Room Lamp Module

IKM3005

GENERAL DESCRIPTION

The Room Lamp module is System LED including current limiting circuit. This LED type is Blue InGaN/GaN SMD Top View 5450. The current limiting circuit limits the current at a predetermined level that is in the below the allowable range.

PACKAGE INFORMATION

5.4mm x 5.0mm x 0.85T
(W x L x H)

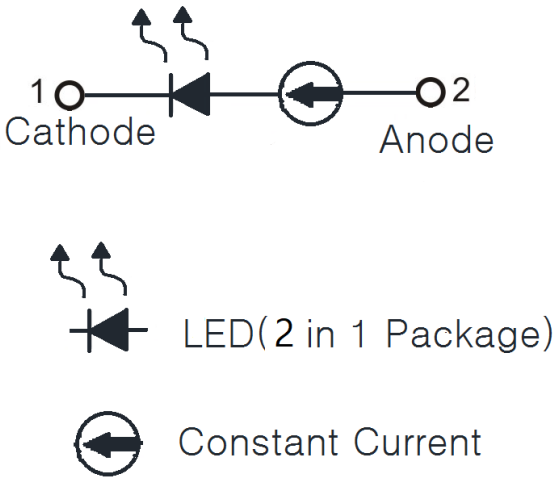
FEATURES

- System LED
- Supply voltage up to 18V
- SMD Top View 5450 type
- Beam View Angle(△Θ) : 120˚
- High current accuracy at supply voltage variation
- Reduced output current at higher temperatures-negative thermal coefficient of -0.5%/K
- No EMI
- Protection of Reverse Voltage

APPLICATIONS

- Automobile Lighting

SCHEMATIC DIAGRAM



PIN LIST AND DESCRIPTIONS

Pin	Name	Description
1	Cathode	GND
2	Anode	Supply voltage

ABSOLUTE MAXIMUM RATINGS*

(Ta = 25℃)

Symbol	Parameter	Conditions	Min	Max	Unit
V_F	Forward Voltage		-	30	V
V_R	Reverse voltage		-	30	V
P_D	Power Dissipation		-	1.2	W
T_{STG}	Storage temperature		-40	+100	°C

Note:
1) Exceeding these ratings may damage the device.

**Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.*

OPERATING RANGE

Symbol	Parameter	Min	Typ	Max	Unit
V_S	Supply voltage on pin V_S	8		18	V
$T_{A\ 1)}$	Ambient temperature range(V_F=12V)	-30		+80	°C

Note:
1) Refer to Forward Current vs Temperature of this manual.

ELECTRICAL CHARACTERISTICS The denotes the specifications which apply over the full operating temperature range, otherwise specifications are at T_A = 25°C.

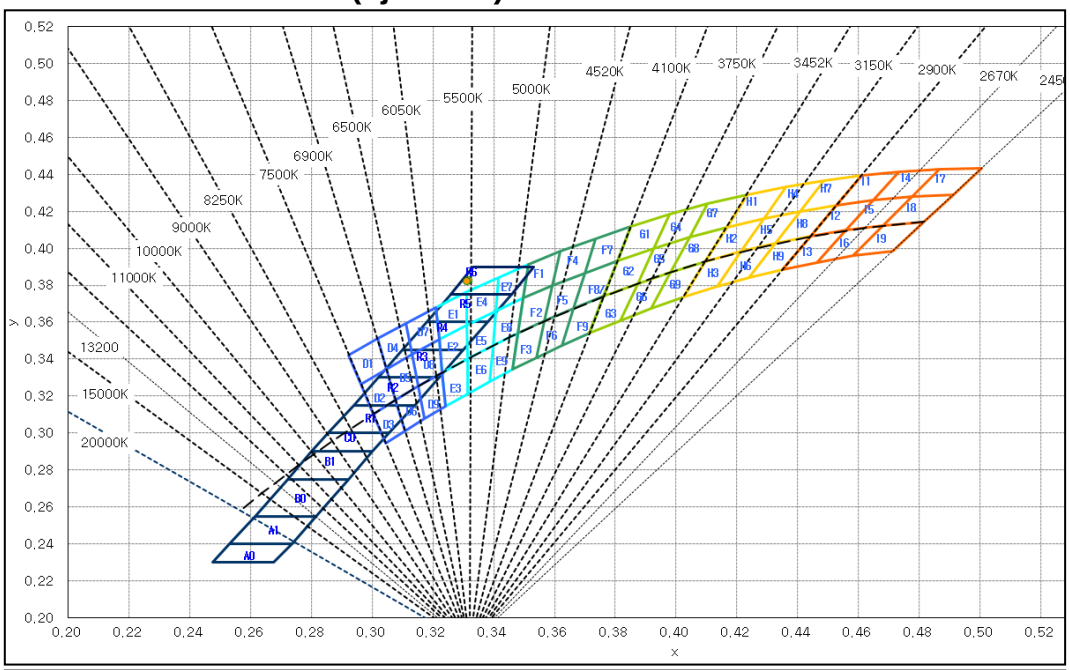
Parameter	Symbol	Condition	Min	Typ.	Max	Unit
LED Current	I_C	V_S=12V	60	70	80	mA
LED Current change versus T_A	$\Delta I_C/I_C$	V_S=12V V_K=3V T_A =(- 40 ~ 85)°C		-0.5		%/K
LED Current change versus supply voltage	$\Delta I_C/\Delta Vs$	V_S=12V-24V V_K=3.0V-15V		1		%/V
Luminous Intensity 1)	Im	V_F=12V		46		lm
Viewing Angle 2)	$2\Theta_{1/2}$	V_F=12V	100	120	140	Deg
Chromaticity Coordinates	-	V_F=12V		X:0.33 Y:0.38		-

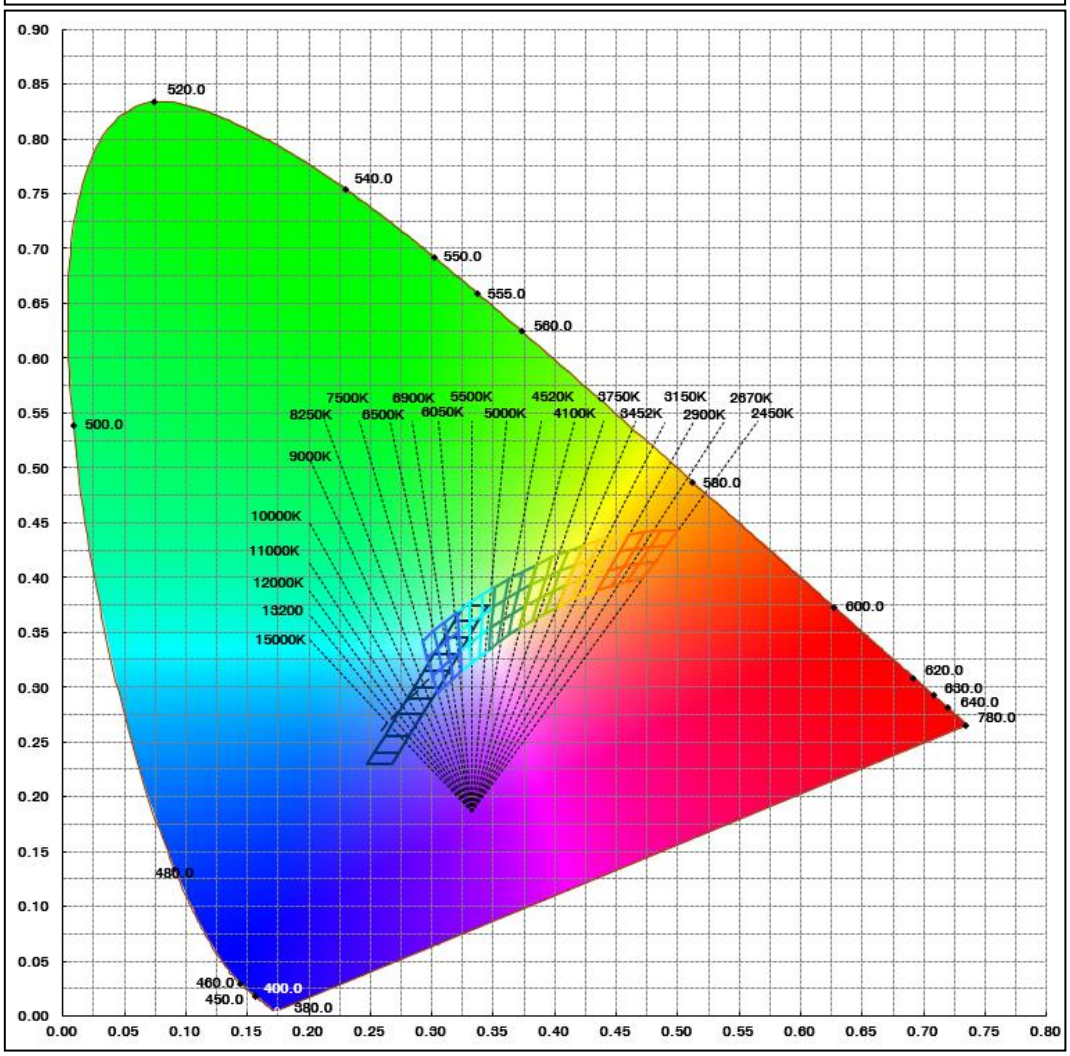
Note:

1) Liminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve. Please refer to rank table.

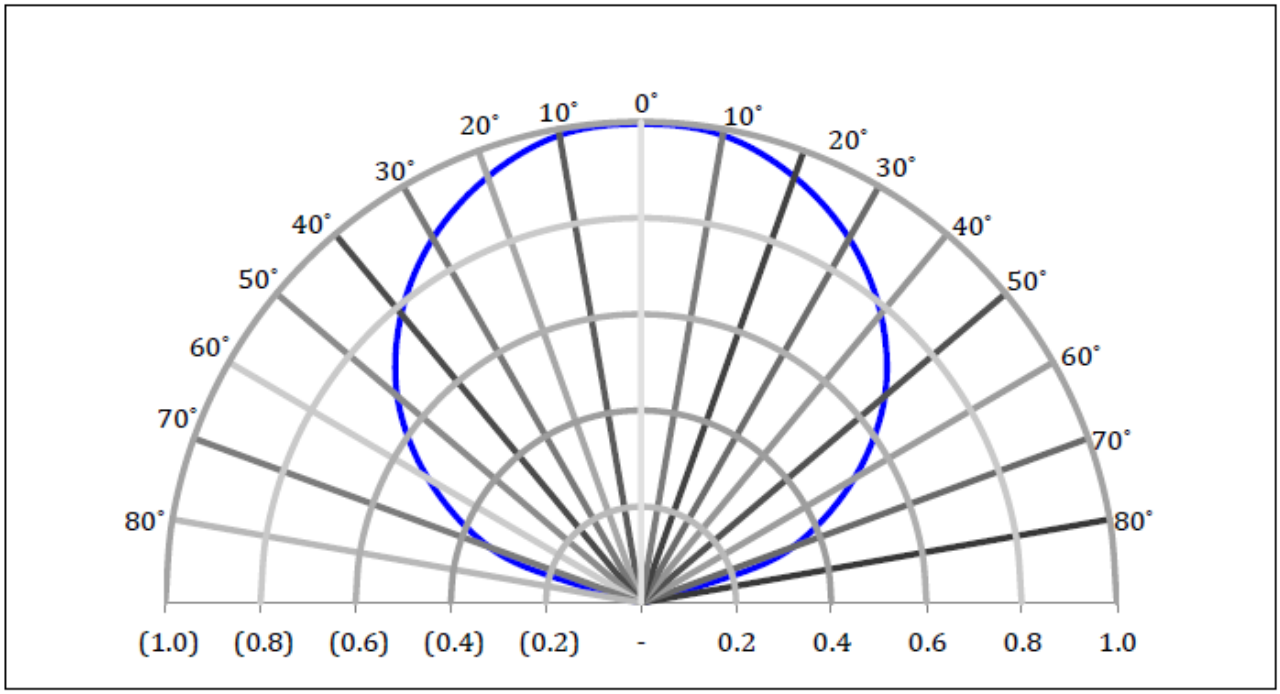
2) $\Theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

CHARACTERISTICS CURVES (Tj = 25℃)

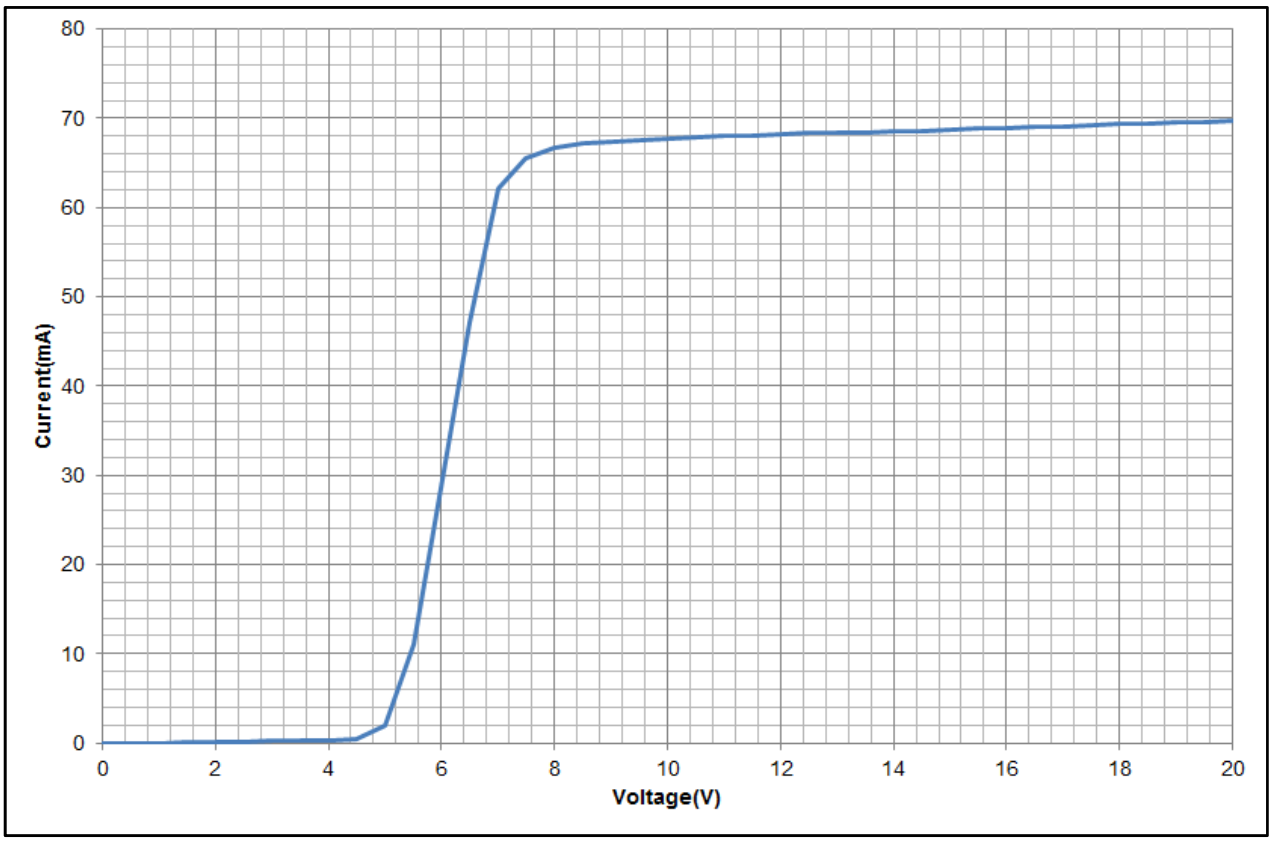




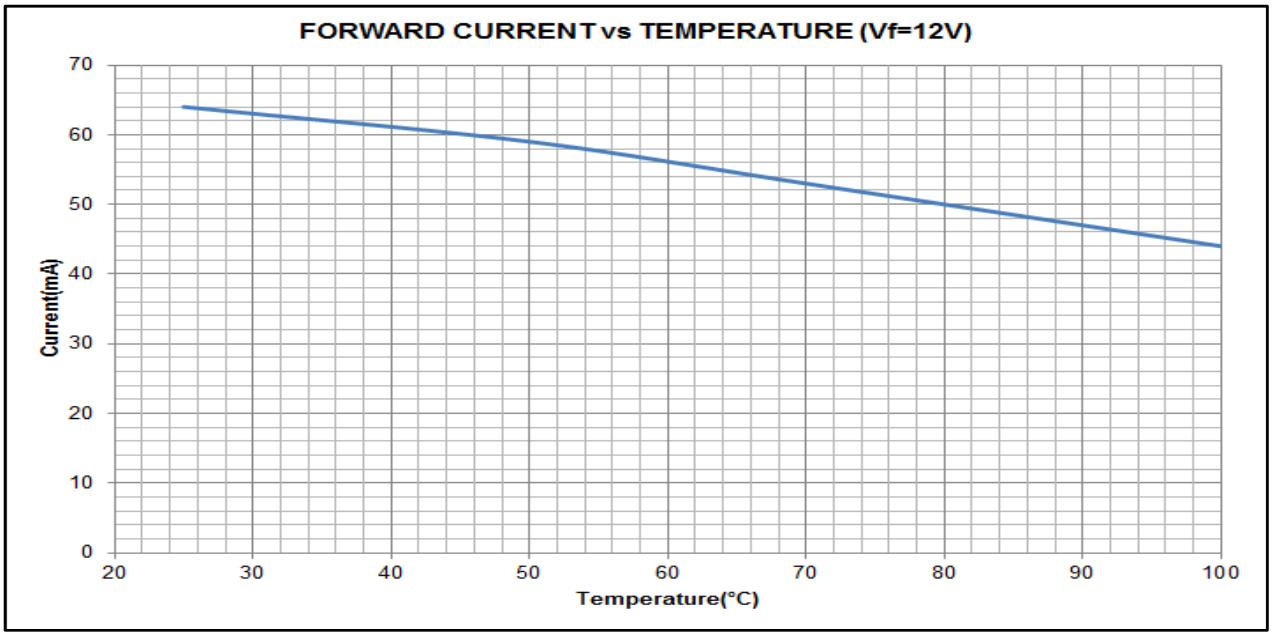
CHROMATICITY COORDINATES RANKS



TYPICAL POLAR RADIATION PATTERN

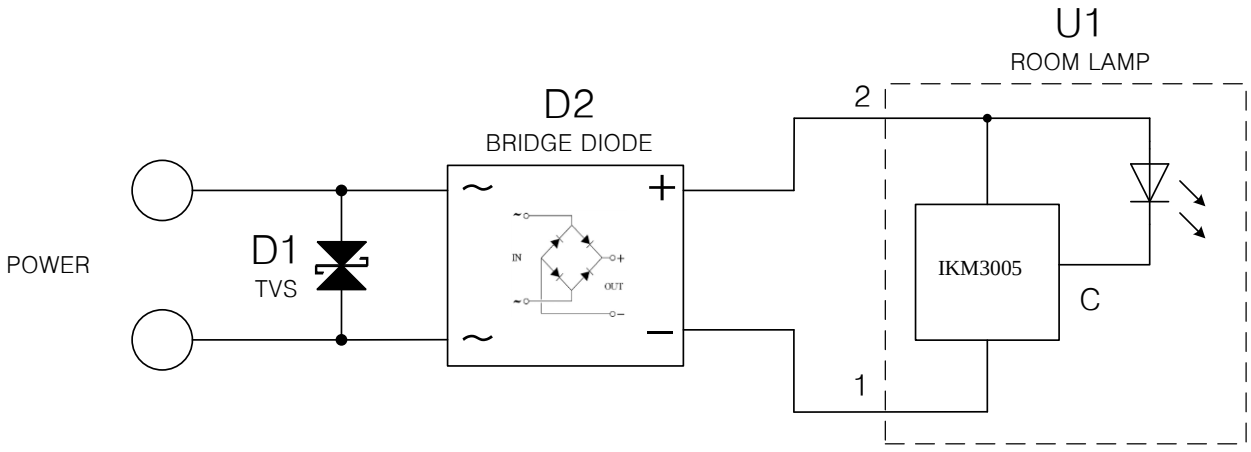


TYPICAL ELECTRICAL I – V Curve



FORWARD CURRENT vs TEMPERATURE (Vf=12V)

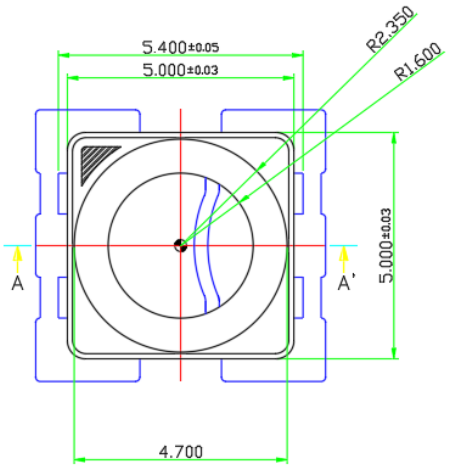
APPLICATION INFORMATION



Note> Using bridge diode, it is possible to use bidirectional contact of POWER.
TVS Diode is optional, not mandatory

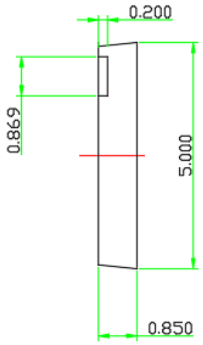
No	ITEM	PART NAME	DESCRIPTION	MAKER	QTY
1	U1	IKM3005	3 IC + 2 LED	IK SEMICON	1
2	D1	P4SMAJ33CA-AU	TVS DIODE	PANJIT SEMICONDUCTOR	1(option)
3	D2	TS240S-AU	BRIDGE DIODE	PANJIT SEMICONDUCTOR	1

DIMENSION

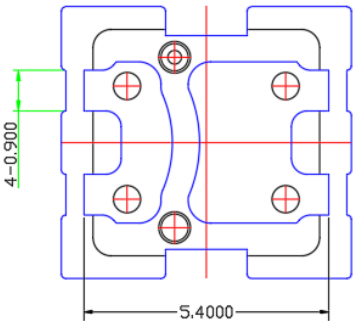


TOP VIEW

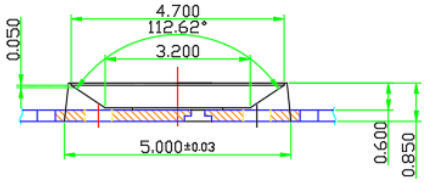
SCALE : 1/1



SIDE VIEW

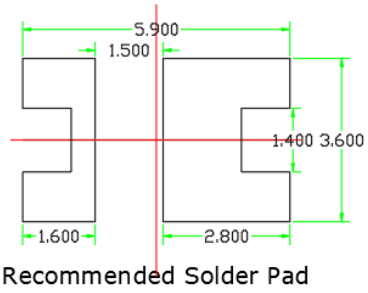


BOTTOM VIEW



SECTION A-A'

SCALE : 1/1



Recommended Solder Pad