

 AUTOMOTIVE MODULE



SPECIFICATION



Part No.: N186003V9

Description: Head Lamp LED

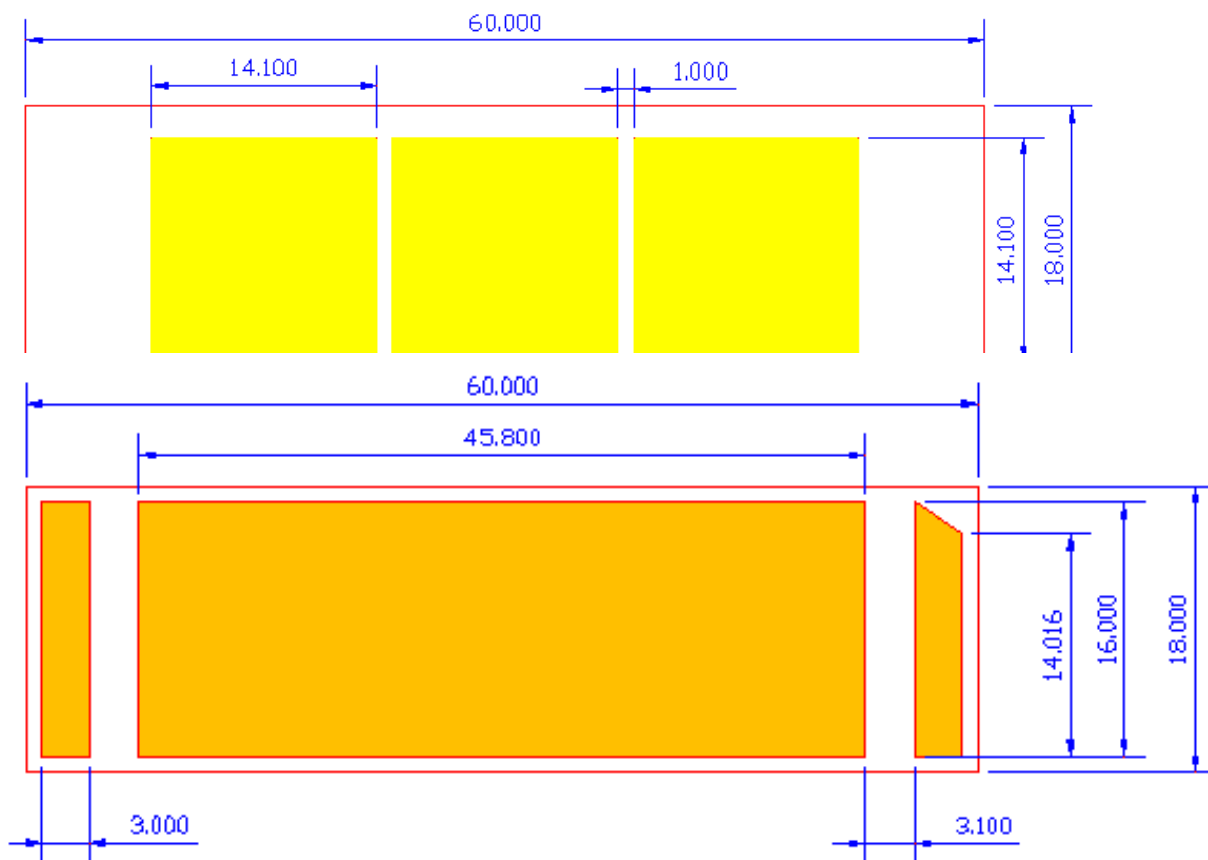
◆Features:

- Lighting Color : White
- External Dimensions : 6.0 x 1.8 x 0.78 (L x W x H) [mm]
- Chip Material: InGaN
- Viewing Angle: 120°

◆Applications:

*Automotive lighting

◆Package Dimensions :



◆ Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Rating	Unit
Power Dissipation	P_D	12	W
Forward Current	I_F	1200	mA
Peak Forward Current*	I_{FP}	1500	mA
Operation Temperature Range	T_{opr}	-40 ~ +125	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-40 ~ +125	$^{\circ}\text{C}$
Junction temperature	T_j	135	$^{\circ}\text{C}$
ESD Sensitivity (HBM)	--	8000	V

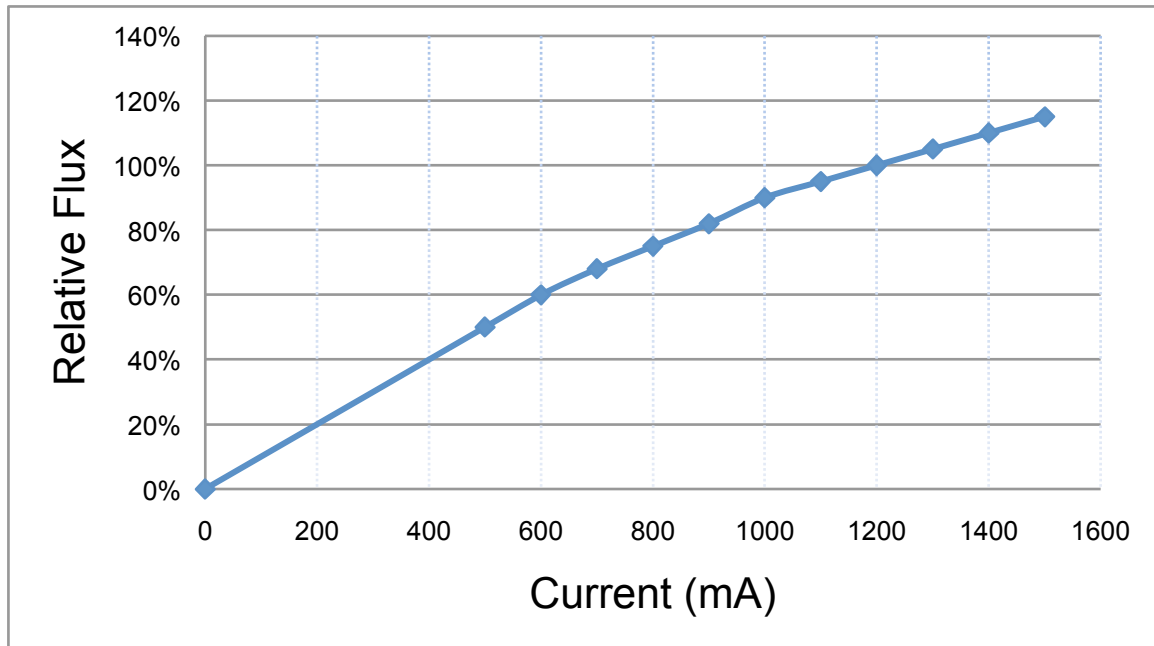
Note: LEDs are not designed to be driven in reverse voltage.

◆ Electrical-Optical Characteristics ($T_A=25^{\circ}\text{C}$)

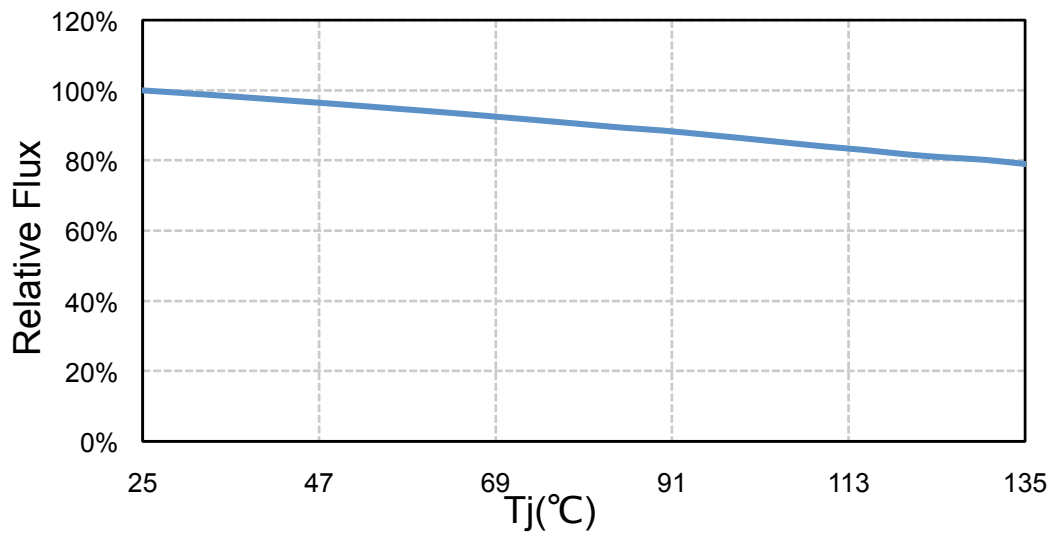
Parameter	Test Condition	Symbol	Min	Typ	Max	Unit
Forward Voltage	$I_F=1200\text{mA}$	V_F	---	9.6	---	V
View Angle	$I_F=1200\text{mA}$	$2\theta_{1/2}$	---	120	---	deg.
Luminous flux	$I_F=1200\text{mA}$	Φ_v	1150	---	1450	lm
Color Temperature	$I_F=1200\text{mA}$	CCT	5500	6000	6500	K
Color Rendering index	$I_F=1200\text{mA}$	R_a	---	70	---	---
Thermal resistance junction to board	$I_F=1200\text{mA}$	$R_{th\ J-B}$			2	$^{\circ}\text{C/W}$

Typical Electrical/Optical Characteristic Curves (If=1200mA;TA=25°C)

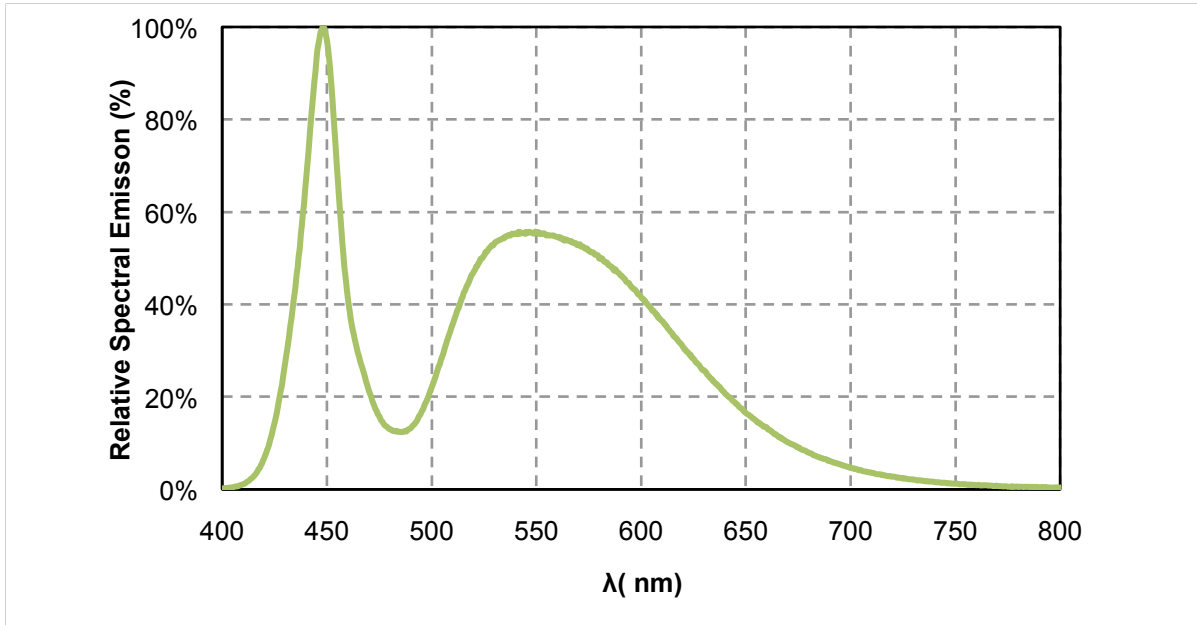
Relative Flux vs Forward Current (Testing time 20ms , T=25°C)



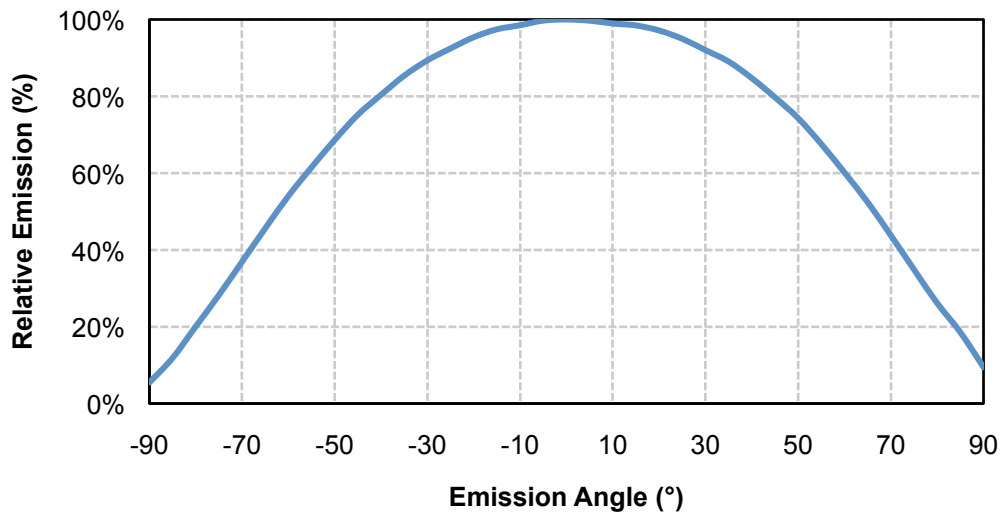
Relative Flux vs Tj



Relative Spectral Emission vs Wavelength



Radiation Characteristics



Reliability

1. Test Items And Results

Item	Test conditions	Note	Number of Damaged
Reflow	Temp:260°Cmax T=10 sec	2 time	0/30
Thermal Shock	-40~100°C 30min, 10s, 30min	500cycles	0/30
High Temperature High Humidity Storage	Ta=60°C,RH=90%	300hrs	0/30
Steady State Operating life	Ta=25°C,IF=1500mA	1000hrs	0/30
Steady State Operating life of High Humidity Heat	Ta=85°C RH=85%,IF=1200mA	1000hrs	0/30
High Temperature Storage	Ta=100°C	1000HRS	0/30
Low Temperature Storage	Ta=-40°C	1000HRS	0/30

2. Criteria for Judging The Damage

Item	Symbol	Test Conditions	Criteria for Judgment	
			Min.	Max.
Forward Voltage	VF	IF =1500mA	---	Initial Data ×1.2
Luminous Flux	Φ_v	IF =1500mA	Initial Data × 0.8	---