



BRIGHTTEK
BRIGHTTEK (EUROPE) LIMITED

Brighten Up The World With LED!



ISO/TS 16949:2009



BS EN ISO 14001:2004



QC 080000 IECQ HSPM

PRODUCT DATASHEET



- ▶ Ceramic High Power
- ▶ 3535 1.1t Series
- ▶ Cool White 6000K / Yellow 595nm

NOD52S78



Release Date: 11 September 2020 Version: A1.0



3535 1.1t Series

RoHS Compliant



FEATURES:

- **Package:** Ceramic SMT Package with Silicon Lens
- **Forward Current:** 200/200mA*
- **Forward Voltage (typ.):** 3.2/2.2V
- **Luminous Flux (typ.):** 60/15lm@200mA
- **Colour:** Cool White / Yellow
- **CCT/Wavelength:** 5000-7000K/590-595nm
- **Viewing angle:** 130°
- **Materials:**
 - Die: InGaN/AlGaInP
 - Resin: Silicon (Yellow Diffused/Water Clear)
 - L/T Finish: Ag plated
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
 - Forward Voltage
 - Luminous Flux
 - CIE Chromaticity/Dominant Wavelength
- **Soldering methods:** IR Reflow Soldering
- **Preconditioning:** MSL3 according to J-STD020
- **Packing:** 12mm tape with min.100pcs/reel, ø180mm (7")

* in order of Cool White / Yellow

APPLICATIONS:

- Portable Lighting
- Outdoor Lighting
- Commercial Lighting
- Indoor Lighting
- Industrial Lighting
- Street and Tunnel Lighting

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I _F	300	mA
Pulse Forward Current, D=0.01s Duty 1/10	I _{PF}	350	mA
Reverse Current @5V	I _R	10	μA
Reverse Voltage	V _R	5	V
Junction Temperature	T _J	115	°C
Operating Temperature	T _{OPR}	-40~+85	°C
Storage Temperature	T _{STG}	-40~+100	°C
Soldering Temperature	T _{SOL}	260	°C
Thermal Resistance - Junction to Solder Point	R _{th}	23	°C/W

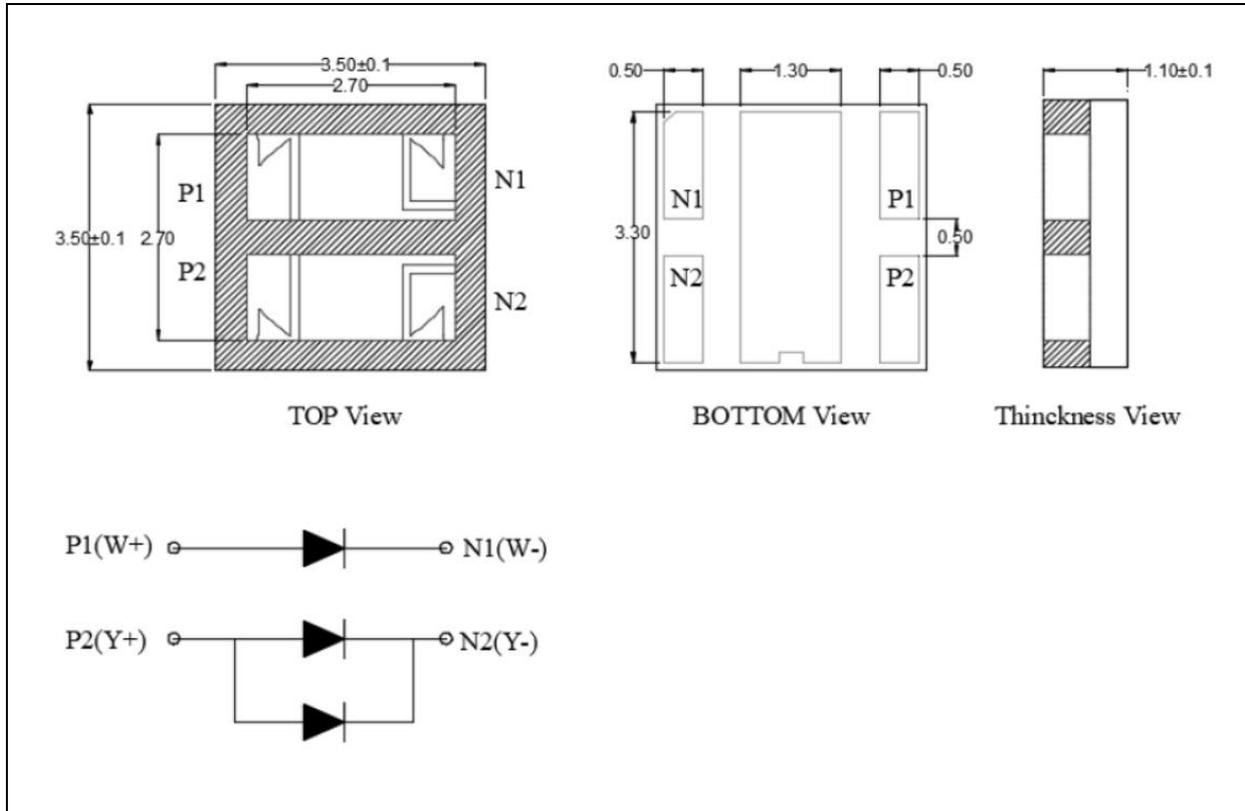
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V _F	3.0/2.0*	3.2/2.2	3.5/2.4	V	I _F =200mA
Luminous Flux	Φ _v	50/10	---	70/20	lm	I _F =200mA
Colour Temperature	CCT	5000	6000	7000	K	I _F =200mA
Dominant Wavelength	λ _d	590	---	595	nm	I _F =200mA
Viewing Angle	2θ _{1/2}	---	130	---	deg	I _F =200mA

1. Luminous flux (Φ_v) ±10%, Forward Voltage (V_F) ±0.1V, Viewing angle(2θ_{1/2}) ±10°
2. * in order of Cool White / Yellow

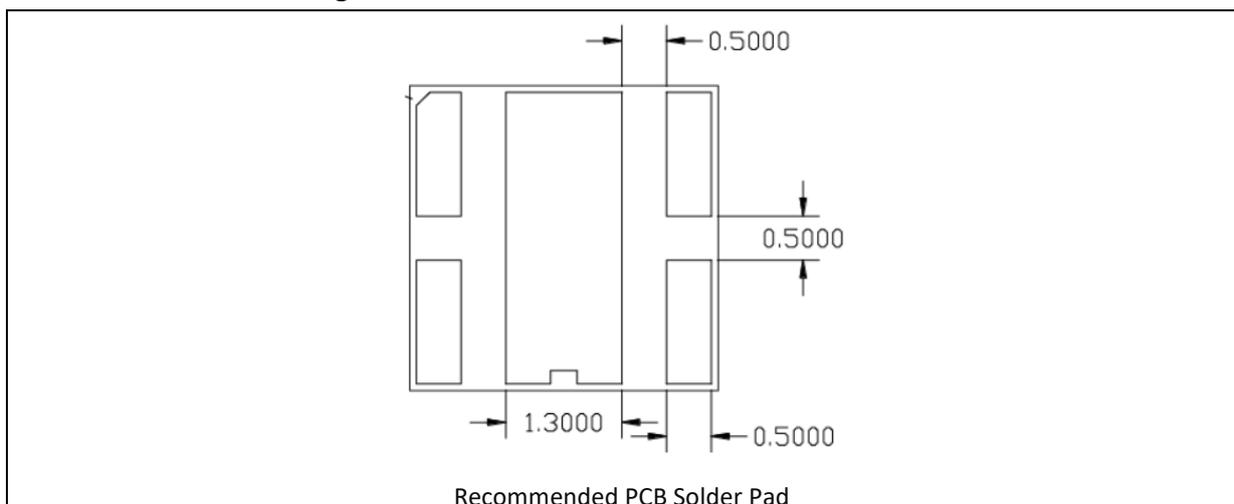
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance ± 0.13 mm, unless otherwise noted.

Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance ± 0.12 mm with angle tolerance $\pm 0.5^\circ$.

BINNING GROUPS:

 Forward Voltage Classifications ($I_F = 200\text{mA}$):

Code		Min.	Max.	Unit
V	Cool White	3.0	3.5	V
	Yellow	2.0	2.4	

 Luminous Flux Classifications ($I_F = 200\text{mA}$):

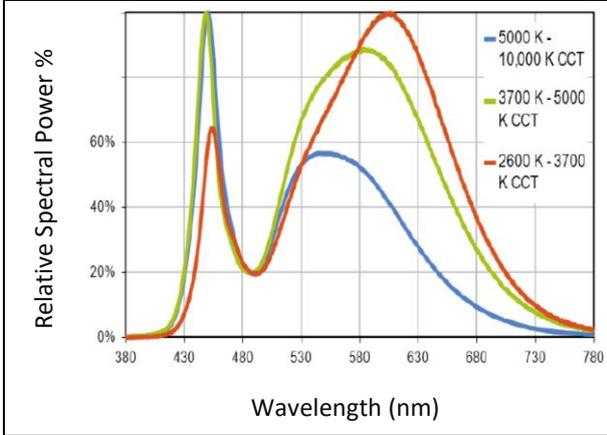
Code		Min.	Max.	Unit
IV	Cool White	50	70	lm
	Yellow	10	20	

 CCT/Wavelength ($I_F = 200\text{mA}$):

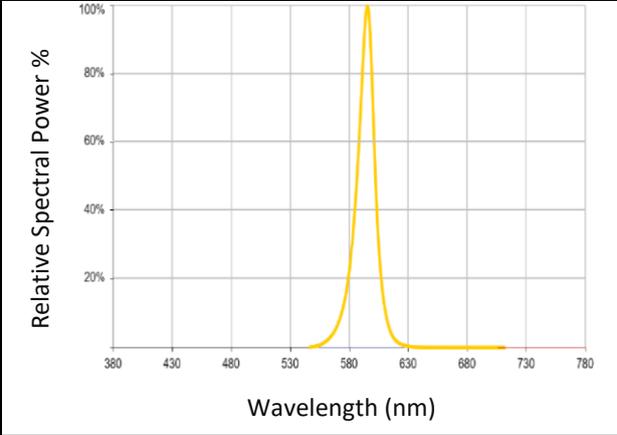
Code		Min.	Max.	Unit
CCT	W5	5000	5500	K
	W6	5500	6500	
	W7	6500	7000	
WL	Y	590	595	nm

ELECTRO-OPTICAL CHARACTERISTICS:

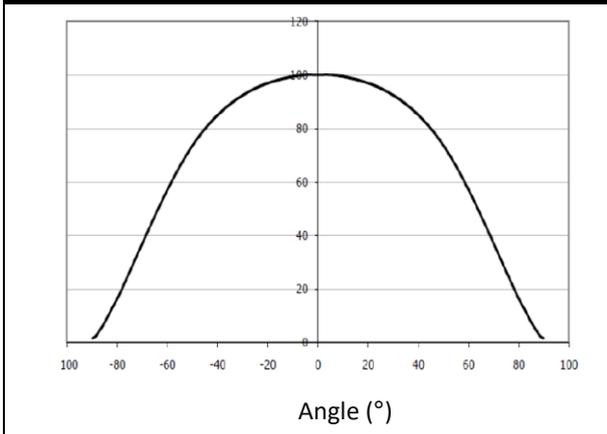
Relative Spectral Power v.s. Wavelength



Relative Spectral Power v.s. Wavelength

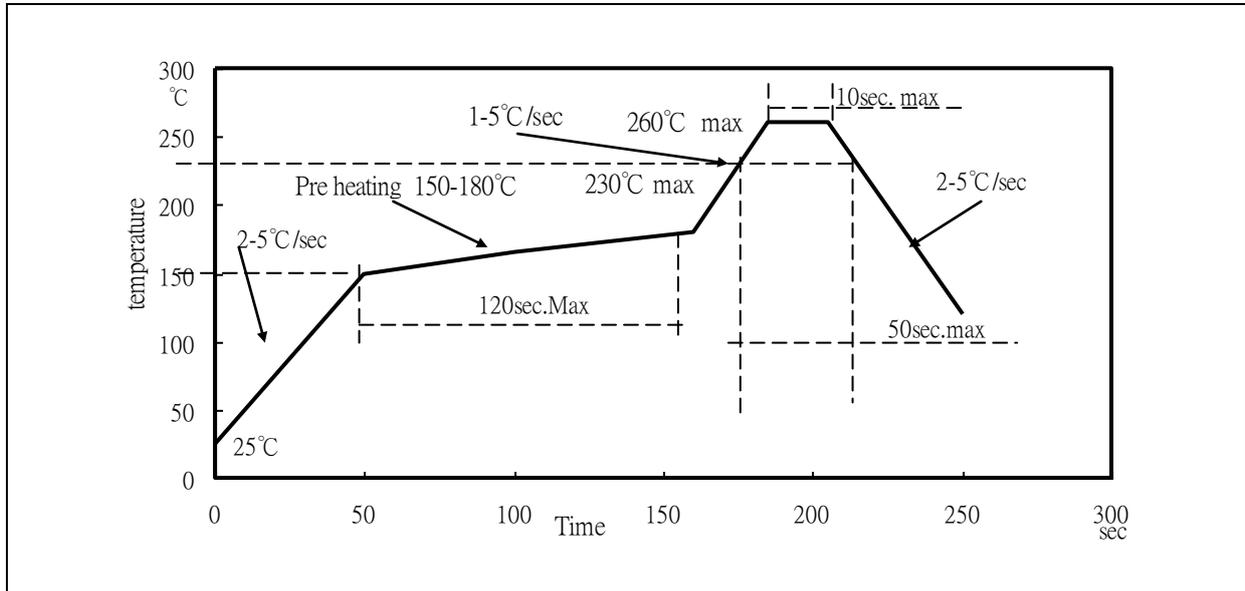


Directive Radiation



RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:

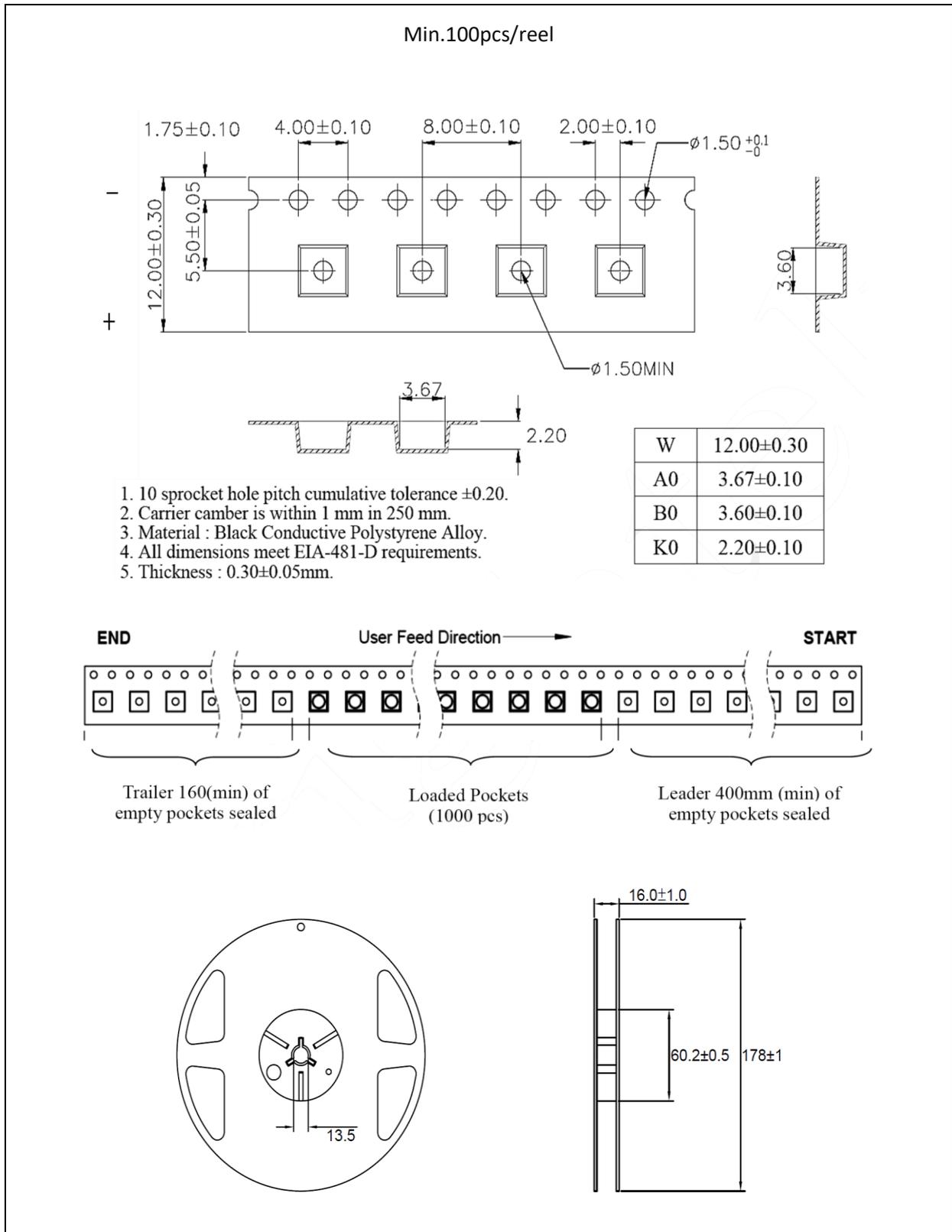


Note:

1. Maximum reflow soldering: 2 times.
2. The 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 month 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 and apply baking at 60°C±5°C for 15hrs before use.

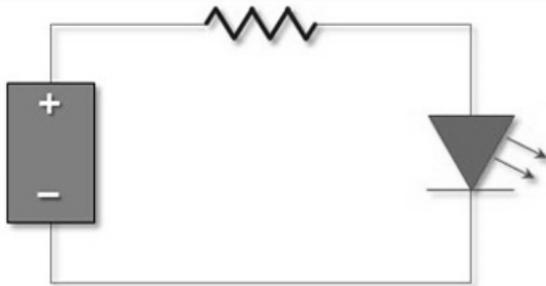
Baking:

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 15hrs and <5%RH, taped / reel package.

It's normal to see slight color fading of carrier (light yellow) 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	11/09/2020	Datasheet set-up.