2173 Salk Avenue, Suite 175
Carlsbad, CA 92008
☎ 800-522-5546
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PRODUCT CHANGE NOTIFICATION

PCN Number:	620
Date of Issue:	5/19/2022
PCN Effective Date:	5/19/2022
Last Time Buy Date:	-
Last Time Ship Date:	-
Type of Change:	DESIGN
Title of Change:	Datasheet update of CMD Series
Description and Reason for Change:	Attribute update for the following features: Luminous Intensity Min, Luminous Intensity Typ, LED Forward Voltage Max, LED Forward Voltage Typ, Peak Wavelength, Viewing Angle, Forward Current

Mario Davila
Product Manager: _____

VCC Contact E-mail: customerservice@vcclite.com

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AFFECTED PART NUMBER(s)				
Manufacturer Part Number (MPN)	**Description**	**Discontinued per PCN**	**Suggested Alternative Part Number(s)**	**Description of the Difference**
CMD15-21VRD /TR8	LED SMT 1206 2V 20mA 4mcd 640nm Red 3K	**No**	-	Luminous Intensity Min changes from 2.4 mcd to 25 mcd, Luminous Intensity Typ. change from 4.0 mcd to 40 mcd, Forward Voltage Typ. changed from 2.0 V to 1.7 V, Voltage Max changed from 2.8 V to 2.4 V, Peak Wavelength changed from 640 nm to 632 nm
CMD15-21VGD /TR8	LED SMT 1206 2.1V 20mA 6.5mcd Green	**No**	-	Luminous Intensity Min changes from 5.5 mcd to 16 mcd, Luminous Intensity Typ. change from 6.5 mcd to 24 mcd, Forward Voltage Typ. changed from 2.1 V to 2.0 V, Voltage Max changed from 2.8 V to 2.4 V, Peak Wavelength changed from 570 nm to 573 nm
CMD15-21VYD/ TR8	LED SMT 1206 2V 20mA 4mcd Yellow	**No**	-	Luminous Intensity Min changes from 3.7 mcd to 16 mcd, Luminous Intensity Typ. change from 4.0 mcd to 25 mcd, Voltage Max changed from 2.8 V to 2.4 V, Peak Wavelength changed from 585 nm to 591 nm
CMD17-21VRC/ TR8	LED SMT 0805 2.0V 13mcd 140deg Red	**No**	-	Luminous Intensity Min changes from 4.5 mcd to 15 mcd, Luminous Intensity Typ. change from 13 mcd to 38 mcd, Voltage Max changed from 2.8 V to 2.4 V, Peak Wavelength changed from 640 nm to 632 nm
CMD17-21VYC/ TR8	LED SMT 0805 2.0V 12mcd 140deg Yellow	**No**	-	Luminous Intensity Min changes from 5 mcd to 15 mcd, Luminous Intensity Typ. change from 12 mcd to 38 mcd, Voltage Max changed from 2.8 V to 2.4 V, Peak Wavelength changed from 585 nm to 591 nm

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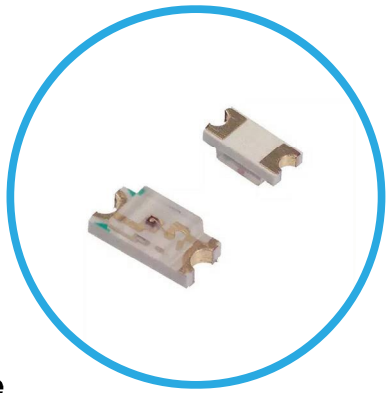
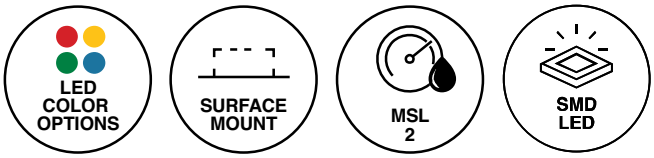
CMD17-21VGC /TR8	LED SMT 0805 2.1V 10mcd 140deg Green	**No**	-	Luminous Intensity Min changes from 6 mcd to 12 mcd, Luminous Intensity Typ. change from 10 mcd to 17 mcd, Forward Voltage Type changed from 2.1 V to 2.0 V, Voltage Max changed from 2.8 V to 2.4 V, Peak Wavelength changed from 570 nm to 573 nm
CMD17-21VRD /TR8	LED SMT 0805 2.0V 6mcd 140deg Red	**No**	-	Luminous Intensity Min changes from 3 mcd to 40 mcd, Luminous Intensity Typ. change from 6 mcd to 80 mcd, Voltage Max changed from 2.8 V to 2.4 V, Peak Wavelength changed from 640 nm to 632 nm, Viewing Angle changed from 140 degrees to 150 degrees
CMD17-21VGD /TR8	LED SMT 0805 2.1V 7mcd 140deg Green	**No**	-	Luminous Intensity Min changes from 4 mcd to 14 mcd, Luminous Intensity Typ. change from 7 mcd to 18 mcd, Voltage Typ changed from 2.1V to 2.0 V, Voltage Max changed from 2.8 V to 2.4 V, Peak Wavelength changed from 570 nm to 575 nm, Viewing Angle changed from 140 degrees to 150 degrees
CMD67-21VRC/ TR8	LED SMT PLCC-2 1.7V 20mA 62mcd Red 2K	**No**	-	Forward Voltage Max changed from 2.8 V to 2.4 V, Peak Wavelength changed from 640 nm to 632 nm
CMD28-21VGC /TR8	LED SMT Mini 2.1V 20mA 5.5mcd Green	**No**	-	Forward Current changed from 30 mA to 20 mA, Forward Voltage Typ. change from 2.1 V to 2.0 V, Luminous Intensity Min changed from 1.0 mcd to 13 mcd, Luminous Intensity Typ. changed from 5.5 mcd to 23 mcd, Peak Wavelength changed from 570 nm to 575 nm
CMD28-21VRC/ TR8	LED SMT Mini 2V 20mA 3mcd 150deg Red	**No**	-	Forward Current changed from 30 mA to 25 mA, Luminous Intensity Min changed from 1.5 mcd to 12 mcd, Luminous Intensity Typ changed from 3.5 mcd to 29 mcd, Peak Wavelength changed from 640 nm to 632 nm

CMD15-21 Series
1206 Package Size
Surface Mount Technology LED



SMD LED in a 1206 package with clear and diffused lens options. Available in multiple single color options.



Applications

- Wearable and Portable Devices
- Automotive Features
- Navigations Systems
- Home and Smart Appliance
- Backlit Keypads
- Medical Devices
- Health Care Application
- Industrial Control Systems
- Status Indicator

Key Features

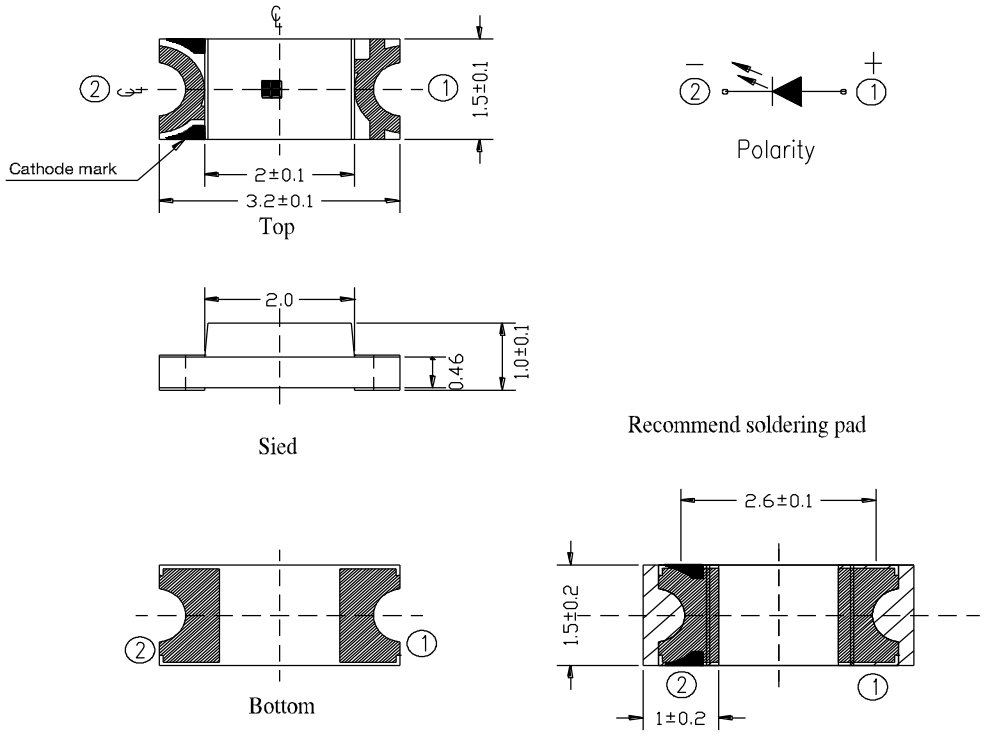
- Surface mount technology
- 1206 LED package size
- Available in a range of colors: red, green, yellow and blue, clear and diffused
- Tape and reel packaged for high-speed auto insertion
- Convection and vapor-phase reflow compatible
- Compact form enables high density placement
- Packaged 2000 pieces per reel
- Consistent high brightness
- Integral lensing for narrow angle light dispersion
- Stringent process controls assure quality
- Extensive qualification testing to meet strictest requirements
- Designed to permit easy post-reflow solder joint inspection
- MSL Rating 2
- For custom LED color contact VCC
- RoHS and REACH Compliant

Ordering Data

Series	Emmited Color/Lens Color
CMD15-21	SRC/TR8

SRC/TR8	Deep Red/Clear
VRC/TR8	Brilliant Red/Clear
VYC/TR8	Yellow/Clear
VGC/TR8	Green/Clear
UBC/TR8	Blue/Clear
VRD/TR8	Brilliant Red Diffused
VGD/TR8	Brilliant Yellow Green Diffused
VYD/TR8	Brilliant Yellow Diffused

Product Dimensions



Notes:
1. All dimensions are in mm
2. Tolerance is ± 0.1mm unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

Product Specifications

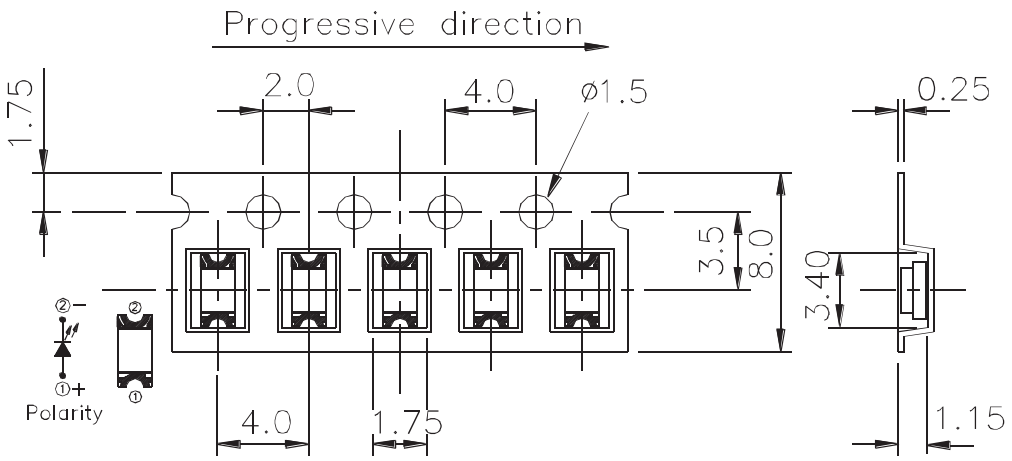
Electrical-Optical Characteristics

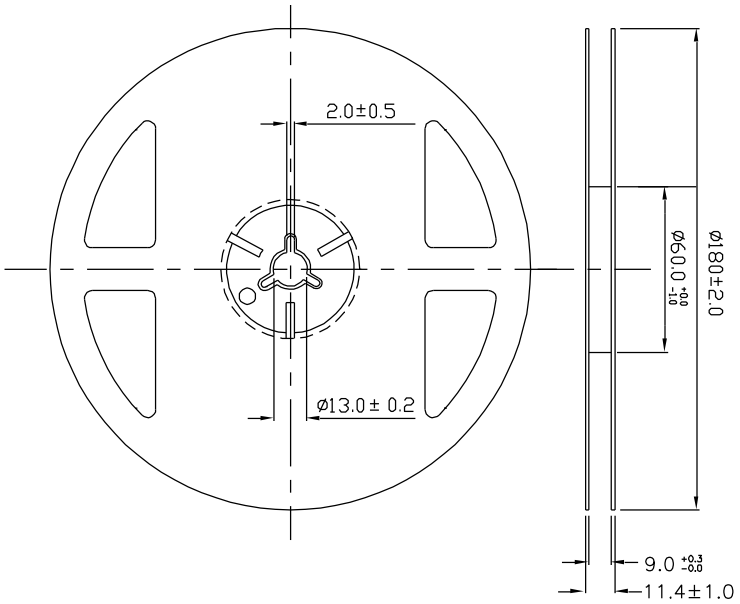
Part Number	Emitted Color	Lens Color	Luminous Intensity		Forward Voltage		Test Current (mA)	Peak Wavelength (nm)
			Min. (mcd)	Typ. (mcd)	Typ. (V)	Max. (V)		
CMD15-21SRC/TR8	Deep Red	Clear	16	23	2.0	2.4	20	650
CMD15-21VRC/TR8	Brilliant Red	Clear	15	38	2.0	2.4	20	632
CMD15-21VYC/TR8	Yellow	Clear	15	39	2.0	2.4	20	591
CMD15-21VGC/TR8	Green	Clear	10	15	2.0	2.4	20	575
CMD15-21UBC/TR8	Blue	Clear	45	-	3.3	3.7	20	468
CMD15-21VRD/TR8	Brilliant Red Diffused	Red Diffused	25	40	1.7	2.4	20	632
CMD15-21VGD/TR8	Brilliant Yellow Green Diffused	Green Diffused	16	24	2.0	2.4	20	573
CMD15-21VYD/TR8	Brilliant Yellow Diffused	Yellow Diffused	16	25	2.0	2.4	20	591

Absolute Maximum Ratings

Emitted Color	Reverse Voltage (IR=100µA) (V)	Average Forward Current (mA)	Peak Forward Current (1 µs @ 10% duty cycle) (mA)	Power Dissipation (mW)	Operating Temperature (°C)	Storage Temperature (°C)	Lead Solder Time at 260°C (Seconds)
Deep Red	5.0	25	60	60	-40 to +85	-40 to +90	10 Max
Yellow	5.0	25	60	60	-40 to +85	-40 to +90	10 Max
Green	5.0	25	60	60	-40 to +85	-40 to +90	10 Max
Blue	5.0	20	40	75	-40 to +85	-40 to +90	10 Max
Brilliant Red	5.0	25	60	60	-40 to +85	-40 to +90	10 Max
Red Diffused	5.0	25	60	60	-40 to +85	-40 to +90	10 Max
Brilliant Yellow Green Diffused	5.0	25	60	60	-40 to +85	-40 to +90	10 Max
Brilliant Yellow Diffused	5.0	25	60	60	-40 to +85	-40 to +90	10 Max

Tape and Reel Specifications





2000 pieces per reel

Notes:
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Compliances and Approvals

REACH COMPLIANCE

RoHS COMPLIANT

CMD28-21 Series
SMT LED Gull Wing Leads

CMD28-21 Series features a SMD LED with a high intensity light output and a clear lens

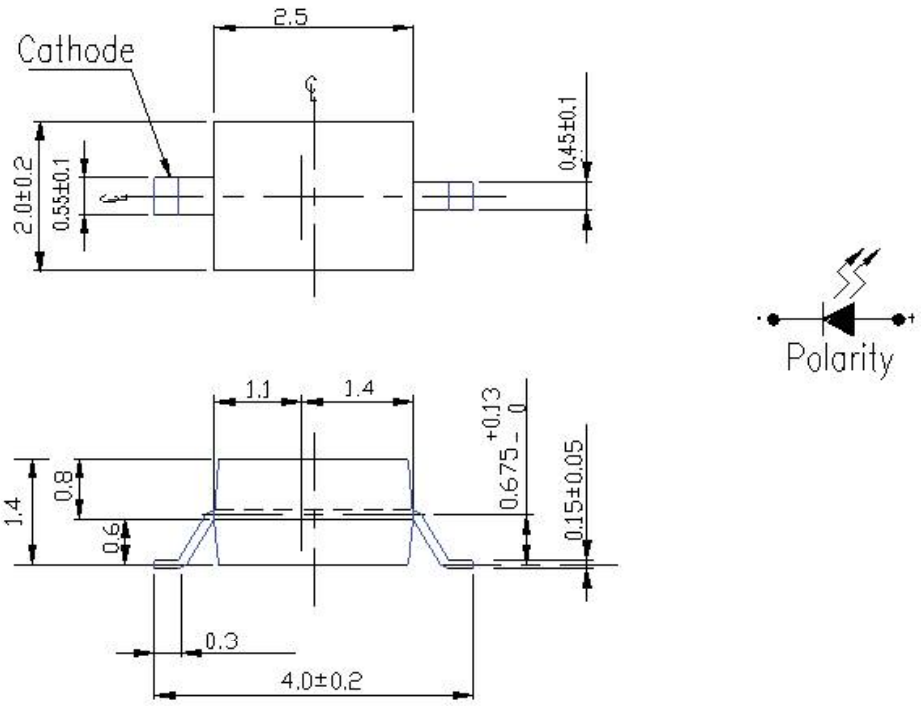
Applications

- Wearable and Portable Devices
- Automotive Features
- Navigations Systems
- Home and Smart Appliance
- Backlit Keypads
- Medical Devices
- Health Care Application
- Industrial Control Systems
- Status Indicator

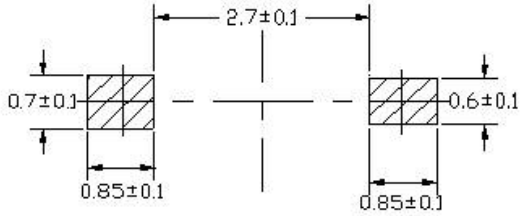
Key Features

- Surface mount technology
- Tape and reel packaged for high-speed automatic insertion
- Convection and vapor-phase reflow compatible
- Compact form enables high density placement
- Packaged 2000 pieces per reel
- Leading edge LED optoelectronic performance
- Consistent high brightness
- Low current types available
- Exceptional reliability
- Stringent process controls assure quality
- Extensive qualification testing to meet strictest requirements
- Designed to permit easy post-reflow solder joint inspection
- Compliant with RoHS and REACH requirements

Product Dimensions



Solder Pad Geometry



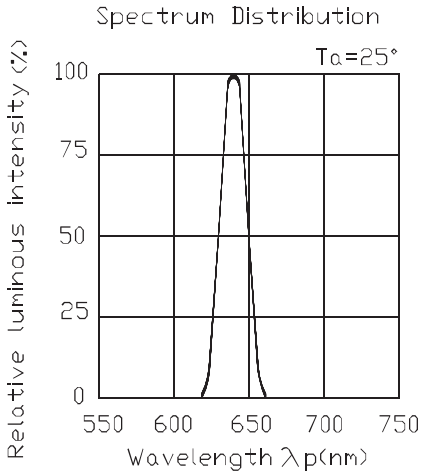
Notes:
1. All dimensions are in mm
2. Tolerance is ±0.1 mm unless otherwise noted
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

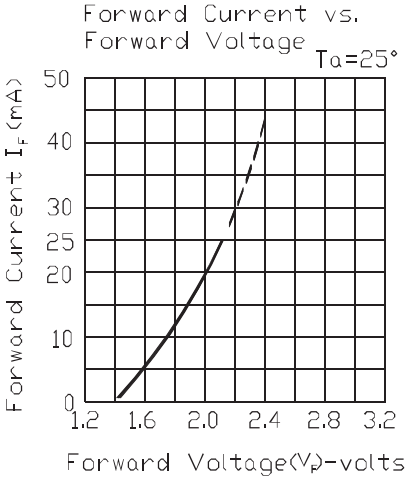
Product Specifications

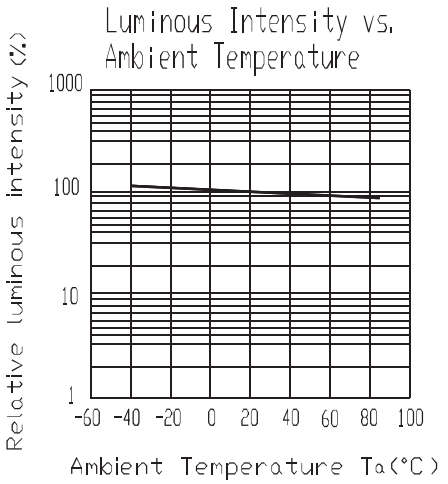
Part Number	CMD28-21VGC/TR8	CMD28-21VYC/TR8	CMD28-21VRC/TR8

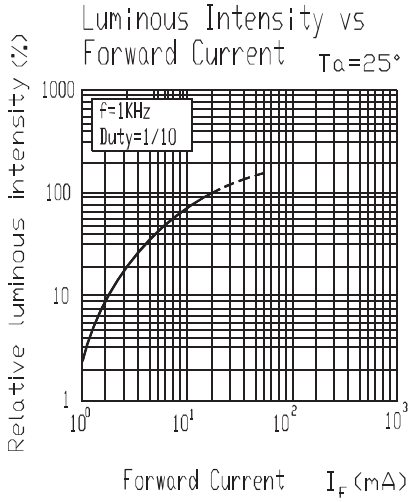
Output Color	Yellow Green	Yellow	Hyper Red
Package Type	Single	Single	Single
Lens Color	Clear	Clear	Clear
Forward Current (mA)	20	25	25
Forward Voltage Typ.(V)	2.0	2.0	2.0
Forward Voltage Max.(V)	2.4	2.4	2.4
Luminous Intensity Min.(mcd)	13 (Typical)	21	12
Luminous Intensity Typ.(mcd)	23 (Typical)	33	29
Luminous Intensity Max.(mcd)	-	-	-
Peak Wavelength Typ (nm)	575	591	632
Viewing Angle 2Θ 1/2 (degrees)	150	150	150
Power Dissipation (mW)	60	60	60
Operating Temperature(°C)	-40 to +85	-40 to +85	-40 to +85
Storage Temperature(°C)	-40 to +100	-40 to +90	-40 to +100
Peak Forward Current (Duty 1/10@ 1KHz) (mA)	60	60	160
Reverse Voltage (V)	5.0	5.0	5.0
Lead Solder Time@260℃±5℃ (sec.)	10 Max	10	10 Max

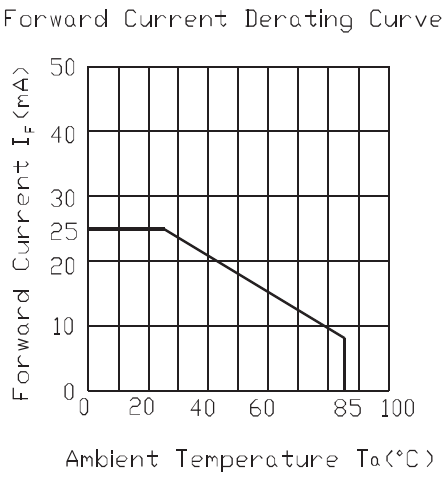
CMD28-21VRC/TR8

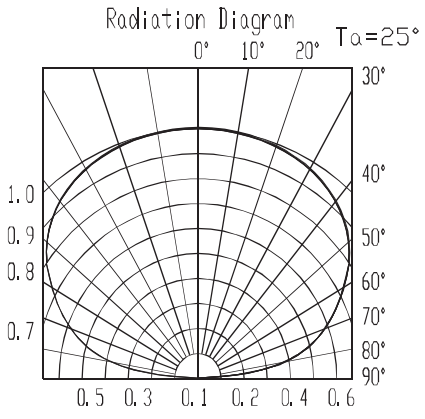












Precautions

Over-current-proof

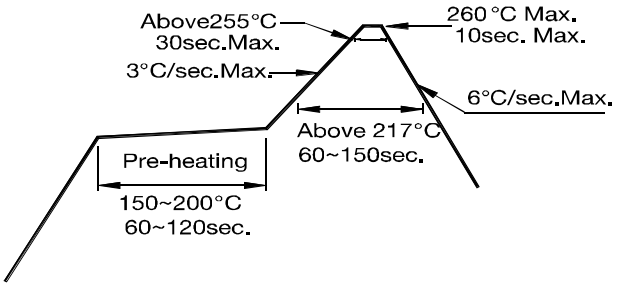
• Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

Storage

• Do not open moisture proof bag before the products are ready to use.
• Before opening the package: The LEDs should be kept at 30°C or less and 90%RH or less.
• After opening the package: The LEDsfloor life is 168 hours under 30°C or less and 60% RH or less.
If unused LEDs remain, it should be stored in moisture proof packages.
• If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment : 60±5°C for 24 hours.

Soldering Condition

• Pb-free solder temperatu



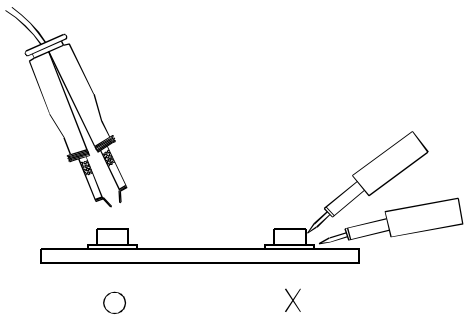
• Reflow soldering should not be done more than two times.
• When soldering, do not put stress on the LEDs during heating.
• After soldering, do not warp the circuit board.

Soldering Iron

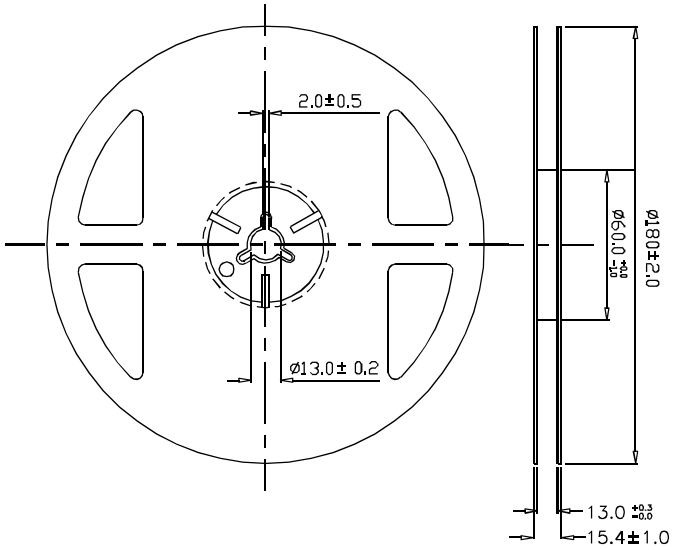
• Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

Repairing

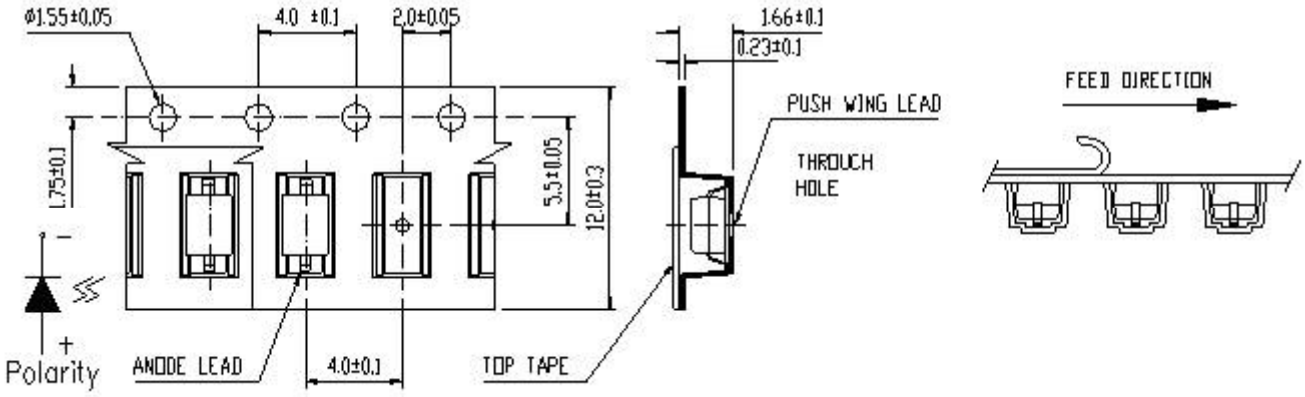
• Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



Tape and Reel Dimensions



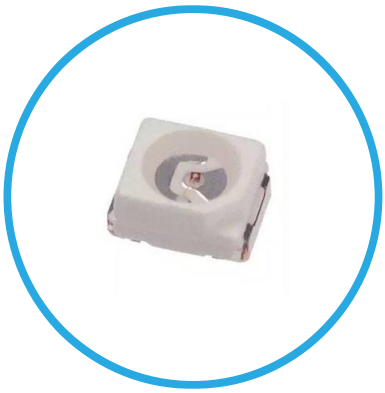
Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



Notes:
1. The tolerance unless mentioned is ± 0.1mm

Compliances and Approvals

CMD67-21 Series
PLCC-2 Package
Surface Mount LED



CMD67-21 Series features a SMD LED with a high intensity light output and a clear lens

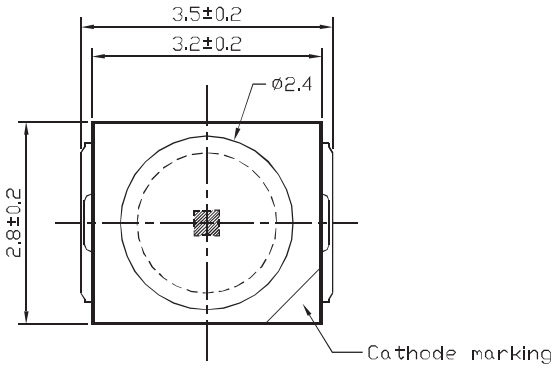
Applications

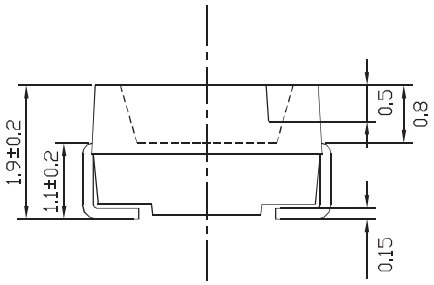
- Wearable and Portable Devices
- Automotive Features
- Navigations Systems
- Home and Smart Appliance
- Backlit Keypads
- Medical Devices
- Health Care Application
- Industrial Control Systems
- Status Indicator

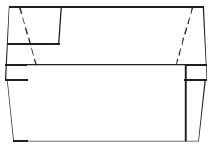
Key Features

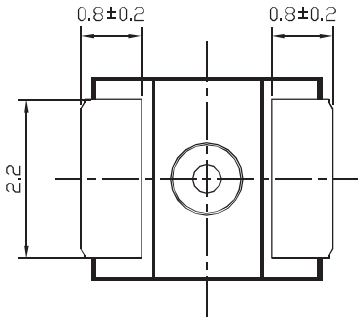
- Surface mount technology
- Tape and reel packaged for high-speed automatic insertion
- Convection and vapor-phase reflow compatible
- Compact form enables high density placement
- Packaged 2000 pieces per reel
- Leading edge LED optoelectronic performance
- Consistent high brightness
- Low current types available
- Exceptional reliability
- Stringent process controls assure quality
- Extensive qualification testing to meet strictest requirements
- Designed to permit easy post-reflow solder joint inspection
- Compliant with RoHS and REACH requirements

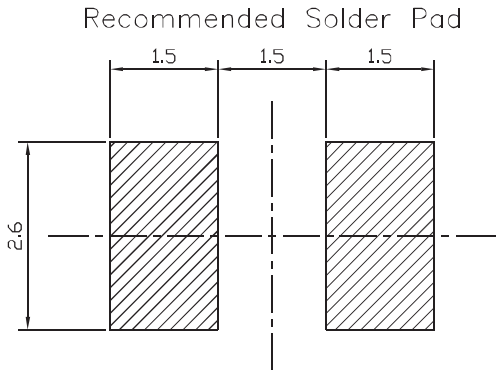
Product Dimensions











Notes:
1. All dimensions are in mm
2. The tolerance unless mentioned is ± 0.1mm

Product Specifications

Electrical-Optical Characteristics

Part Number	Emitted Color	Lens Color	Luminous Intensity		Forward Voltage		Polarity Mark Indicates	Peak Wavelength (nm)	Viewing Angle (degrees)
			Min. (mcd)	Typ. (mcd)	Typ. (V)	Max. (V)			
CMD67-21VGC/TR8	Green	Clear	15.0	25.0	2.1	2.8	Cathode	570	120
CMD67-21VYC/TR8	Yellow	Clear	6.0	10.0	2.0	2.8	Cathode	585	120
CMD67-21VRC/TR8	H.E. Red	Clear	6.0	10.0	2.0	2.4	Cathode	632	120
CMD67-21SRC/TR8	Bright Red	Clear	25.0	40.0	1.7	2.4	Anode	660	120
CMD67-21URC/TR8	Bright red	Clear	36.0	62.0	1.7	2.4	Anode	660	120

Absolute Maximum Ratings

Emitted Color	Reverse Voltage (IR=100µA) (V)	Average Forward Current (mA)	Peak Forward Current (1 µs @ 10% duty cycle) (mA)	Power Dissipation (mW)	Operating Temperature (°C)	Storage Temperature (°C)	Lead Solder Time at 260°C (Seconds)
Green	5.0	25	150	105	-40 to +85	-40 to +85	5
H.E. Red	5.0	25	60	60	-40 to +85	-40 to +100	5
Yellow	5.0	30	150	105	-40 to +85	-40 to +85	5
Bright red	5.0	30	150	100	-40 to +85	-40 to +85	5

Precautions

- **Over-current-proof**

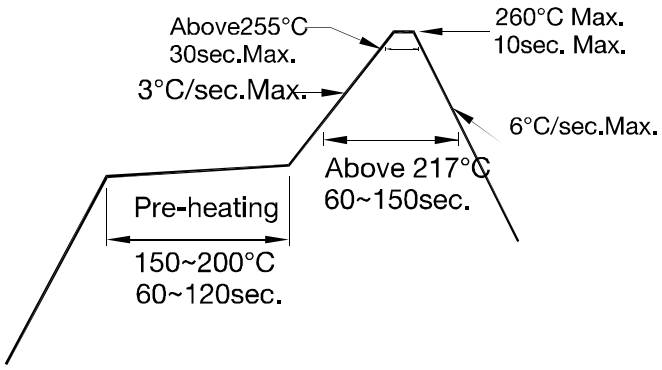
  - Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

- **Storage**

  - Do not open moisture proof bag before the products are ready to use.
  - Before opening the package: The LEDs should be kept at 30°C or less and 90%RH or less.
  - After opening the package: The LED's floor life is 168 hrs under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.
  - If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment : 60±5°C for 24 hours.

- **Soldering Condition**

  - Pb-free solder temperature profile



  - Reflow soldering should not be done more than two times.
  - When soldering, do not put stress on the LEDs during heating.
  - After soldering, do not warp the circuit board.

- **Soldering Iron**

  - Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 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.

- **Repairing**

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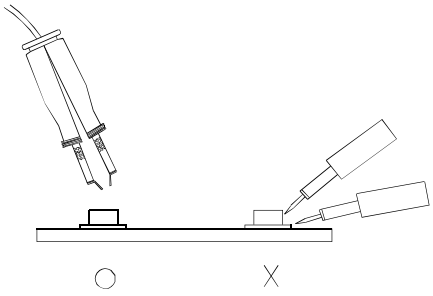
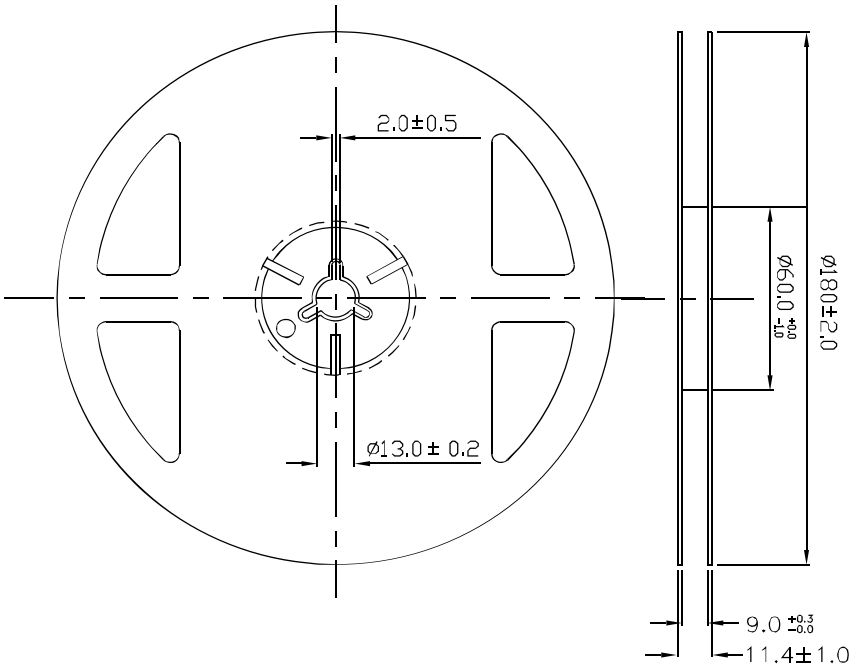
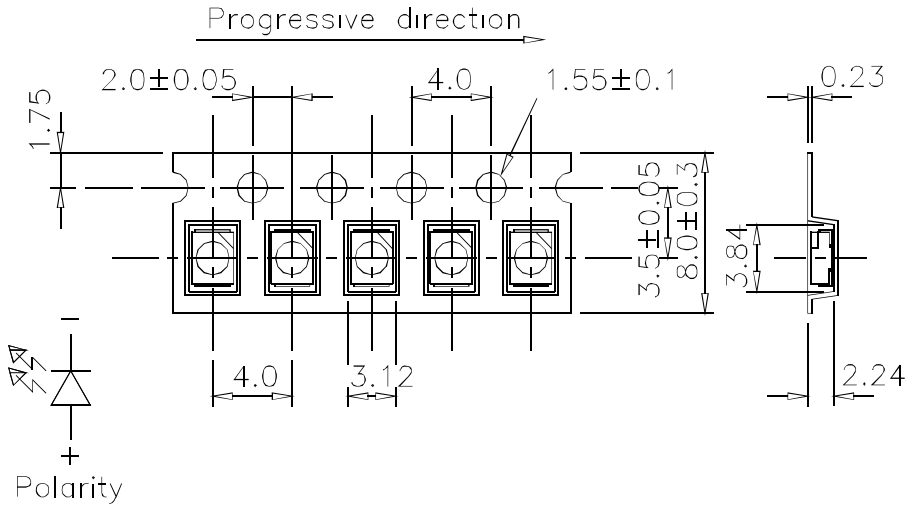


Tape and Reel Dimensions



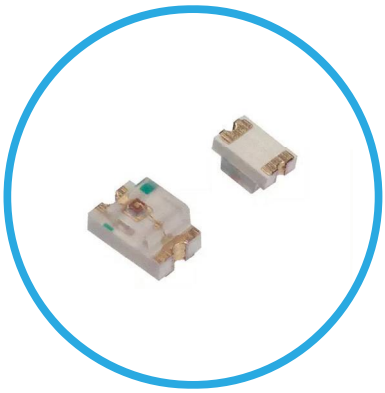
Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



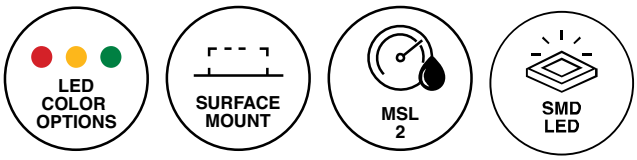
Notes:
1. The tolerance unless mentioned is ± 0.1mm

Compliances and Approvals

CMD17-21 Series
0805 Package Size
Surface Mount Technology LED



SMD LED available in three colors. Available in clear and diffused lens options



Application

- Wearable and Portable Devices
- Automotive Features
- Navigations Systems
- Home and Smart Appliance
- Backlit Keypads
- Medical Devices
- Health Care Application
- Industrial Control Systems
- Status Indicator

Key Features

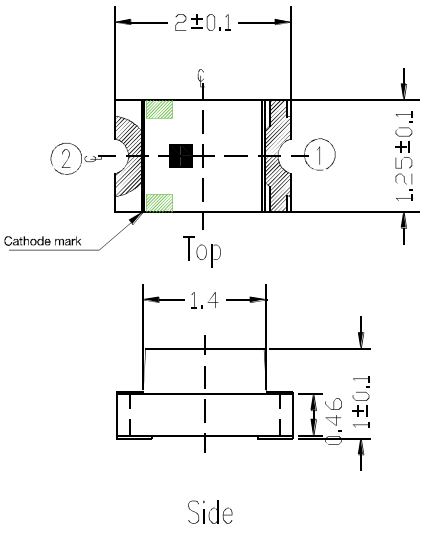
- Surface mount technology
- Tape and reel packaged for high-speed auto insertion
- Convection and vapor-phase reflow compatible
- Compact form enables high density placement
- Packaged 3000 pieces per reel
- Lead Finish (Plating): Au
- Under Plating Material: NiCu
- Leading edge LED optoelectronic performance
- Consistent high brightness
- Exceptional Reliability
- Stringent process controls assure quality
- Extensive qualification testing to meet strictest requirements
- Designed to permit easy post-reflow solder joint inspection
- MSL Rating 2
- For custom LED color contact VCC
- RoHS and REACH Compliant

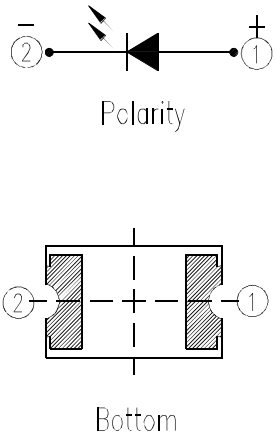
Ordering Data

Series	Emmited Color/Lens Color
CMD17-21	SRC/TR8

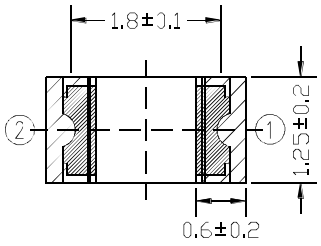
SRC/TR8	Super Red/Clear
VRC/TR8	Brilliant Red/Clear
VYC/TR8	Brilliant Yellow/Clear
VGC/TR8	Green/Clear
VRD/TR8	Red/Red Diffused
VYD/TR8	Yellow/Yellow Diffused
VGD/TR8	Green/Green Diffused

Product Dimensions





Recommended Soldering Pattern



Notes:
1. All dimensions are in mm
2. Tolerance is ±0.1 mm unless otherwise noted
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

Product Specifications

Electrical-Optical Characteristics

Part Number	Emitted Color	Lens Color	Test Current (mA)	Luminous Intensity		Forward Voltage		Peak Wavelength (nm)	Viewing Angle (degrees)
				Min. (mcd)	Typ. (mcd)	Typ. (V)	Max. (V)		
CMD17-21SRC/TR8	Super Red	Clear	20	10.0	21.0	1.7	2.4	660	140
CMD17-21VRC/TR8	Brilliant Red	Clear	20	15	38	2.0	2.4	632	140
CMD17-21VYC/TR8	Brilliant Yellow	Clear	20	15	38	2.0	2.4	591	140
CMD17-21VGC/TR8	Brilliant Green	Clear	20	12	17	2.0	2.4	573	140
CMD17-21VRD/TR8	Red	Red Diffused	20	40	80	2.0	2.4	632	150
CMD17-21VYD/TR8	Yellow	Yellow Diffused	20	2.5	4.0	2.0	2.8	505	140
CMD17-21VGD/TR8	Green	Green Diffused	20	14	18	2.0	2.4	575	150

Absolute Maximum Ratings

Emitted Color	Power Dissipation (mW)	Operating/Storage Temperature (°C)	Average Forward Current (mA)	Peak Forward Current (1 µs @ 10% duty cycle)	Reverse Voltage (IR=100µA) (V)	Lead Solder Time at 260°C (Seconds)
Super Red	100	-40 to +85	30	150	5.0	5
Brilliant Yellow	60	-40 to +85/-40 to +90	25	60	5.0	10 Max
Brilliant Green	60	-40 to +85/-40 to +90	25	60	5.0	10 Max
Green Diffused	60	-40 to +85/-40 to +90	25	60	5.0	10 Max
Brilliant Red	60	-40 to +85/-40 to +90	25	60	5.0	10 Max
Red Diffused	60	-40 to +85/-40 to +90	25	60	5.0	10 Max

Precautions

Over-current-proof

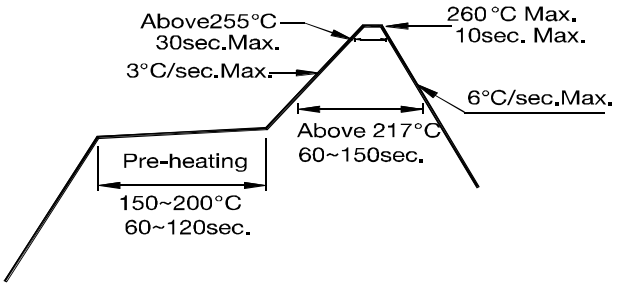
• Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

Storage

• Do not open moisture proof bag before the products are ready to use.
• After opening the package: The LEDs should be kept at 30°C or less and 60%RH or less.
• The LEDs should be used within 168 hours (7days) after opening the package. If unused LEDs remain, it should be stored in moisture proof packages.
• If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment : 60±5°C for 24 hours.

Soldering Condition

• Pb-free solder temperatu



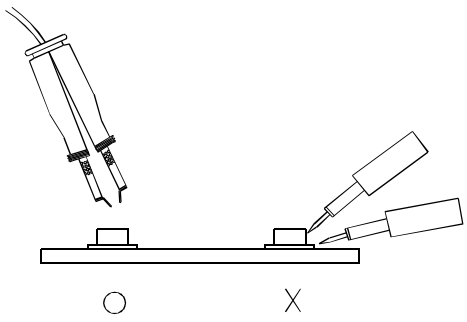
• Reflow soldering should not be done more than two times.
• When soldering, do not put stress on the LEDs during heating.
• After soldering, do not warp the circuit board.

Soldering Iron

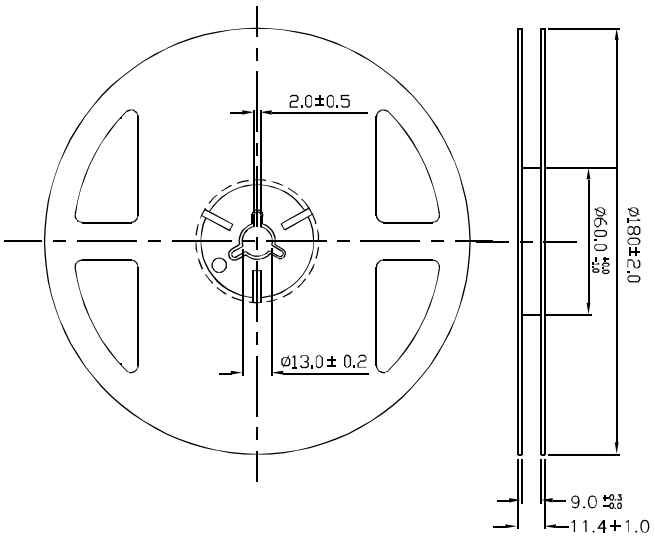
• Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

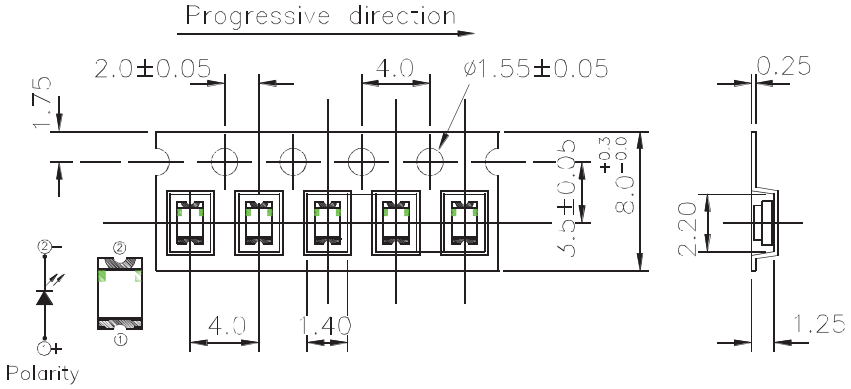
Repairing

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



Tape and Reel Specifications





3000 pieces per reel

Notes:
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Compliances and Approvals