

APBD3224ESGC-F01

3.2 x 2.4 mm SMD Chip LED Lamp

DESCRIPTIONS

- The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode
- The Super Bright Green source color devices are made with Gallium Phosphide Green Light Emitting Diode

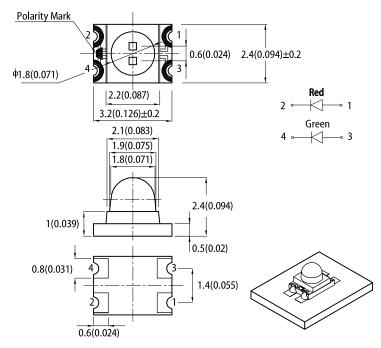
FEATURES

- 3.2 x 2.4 mm SMD LED, 2.4 mm thickness
- · Low power consumption
- Ideal for backlight and indicator
- Package: 1500 pcs / reel
- Moisture sensitivity level: 3
- · RoHS compliant

APPLICATIONS

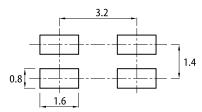
- Backlight
- · Status indicator
- · Home and smart appliances
- · Wearable and portable devices
- · Healthcare applications

PACKAGE DIMENSIONS



RECOMMENDED SOLDERING PATTERN

(units: mm; tolerance: \pm 0.1)



- 1. All dimensions are in millimeters (inches)
- Tolerance is ±0.1(0.004") unless otherwise noted.
 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.

SELECTION GUIDE

Part Number	Emitting Color	Lens Type	Iv (mcd) @ 20mA [2]		Viewing Angle [1]
rait Nullibei	(Material)		Min.	Тур.	201/2
APBD3224ESGC-F01	■ High Efficiency Red (GaAsP/GaP)	- Water Clear	30	70	000
			*12	*40	
	Super Bright Green (GaP)		20	55	20°
			*20	*55	

Notes.

1. 61/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.

2. Luminous intensity / luminous flux: +/-15%.

* Luminous intensity value is traceable to CIE127-2007 standards.





ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

Parameter	Symbol	Fusition Calan	Value		11:4
Parameter		Emitting Color	Тур.	Max.	Unit
Wavelength at Peak Emission I _F = 20mA	λ_{peak}	High Efficiency Red Super Bright Green	627 565	-	nm
Dominant Wavelength I _F = 20mA	λ _{dom} ^[1]	High Efficiency Red Super Bright Green	617 568	-	nm
Spectral Bandwidth at 50% Φ REL MAX I_{F} = 20mA	Δλ	High Efficiency Red Super Bright Green	45 30	-	nm
Capacitance	С	High Efficiency Red Super Bright Green	15 15	-	pF
Forward Voltage I _F = 20mA	V _F ^[2]	High Efficiency Red Super Bright Green	2.0 2.2	2.5 2.5	V
Reverse Current (V _R = 5V)	I _R	High Efficiency Red Super Bright Green	-	10 10	μА
Temperature Coefficient of λ_{peak} I_F = 20mA, -10°C \leq T \leq 85°C	$TC_{\lambda peak}$	High Efficiency Red Super Bright Green	0.12 0.1	-	nm/°C
Temperature Coefficient of λ_{dom} I_F = 20mA, -10°C \leq T \leq 85°C	TC_{\lambdadom}	High Efficiency Red Super Bright Green	0.06 0.06	-	nm/°C
Temperature Coefficient of V_F I_F = 20mA, -10°C \leq T \leq 85°C	TC _V	High Efficiency Red Super Bright Green	-1.3 -1.3	-	mV/°C

Notes:

ABSOLUTE MAXIMUM RATINGS at T_A=25°C

Dovementor	Council of	Val	11-14	
Parameter	Symbol	High Efficiency Red	Super Bright Green	Unit
Power Dissipation	Pb	75	62.5	mW
Reverse Voltage	VR	5	5	V
Junction Temperature	TJ	125	110	°C
Operating Temperature	Тор	-40 To	°C	
Storage Temperature	Tstg	-40 To +85		°C
DC Forward Current	lF	30 25		mA
Peak Forward Current	IFм ^[1]	160	140	mA
Electrostatic Discharge Threshold (HBM)	-	8000	8000	V
Thermal Resistance (Junction / Ambient)	R _{th JA} ^[2]	585	825	°C/W
Thermal Resistance (Junction / Solder point)	R _{th JS} ^[2]	560	725	°C/W

Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. $R_{lh, JA}$, $R_{lh, JS}$ Results from mounting on PC board FR4 (pad size \geq 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.



Nuces.

1. The dominant wavelength (λd) above is the setup value of the sorting machine. (Tolerance λd:±1nm.)

2. Forward voltage: ±0.1V.

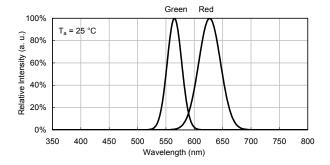
3. Wavelength value is traceable to CIE127-2007 standards.

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

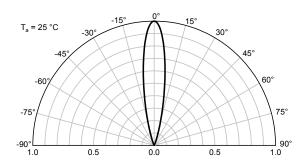


TECHNICAL DATA

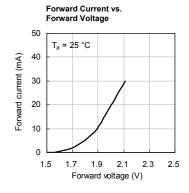
RELATIVE INTENSITY vs. WAVELENGTH

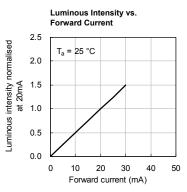


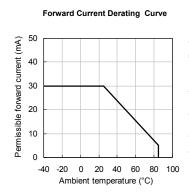
SPATIAL DISTRIBUTION

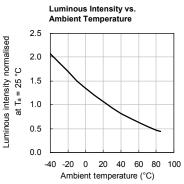


HIGH EFFICIENCY RED

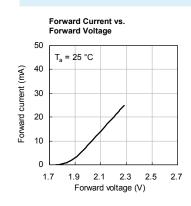


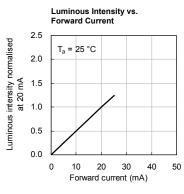


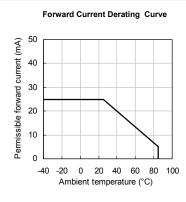


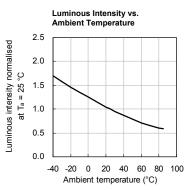


SUPER BRIGHT GREEN











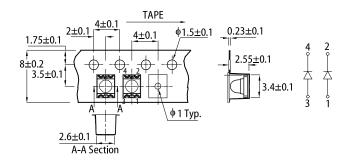
REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS

300 above 255℃ (°C) 260°C max. 30s max. 10s max. 250 3°C/s max. 6°C/s max. 200 150 pre-heating 100 150~200°C above 217°C 60~120s 60~150s 50 . 25℃ 0 50 100 150 200 300 0 (sec) Time

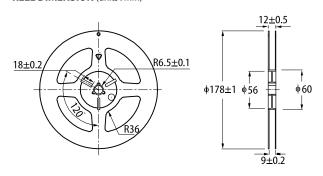
- Don't cause stress to the LEDs while it is exposed to high temperature.
- 2. The maximum number of reflow soldering passes is 2 times.

 3. Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.

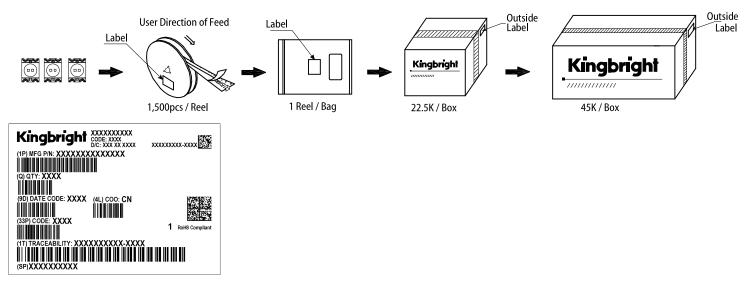
TAPE SPECIFICATIONS (units: mm)



REEL DIMENSION (units: mm)



PACKING & LABEL SPECIFICATIONS



PRECAUTIONARY NOTES

- The information included in this document reflects representative usage scenarios and is intended for technical reference only.

 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.
- 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.

 The information in this document applies to typical usage in consumer electronics applications. If customer's application has special reliability requirements or have life-threatening
- liabilities, such as automotive or medical usage, please consult with Kingbright representative for further assistance. The contents and information of this document may not be reproduced or re-transmitted without permission by Kingbright. All design applications should refer to Kingbright application notes available at https://www.KingbrightUSA.com/Application

