

SURFACE MOUNT LED RED/GREEN/BLUE, 1204 PACKAGE

BIVAR

SM1204RGB

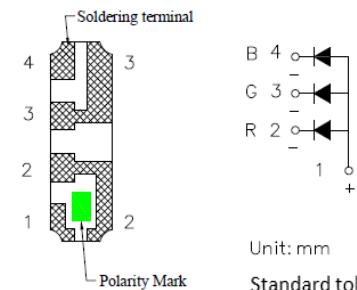
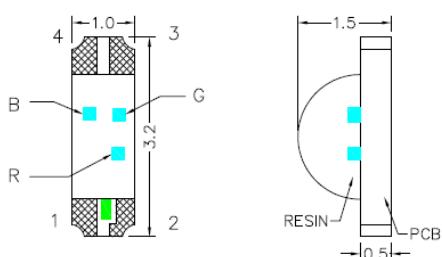
- ♦ Industry Standard 1204 Package
- ♦ RoHS Compliant
- ♦ Right Angle Mounting
- ♦ Three Chips in One Package
- ♦ Water Clear Lens
- ♦ Wide Viewing Angle
- ♦ Ideal for Status Indication and Backlighting



Bivar Surface Mount SM1204 RGB LED is offered in an industry standard package with high luminous intensity and wide viewing angles. The miniature package is ideal for reduced space applications such as general indication and backlighting. Low power consumption and excellent long-life reliability are suitable for battery powered equipment. The flexible three chip design allows for a wide variety of lighting options where the chips can be individually driven or mixed to create numerous color and intensity combinations. Bivar SM1204 LED is packaged in standard tape and reels for pick and place assemblies.

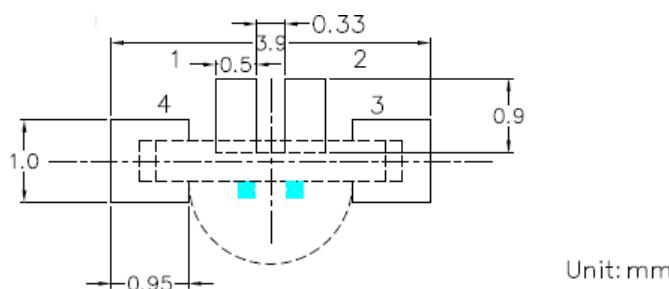
Part Number	Emitted Color	Peak Wavelength λ_P (nm) TYP.	Dominant Wavelength λ_D (nm) TYP.	Lens Appearance	Luminous Intensity (mcd) TYP.	Viewing Angle
SM1204RGB	Ultra-High Red	645	631	Water Clear	145	110°
	Green	523	525		1050	
	Blue	468	470		225	

Outline Dimensions



Standard tolerance: $\pm 0.25\text{mm}$ unless otherwise noted.

1. Soldering terminal may shift in x, y direction.



Unit: mm



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Absolute Maximum Ratings

$T_A = 25^\circ\text{C}$ unless otherwise noted

Item	Symbol	Maximum	Unit
Peak Forward Current ¹	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Derating Linear from 25°C	-	0.4	mA/ $^\circ\text{C}$
Operating Temperature Range	T_{opr}	-40 to 85	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 to 85	$^\circ\text{C}$

Notes: 1. 10% Duty Cycle, Pulse Width ≤ 0.1 msec.

2. Solder time less than 5 seconds at temperature extreme.

Handling: Reflow soldering must not be performed more than twice. Hand soldering must not be performed more than once. Sensitive to static electricity or surge voltage. Proper handling required to avoid ESD damage and impair LED reliability.

Electrical/Optical Characteristics

$(T_A = 25^\circ\text{C})$

Emitting Color	Forward Voltage (V)			Recommend Forward Current (mA)	Power Dissipation (mW)	Reverse Current (mA)	Dominant Wavelength (nm) ³			Luminous Intensity (mcd) ⁴			Viewing Angle $2\Theta 1/2$ (deg)
	MIN	TYP	MAX				TYP	MAX	MAX	MIN	TYP	MAX	
Ultra Red	1.4	1.9	2.4	20	78	30	623	631	640	115	145	180	110
Green	2.7	3.1	3.5	20	78	25	516	525	530	650	1050	1250	
Blue	2.7	3.1	3.5	20	100	25	463	470	475	180	225	285	

Notes: 2. The maximum reverse current (I_R) for all dies is $10 \mu\text{A}$.

3. Tolerance of Dominant Wavelength: -1nm of MIN & +1nm of MAX.

4. Tolerance of Luminous Intensity: $\pm 15\%$.

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Soldering Iron:

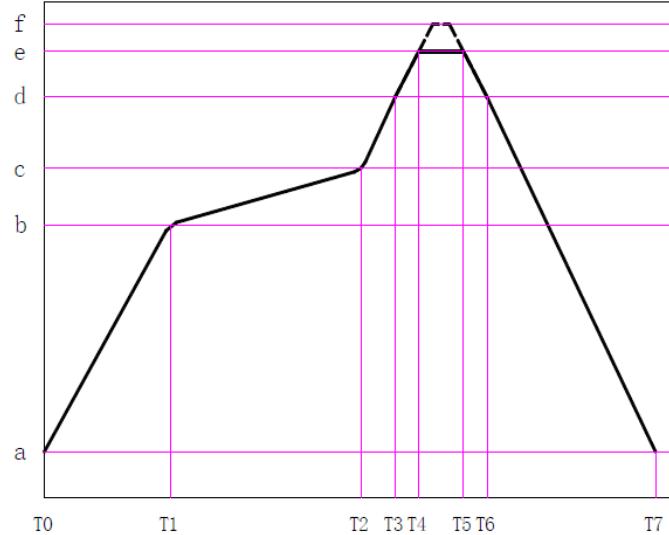
1. Temperature at tip of iron: 300°C Max. (25W Max)
2. Soldering Time: 5 ± 1 sec.

Recommended Reflow Temp/Time:

Please refer to the figure on the right:

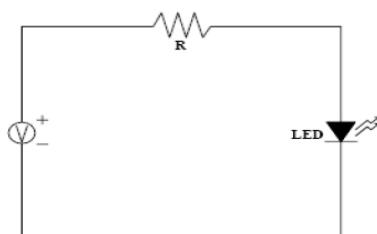
Temp.(°C)	Time(Sec)	
a 25	T0~T1	Max. 3°C/sec
b 150	T1~T2	90~130 sec
c 200	T2~T4	Max. 3°C/sec
d 220	T3~T6	Max. 50sec
e 245		
f Max. 260		Max. 10sec
	T5~T7	Max. -3°C/sec
Blet Speed		70~90 cm/min

Note: Will vary based on equipment and process used.



Precautions for Use:

- Over – current – proof
Customers must use apply resistors for protection otherwise a slight voltage shift will cause a large current change, causing burnout.

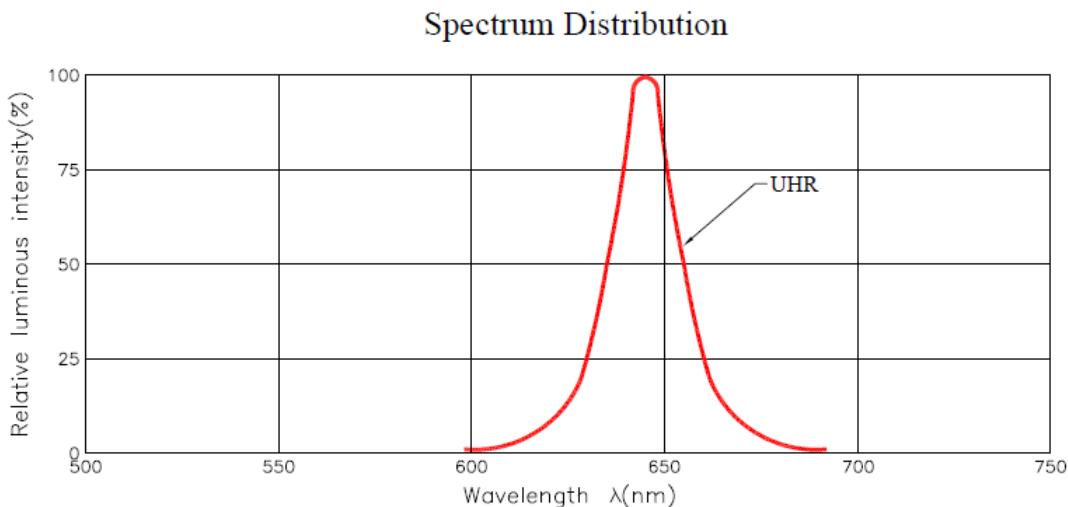
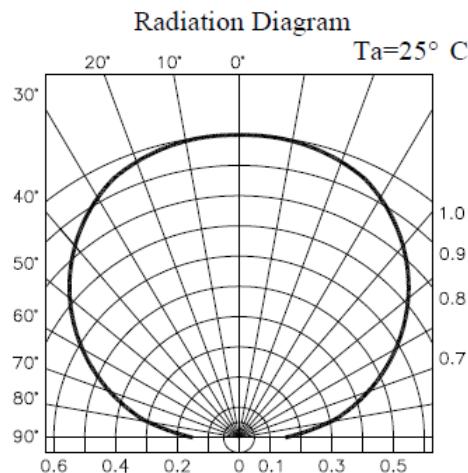
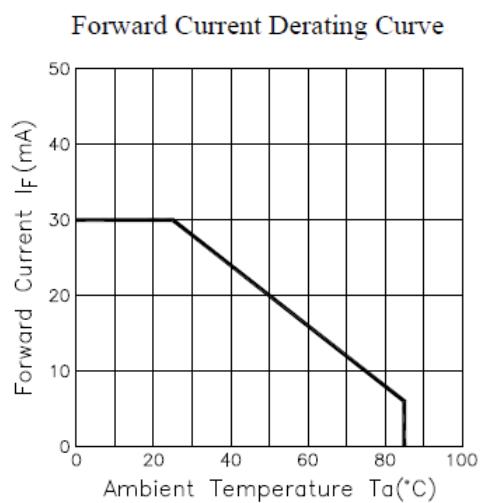
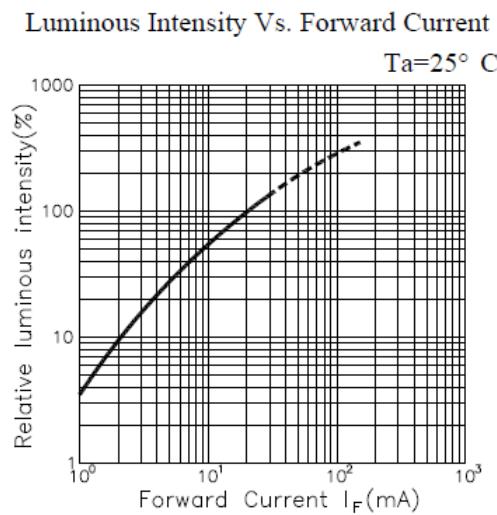
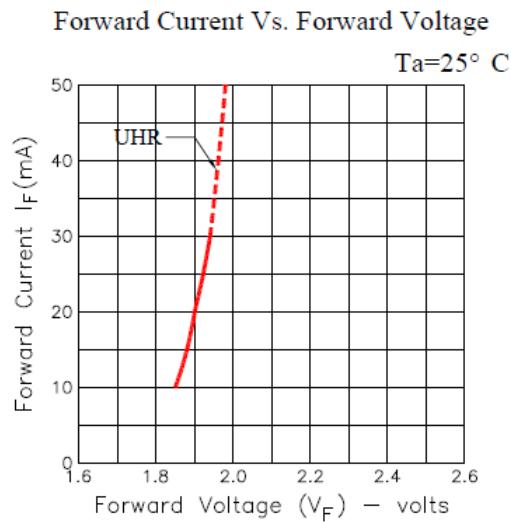


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Typical Electrical/Optical Parameters for Red

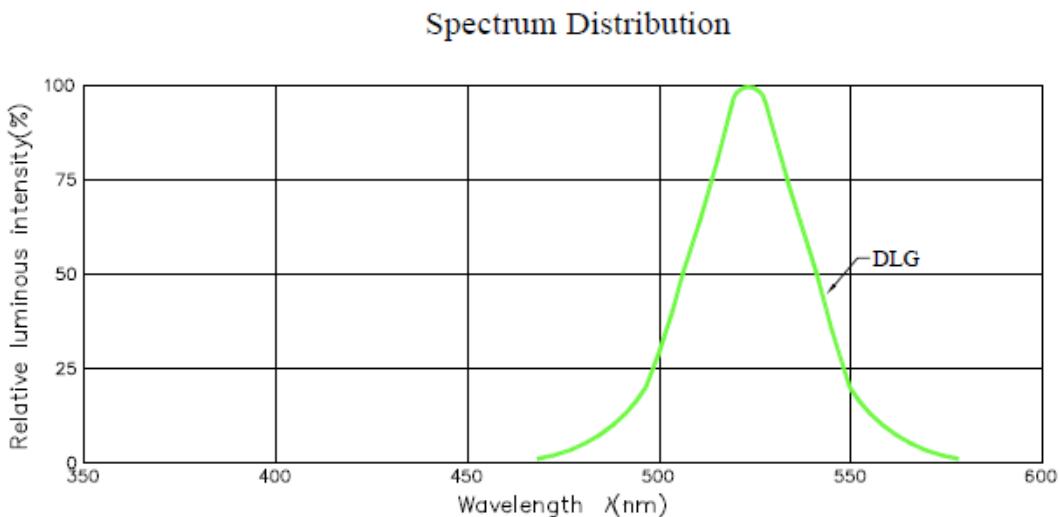
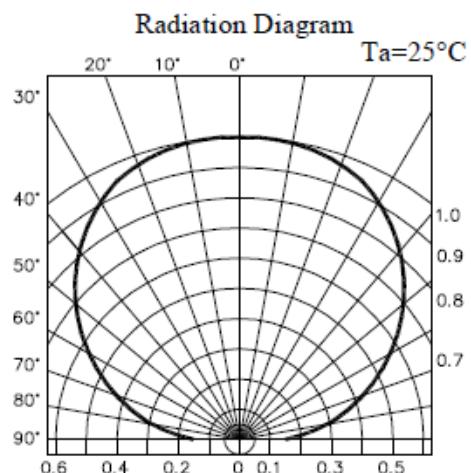
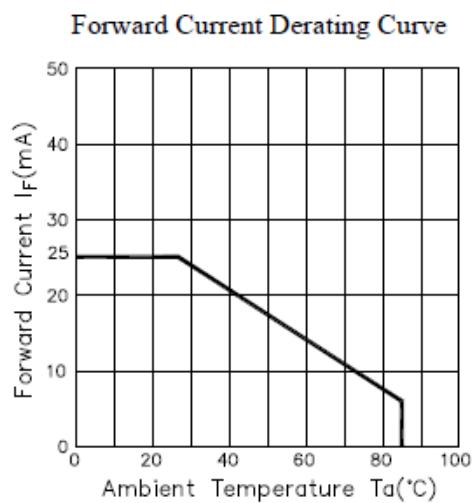
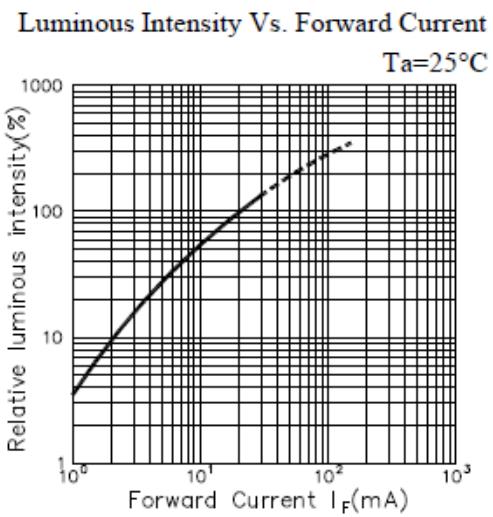
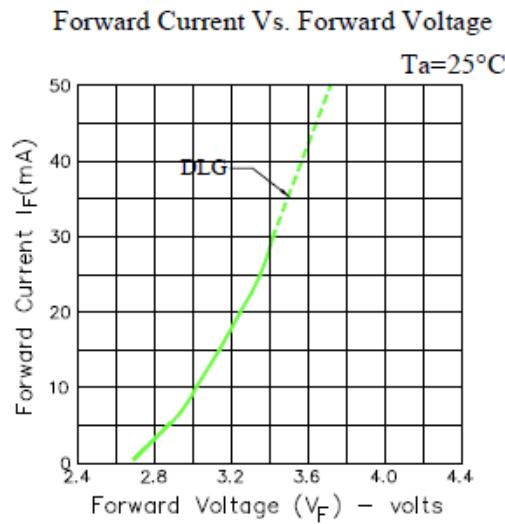


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Typical Electrical/Optical Parameters for Green

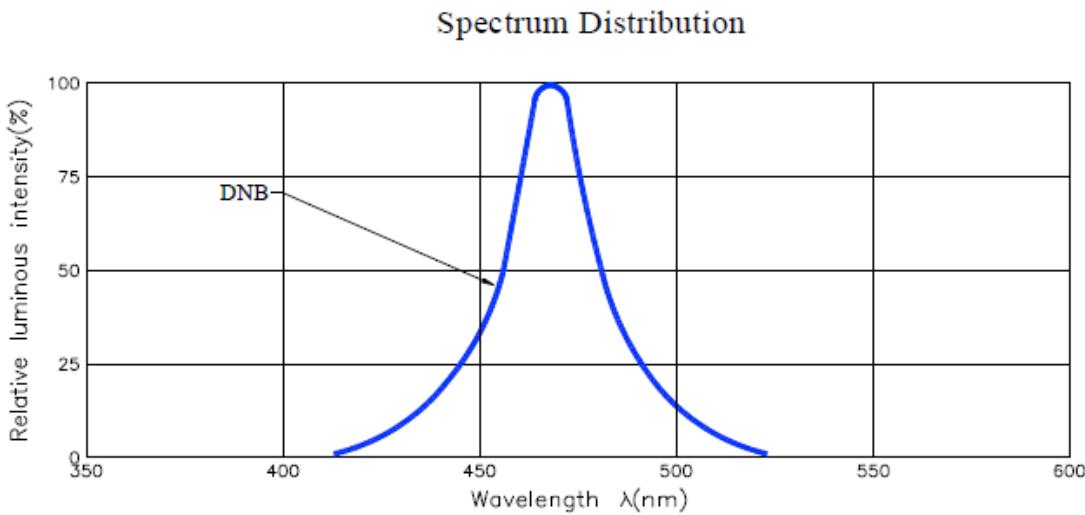
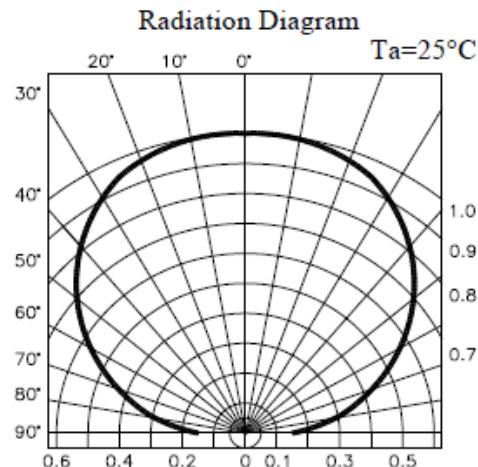
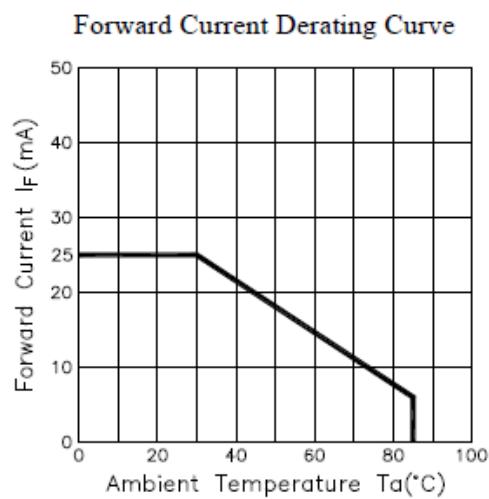
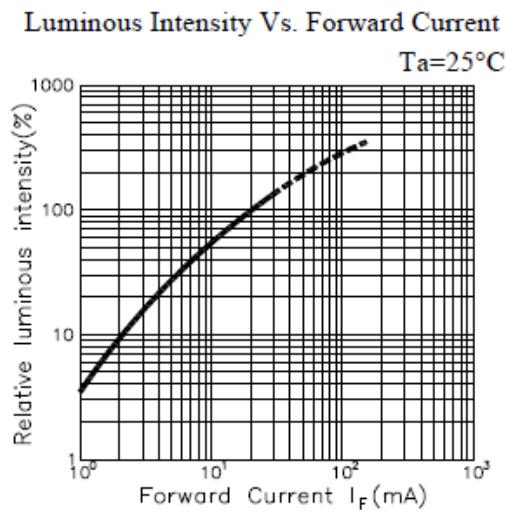
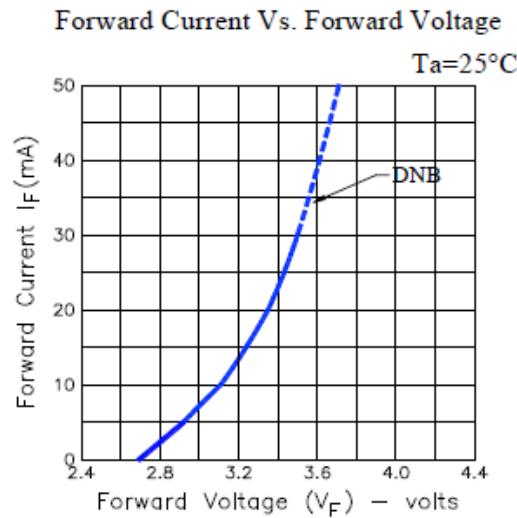


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Typical Electrical/Optical Parameters for Blue



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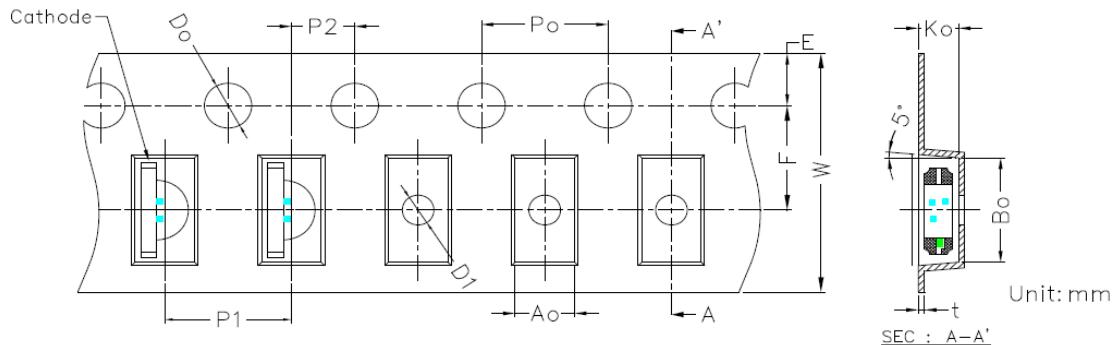
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Storage:

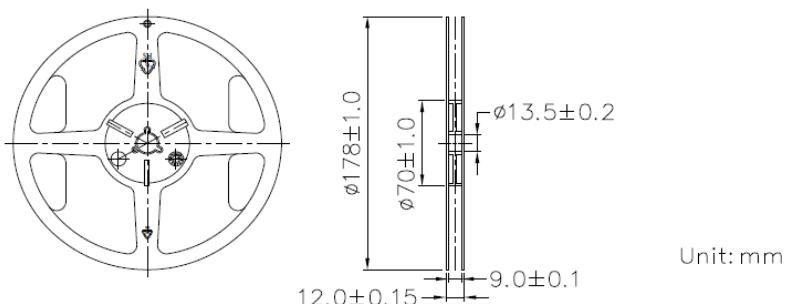
1. The storage temperature and relative humidity range are 5C ~ 30C, R.H. 60 % max
2. Once the package is opened, products should be used within 72 hrs. Otherwise, they should be kept in a damp-proof box with a desiccating agent. Considering the tape life, we suggest using product within 1 year of production date.
3. It's recommended to bake at 80C ± 5C for 24 hrs before soldering them when the package is unsealed for 72 hrs.

Tape Specification: 3000 pcs per Reel

Item	Packing Size												
	W	P1	E	F	Do	D1	Po	10Po	P2	Ao	Bo	Ko	t
Spec. (mm)	8.00	4.00	1.75	3.5	1.5	1.00	4.00	40.00	2.00	1.60	3.35	1.15	0.22
Tolerance (mm)	±0.20	±0.10	±0.10	±0.05	+0.10 -0.00	±0.05	±0.05	±0.20	±0.05	±0.10	±0.10	±0.10	±0.05



Dimensions of Reel and Packaging:

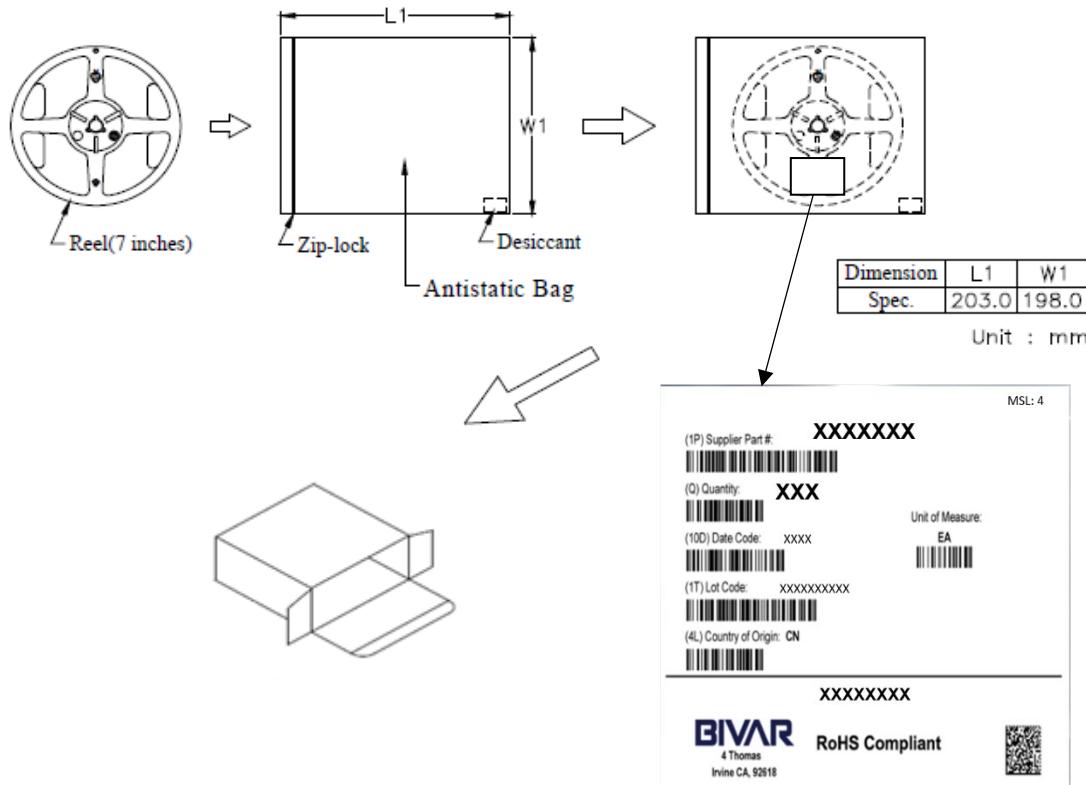


1 reel per bag.

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