SPECIFICATIONS

FOR TOPLITE COB MODULE

MODEL： ATR-AR38

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TOPLITE INTERNATIONAL LLC.

www.topliteusa.com

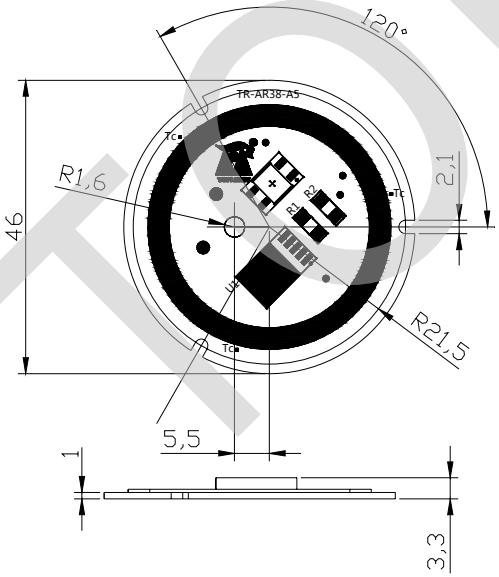
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TECHNICAL DATA SHEET
ATR-AR38 <FOR TOPLITE COB MODULE>

1. PRODUCT APPEARANCE



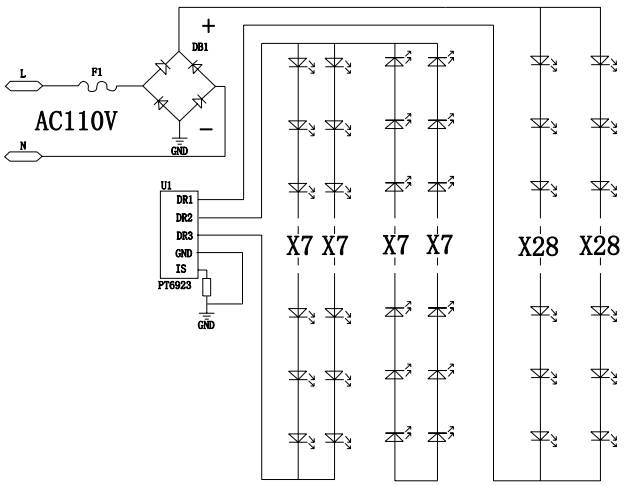
2. OUTLINE DRAWING



Unit：mm

Tolerance：±0.25

3. SCHEMATIC DIAGRAM



4. DESCRIPTION

The ATR-AR38 series, which are designed for AC drive or operation , do not need the standard converter essential for a conventional general lighting product。The modules also have a high power factor which can contribute to high energy savings in many lighting applications。Since there is no need for a converter, the ATR-AR38 series life-time can be estimated closer to the LED because it is not as dependent on the other electronics in the system。it also allows for better utilization of space without the converter.

5. FEATURES

- Connect to AC power
- High Power Efficiency
- High Power Factor
- Low THD
- Long Life Time
- Simplest BOM
- Miniaturization
- Lead Free product
- RoHS compliant Applications
- Bulb light
- Down light
- Factory Ceiling light
- Industrial Light

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6. PERFORMANCE PARAMETERS

6-1. ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	RATING	UNIT
Power Dissipation	P	10.8	W
Forward Current	I_F	90	mA
MAX Voltage	Vopt	125	V
Operating Temperature	T_{opr}	- 30 ～ + 85	℃
Storage Temperature	T_{stg}	- 40 ～ + 100	℃
Junction Temperature	T_{jmax}	+ 125	℃

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.

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6-2. ELECTRICAL-OPTICAL CHARACTERISTICS

(T_c=25℃)

**		PARAMETER	SYMBO	CONDITION	MIN.	TYP.	MAX.	UNIT
common		Operating Voltage	V_F	AC110V 60Hz	100	110	120	V
		Beam Angle	Deg		—	120	—	Deg
		Operating Frequency	Hz		—	60	—	Hz
		CRI	Ra		80	—	—	—
		Power Factor	PF		0.9	0.95	—	—
W	**	Color Temp.	—	AC110V 60Hz	2870	3045	3220	K
	W_1	Luminous Flux *2	Φ		720	765	—	lm
		Luminous Efficiency	η		80	85	—	lm/W
	W2	Luminous Flux *2	Φ		774	810	—	lm
		Luminous Efficiency	η		86	90	—	lm/W
D	**	Color Temp.	—	AC110V 60Hz	4745	5028	5311	K
	D1	Luminous Flux *2	Φ		810	855	—	lm
		Luminous Efficiency	η		90	95	—	lm/W
	D2	Luminous Flux *2	Φ		864	900	—	lm
		Luminous Efficiency	η		96	100	—	lm/W
C	**	Color Temp.	—	AC110V 60Hz	6020	6530	7040	K
	C1	Luminous Flux *2	Φ		855	900	—	lm
		Luminous Efficiency	η		95	100	—	lm/W
	C2	Luminous Flux *2	Φ		909	945	—	lm
		Luminous Efficiency	η		101	105	—	lm/W

(Note) Parameters is formulated based on shipping samples

Note：

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

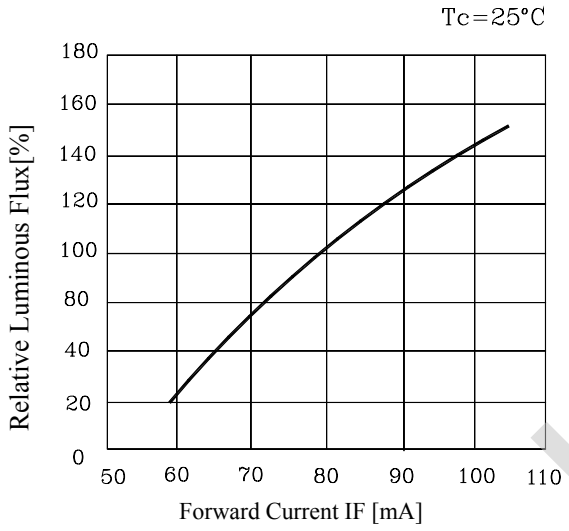
*2. Monitored by TOPLITE's 1 m integrating sphere, after 20 ms drive, Measurement tolerance: ± 10 %

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

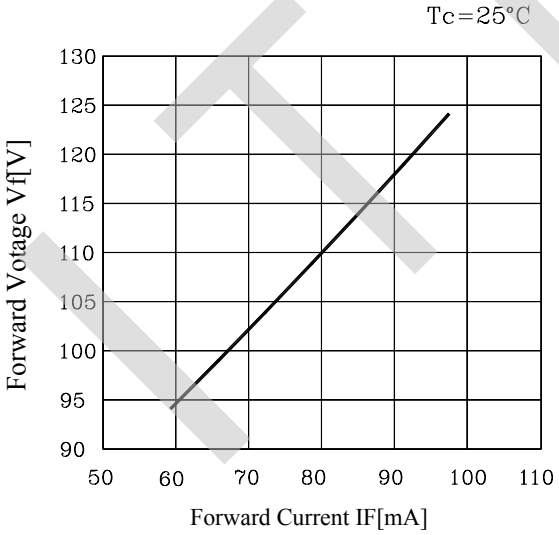
*4.Operating Voltage doesn't indicate the maximum voltage which customers use but means tolerable voltage according to each country's voltage variation rate .It s recommended that the solder pad temperature should be below70

6-3. OPTICAL CHARCTERISTICS CURVES (TYP.)

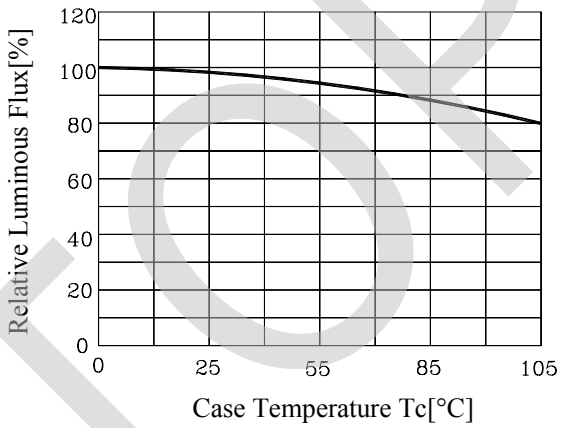
Forward Current Vs.Relative Luminous Flux



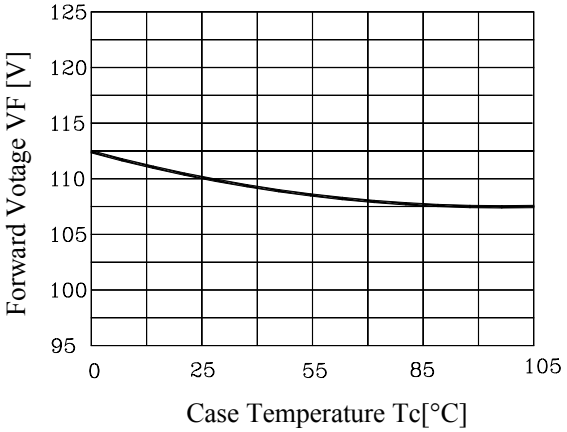
Forward Votage Vs. Forward Current



Case Temperature Vs. Relative Luminous Flux



Case Temperature Vs. Forward Votage



7.RELIABILITY

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

7-1. TEST ITEMS AND TEST CONDITIONS

NO.	TEST ITEM	TEST CONDITIONS	RESULT
1	Continuous operation test	T_a = 25℃, V_F =110V 60Hz × 1000 hours(with Al fin)	PASS
		T_a = 80℃, T j≒120℃, V_F =110V 60Hz× 1000 hours(with Al fin)	
2	Low temperature storage	T_a =-40℃×1000 hours	PASS
3	High temperature storage	T_a =100℃×1000 hours	PASS
4	Moisture resistance	T_a =60℃, 90%RH for 1000 hours	PASS
5	Thermal shock	T_a =-40℃×30minutes～100℃×30minutes, 100 cycle	PASS

7-2. FAILURE CRITERIA

NO.	PARAMETER	SYMBOL	FAILURE CRITERIA
1	Forward Voltage	V_F	V_F ＞ Initial value× 1.1
2	Luminous Flux	Φ	Φ ＜ Initial value× 0.7

8.CHROMATICITY COORDINATES REGIONAL

8-1. 3000K CHROMATICITY COORDINATES

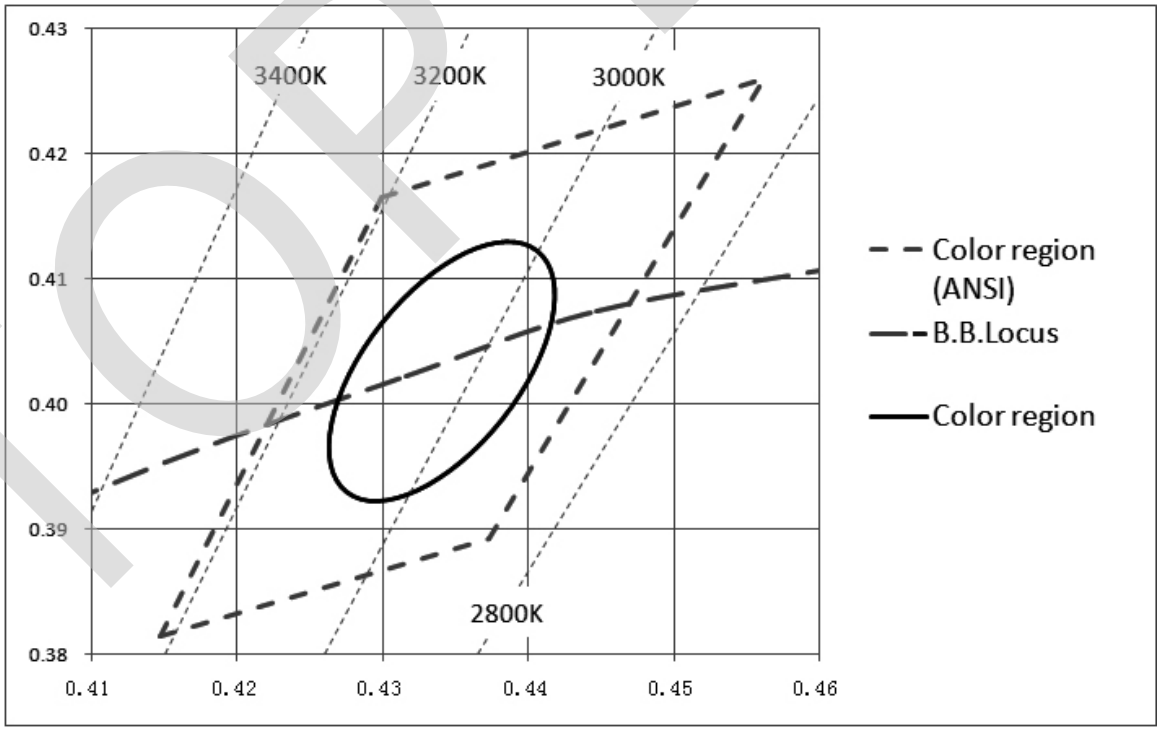
(Tolerance: x,y ± 0.005)

(V_F =110V 60Hz, T_c= 25℃)

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 VF±3% , Dv±10% , Chromaticity(x,y)±0.005.

8-2. 5000K CHROMATICITY COORDINATES

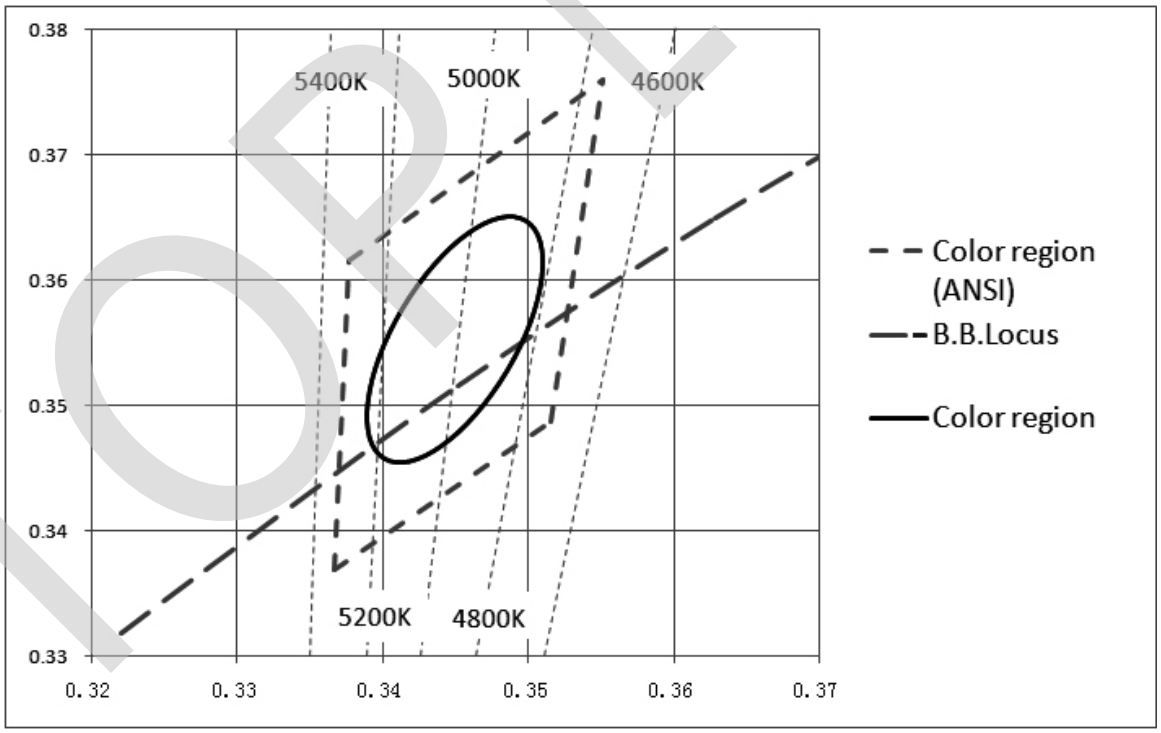
(Tolerance: x,y ± 0.005)

(V_F =110V 60Hz, T_c= 25℃)

Range		Chromaticity coordinates				
		NO.1	NO.2	NO.3	NO.4	CENTER
	x	0.3551	0.3376	0.3366	0.3515	0.3447
	y	0.3760	0.3616	0.3369	0.3	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 VF±3% , Dv±10% , Chromaticity(x,y)±0.005.

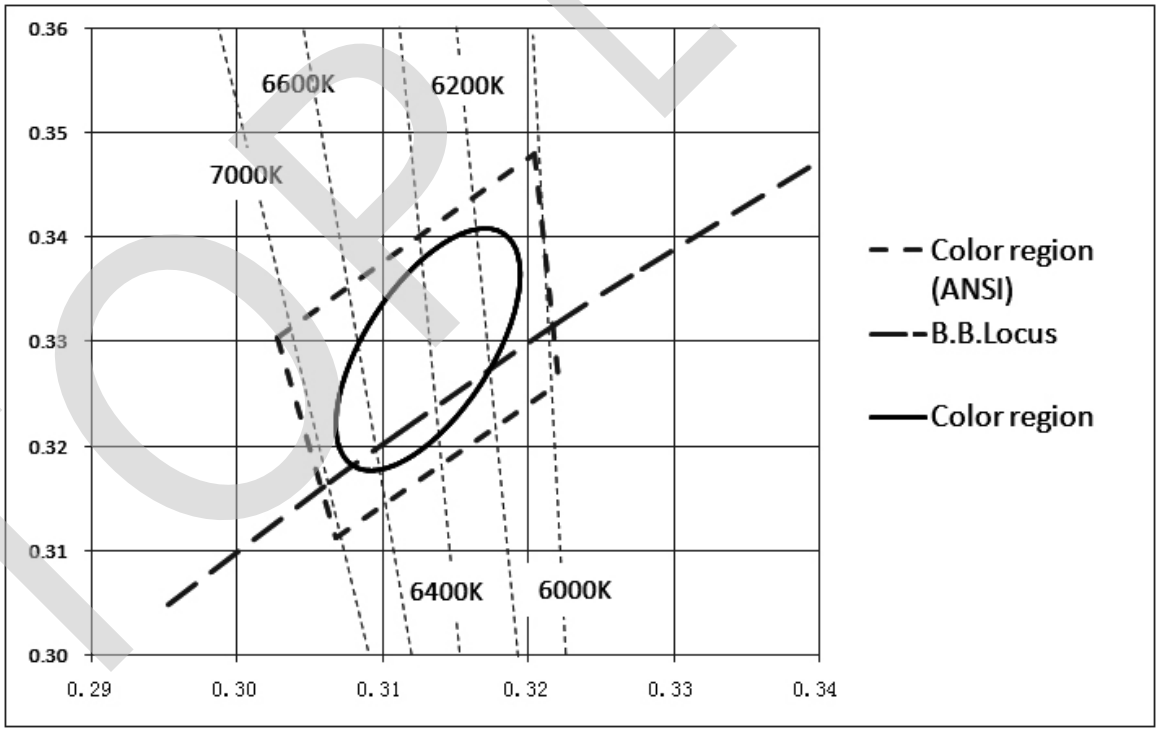
8-3. 6500K CHROMATICITY COORDINATES

(Tolerance: x,y ± 0.005)
(V_F =110V 60Hz, T_c= 25℃)

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



Note: The tolerance of measurement at our tester is VF±3% , Dv±10% , Chromaticity(x,y)±0.005.

11. ATTENTION

- Please review the ATR-AR38 Module Application Note for protective circuitry component usage.
- Please note, the AC-products run on high voltage so use caution when near the device which the circuit is ATR-AR38
- DO NOT touch any of the circuit board, components or terminals with body or metal while circuit is active.
- Please do not add or change wires while ATR-AR38 circuit is active
- The appearance and specifications of the product may be modified for improvement without notice.
- Long time exposure of sunlight or occasional UV exposure will cause lens discoloration.
- Please do not assemble under the condition of moisture and oxidizing gas in the air (Cl, H2S,NH3,SO2,NOX,etc)

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