



APDA3020SF3C-100MAV
3.0 x 2.0 mm Infrared Emitting Diode

DESCRIPTION

- SF3 made with AlGaAs on Si-substrate Infrared Emitting Diode

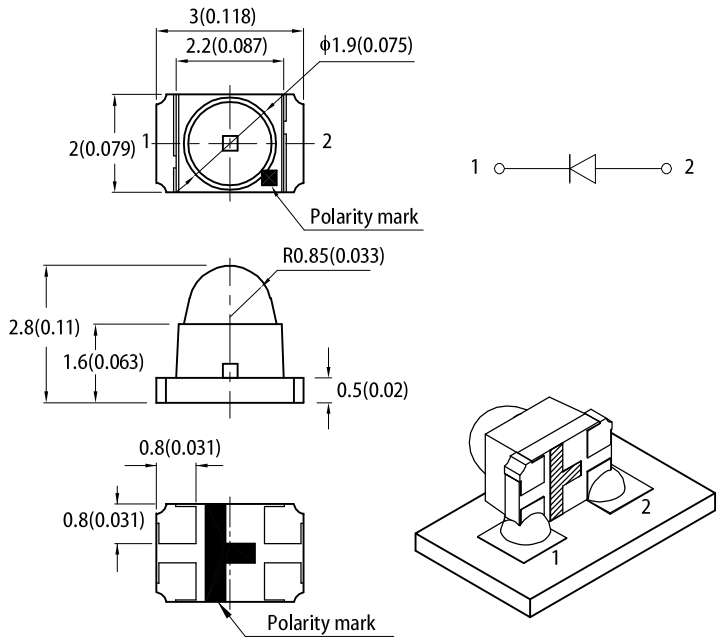
FEATURES

- 3.0 mm x 2.8 mm SMD LED, 2.0 mm thickness
- Mechanically and spectrally matched to the Phototransistor
- High radiant power and high speed
- Package matches with photodetector APDA3020P3C-P22
- Package: 2000 pcs / reel
- Moisture sensitivity level: 3
- Tinned pads for improved solderability
- Halogen-free
- RoHS compliant

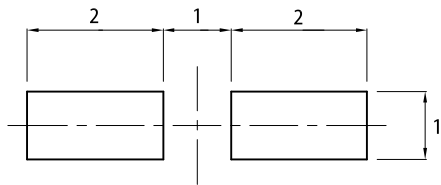
APPLICATIONS

- Infrared Illumination for cameras
- Machine vision systems
- Surveillance systems
- Industrial electronics
- IR data transmission
- Remote control

PACKAGE DIMENSIONS



RECOMMENDED SOLDERING PATTERN
(units : mm; tolerance : ± 0.1)



Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.2(0.008") unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.
5. For right angle SMD LEDs, the solder stencil should be at least 5mil in thickness, to prevent poor solder wetting due to insufficient solder paste.

SELECTION GUIDE

Part Number	Emitting Color (Material)	Lens Type	Po (mW/sr) @ 100mA ^[2]		Viewing Angle ^[1]
			Min.	Typ.	2θ1/2
APDA3020SF3C-100MAV	Infrared (AlGaAs)	Water Clear	55	100	10°

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

ELECTRICAL / OPTICAL CHARACTERISTICS at $T_A=25^{\circ}\text{C}$

Parameter	Symbol	Emitting Color	Value		Unit
			Typ.	Max.	
Wavelength at Peak Emission $I_F = 100\text{mA}$	λ_{peak}	Infrared	940	-	nm
Spectral Bandwidth at 50% Φ REL MAX $I_F = 100\text{mA}$	$\Delta\lambda$	Infrared	48	-	nm
Forward Voltage $I_F = 100\text{mA}$	$V_F^{[1]}$	Infrared	1.55	1.8	V
Reverse Current ($V_R = 5\text{V}$)	I_R	Infrared	-	10	μA
Rise Time $I_F = 100\text{mA}$	t_r	Infrared	10.6	-	ns
Fall Time $I_F = 100\text{mA}$	t_f	Infrared	10.3	-	ns

Notes:

1. Forward voltage: $\pm 0.1\text{V}$.

2. Wavelength value is traceable to CIE127-2007 standards.

3. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

ABSOLUTE MAXIMUM RATINGS at $T_A=25^{\circ}\text{C}$

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	180	mW
Reverse Voltage	V_R	5	V
Junction Temperature	T_j	115	$^{\circ}\text{C}$
Operating Temperature	T_{op}	-40 to +85	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-40 to +85	$^{\circ}\text{C}$
DC Forward Current	I_F	100	mA
Peak Forward Current	$I_{FP}^{[1]}$	1200	mA
Electrostatic Discharge Threshold (HBM)	-	8000	V

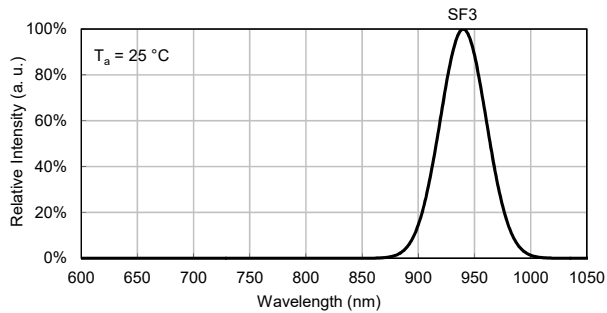
Notes:

1. 1/100 Duty Cycle, 10 μs Pulse Width.

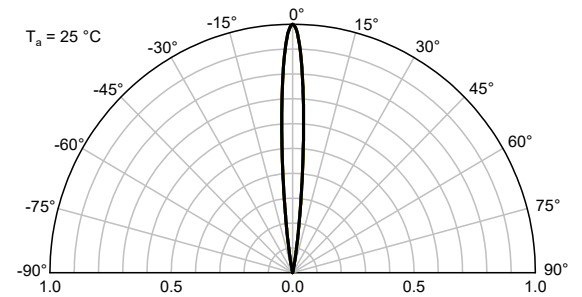
2. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

TECHNICAL DATA

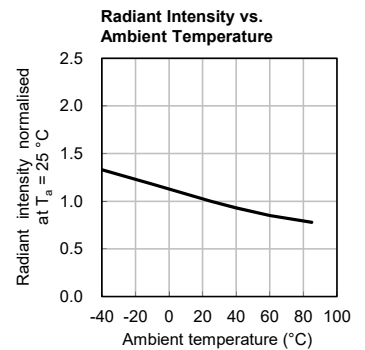
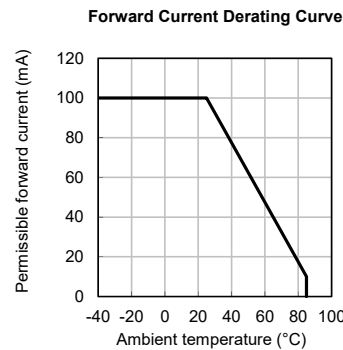
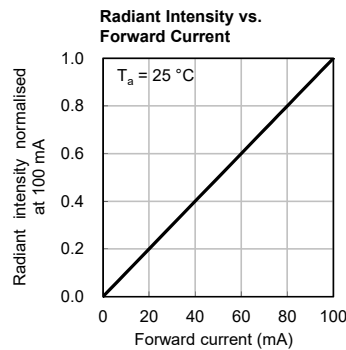
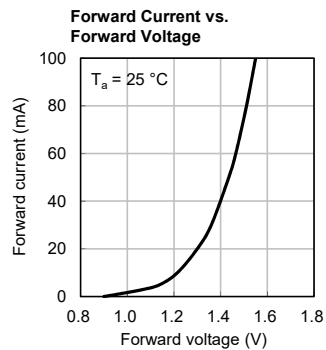
RELATIVE INTENSITY vs. WAVELENGTH



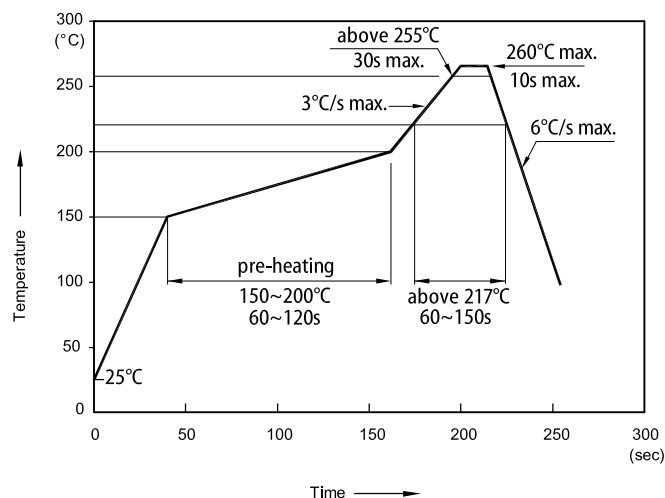
SPATIAL DISTRIBUTION



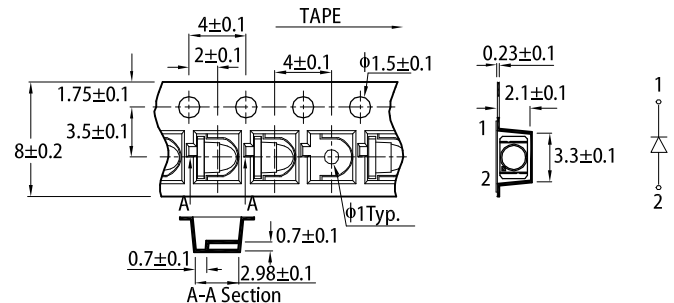
INFRARED



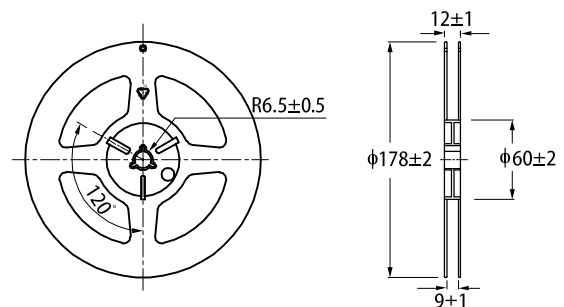
REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS



TAPE SPECIFICATIONS (units : mm)

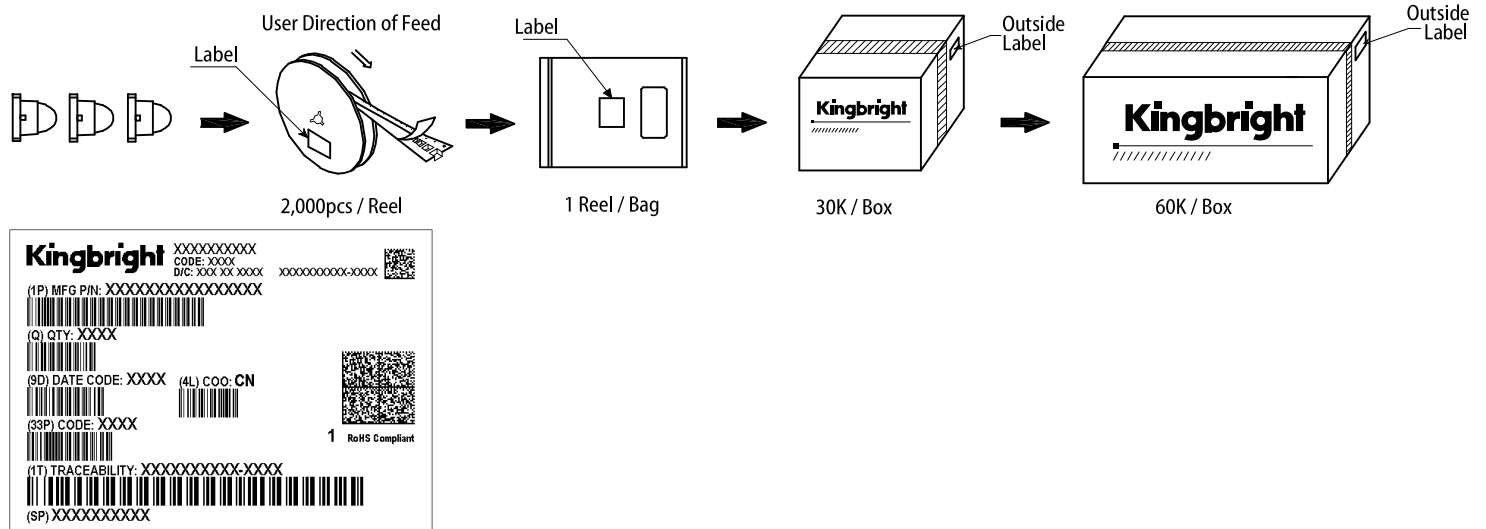


REEL DIMENSION (units : mm)



- Notes:
1. Don't cause stress to the LEDs while it is exposed to high temperature.
 2. The maximum number of reflow soldering passes is 2 times.
 3. Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.

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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