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BRIGHTTEK (EUROPE) LIMITED

Brighten up The World With LED!



ISO/TS 16949:2009

BSI EM ISO 14001:2004

QC 900000 IECQ HSP98

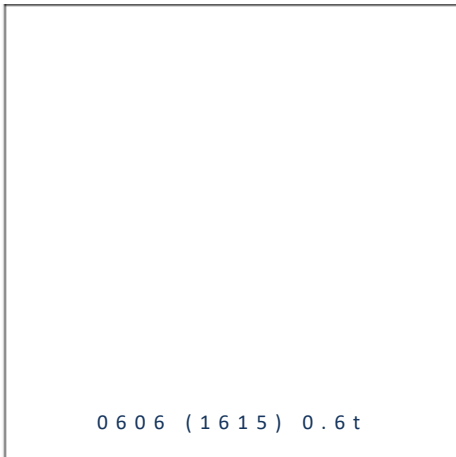
PRODUCT DATASHEET



- ▶ PCB / CHIP LED
- ▶ 0606 (1615) 0.6t
- ▶ Red 620nm / True Green 525nm

Release Date: 27 May 2022 Version: A1.1

NOD19S28



0606 (1615) 0.6t



FEATURES (Red/True Green):

- **Package:** PCB / CHIP Top View SMT Package
- **Forward Current:** 20/20mA*
- **Forward Voltage (typ.):** 2.0/3.2V
- **Luminous Flux (typ.):** 150/400mcd@20mA
- **Colour:** Red/ True Green
- **CCT/Wavelength:** 620/525nm
- **Viewing angle:** 140/140°
- **Materials:**
 - Die: AlGaInP/InGaN
 - Resin: Epoxy (Water Clear)
- **Operating Temperature:** -40~+80°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
 - Forward voltage
 - Luminous intensity
 - Dominant Wavelength
- **Soldering methods:** Reflow soldering
- **Preconditioning:** MSL 3 according to JEDEC
- **Packing:** 8mm tape with max. 4000pcs/reel, ø180mm (7'')

* in order of Red/Green

APPLICATIONS:

- Switch Light
- 3C Application
- Decoration Lighting
- Signal Lighting

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I _F	30/30*	mA
Pulse Forward Current (duty 1/10; width 0.1ms)	I _{MAX}	100/100	mA
Reverse Voltage	V _R	5	V
Reverse Current @5V	I _R	10	μA
Junction Temperature	T _j	110	°C
Soldering Temperature	T _{SOL}	260	°C
Operating Temperature	T _{OPR}	-40~+80	°C
Storage Temperature	T _{STG}	-40~+100	°C

1. * In the order of Red/Green.

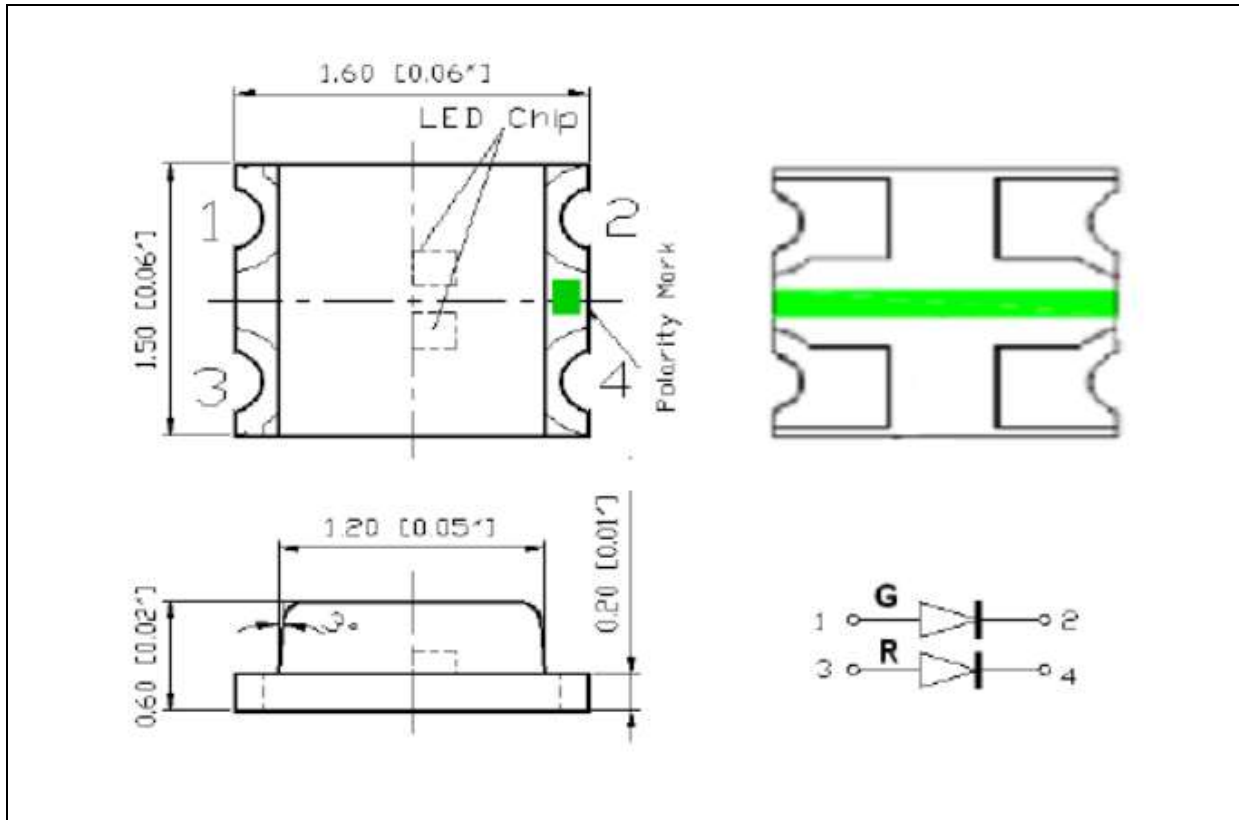
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Red - Forward Voltage	V _F	1.6	---	2.5	V	I _F =20mA
Red - Luminous Intensity	I _v	80	150	---	mcd	I _F =20mA
Red - Wavelength	λ _D	615	---	630	nm	I _F =20mA
Special Half Bandwidth	Δλ	---	20	---	nm	I _F =20mA
Green - Forward Voltage	V _F	2.8	---	3.7	V	I _F =20mA
Green - Luminous Intensity	I _v	250	400	---	mcd	I _F =20mA
Green - Wavelength	W _P	520	---	535	nm	I _F =20mA
Special Half Bandwidth	Δλ	---	30	---	nm	I _F =20mA
Viewing Angle	2θ _{1/2}	---	140	---	deg	I _F =20mA

1. Luminous intensity (I_v) ±10%, Forward Voltage (V_F) ±0.1V, Viewing angle(2θ_{1/2}) ±5%, Wavelength (λ) ±1nm

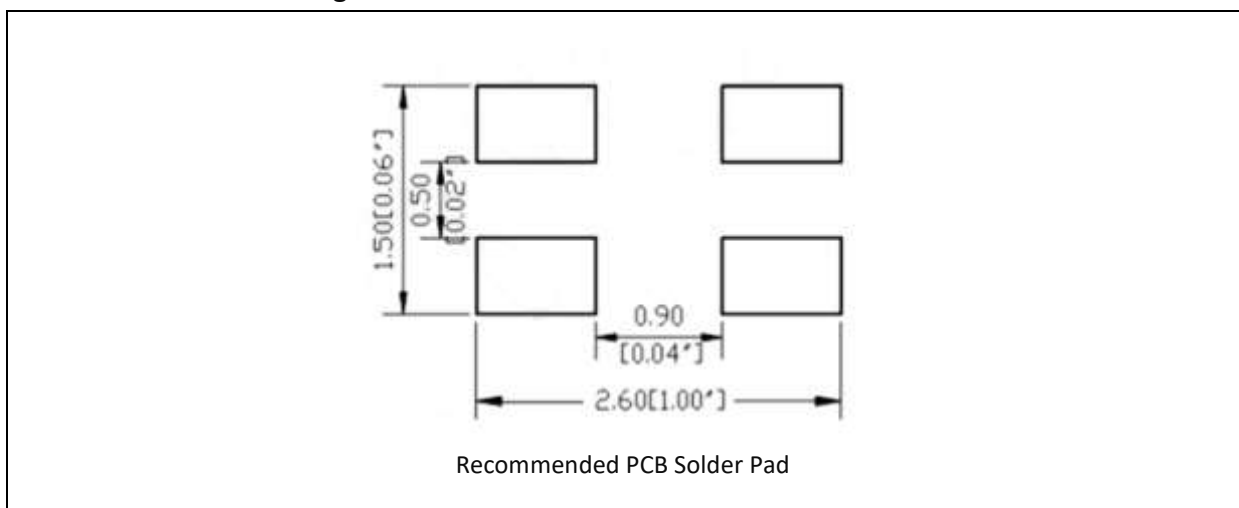
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance $\pm 0.1\text{mm}$, unless otherwise noted.

Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance $\pm 0.1\text{mm}$ with angle tolerance $\pm 0.5^\circ$.

BINNING GROUPS:

 Forward Voltage Classifications ($I_F = 20\text{mA}$):

Code		Min.	Max.	Unit
Red	□	1.7	2.5	
Green	f	2.8	3.1	V
	g	3.1	3.4	
	h	3.4	3.7	

 Luminous Intensity Classifications ($I_F = 20\text{mA}$):

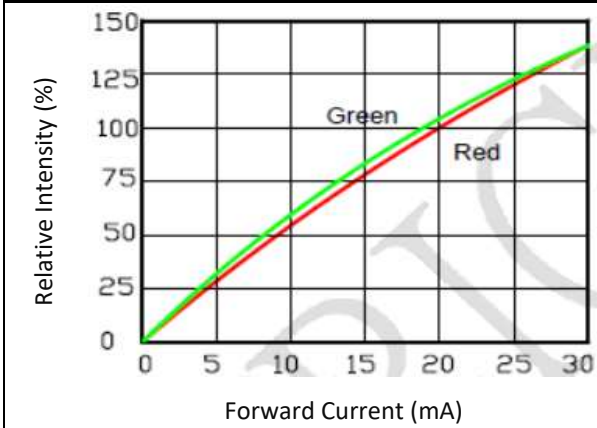
Code		Min.	Max.	Unit
Red	I	80	100	mcd
	J	100	125	
	K	125	160	
	L	160	200	
	M	200	250	
Green	N	250	320	mcd
	O	320	400	
	P	400	500	
	Q	500	630	
	R	630	800	

 Wavelength Classifications ($I_F = 20\text{mA}$):

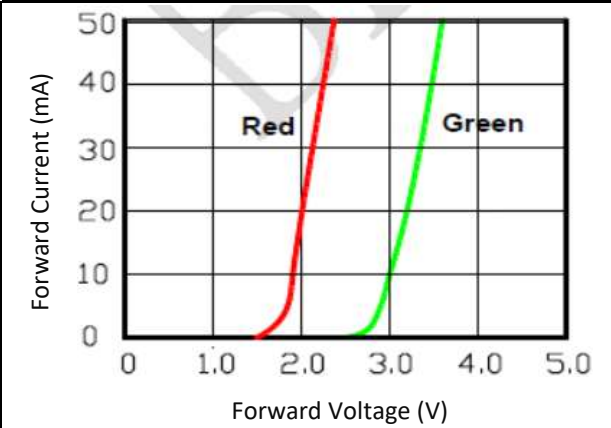
Code		Min.	Max.	Unit
Red	s	615	620	nm
	t	620	635	
	u	635	630	
Green	U	520	522.5	nm
	V	522.5	525	
	W	525	527.5	
	X	527.5	530	
	Y	530	532.5	
	Z	532.5	535	

ELECTRO-OPTICAL CHARACTERISTICS:

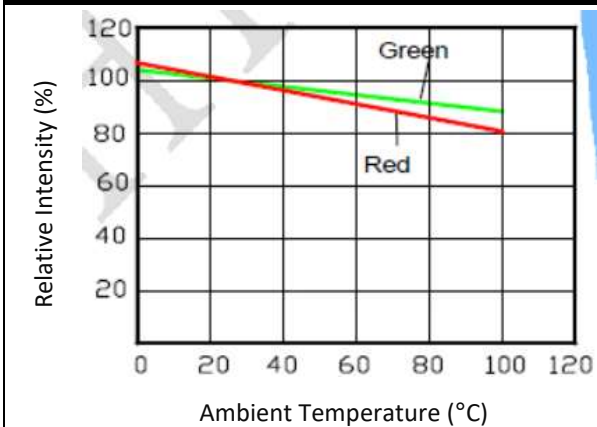
Relative Intensity v.s. Forward Current



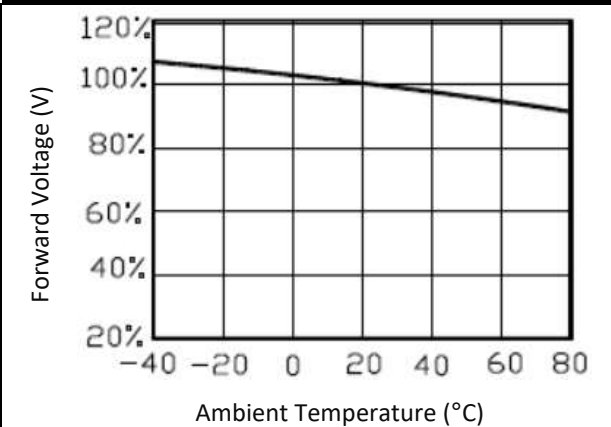
Forward Current v.s. Forward Voltage



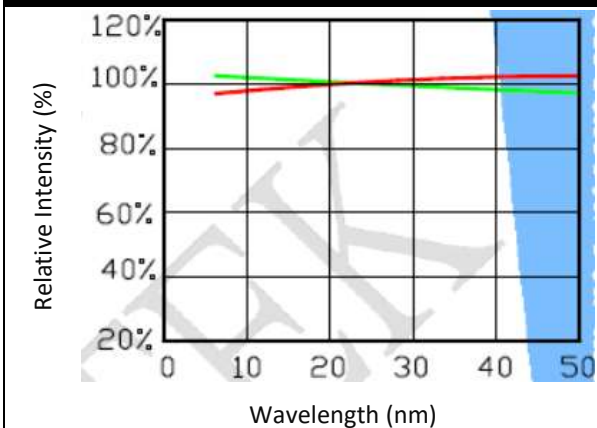
Relative Intensity v.s. Ambient Temperature



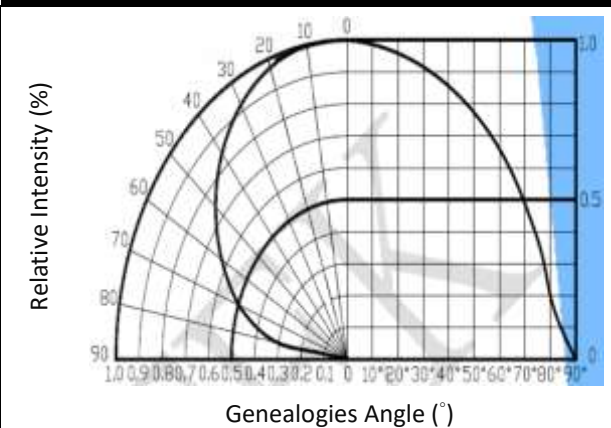
Forward Voltage v.s. Ambient Temperature

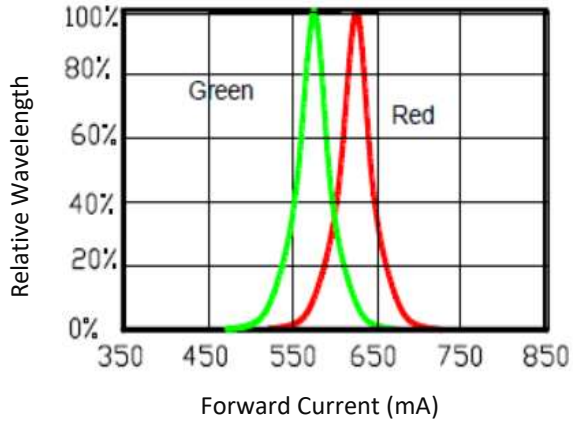
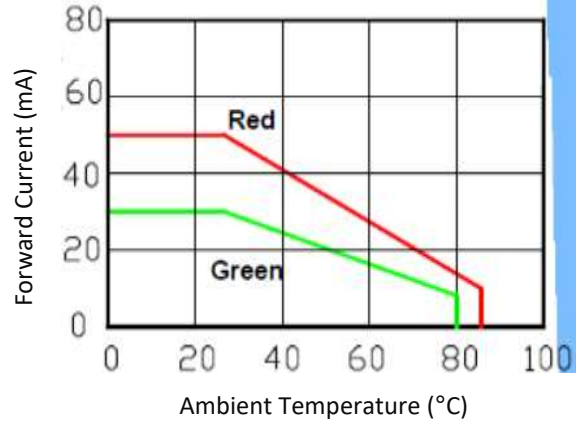


Relative Spectral Distribution



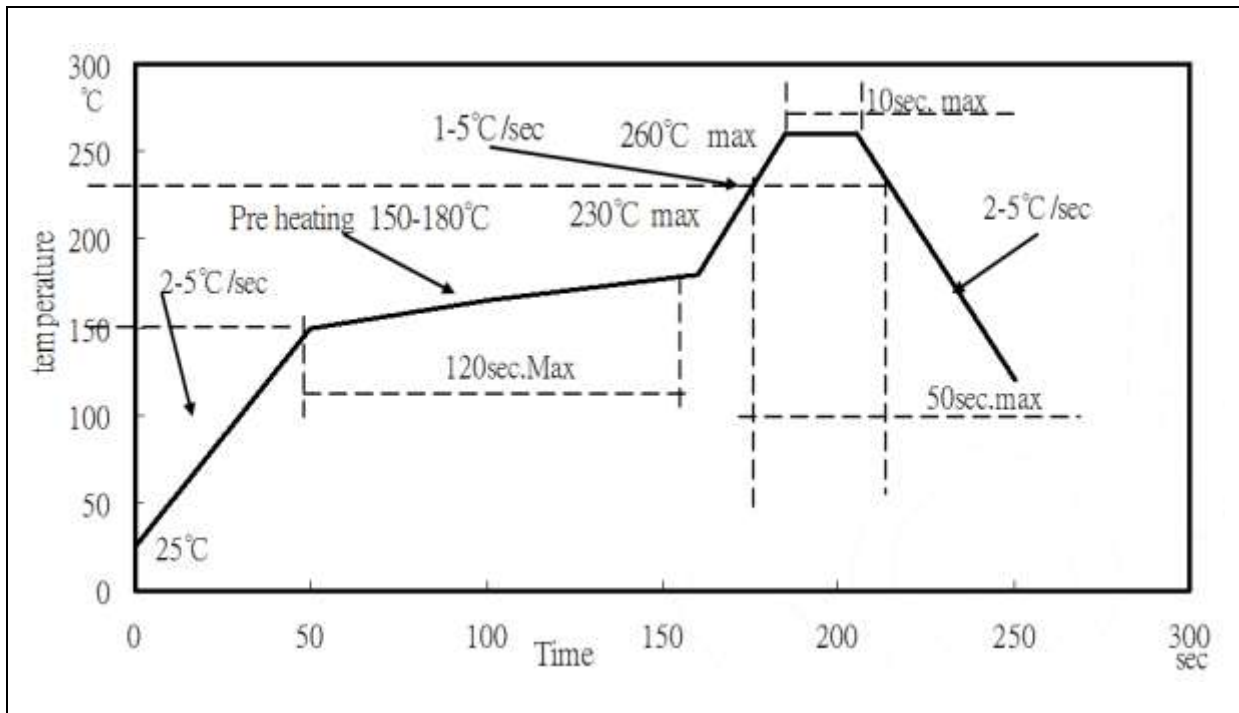
Directive Radiation



ELECTRO-OPTICAL CHARACTERISTICS:
Wavelength Shift v.s. Forward Current

Maximum Current v.s. Ambient Temperature


RECOMMENDED SOLDERING PROFILE:

Lead-free Solder:

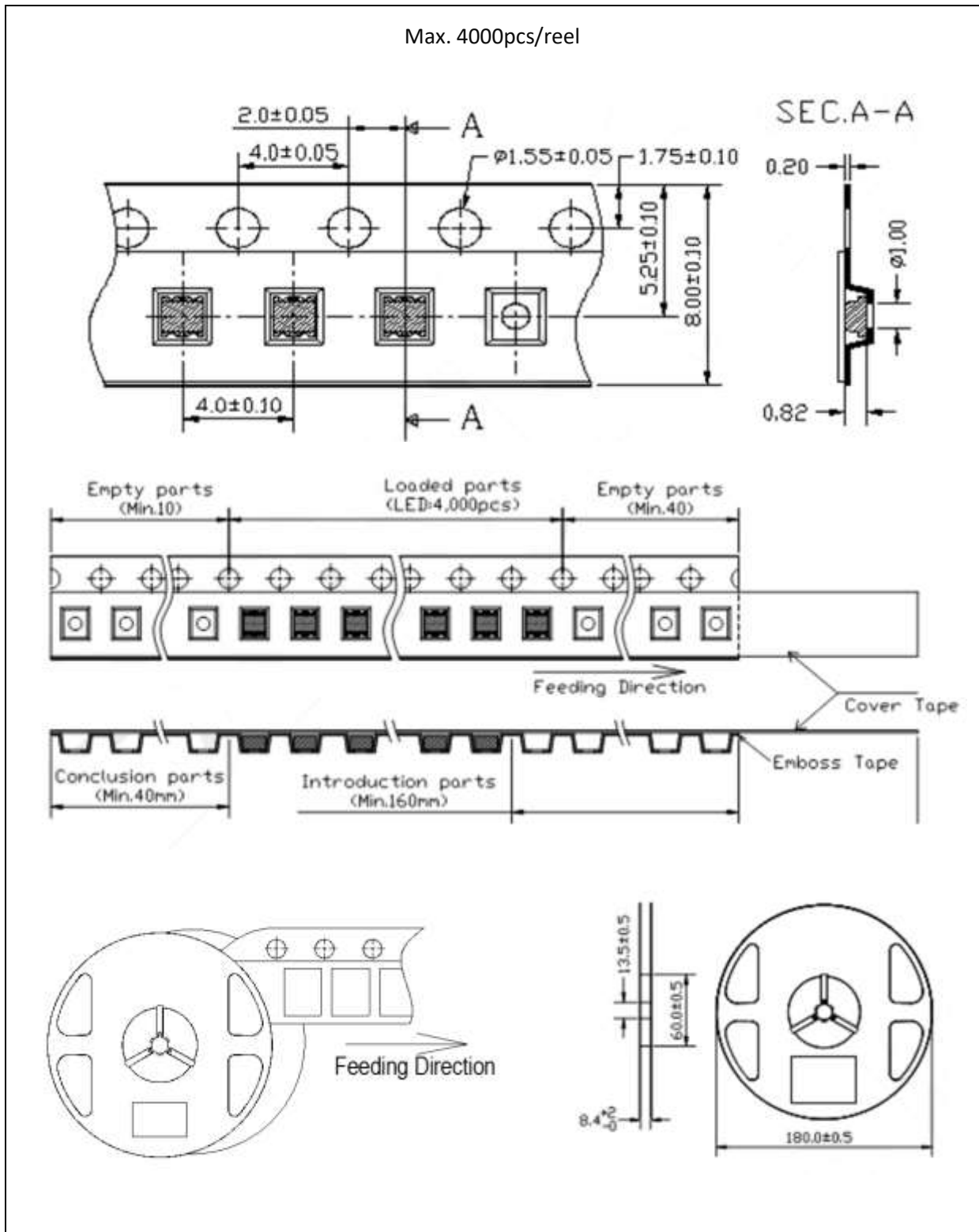


Note:

1. Maximum reflow soldering: 1 time.
2. Recommended reflow temperature is 240°C; the maximum soldering temperature should be limited to 260°C.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

PACKING SPECIFICATION:

Reel Dimension:



PRECAUTIONS OF USE:

Storage:

It is recommended to store the products in the following conditions:

- Humidity: 60% R.H. Max.
- Temperature: 5°C~30°C (41°F ~86°F).

Shelf life in sealed bag: 12 months at 5°C~30°C and <60% R.H.

Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp-proof box with desiccating agent <10% R.H. and apply baking before use.

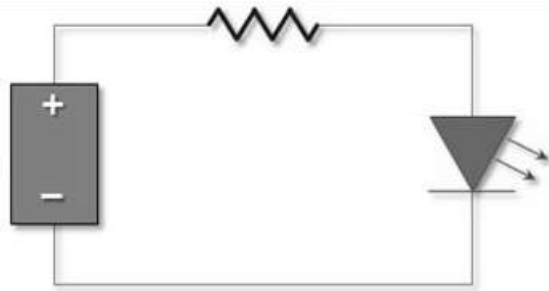
Baking:

It is recommended to bake the LED before soldering if the pack has been unsealed for longer than 24hrs. The suggested baking conditions are as followings:

- 60±3°C x 24hrs and <5%RH, taped / reel package.

It's normal to see slight color fading of carrier (light Red) after baking in process.

Testing Circuit:



Must apply resistor(s) for protection (over current proof).

Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED carrier / package. Avoid putting any stress force directly on to the LED lens.

ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling the LED all time. All devices, equipment, machinery, work tables, and storage racks must be properly grounded.

In the events of manual working in process, make sure the devices are well protected from ESD at any time.

REVISION RECORD:

Version	Date	Summary of Revision
A1.0	20/05/2016	Datasheet set-up.
A1.1	27/05/2022	New datasheet format.