



BRIGHTTEK
BRIGHTTEK (EUROPE) LIMITED

Brighten up The World With LED!



ISO/TS 16949:2009



BSI
 ISO 14001:2004



QC 800000 IECQ HSP98

PRODUCT DATASHEET

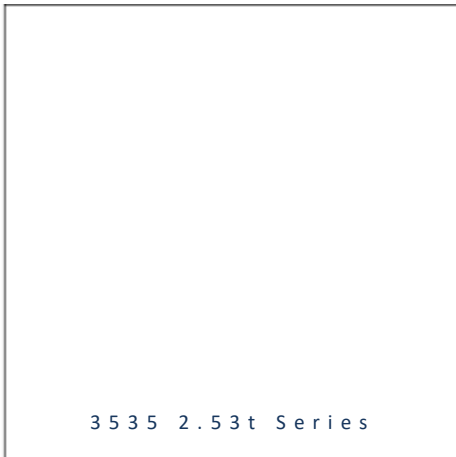


- ▶ Ceramic High Power
- ▶ 3535 Series 2.53t
- ▶ Infrared (850nm)

NOF39S76



Release Date: 15 August 2023 | Version: A1.1



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3535 2.53t Series



FEATURES:

- **Package:** Ceramic SMT Package with Silicon Lens
- **Forward Current (typ.):** 1A
- **Forward Voltage (typ.):** 3.2V
- **Radiant Intensity(typ.):** 520mW/sr@1A
- **Colour:** Infrared (IR)
- **Peak Wavelength (typ.):** 850nm
- **Viewing Angle:** 90°
- **Materials:**
 - Die: AlGaAs
 - Resin: Silicon (Water Clear)
 - L/F: Ceramic AlN
- **Operating Temperature:** -40~+125°C
- **Storage Temperature:** -40~+125°C
- **Grouping Parameters:**
 - Forward Voltage
 - Radiant Intensity
 - Peak Wavelength
- **Soldering Methods:** IR Reflow
- **MSL Level:** according to J-STD020 Level 3
- **Packing:** 12mm tape with max.500pcs/reel, ø180mm (7")

APPLICATIONS:

- Security Camera
- CCD Camera
- Motion Detection
- Night Viewer
- Switch Sensor
- Smoke Detector

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I _F	1000	mA
Pulse Forward Current Duty 1/10@10KHz	I _{PF}	2000	mA
Reverse Current @5V	I _R	10	μA
Power Consumption	P _{tot}	3.7	W
Electrostatic Discharge (HBM) 100pf/1.5KΩ	ESD	2000	V
Electrostatic Discharge (MM) 200pf/0KΩ		150	V
Operating Temperature	T _{OPR}	-40~+125	°C
Storage Temperature	T _{STG}	-40~+125	°C
LED Junction Temperature	T _j	145	°C
Thermal Resistance	R _{th}	8	°C/W
Soldering Temperature	T _P	260	°C

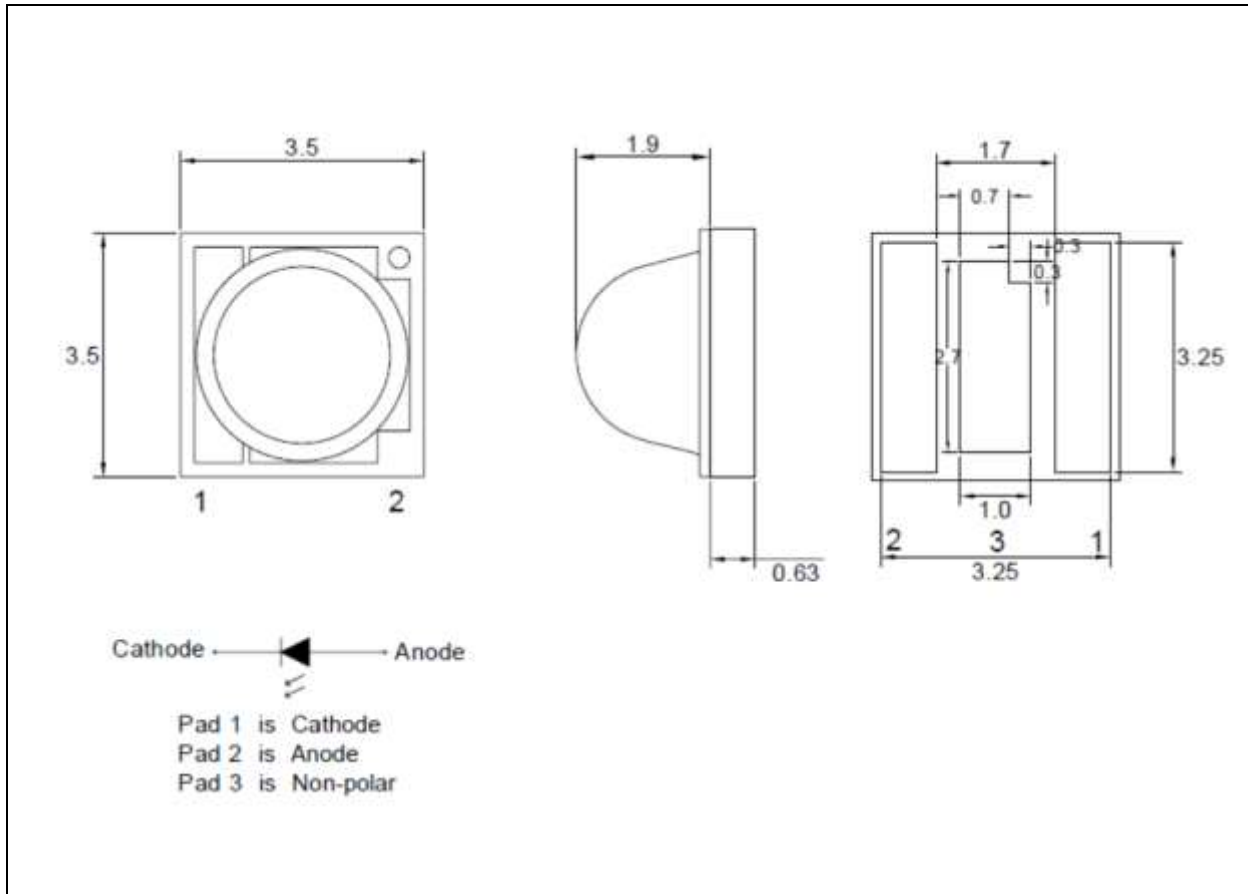
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V _F	2.8	---	3.7	V	I _F =1A
Radiant Intensity	I _e	360	520	---	mW/sr	I _F =1A
Radiant Flux	φ _e	---	1250	---	mW	I _F =1A
Peak Wavelength	λ _P	---	850	---	nm	I _F =1A
Spectral Half Width	Δλ	---	40	---	nm	I _F =1A
Viewing Angle	2θ _{1/2}	---	90	---	deg	I _F =1A

1. Radiant Intensity ±15%, Forward Voltage ±0.1V

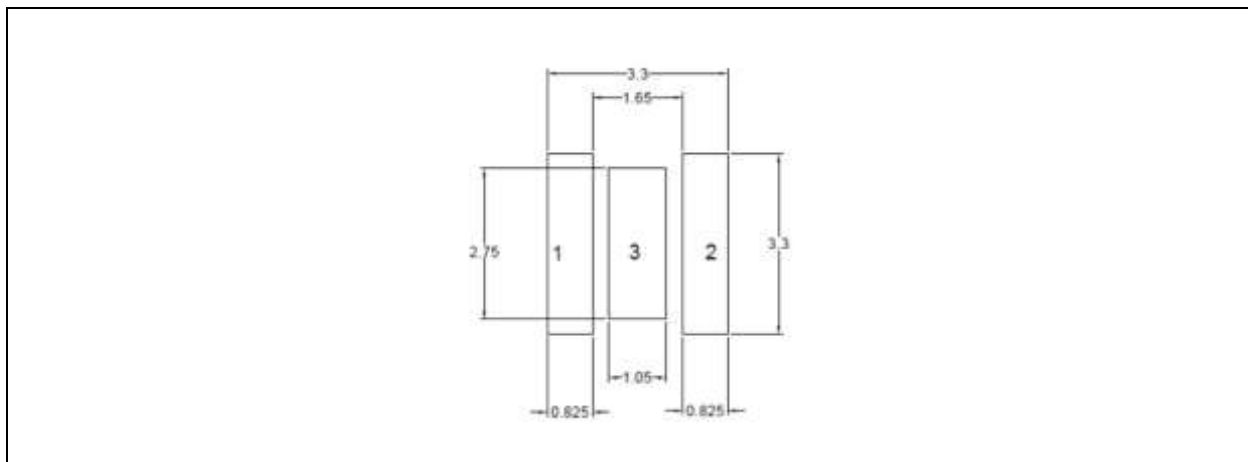
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance $\pm 0.2\text{mm}$, unless otherwise noted.

Recommended Soldering Pad Dimension:



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

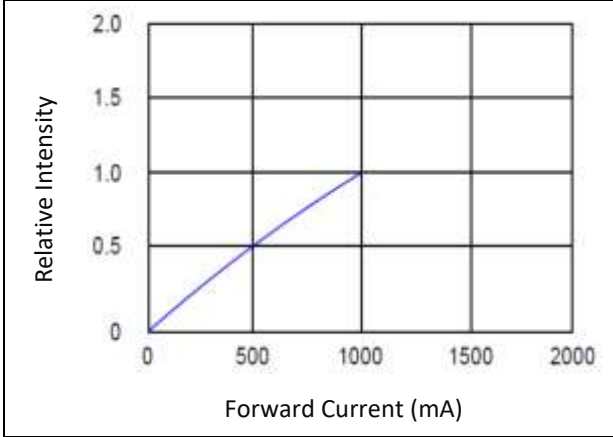
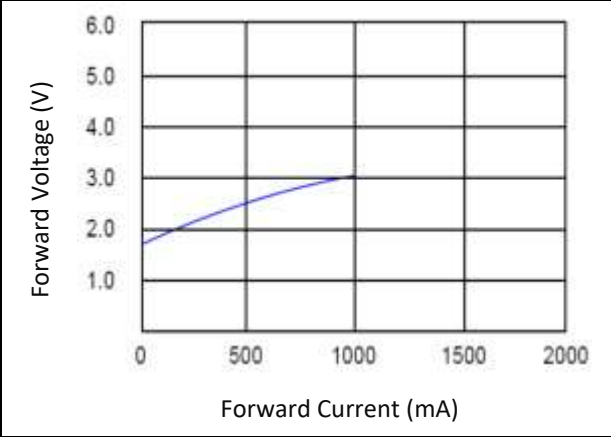
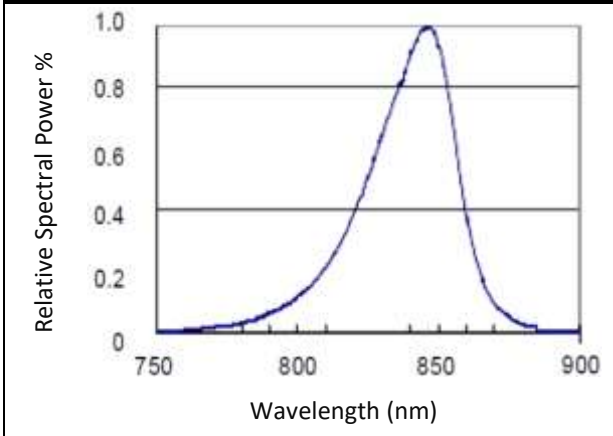
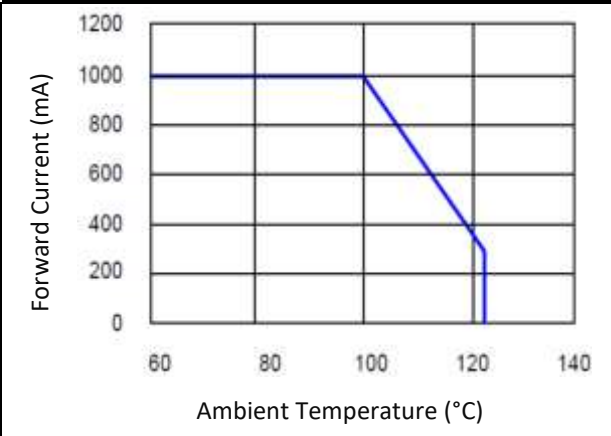
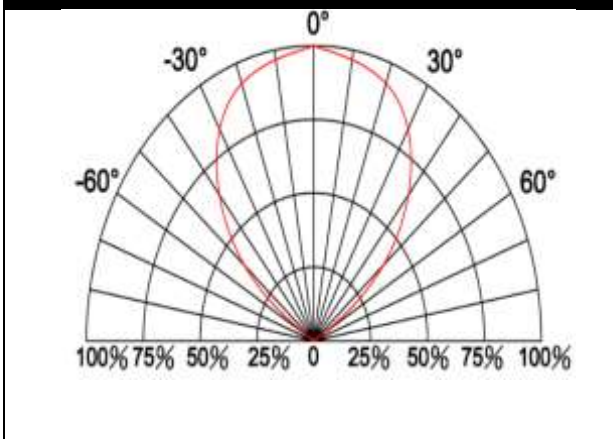
BINNING GROUPS:

 Forward Voltage Classifications ($I_F = 1A$):

Code	Min.	Max.	Unit
1	2.8	3.1	V
2	3.1	3.4	
3	3.4	3.7	

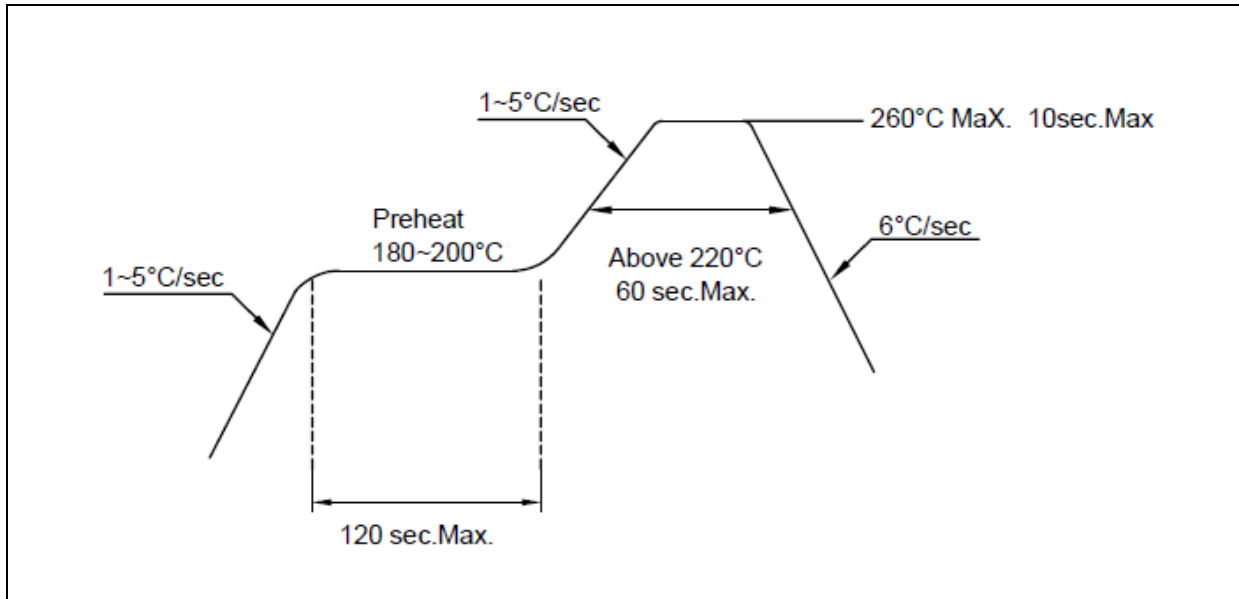
 Radiant Intensity Classifications ($I_F = 1A$):

Code	Min.	Max.	Unit
E5	360	430	mW/sr
E6	430	520	
E7	520	620	
E8	620	740	

ELECTRO-OPTICAL CHARACTERISTICS:
Relative Intensity v.s. Forward Current

Forward Current v.s. Forward Voltage

Relative Spectral Power v.s. Wavelength

Max. Driving Current v.s. Ambient Temperature

Directive Radiation


RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:

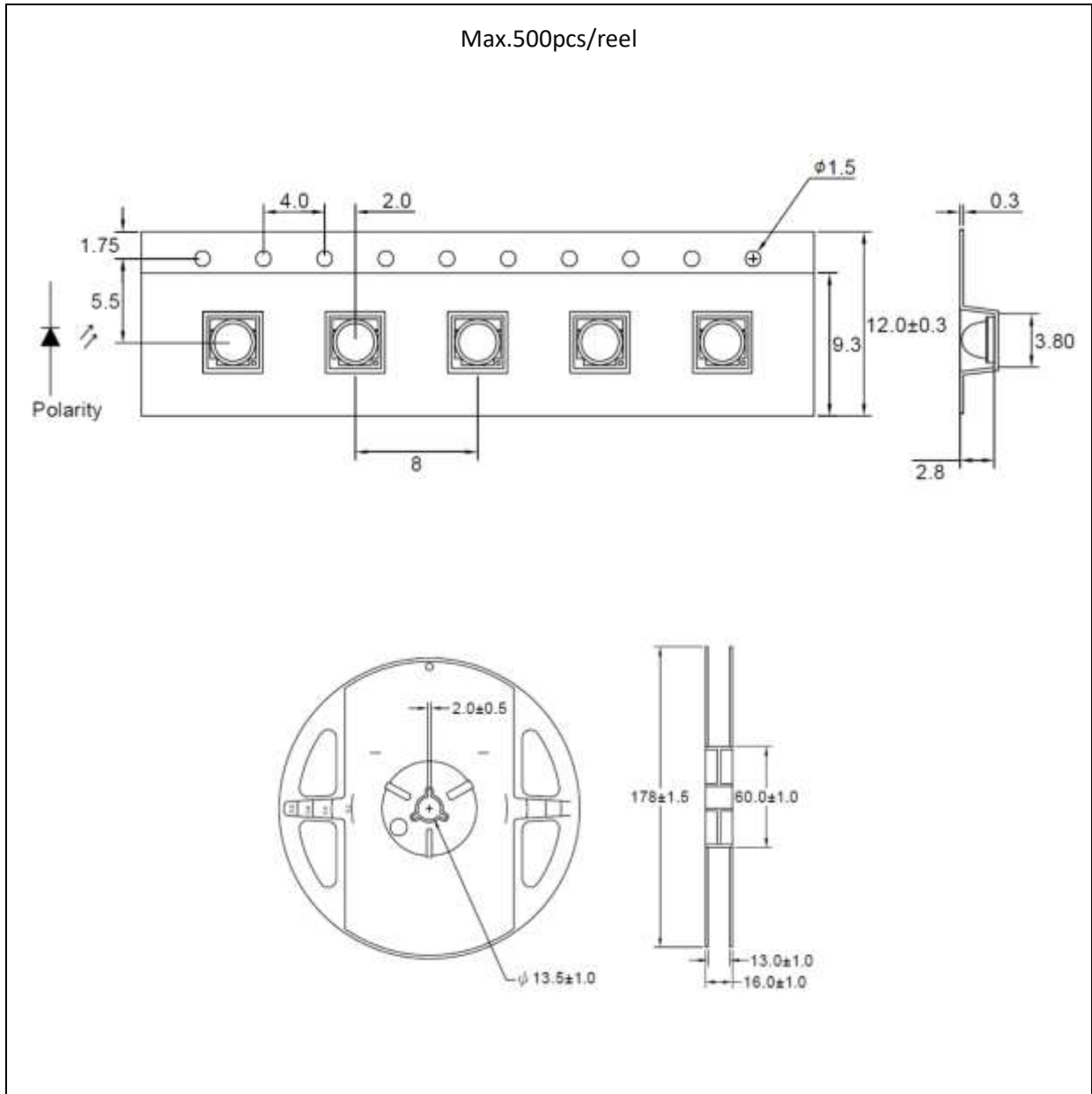


Note:

1. Maximum reflow soldering: 2 times.
2. Recommended soldering temperature is 245°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±5°C x 72hrs 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	20/07/2017	Datasheet set-up.
A1.1	15/08/2023	Update temperature range and drawings.