

AM23YC-F

SOT-23 Surface Mount LED Lamp



DESCRIPTION

- The Yellow source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow Light Emitting Diode

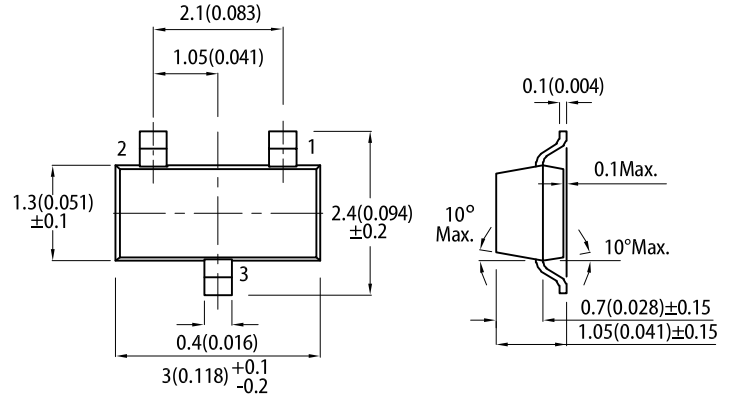
FEATURES

- SOT-23 package surface mount LED lamp
- Low power consumption
- Long life - solid state reliability
- Package: 2000 pcs / reel
- Moisture sensitivity level: 3
- Halogen-free
- RoHS compliant

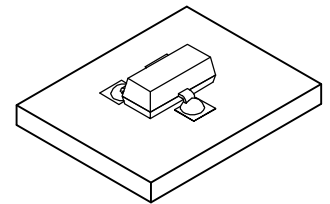
APPLICATIONS

- Backlight
- Status indicator
- Home and smart appliances
- Wearable and portable devices
- Healthcare applications

PACKAGE DIMENSIONS

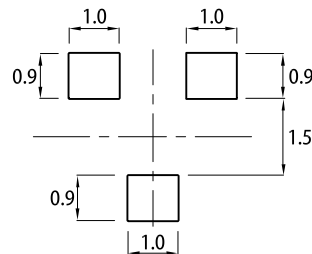


- 1 Anode
2 N.C.
3 Cathode



RECOMMENDED SOLDERING PATTERN

(units : mm; tolerance : ± 0.1)



Notes:

- All dimensions are in millimeters (inches).
- Tolerance is ±0.25(0.01") unless otherwise noted.
- Lead spacing is measured where the lead emerge from the package.
- The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
- The device has a single mounting surface. The device must be mounted according to the specifications.

SELECTION GUIDE

Part Number	Emitting Color (Material)	Lens Type	Iv (mcd) @ 20mA ^[2]		Viewing Angle ^[1]
			Min.	Typ.	2θ1/2
AM23YC-F	■ Yellow (GaAsP/GaP)	Water Clear	3	8	170°

Notes:
1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
2. Luminous intensity / luminous flux: +/-15%.
3. Luminous intensity value is traceable to CIE127-2007 standards.

ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

Parameter	Symbol	Emitting Color	Value		Unit
			Typ.	Max.	
Wavelength at Peak Emission I _F = 20mA	λ_{peak}	Yellow	590	-	nm
Dominant Wavelength I _F = 20mA	$\lambda_{\text{dom}}^{[1]}$	Yellow	588	-	nm
Spectral Bandwidth at 50% Φ REL MAX I _F = 20mA	$\Delta\lambda$	Yellow	35	-	nm
Capacitance	C	Yellow	20	-	pF
Forward Voltage I _F = 20mA	V _F ^[2]	Yellow	2.1	2.5	V
Reverse Current (V _R = 5V)	I _R	Yellow	-	10	μA
Temperature Coefficient of λ_{peak} I _F = 20mA, -10°C ≤ T ≤ 85°C	TC _{λ_{peak}}	Yellow	0.12	-	nm/°C
Temperature Coefficient of λ_{dom} I _F = 20mA, -10°C ≤ T ≤ 85°C	TC _{λ_{dom}}	Yellow	0.07	-	nm/°C
Temperature Coefficient of V _F I _F = 20mA, -10°C ≤ T ≤ 85°C	TC _V	Yellow	-2	-	mV/°C

Notes:

1. The dominant wavelength (λ_d) above is the setup value of the sorting machine. (Tolerance λ_d : ±1nm.)
2. Forward voltage: ±0.1V.
3. Wavelength value is traceable to CIE127-2007 standards.
4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

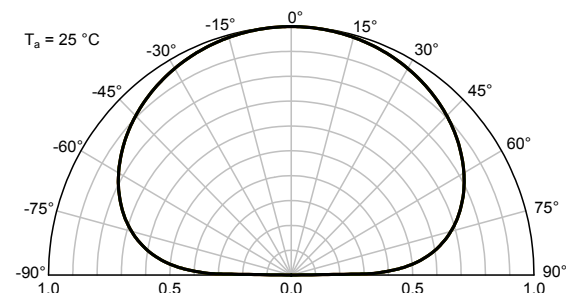
ABSOLUTE MAXIMUM RATINGS at T_A=25°C

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	75	mW
Reverse Voltage	V _R	5	V
Junction Temperature	T _j	110	°C
Operating Temperature	T _{op}	-40 to +85	°C
Storage Temperature	T _{stg}	-40 to +85	°C
DC Forward Current	I _F	30	mA
Peak Forward Current	I _{FM} ^[1]	140	mA
Electrostatic Discharge Threshold (HBM)	-	8000	V
Thermal Resistance (Junction / Ambient)	R _{th JA} ^[2]	610	°C/W
Thermal Resistance (Junction / Solder point)	R _{th JS} ^[2]	440	°C/W

Notes:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. R_{th JA}, R_{th JS} Results from mounting on PC board FR4 (pad size ≥ 16 mm² per pad).
3. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

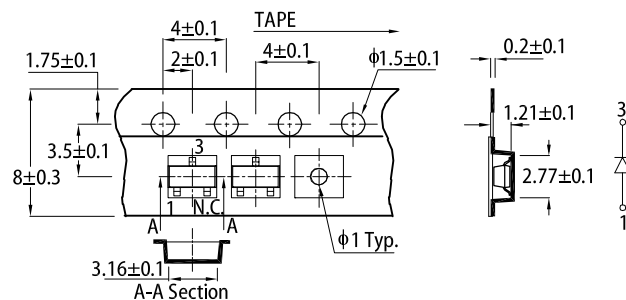
RELATIVE INTENSITY vs. WAVELENGTH



The four graphs illustrate the LED's characteristics:

- Forward Current vs. Forward Voltage:** Shows the forward current (mA) versus forward voltage (V) at $T_a = 25^\circ\text{C}$. The current starts to rise significantly around 1.8V and reaches 30mA at approximately 2.15V.
- Luminous Intensity vs. Forward Current:** Shows the normalized luminous intensity (at 20mA) versus forward current (mA) at $T_a = 25^\circ\text{C}$. The intensity increases linearly with current, reaching 1.5 at 30mA.
- Forward Current Derating Curve:** Shows the permissible forward current (mA) versus ambient temperature ($^\circ\text{C}$). The current is constant at 30mA from -40°C to 25°C and then derates linearly to 0mA at 85°C .
- Luminous Intensity vs. Ambient Temperature:** Shows the normalized luminous intensity (at $T_a = 25^\circ\text{C}$) versus ambient temperature ($^\circ\text{C}$). The intensity decreases as temperature increases, starting at approximately 1.75 at -40°C and reaching about 0.55 at 85°C .

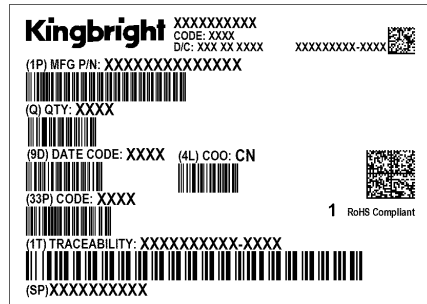
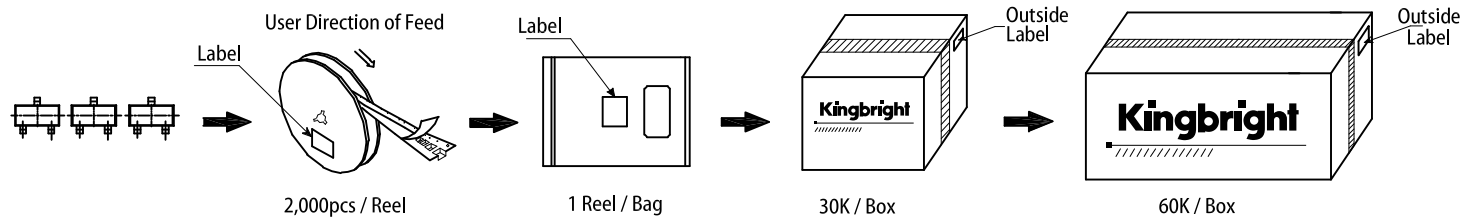
TAPE SPECIFICATIONS (units : mm)



Technical drawing of a wheel hub. The left view is a top-down circular view showing four spokes arranged at 120° intervals. The outer rim has a radius of $R6.5 \pm 0.5$. The right view is a side elevation showing a total width of 12 ± 1 and a central bore diameter of $\phi 60 \pm 2$. The overall diameter of the hub is $\phi 178 \pm 2$. The bottom view shows a mounting flange with a diameter of 9 ± 1 .

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PACKING & LABEL SPECIFICATIONS



PRECAUTIONARY NOTES

1. The information included in this document reflects representative usage scenarios and is intended for technical reference only.
2. The part number, type, and specifications mentioned in this document are subject to future change and improvement without notice. Before production usage customer should refer to the latest datasheet for the updated specifications.
3. When using the products referenced in this document, please make sure the product is being operated within the environmental and electrical limits specified in the datasheet. If customer usage exceeds the specified limits, Kingbright will not be responsible for any subsequent issues.
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