

ACSC03-41CGKWA-F01
Surface Mount Display

DESCRIPTIONS

- The Green source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode
- Electrostatic discharge and power surge could damage the LEDs
- It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs
- All devices, equipments and machineries must be electrically grounded

FEATURES

- 0.3 inch digit height
- Low current operation
- Excellent character appearance
- Mechanically rugged
- Gray face, white segment
- Package: 550 pcs / reel
- Moisture sensitivity level: 2a
- RoHS compliant

APPLICATIONS

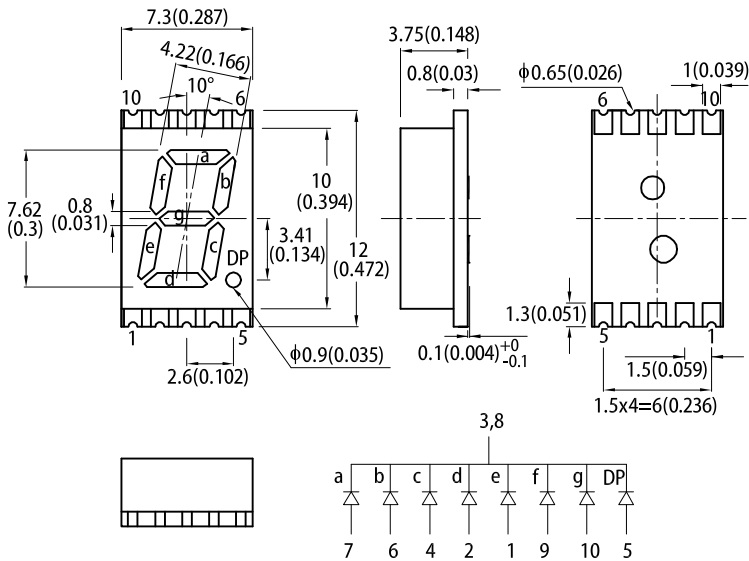
- Home and smart appliances
- Display time and digital combination
- Industrial and instrumental applications
- Numeric status

ATTENTION

Observe precautions for handling electrostatic discharge sensitive devices

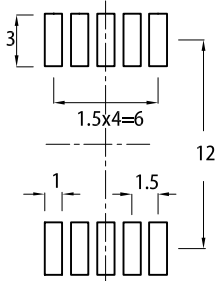


PACKAGE DIMENSIONS



RECOMMENDED SOLDERING PATTERN

(units: mm; tolerance: ± 0.15)



- Notes:
1. All dimensions are in millimeters (inches), Tolerance is $\pm 0.25(0.01)$ unless otherwise noted.
 2. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
 3. The gap between the reflector and PCB shall not exceed 0.25mm.

SELECTION GUIDE

Part Number	Emitting Color (Material)	Lens Type	Iv (ucd) @ 10mA ^[1]		Description
			Min.	Typ.	
ACSC03-41CGKWA-F01	■ Green (AlGaInP)	White Diffused	3600	12000	Common Cathode, Rt. Hand Decimal
			*1400	*3100	

Notes:
1. Luminous intensity / luminous Flux: $\pm 15\%$.
* 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 = 10mA	λ _{peak}	Green	574	-	nm
Dominant Wavelength I _F = 10mA	λ _{dom} ^[1]	Green	570	-	nm
Spectral Bandwidth at 50% Φ REL MAX I _F = 10mA	Δλ	Green	20	-	nm
Forward Voltage I _F = 10mA	V _F ^[2]	Green	2.0	2.45	V
Reverse Current (V _R = 5V)	I _R	Green	-	10	μA

Notes:
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.

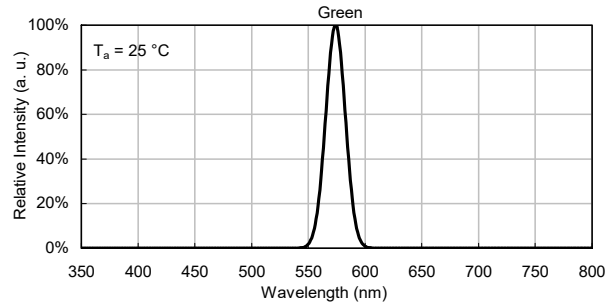
ABSOLUTE MAXIMUM RATINGS at T_A=25°C

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	75	mW
Reverse Voltage	V _R	5	V
Junction Temperature	T _j	115	°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 _{FP} ^[1]	150	mA
Electrostatic Discharge Threshold (HBM)	-	3000	V

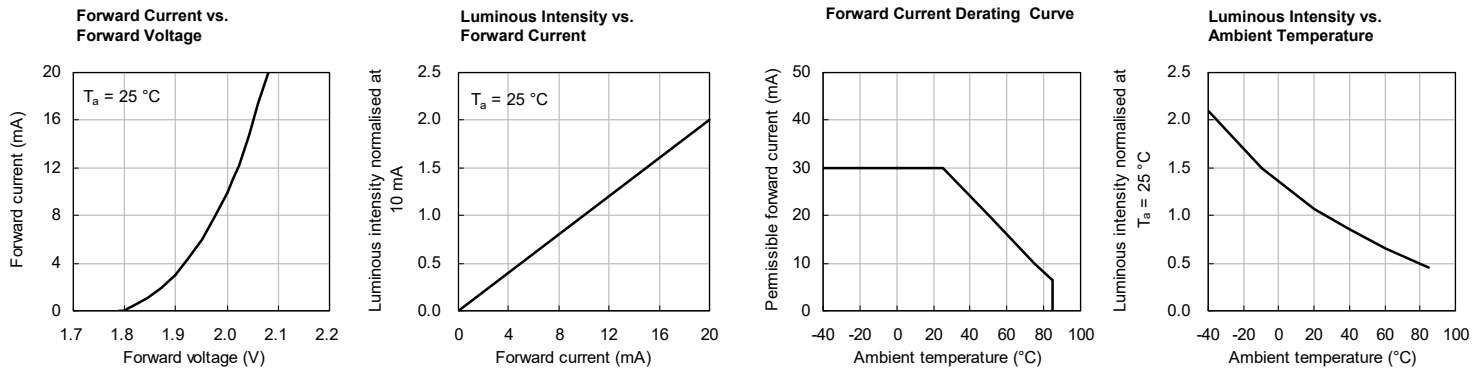
Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

TECHNICAL DATA

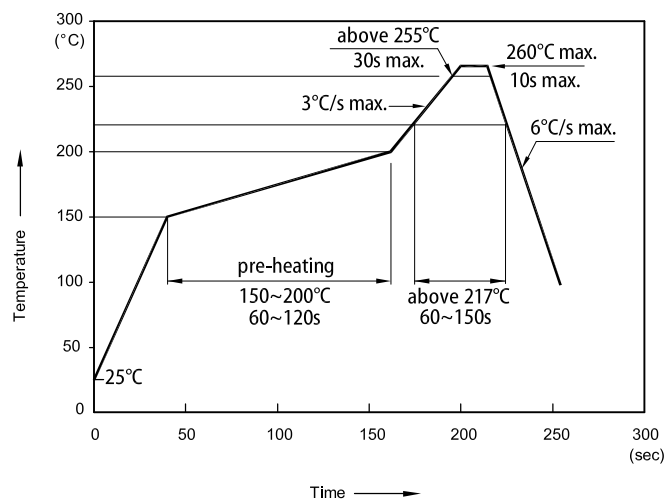
RELATIVE INTENSITY vs. WAVELENGTH



GREEN

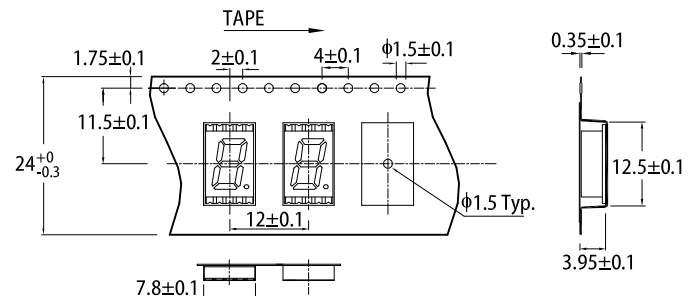


REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS

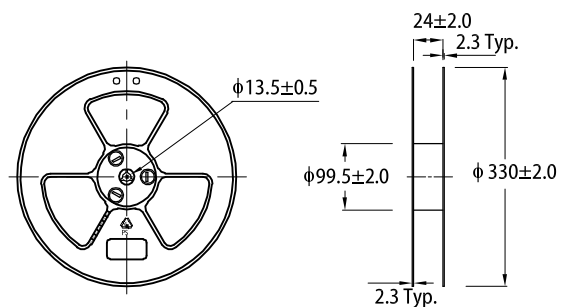


- Notes:
1. Don't cause stress to the LEDs while it is exposed to high temperature.
 2. The maximum number of reflow soldering passes is 2 times.
 3. Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.

TAPE SPECIFICATIONS (units: mm)



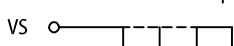
REEL DIMENSION (units: mm)

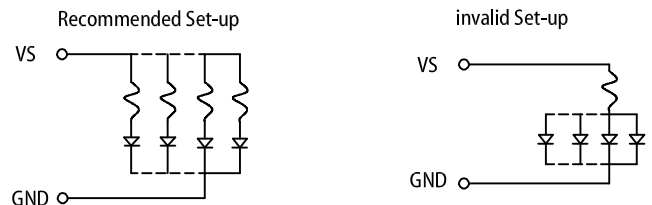


The diagram illustrates the packaging process for 5500 pcs of 1000mAh 3.7V Li-ion cells. It shows the following steps:

- 550 pcs / Reel:** The initial quantity of cells is shown as two individual cells and a reel of 550 pcs.
- 1 Reel / Bag:** The cells are packaged into a bag, which is then sealed with an "Inside Label Zip Seal".
- 2 Bag / Box:** Two bags are placed into a box.
- 5500 pcs / Box:** The final quantity is shown as a box containing 5500 pcs, with an "Outside Label" on the side.



1. Protective current-limiting resistors may be necessary to operate the LEDs within the specified range.
 2. LEDs mounted in parallel should each be placed in series with its own current-limiting resistor.
 3. The driving circuit should be designed to protect the LED against reverse voltages and transient voltage spikes when the circuit is powered up or shut down.
 4. The safe operating current should be chosen after considering the maximum ambient temperature of the operating environment.
 5. Prolonged reverse bias should be avoided, as it could cause metal migration, leading to an increase in leakage current or causing a short circuit.
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- The diagram, titled "Recommended Set-up", shows a circuit with a positive supply terminal labeled "VS" and a ground terminal labeled "GND". Four LEDs are connected in parallel between these two terminals. Each LED is in series with a vertical resistor, represented by a zigzag line. Dashed horizontal lines indicate the common connection points for the resistors to the VS and GND rails.



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.
4. 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.
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6. When any special process such as potting is required for LED assembly, please consult with Kingbright representative before proceeding.
7. All design applications should refer to Kingbright application notes available at <https://www.KingbrightUSA.com/ApplicationNotes>