AMC HighTech Lighting Solutions

LM-3-940-20-SMD

PRELIMINARY Specification

Infrared Lamp Module (SMD)
Rev. 0.2 (Mar. 2025)

Features

- high efficacy
- high intensity
- solid state reliability
- industrial standard size
- GaAlAs on GaAs
- RoHS-compliant

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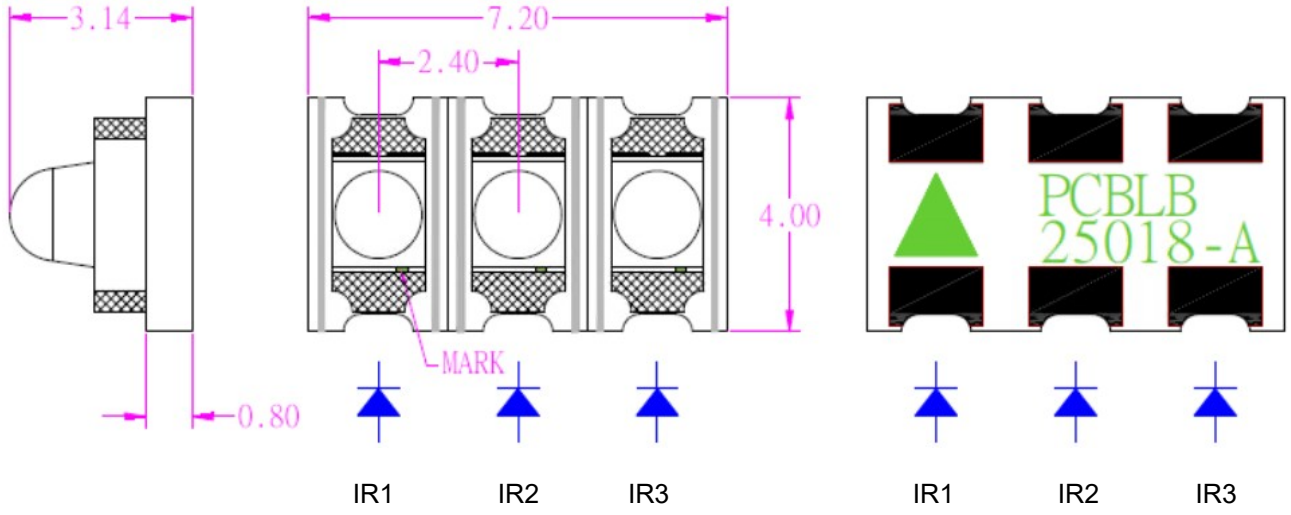
Dimensions

SIDE VIEW TOP VIEW BOTTOM VIEW



NOTES:

1. All dimensions are in millimeters
2. Tolerance is ±0.5 mm unless otherwise noted

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Specifications

Part No.	Emitting Light	Dominant Wavelength	Operation Current
LM-3-940-20-SMD	Infrared	940 nm	20 mA

Absolute Maximum Ratings (T_A= 25 °C)

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	0.13	W
Forward Current	If	65	mA
Peak Forward Current *2	Ifp	1	A
Operating Temperature Range	Topr.	-30 to +60	°C
Storage Temperature Range	Tstg.	-35 to +70	°C
Lead Soldering Temperature *3	Tsol	260	°C

*1 below 25 °C free air temperature.
*2 Pulse width ≤100 µs, Duty cycle= 1 %.
*3 2 mm form body for 5 seconds.

Electrical and Optical Characteristics

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Radiant Intensity	Ee	IF= 20 mA	1.0	10.0	-	mW/sr
Peak Wavelength	λp	IF= 20 mA	-	940	-	nm
Spectral Bandwidth	λD	IF= 20 mA	-	45	-	nm
Forward Voltage	VF	IF= 20 mA	-	1.2	1.5	V
Reverse Current	IR	VR= 5 V	-	-	10	µA
Viewing Angle	2θ1/2	IF= 20 mA	-	20	-	deg

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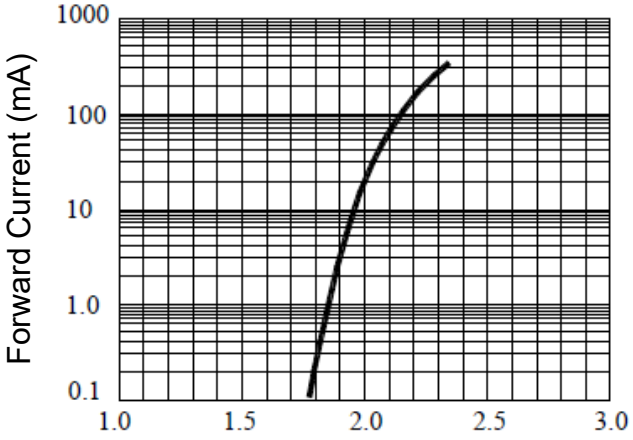
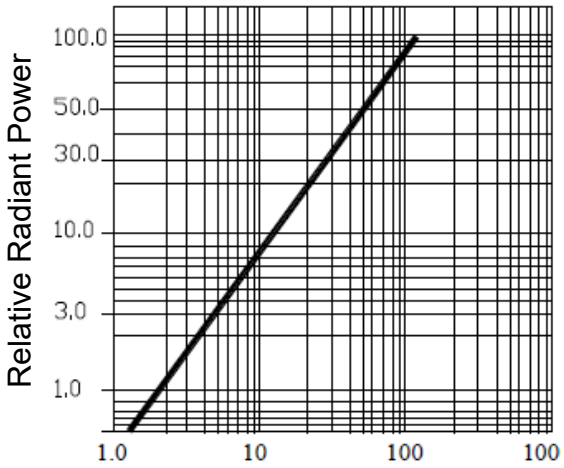
Typical optical / electrical characteristics curves



VORWARD CURRENT VS. APPLIED VOLTAGE



FORWARD CURRENT VS. LUMINOUS INTENSITY

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Handling precautions

Please read the following notes before using the datasheets:

1.Over-current-proof

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

2.Storage

2.1 If the package contains a moisture proof bag inside, please don't open the package before using.

2.2 Before opening the package, the LEDs should be kept at 30 °C or less and 80 % RH or less.

2.3 The LEDs should be used within a year.

2.4 After opening the package, the LEDs should be kept at 30 °C or less and 60 % RH or less.

3.Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 260 °C for 5 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

4.Soldering

When soldering, for Lamp without stopper type and must be leave a minimum of 3 mm clearance from the base of the lens to the soldering point.

To avoided the Epoxy climb up on lead frame and was impact to non-soldering problem, dipping the lens into the solder must be avoided.

Do not apply any external stress to the lead frame during soldering while the LED is at high temperature.

Recommended soldering conditions:

Soldering Iron		Wave Soldering	
Temperature Soldering time	300 °C max. 3 sec. max. (one time only)	Pre-heat Pre-heat time Solder Wave Soldering time	100 °C max. 60 sec. max. 260 °C max. 5 sec. max.

Note: Excessive soldering temperature and / or time might result in deformation of the LED lens or catastrophic failure of the LED.

5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used. It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

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