SPECIFICATION SHEET

5MM ROUND INFRARED LAMPS BNDF5 SERIES

SPECIFICATION SHEET NO.	S1021- BNDF5IRCLBD014	
ORIGINAL MFG/PART NO.	Oriental Technology/BND-F5IRCL-BD-014	
NEXTGEN PART CODE	BNDF5IRCLBD014	Indicate This Code For RFQ /Order
DATE	Oct. 21, 2025	
REVISION	A5	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	5mm Round Infrared LAMPS, BNDF5 Series Φ5.0*7.7mm, Controlled angle 20° Power dissipation 100mW Max. Continuous Forward Current: 100 mA Max., Reverse Voltage. 6.0V Max. Operating Temp. Range -20°C ~+80°C Package in Bulk, RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863)	
CUSTOMER		
CUSTOMER PART NUMBER		
CROSS REF. PART NUMBER		
MEMO		

VENDOR APPROVE
Issued/Checked/Approved       
Effective Date: Oct.21, 2025

CUSTOMER APPROVE
Date:

NextGen Components, Inc. sales@NextGenComponent.com www.NextGenComponent.com

MAIN FEATURE

Image shown is a representation only.

Exact specifications should be obtained from the product dimension.

- Mechanically and spectrally matched to the phototransistor.
- Long Life-Solid State Reliability
- Low Costs and Short Lead Time
- This Devices are Made With PIN GaAs.
- Mechanically and Spectrally Matched To The Phototransistor.
- Cross Competitors Parts and More.
- RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863)
- Moisture Sensitivity Level (MSL) 2A (4 weeks)

APPLICATION

- Display Quality Commercial, Full Spectrum Lighting

ELECTRICAL CHARACTERISTICS

- See Page 5 ~Page 6 For Different Part Code
- All Parameters are Subject To NextGen Components' Final Confirmation

HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code BNDF5IRCLBD014 For RFQ and Order.

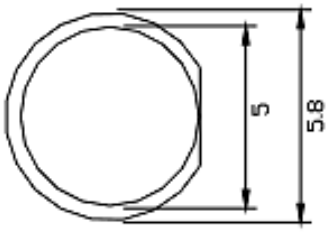
PART CODE GUIDE

RFQ
Request For Quotation

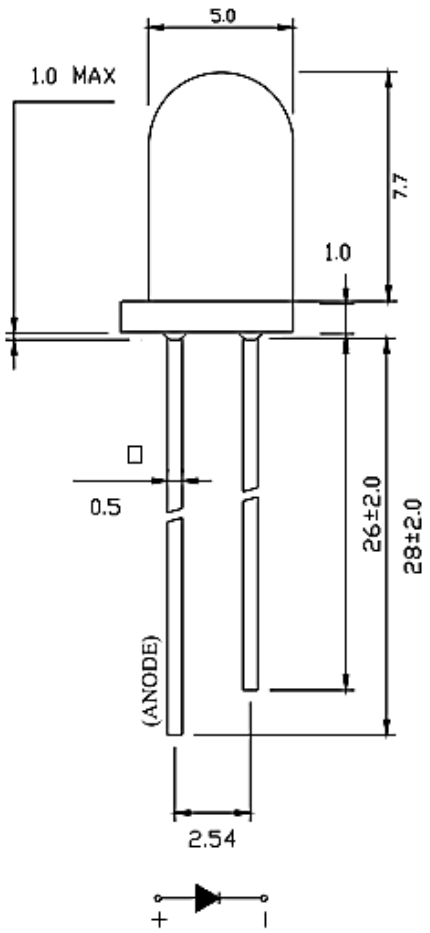
CODE	NAME	KEY SPECIFICATION OPTION
BNDF5	Product Series Code	5mm Round Infrared LAMPS, Φ5.0*7.7mm Reverse Voltage. 6.0V Max. Power dissipation 100mW Max.
IR	Reverse Current Code	IR: 10 μA Max.
CLBD014	Parameters Code	Letter or Digits (A~Z, a~z or 0~9)
XX	Special/Custom Parameters	Blank: N/A; XX: Letter A~Z, a~z or digits (0~9) for Special/Custom Parameters

DIMENSION- Unit: mm, Tol.: +/-0.25mm, Φ5.0*7.7mm

Top View



Side View



ELECTRICAL CHARACTERISTICS

ORDER PART CODE	LENS	EMITTED COLOR	MATERIAL
BNDF5IRCLBD014	Water Clear	Infrared	GaA1As

ELECTRICAL / OPTICAL CHARACTERISTICS @25℃, RH60%

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			MIN.	TYP.	MAX.	
Radiant Intensity	Ee	IF=20mA	20	40		mW/sr
		IFP=100mA TP=10μs	60	120		
Controlled Angle	2θ1/2			20		deg
Peak Wavelength	λp			850		nm
Forward Voltage	VF	IF=20mA		1.2	1.4	V
		IF=100mA		1.5	1.8	
Reverse Current	IR	VR=5V			10	μA
Switch Time	tr/tf	VCE=5V IC=1mA		15/15		μs
Spectral Bandwidth At 50%		IF=20mA		50		nm

Note

1. 1/2 Is The Angle From Optical Centerline Where The Luminous Intensity Is 1/2 The Optical Centerline Value.
2. The Above Luminous Intensity Measurement Allowance Tolerance ±15%.

ABSOLUTE MAXIMUM RATINGS at Ta=25℃

PARAMETER	SYMBOL	VALUE	UNIT
Peak Forward Current	IFP	1000	mA
Continuous Forward Current	IF	100	mA
Reverse Voltage	V_R	6	V
Power Dissipation	PD	100	mW
Operating Temperature	Topr	-20~+80	℃
Storage Temperature	Tstg	-40~+100	℃
Lead Soldering Temperature [1.6mm(.063") From Body]		260 ℃ for 3 seconds	

Note

1. 1/10 Dut Cycle,0.1ms Pulse Width.
2. The Above Forward Voltage Measure Ment Allowance Tolerance ±0.1v.

TYPICAL ELECTRO-OPTICAL CHARACTERISTICS CURVES

Fig.1 Forward Current vs. Ambient Temperature

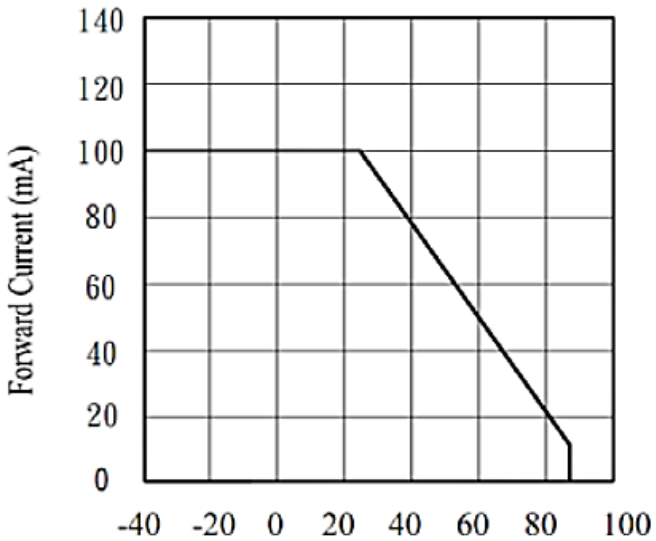
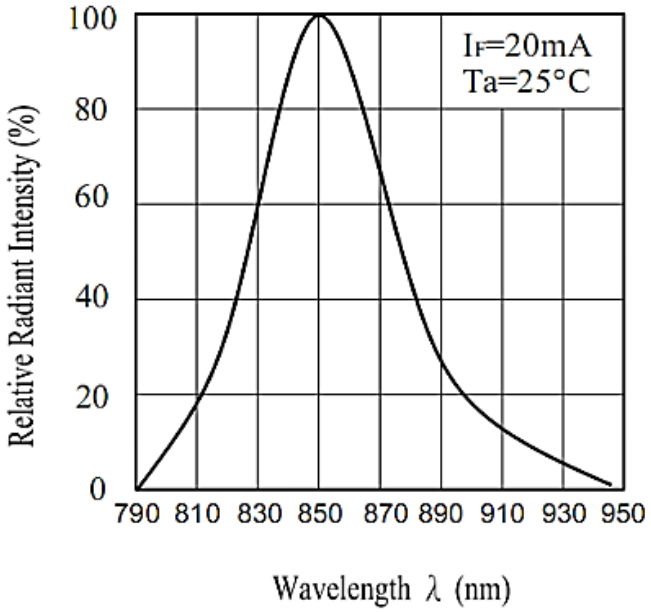


Fig.2 Spectral Distribution



TYPICAL ELECTRO-OPTICAL CHARACTERISTICS CURVES

Fig.3 Peak Emission Wavelength vs.Ambient Temperature

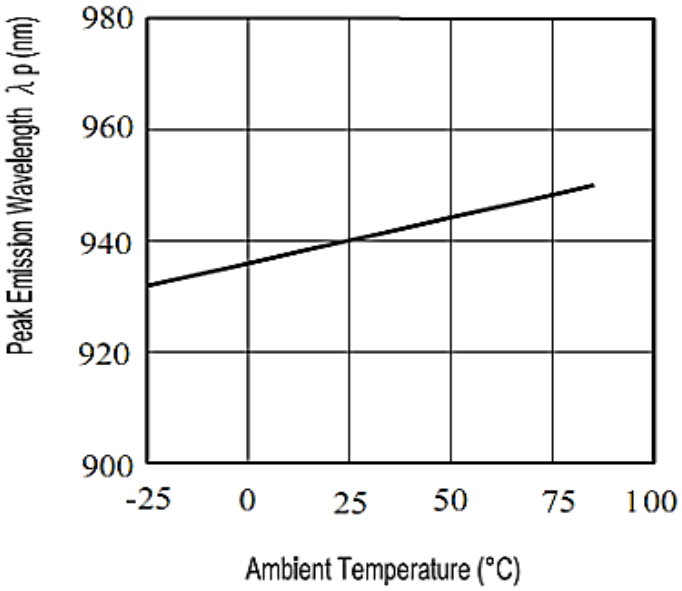
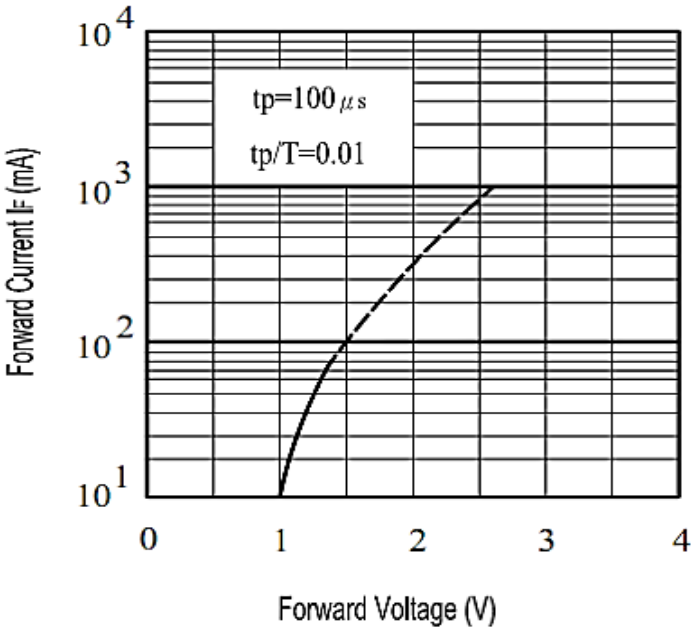


Fig.4 Forward Current vs. Forward Voltage



TYPICAL ELECTRO-OPTICAL CHARACTERISTICS CURVES

Fig.5 Relative Intensity vs.
Forward Current

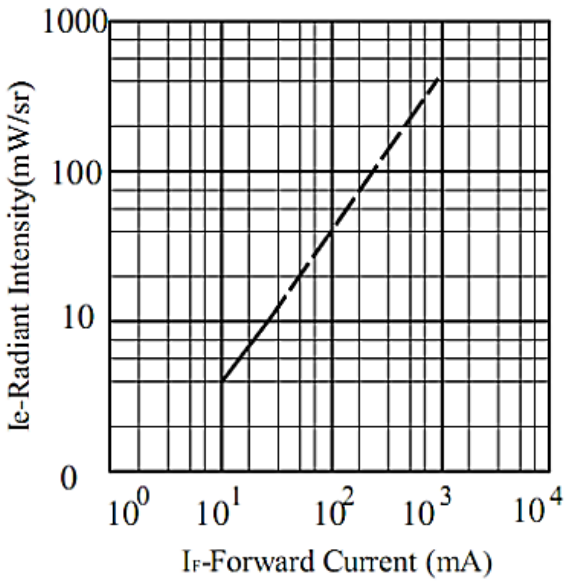
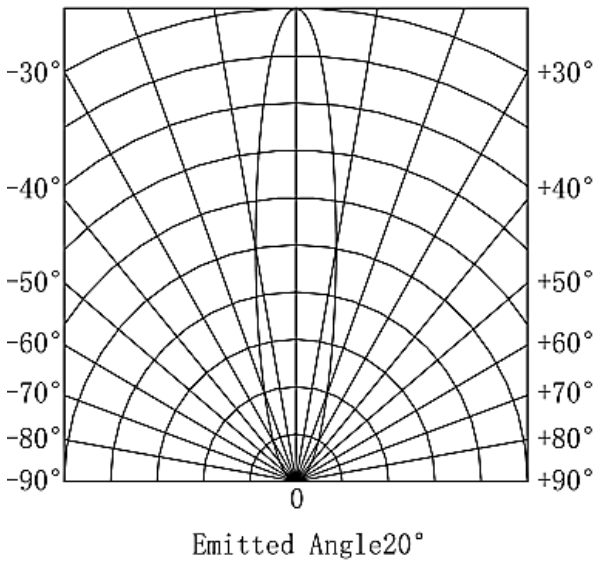


Fig.6 Relative Radiant Intensity vs.
Angular Displacement



TYPICAL ELECTRO-OPTICAL CHARACTERISTICS CURVES

Fig.7 Relative Intensity vs.
Ambient Temperature(°C)

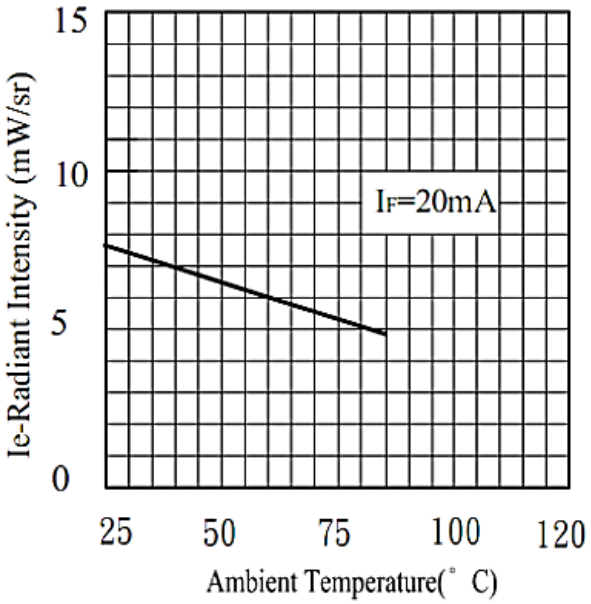
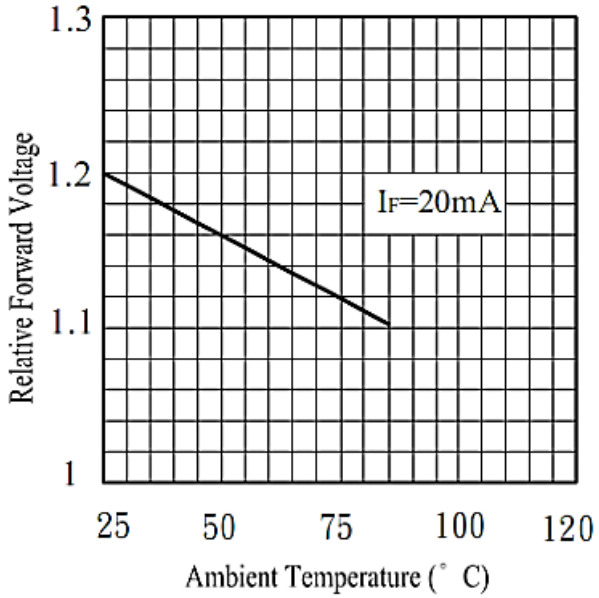


Fig.8 Forward Voltage vs.
Ambient Temperature(°C)



RELIABILITY TEST

CLASSIFICATION	TEST ITEMS	TEST CONDITIONS	REFERENCE STANDAED
Endurance Test	Operation Life	Ta=Under Room Temperature As Per Data Sheet Maximum Rating *Test Time=1000HRS(-24HRS,+72HRS)	MIL-STD-750D:1026 (1995) MIL-STD-883D:1005(1991) JIS C 7021:B-1(1982)
	High Temperature High Humidity Storage	Ta=65±5℃, RH=90~95% Test Time=240HRS± 2HRS	MIL-STD-202F:103(1980) JIS C 7021:B-11(1982)
	High Temperature High Humidity Reverse BIAS	Ta=65±5℃ RH=90~95% Test Time=500HRS(-24HRS,+48HRS)	JIS C 7021:B-11(1982)
	High Temperature Storage	Ta=105±5℃ *Test Time=1000HRS(-24HRS,+72HRS)	MIL-STD-883D:1008(1991) JIS C 7021:B-10(1982)
	Low Temperature Storage	Ta=55±5℃ *Test Time=1000HRS(-24HRS,+72HRS)	JIS C 7021:B-12(1982)
Endurance Test	Temperature Cycling	105℃ ~ 25℃ ~ -55℃ ~ 25℃ 30mins 5mins 30mins 5mins 10Cycles	MIL-STD-202F:107D(1980) MIL-STD-750D:1051(1995) MIL-STD-883D:1010(1991) JIS C 7021:A-4(1982)
	Thermal Shock	105℃±5℃ ~-55℃±5℃ 10mins 10mins 10Cycles	MIL-STD-202F:107D(1980) MIL-STD-750D:1051(1995) MIL-STD-883D:1010(1991)
	Solder Resistance	T.sol=260±5℃ Dwell Time=10±lsecs	MIL-STD-202F:210A(1980) MIL-STD-750D:2031(1995) JIS C 7021:A-1(1982)
	Solderability	T.sol=230±5℃ Dwell Time=5±lsecs	MIL-STD-202F:208D(1980) MIL-STD-750D:2026(1995) MIL-STD-883D:2003(1991) JIS C 7021:A-2(1982)

Note

1. The Appearance And Specifications Of The Product May Be Modified For Improvement, Without Prior Notice

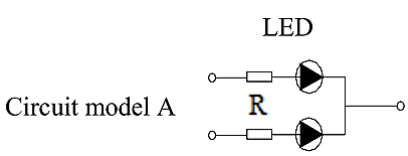
APPLICATION NOTES

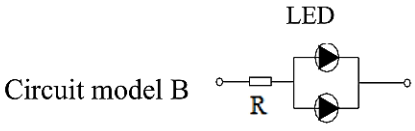
- Storage: It is recommended that LEDs out of their original packaging are used within three months. For extended storage out of their original packing, it is recommended that the LEDs be stored in a sealed container with appropriate desiccant or in desiccators with nitrogen ambient.
- Cleaning: Use alcohol-based cleaning solvent such as isopropyl alcohol to clean the LEDs if necessary.
- Soldering: When soldering leave a minimum of 2mm clearance from the base of the lens to the soldering point. Dipping the lens into the solder must be avoided. Do not apply any external stress to the lead frame during soldering while the LED is at high temperature. Recommended soldering conditions:

SOLDERING IRON		WAVE SOLDERING	
Temperature	320℃ Max	Pre-heat Pre-heat time	100℃ Max 60 sec. Max
Soldering time	3 sec. Max (one time only)	Solder wave Soldering time	260℃ Max 3 sec. Max

Note: Excessive soldering temperature and/or time might result in deformation of the LED lens or catastrophic failure of the LED.

- Drive Method: An LED is a current-operated device, In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended that a current limiting resistor be incorporated in the drive circuit, in series with each LED as shown in Circuit A below.
  (A) Recommended circuit
  (B) The brightness of each LED might appear different due to the differences in the I-V characteristics of those LEDs.





IMPORTANT NOTES AND DISCLAIMER

1. ROHS COMPLIANCE: The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained can be obtained at Download Center.
2. REACH COMPLIANCE: REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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