

# 3528 SMD Chip LED - Red multicomp<sup>PRO</sup>

**RoHS  
Compliant**



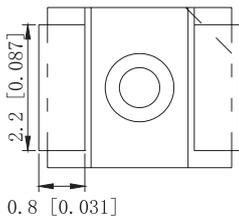
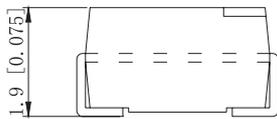
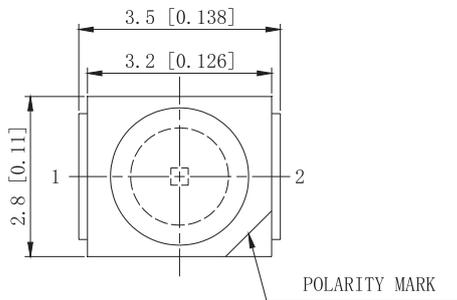
## Features

- 3.5mm × 2.8mm SMT LED, 1.9mm Thickness.
- Wide Viewing Angle.
- Ideal For Backlight And Indicator.

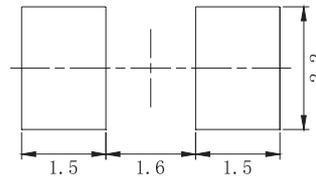
## Applications

- Automotive: Backlighting in dashboard and switch.
- Telecommunication: Indicator and Backlighting in telephone and fax.
- Flat Backlight for LCD switch and symbol.

## Package Dimensions



## Recommended soldering pattern



Dimensions : Millimetres

## Notes

1. All dimensions are in millimeters.
2. Tolerance is  $\pm 0.25$  unless otherwise noted.
3. Specifications are subject to change without notice.

## Device Selection Guide

Part No.	Chip		Lens Colour
	Material	Emitted Colour	
MP007084	(InGaAlP)	Red	Water Clear

Newark.com/multicompro  
Farnell.com/multicompro  
Element14.com/multicompro

**multicom<sup>PRO</sup>**

# 3528 SMD Chip LED - Red multicom<sup>PRO</sup>

## Absolute Maximum Ratings at TA=25°C

Parameter	Symbol	Value	Unit
Power Dissipation	P <sub>d</sub>	62	mW
Forward Current	I <sub>F</sub>	25	mA
Peak Forward Current*1	I <sub>FP</sub>	100	mA
Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature	T <sub>opr</sub>	-40°C To +85°C	
Storage Temperature	T <sub>stg</sub>	-40°C To +85°C	

Notes:

\*1: Pulse width ≤ 0.1ms, Duty cycle ≤ 1/10

## Electrical / Optical Characteristics at TA=25°C

Parameter	Symbol	Min.	Typ.	Max	Unit	Test Conditions
Forward Voltage	V <sub>F</sub>	1.8	—	2.6	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	—	—	10	μA	V <sub>R</sub> =5V
Dominant Wavelength	λ <sub>D</sub>	617	—	629	nm	I <sub>F</sub> =20mA
Luminous Intensity	I <sub>v</sub>	845	—	1800	mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ <sub>1/2</sub>	—	120	—	Deg.	I <sub>F</sub> =20mA

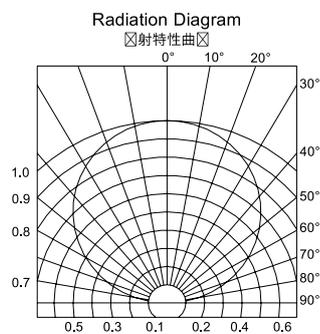
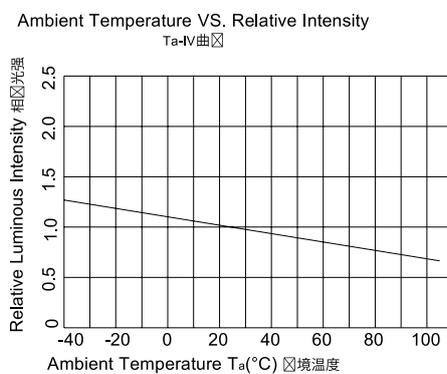
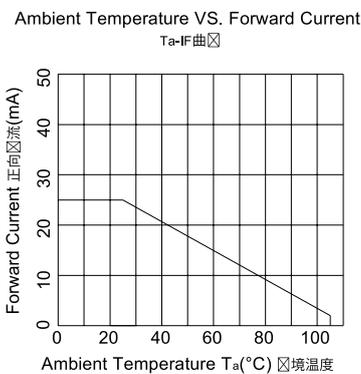
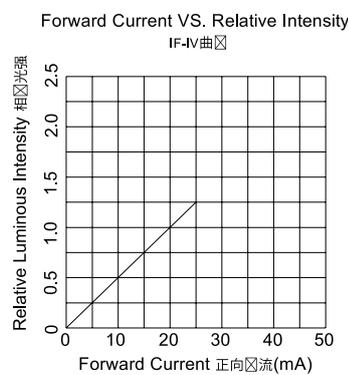
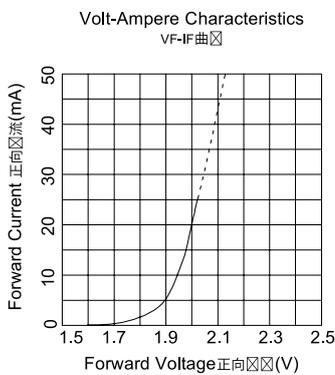
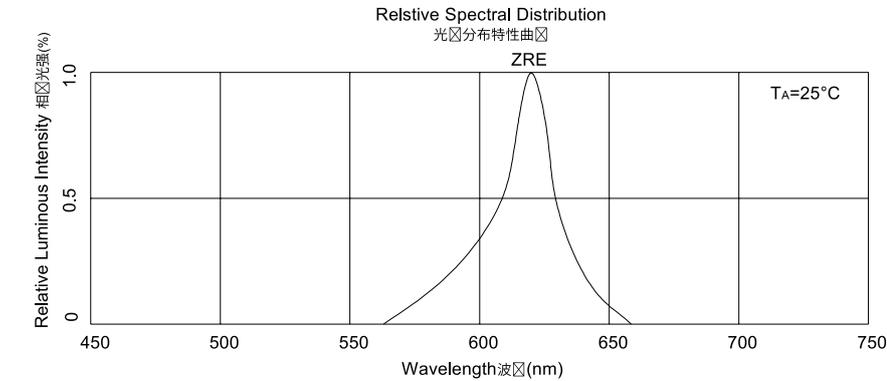
Remarks:

If special sorting is required (e.g. binning based on forward voltage, luminous intensity, or dominant wavelength), the typical accuracy of the sorting process is as follows:

1. Dominant wavelength: ±1nm
2. Luminous Intensity: ±15%
3. Forward Voltage: ±0.1V

# 3528 SMD Chip LED - Red multicomp<sup>PRO</sup>

## Typical Electrical/Optical Characteristics Curves



Dimensions : Millimetres

# 3528 SMD Chip LED - Red multicom<sup>PRO</sup>

## Reliability Test Items and Conditions

Test Item	Reference	Test Conditions	Time	Quantity	Criterion
Thermal Shock	JIS-C7021 A-4	100°C±5°C 15min ↓↑ -40°C±5°C 15min	200cycles	22	0/22
High Temperature Storage	JEITA ED- 4701 200 201	Ta=100°C	1000h		
Low Temperature Storage	JEITA ED- 4701 200 202	Ta=-40°C			
High Temperature High Humidity Storage	JIS-C7021 B-11	Ta=85, RH=85%	2 times		
Resistance to Soldering Heat	GB/T 4937	Tsol*=(260±5)°C 10secs.	1000h		
Life Test	JESD22-A108	Ta=25°C±5°C IF=20mA	1000h		
High Temperature Life Test		Ts=55°C±5°C IF=20mA			

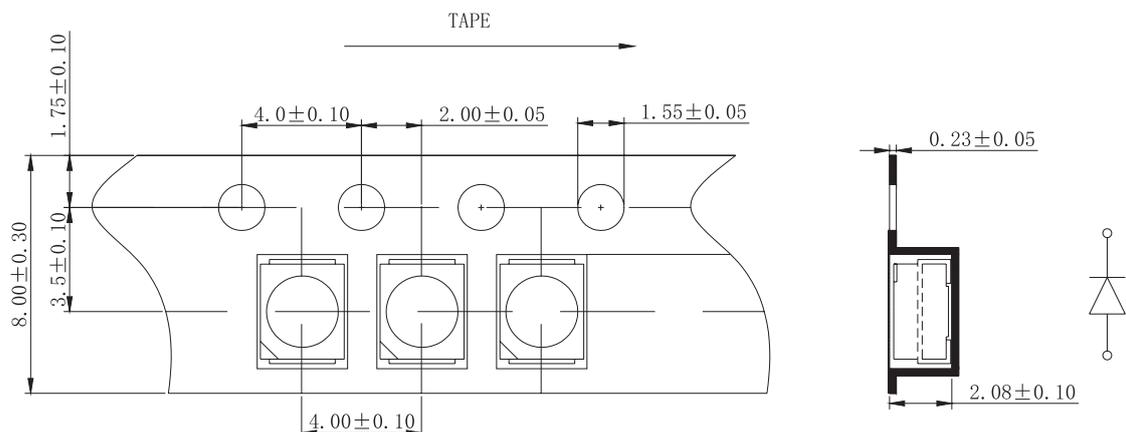
## Criteria for Judging the Damage

Item	Symbol	Test Condition	Failure Criteria	
			MIN.	MAX.
Forward Voltage	VF V	IF=20mA	---	U.S.L*1.1
Reverse Current	IR uA	VR=5V	---	10uA
Luminous Flux	IV LM	IF=20mA	L.S.L*0.7	---

Note:1.USL:Upper Specification Level

2.LSL:Lower Specification Level

## Tape specifications



Dimensions : Millimetres

## Hand Soldering

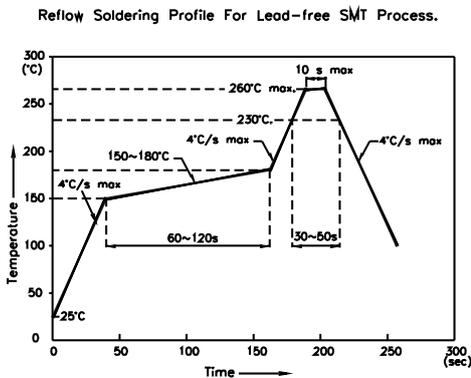
A soldering iron of less than 20W is recommended to be used in Hand Soldering, Please keep the temperature of the soldering iron under 360°C while soldering. Each terminal of the LED is to go for less than 3 second and for one time only. Be careful because the damage of the product is often started at the time of the hand soldering.

Newark.com/multicom-pro  
Farnell.com/multicom-pro  
Element14.com/multicom-pro

**multicom<sup>PRO</sup>**

# 3528 SMD Chip LED - Red multicomp<sup>PRO</sup>

## Soldering Profile



### Notes

1. We recommend the reflow temperature 245°C. ( $\pm 5^\circ\text{C}$ ) The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

## ESD ( Electrostatic Discharge)

Static Electricity or power surge will damage the LED.

The following procedures may decrease the possibility of ESD damage.

- All production machinery and test instruments must be electrically grounded.
- Use a conductive wrist band or anti-electrostatic glove when handling these LEDs.
- Maintain a humidity level of 50% or higher in production areas.
- Use anti-static packaging for transport and storage.

## Cleaning

- Led should be cleaned in a normal temperature and the time for cleaning should be less than 3 minutes; please use Alcohol as cleaner ,before you use other cleaning solvent ,please make sure that the cleaner will not make any damage to the LED performance or the appearance .
- Ultrasonic Cleaning is also commonly used for cleaning LED , please verify the Ultrasonic cleaning's Power and time to avoid any damage to the LED.

## Storage

- Storage condition before opening the package: 5°C to 30°C, the largest percentage relative humidity is 60% and the storage period is one month. The LEDs beyond the storage period just can be used after dealing as step 4.
- After opening the package, If the LEDs will be Infrared reflow soldering, Oxygen phase reflow soldering or any other welding.
  - a. must be welding within 24 hours.
  - b. the storage humidity must be below 30% .
- If the situation does not satisfy 2a or 2b, the LEDs must be roasted.
- If the LEDs need to be roasted, the roast temperature should be 60°C $\pm$ 3 and the roast timeshould be 48 hours.

## Part Number Table

Description	Part Number
SMD LED, Red, 120°, 1800mcd, 3.5mm x 2.8mm	MP007084

**Important Notice :** This data sheet and its contents (the "Information") belong to the members of the AVNET group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp Pro is the registered trademark of Premier Farnell Limited 2019.

Newark.com/multicomp-pro  
Farnell.com/multicomp-pro  
Element14.com/multicomp-pro

**multicomp<sup>PRO</sup>**