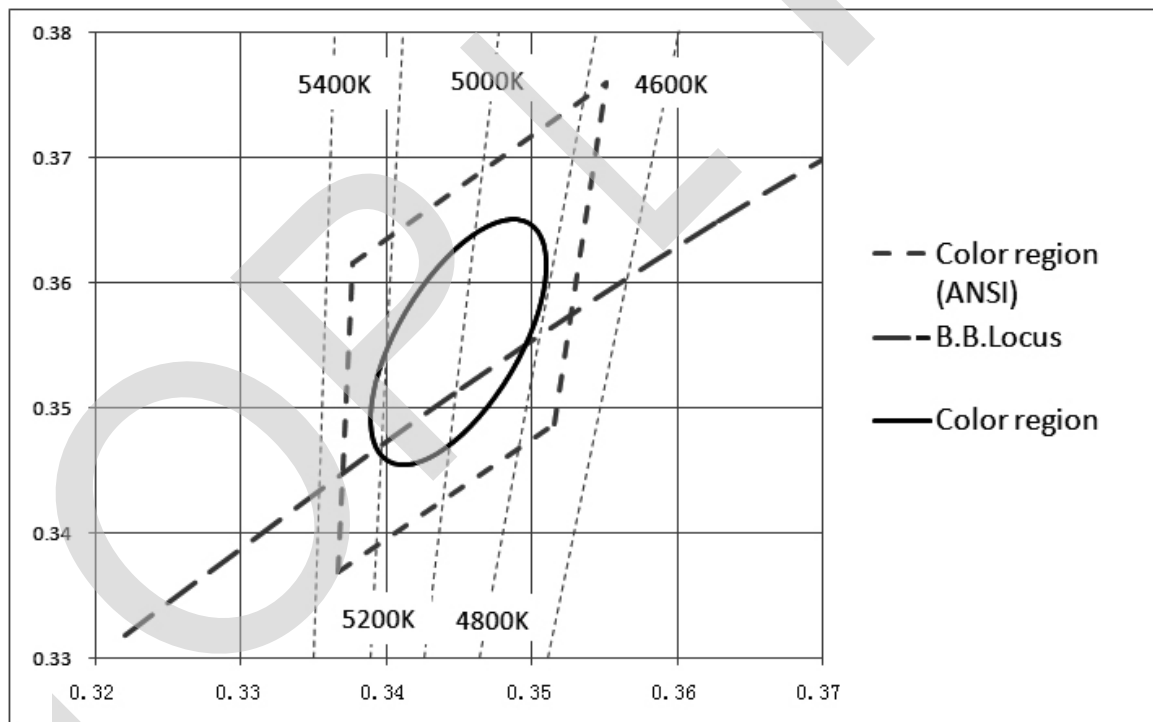
(Tolerance:  $x,y \pm 0.005$ )

( $I_F = 140\text{mA}$ ,  $T_c = 25^\circ\text{C}$ )

Range		Chromaticity coordinates				
		NO.1	NO.2	NO.3	NO.4	CENTER
	<b>x</b>	0.3551	0.3376	0.3366	0.3515	0.3447
	<b>y</b>	0.3760	0.3616	0.3369	0.3487	0.3553

\* The percentage of each rank in the shipment shall be determined by TOPLITE.

**Chromaticity Diagram**



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





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**5-3. 6500K CHROMATICITY COORDINATES**

(Tolerance: x,y ± 0.005)

(I<sub>F</sub> =140mA, T<sub>c</sub>= 25°C)

Range		Chromaticity coordinates				
		NO.1	NO.2	NO.3	NO.4	CENTER
	x	0.3205	0.3028	0.3068	0.3221	0.3123
	y	0.3481	0.3304	0.3113	0.3261	0.3238

\* The percentage of each rank in the shipment shall be determined by TOPLITE.

**Chromaticity Diagram**

