miniature based

Miniature Based LED Lamps

LEDTRONICS, INC.
THE FUTURE OF LIGHT

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Once limited to simple status indicators, Light Emitting Diodes (LEDs) now play prominent roles in back lighting, panel indication, decorative illumination, emergency lighting, animated signage, etc.... The emergence of LEDs as a viable alternative to incandescent lighting can be attributed to new manufacturing technologies, packaging innovations and an increasing number of colors. These factors along with the growing awareness of the advantages of LEDs (e.g., a life span measured in years not hours, vivid sunlight-visible colors and low power requirements) have engineers, product designers, purchasing agents and component vendors viewing LEDs in a whole new light.

For many applications LED lamps are superior to incandescent lighting. So why is it that in tens of millions of switches, indicators, control panels, signs, annunciators, displays, decor lights and dozens of other applications, design engineers still specify incandescent technology? It might be that they're just a few years behind what's really happening in LED illumination.

Although advances made in LED technology in the past few years have dramatically broadened the applications for these rugged little light sources, it wasn't that long ago that red was the only "daylight-visible" colored LED. And that wasn't the only thing limiting their use!

Unlike incandescent bulbs that give off the full spectrum of light in a spherical pattern, LEDs emit a focused beam of a single wavelength (color) in only one direction, in a variety of angles. For many applications, such as indicators or switch illuminators, this is not a problem, but it took the development of multi-chip arrays and high-flux LED chips to begin to achieve the effect of an incandescent filament.

Major advancements in LED technology have taken place in recent years such as development of new "doping" technologies that increase LED light output by as much as 20 times over earlier generations, and allow the production of daylight-visible LEDs in virtually any color of the spectrum. In addition to red, yellow, and amber/orange, LEDs are now available in many colors from leaf green to ultra blue. Even white light, long thought to be an impossibility, is now available in three different shades as a light-emitting diode.

The efficiency of LEDs is most apparent in applications requiring color. Light from a typical incandescent bulb must be filtered so that only light from a particular part of the spectrum (e.g., red, amber or green, etc...) for example—is visible. While LEDs deliver 100 percent of their energy as colored light, incandescent bulbs waste 90 percent or more of their energy in light blocked by the colored lens or filter. Incandescent bulbs also waste 80 percent to 90 percent of their energy on heat generation to reach the temperature for which (Kelvin scale) they are designed.

The point is that what was once a fairly marginal light source isn't marginal any more. In many applications, LEDs exceed the energy available from incandescent bulbs and offer significant additional benefits making LED clusters and lamps as friendly to the environment as they are to the operating budget.

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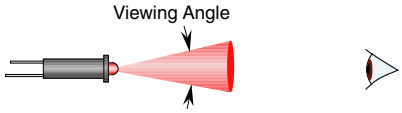
Application Notes

Will the Panel LED replace another manufacturers parts?	Dialight, Data Display Products, Industrial Devices Inc., etc... If so, what is the part number?
Mounting Type?	Snap-in, Snap-in with mount clip, Bolt-on, Relampable, etc...
Mounting Diameter & Panel Thickness?	What is the hole diameter into which the lamp assembly must fit? How thick is the wall of the panel?
Operating Voltage and Polarity?	Actual open line voltage? AC or DC? Does it fluctuate? Indicate the Minimum/Maximum values?
Terminal Type?	Are solid wire (0.02 sq.), pigtail flexible wire lead (24AWG), quick disconnect (3/16 rectangular), solder lug, turret, or screw-on type terminals preferred?
Viewing Distance?	How far is the operator / technician when the indicator must be visible? 5 to 10 feet, 20 to 50 feet, 100 to 200 feet, 500 to 1000 feet?
Viewing Angle?	0 to 12 degrees – Narrow Beam 30 to 60 degrees – Medium Beam 100 to 160 degrees – Wide Beam 
LED Color?	Ultra Red, Hi-Efficiency Red, Standard Red, Orange, Yellow, Cool white, Ultra Green, Aqua Green, Blue
Lens Type?	Diffused lenses are used in applications where direct viewing or indication is needed. Clear lenses are used in application where illumination is needed. Is the lens fluted?
Ambient Lighting?	Standard office lighting. High ceiling factory lighting. Indirect sunlight. Direct sunlight
Potential Quality and Target Price?	How many pieces are required within a given time frame? How much budgetary funding is allowed for this item or project?

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Based LED Questionnaire

Date_____

About you

The following information assists LEDtronics in determining the most appropriate FREE LED product SAMPLE. Fax to (310) 534-1424 for fast response.

Name: _____ Phone: ( ) _____

Company: _____ Fax: ( ) _____

Address: _____ M/S: _____

City: _____ State: _____ Zip: _____

E-Mail: _____

About your company

What does your company manufacture _____

Is your company ☐ Govt/Military ☐ Govt Contractor ☐ OEM ☐ Distributor ☐ Utility ☐ MRO

Requirement is for ☐ R&D ☐ Replacement ☐ New Application ☐ Other _____

Total annual quantity _____

Target price _____ Time frame ☐ Immediate ☐ 3 months ☐ 6 months

For internal use only

SIC code: _____

Originator: _____

Rep: _____

Current Customer ☐ Yes ☐ No

About your application

Incandescent/LED No. _____ mAmps _____ Design Volts _____ MSCD_____

Base size ☐ T1 ☐ T2 ☐ T1¾ ☐ T3¼ ☐ S6 ☐ 15mm ☐ Other_____

Base type ☐ Flange ☐ Bayonet ☐ Wedge ☐ Bi-pin ☐ Screw ☐ Groove ☐ Other_____

Operating voltage (max) ☐ 5V ☐ 12V ☐ 24V ☐ 28V ☐ 120VAC ☐ Other_____

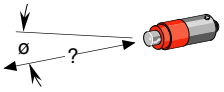
Voltage (type) ☐ AC ☐ DC ☐ Bipolar Polarity of center contact ☐ + ☐ –

Lens color ☐ Red ☐ Orange ☐ Amber ☐ Yellow ☐ White ☐ Green ☐ Blue ☐ Other_____

Lens type ☐ Clear ☐ Diffused Lens size ☐ 16mm ☐ 22mm ☐ 30mm ☐ Other_____

Lens shape ☐ Circular ☐ Square ☐ Rectangular

☐ Jelly-jar ☐ Other_____

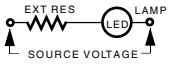


Ambient lighting conditions ☐ Indirect sunlight ☐ Direct sun ☐ Office ☐ Lowlight ☐ Darkroom

Maximum viewing distance desired ☐ 1 ft ☐ 5 ft ☐ 10 ft ☐ 20 ft ☐ 50 ft ☐ Other_____

Maximum viewing angle desired ☐ Straight on ☐ 30¡ ☐ 60¡ ☐ 90¡ ☐ Other_____

Distance between top of lamp and lens/filter ☐ 1/8" ☐ 1/4" ☐ 1/2" ☐ Other _____



Is an external resistor in series with the lamp ☐ Yes ☐ No If yes, Ohms _____ Watts_____

What is the source voltage if higher than the operating voltage of the lamp _____

Would like updated literature ☐ Yes ☐ No More info on: ☐ Based ☐ Panel ☐ PCB ☐ Discrete ☐ Other_____

Applicable statutory and regulatory requirements ☐ Yes ☐ No Doc. No. _____

Additional Notes/Sketches

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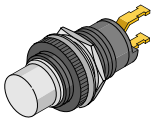
T1(3mm) Sub-Midget Based LEDs

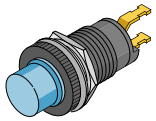
Subminiature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAlAs	682,685,714,718	FF120-0UR-005P	5V	20	100	120º	Center Contact Polarity P = Positive N = Negative Replace FF120 With F120 Standard (65º) Beam Intensity 180 mcd/30 Ft.Cd
	7241	FF120-0UR-018P	18V	15	50		
	6839	FF120-0UR-024P	24V	12	33		
	6839	FF120-0UR-028P	28V	12	33		
612nm Super Orange InGaAlP	682,685,714,718	FF120-0UO-005P	5V	20	85	120º	Center Contact Polarity P = Positive N = Negative Replace FF120 With F120 Medium (50º) Beam Intensity 350 mcd
	7241	FF120-0UO-018P	18V	15	64		
	6839	FF120-0UO-024P	24V	12	51		
	6839	FF120-0UO-028P	28V	12	51		
595nm Super Yellow InGaAlP	682,685,714,718	FF120-0UY-005P	5V	20	32	120º	Center Contact Polarity P = Positive N = Negative Replace FF120 With F120 Medium (50º) Beam Intensity 1K mcd
	7241	FF120-0UY-018P	18V	15	21		
	6839	FF120-0UY-024P	24V	12	15		
	6839	FF120-0UY-028P	28V	12	15		
8000K Cool White SiC/GaN	682,685,714,718	FF120-0CW-005P	5V	15	150	120º	Center Contact Polarity P = Positive N = Negative Replace FF120 With F120 Std. (50º) Beam Intensity 650 mcd/75 Ft. cd
	7241	FF120-0CW-018P	18V	15	150		
	6839	FF120-0CW-024P	24V	10	100		
	6839	FF120-0CW-028P	28V	10	100		
570nm Lime Green InGaAlP	682,685,714,718	FF120-0UG-005P	5V	20	36	120º	Center Contact Polarity P = Positive N = Negative Replace FF120 With F120 Medium (50º) Beam Intensity 165 mcd@ 20 mA
	7241	FF120-0UG-018P	18V	15	27		
	6839	FF120-0UG-024P	24V	12	22		
	6839	FF120-0UG-028P	28V	12	22		
525nm Aqua Green SiC/GaN	682,685,714,718	FF120-0AG-005P	5V	15	200	120º	Center Contact Polarity P = Positive N = Negative Replace FF120 With F120 Narrow (15º) Beam Intensity 5K mcd/145 Ft.Cd
	7241	FF120-0AG-018P	18V	15	200		
	6839	FF120-0AG-024P	24V	10	150		
	6839	FF120-0AG-028P	28V	10	150		
470nm Super Blue SiC/GaN	682,685,714,718	FF120-0PB-005P	5V	15	60	120º	Center Contact Polarity P = Positive N = Negative Replace FF120 With F120 Std. (15º) Beam Intensity 1.5K mcd/32 Ft.Cd @15 mA
	7241	FF120-0PB-018P	18V	15	60		
	6839	FF120-0PB-024P	24V	10	45		
	6839	FF120-0PB-028P	28V	10	45		

All dimensions in inches. For millimeters multiply by 25.4

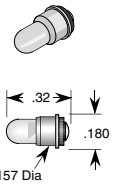
Options



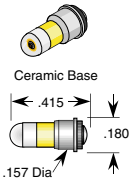
Series: HLD310 (Rear Mount)
PN Example: HLD310CW900-5V-P



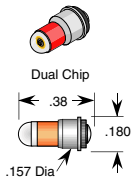
Series: HLC310 (Front Mount)
PN Example: HLC310CB1K-5V-P



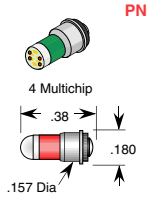
Series: F120 (No Resistor)
PN Example: F120-0UR-002F



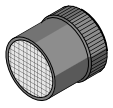
Series: F121 (1 Chip, 160º)
PN Example: F121-0UY-005P



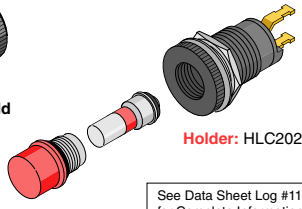
Series: F122 (2 Chip, 160º)
PN Example: F122-0UO-005P



Series: F124 (4 Chip, 160º)
PN Example: F124-0UR-028P



RFI EMI Shield



Holder: HLC2020

Lens: HL230

See Data Sheet Log #119 for Complete Information on Panel Mount LEDs

Log # 122A Rev 09-2000

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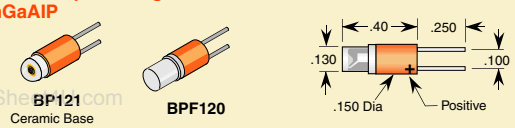
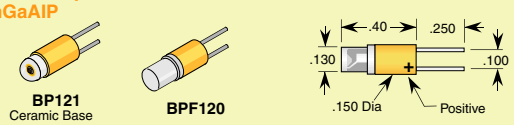
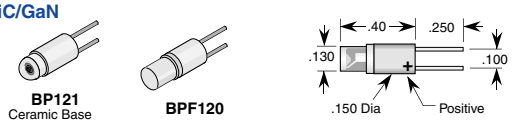
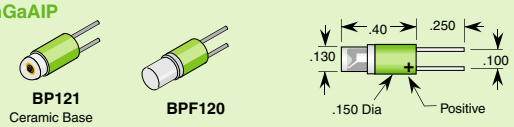
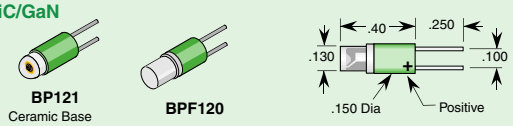
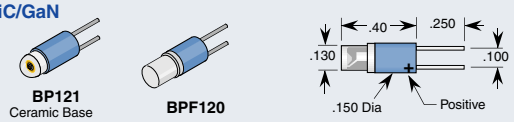
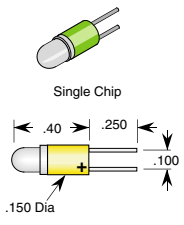
T1(3mm) Sub-Midget Bi-Pin Based LEDs

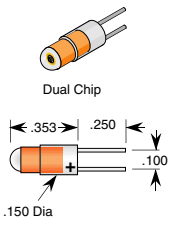
Subminiature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAlAs 	7265,7680,7714	BPF120-0UR-005V	5V	20	100	120º	Contact Polarity V = DC only Replace BPF120 With BP120 Standard (65º) Beam Intensity 180 mcd/30 Ft.Cd @20 mA
		BPF120-0UR-014V	12/14V	15	50		
	7839	BPF120-0UR-024V	24V	12	33		
	7839	BPF120-0UR-028V	28V	12	33		
612nm Super Orange InGaAlP 	7265,7680,7714	BPF120-0UO-005V	5V	20	85	120º	Contact Polarity V = DC only Replace BPF120 With BP120 Medium (50º) Beam Intensity 350 mcd@20 mA
		BPF120-0UO-014V	12/14V	15	64		
	7839	BPF120-0UO-024V	24V	12	51		
	7839	BPF120-0UO-028V	28V	12	51		
595nm Super Yellow InGaAlP 	7265,7680,7714	BPF120-0UY-005V	5V	20	32	120º	Contact Polarity V = DC only Replace BPF120 With BP120 Medium (50º) Beam Intensity 1K mcd@20 mA
		BPF120-0UY-014V	12/14V	15	21		
	7839	BPF120-0UY-024V	24V	12	15		
	7839	BPF120-0UY-028V	28V	12	15		
8000K Cool White SiC/GaN 	7265,7680,7714	BPF120-0CW-005V	5V	15	150	120º	Contact Polarity V = DC only Replace BPF120 With BP120 Std (50º) Beam Intensity 650 mcd/75 Ft. cd @15 mA
		BPF120-0CW-014V	12/14V	15	150		
	7839	BPF120-0CW-024V	24V	10	100		
	7839	BPF120-0CW-028V	28V	10	100		
570nm Lime Green InGaAlP 	7265,7680,7714	BPF120-0UG-005V	5V	20	36	120º	Contact Polarity V = DC only Replace BPF120 With BP120 Medium (50º) Beam Intensity 165 mcd@ 20 mA
		BPF120-0UG-014V	12/14V	15	27		
	7839	BPF120-0UG-024V	24V	12	22		
	7839	BPF120-0UG-028V	28V	12	22		
525nm Aqua Green SiC/GaN 	7265,7680,7714	BPF120-0AG-005V	5V	15	200	120º	Contact Polarity V = DC only Replace BPF120 With BP120 Narrow (15º) Beam Intensity 5K mcd/145 Ft.Cd @15 mA
		BPF120-0AG-014V	12/14V	15	200		
	7839	BPF120-0AG-024V	24V	10	150		
	7839	BPF120-0AG-028V	28V	10	150		
470nm Super Blue SiC/GaN 	7265,7680,7714	BPF120-0PB-005V	5V	15	60	120º	Contact Polarity V = DC only Replace BPF120 With BP120 Std (15º) Beam Intensity 1.5K mcd/32 Ft.Cd @15 mA
		BPF120-0PB-014V	12/14V	15	60		
	7839	BPF120-0PB-024V	24V	10	45		
	7839	BPF120-0PB-028V	28V	10	45		

All dimensions in inches. For millimeters multiply by 25.4

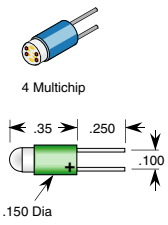
Options



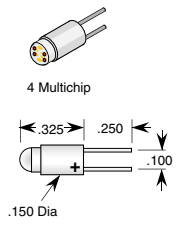
Series: BP120 (No Resistor)
PN Example: BP120-0UY-005B



Series: BP122 (2Chip 160º)
PN Example: BP122-0CO-005B



Series: BP124 (4 Chip 160º)
PN Example: BP124-0UG-005B



Series: BP124 (4 Chip 160º)
PN Example: BP124-0CW-005B

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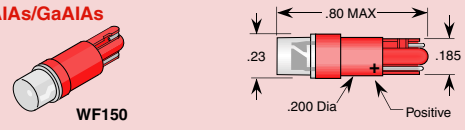
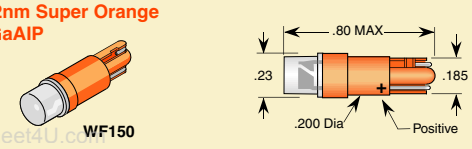
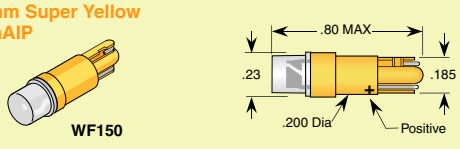
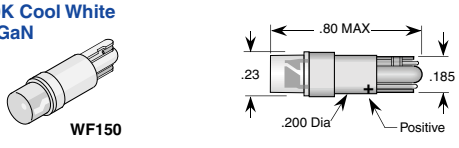
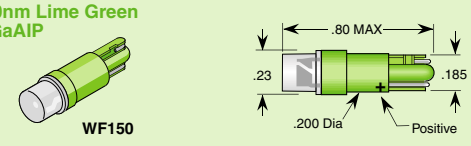
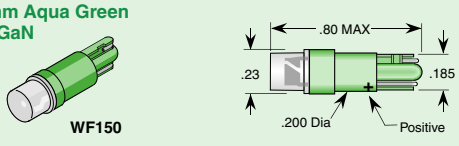
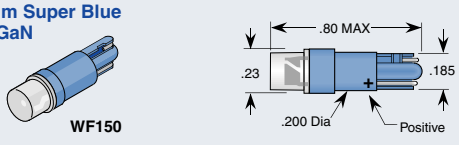
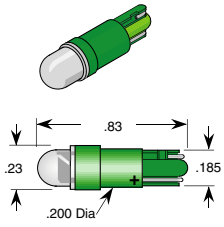
T1-1/2 (4.5mm) Midget Wedge Based LEDs

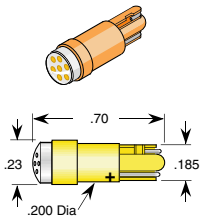
Subminiature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25¡C) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumi-nation	Special Features
660nm Ultra Red GaAlAs/GaAlAs 	56,79,84,86	WF150-0UR-005V	5V	20	115	120¡	Contact Polarity V = DC only Replace WF150 With W150 Narrow Beam (15¡) Intensity 1.6K mcd/52 Ft.Cd @20 mA
	18,37,73,74	WF150-0UR-014V	12/14V	20	115		
	17, 85	WF150-0UR-024V	24V	15	85		
	17, 85	WF150-0UR-028V	28V	15	85		
612nm Super Orange InGaAlP 	56,79,84,86	WF150-0UO-005V	5V	20	130	120¡	Contact Polarity V = DC only Replace WF150 With W150 Narrow Beam (15¡) Intensity 3.5K mcd@20 mA
	18,37,73,74	WF150-0UO-014V	12/14V	20	130		
	17, 85	WF150-0UO-024V	24V	15	98		
	17, 85	WF150-0UO-028V	28V	15	98		
595nm Super Yellow InGaAlP 	56,79,84,86	WF150-0UY-005V	5V	20	116	120¡	Contact Polarity V = DC only Replace WF150 With W150 Narrow Beam (15¡) Intensity 3.2K mcd@20 mA
	18,37,73,74	WF150-0UY-014V	12/14V	20	116		
	17, 85	WF150-0UY-024V	24V	15	75		
	17, 85	WF150-0UY-028V	28V	15	75		
8000K Cool White SiC/GaN 	56,79,84,86	WF150-0CW-005V	5V	15	160	120¡	Contact Polarity V = DC only Replace WF150 With W150 Std. Beam (50¡) Intensity 750 mcd/75 Ft. cd @15 mA
	18,37,73,74	WF150-0CW-014V	12/14V	15	160		
	17, 85	WF150-0CW-024V	24V	15	160		
	17, 85	WF150-0CW-028V	28V	15	160		
570nm Lime Green InGaAlP 	56,79,84,86	WF150-0UG-005V	5V	20	58	120¡	Contact Polarity V = DC only Replace WF150 With W150 Narrow Beam (12-15¡) Intensity 1K mcd@ 20 mA
	18,37,73,74	WF150-0UG-014V	12/14V	20	58		
	17, 85	WF150-0UG-024V	24V	15	44		
	17, 85	WF150-0UG-028V	28V	15	44		
525nm Aqua Green SiC/GaN 	56,79,84,86	WF150-0AG-005V	5V	15	400	120¡	Contact Polarity V = DC only Replace WF150 With W150 Narrow Beam (15¡) Intensity 7K mcd/250 Ft.Cd @15 mA
	18,37,73,74	WF150-0AG-014V	12/14V	15	400		
	17, 85	WF150-0AG-024V	24V	15	400		
	17, 85	WF150-0AG-028V	28V	15	400		
470nm Super Blue SiC/GaN 	56,79,84,86	WF150-0PB-005V	5V	15	125	120¡	Contact Polarity V = DC only Replace WF150 With W150 Std. Beam (15¡) Intensity 2K mcd/60 Ft.Cd @15 mA
	18,37,73,74	WF150-0PB-014V	12/14V	15	125		
	17, 85	WF150-0PB-024V	24V	15	125		
	17, 85	WF150-0PB-028V	28V	15	125		

All dimensions in inches. For millimeters multiply by 25.4

Options



Series: W150
PN Example: W150-0AG-005B



Series: W156
PN Example: W156-0UY-005B

Log # 122C Rev 09-2000

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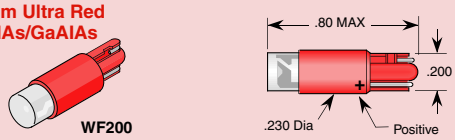
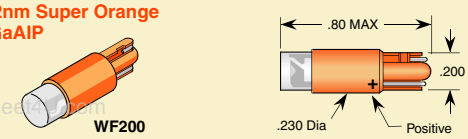
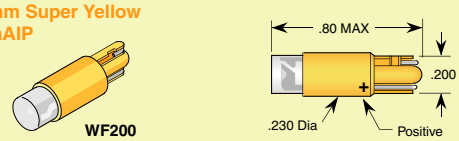
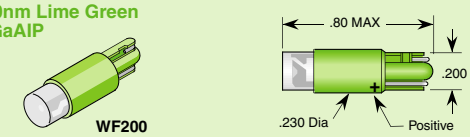
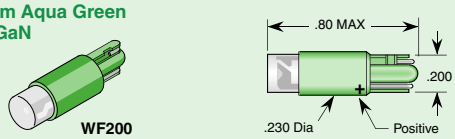
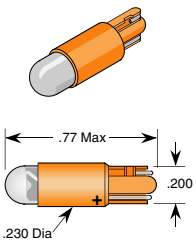
T1-3/4 (5mm) Midget Wedge Based LEDs

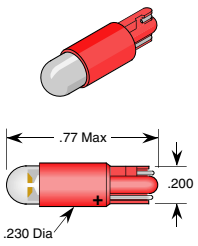
Subminiature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAlAs 	56,79,84,86	WF200-0UR-005V	5V	20	115	120º	Contact Polarity V = DC only Replace WF200 With W200 Narrow Beam (15º) Intensity 1.6K mcd/52 Ft.Cd @20 mA
	18,37,73,74	WF200-0UR-014V	12/14V	20	115		
	17, 85	WF200-0UR-024V	24V	15	85		
	17, 85	WF200-0UR-028V	28V	15	85		
612nm Super Orange InGaAIP 	56,79,84,86	WF200-0UO-005V	5V	20	130	120º	Contact Polarity V = DC only Replace WF200 With W200 Narrow Beam (15º) Intensity 3.5K mcd@ 20 mA
	18,37,73,74	WF200-0UO-014V	12/14V	20	130		
	17, 85	WF200-0UO-024V	24V	15	98		
	17, 85	WF200-0UO-028V	28V	15	98		
595nm Super Yellow InGaAIP 	56,79,84,86	WF200-0UY-005V	5V	20	116	120º	Contact Polarity V = DC only Replace WF200 With W200 Narrow Beam (15º) Intensity 3.2K mcd@ 20 mA
	18,37,73,74	WF200-0UY-014V	12/14V	20	116		
	17, 85	WF200-0UY-024V	24V	15	75		
	17, 85	WF200-0UY-028V	28V	15	75		
8000K Cool White SiC/GaN 	56,79,84,86	WF200-0CW-005V	5V	15	160	120º	Contact Polarity V = DC only Replace WF200 With W200 Std. Beam (50º) Intensity 750 mcd/75 Ft. cd @15 mA
	18,37,73,74	WF200-0CW-014V	12/14V	15	160		
	17, 85	WF200-0CW-024V	24V	15	160		
	17, 85	WF200-0CW-028V	28V	15	160		
570nm Lime Green InGaAIP 	56,79,84,86	WF200-0UG-005V	5V	20	58	120º	Contact Polarity V = DC only Replace WF200 With W200 Narrow Beam (12-15º) Intensity 1K mcd@ 20 mA
	18,37,73,74	WF200-0UG-014V	12/14V	20	58		
	17, 85	WF200-0UG-024V	24V	15	44		
	17, 85	WF200-0UG-028V	28V	15	44		
525nm Aqua Green SiC/GaN 	56,79,84,86	WF200-0AG-005V	5V	15	400	120º	Contact Polarity V = DC only Replace WF200 With W200 Narrow Beam (15º) Intensity 7K mcd/250 Ft.Cd @15 mA
	18,37,73,74	WF200-0AG-014V	12/14V	15	400		
	17, 85	WF200-0AG-024V	24V	15	400		
	17, 85	WF200-0AG-028V	28V	15	400		
470nm Super Blue SiC/GaN 	56,79,84,86	WF200-0PB-005V	5V	15	125	120º	Contact Polarity V = DC only Replace WF200 With W200 Std. Beam (15º) Intensity 2K mcd/60 Ft.Cd @15 mA
	18,37,73,74	WF200-0PB-014V	12/14V	15	125		
	17, 85	WF200-0PB-024V	24V	15	125		
	17, 85	WF200-0PB-028V	28V	15	125		

All dimensions in inches. For millimeters multiply by 25.4

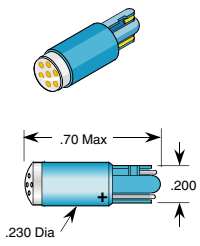
Options



Series: W200
PN Example: W200-0UO-005B



Series: W202
PN Example: W202-0UR-005B



Series: W206
PN Example: W206-0PB-005B

Log # 122D Rev 08-2000

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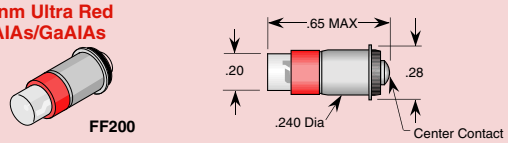
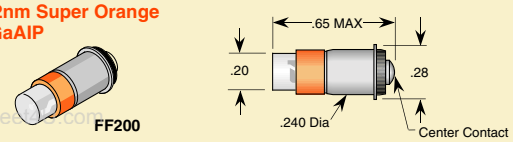
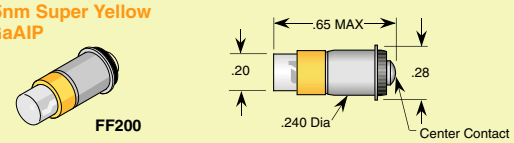
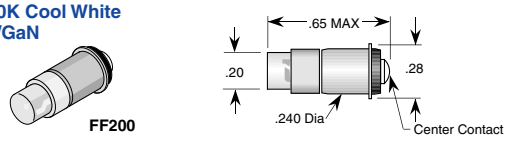
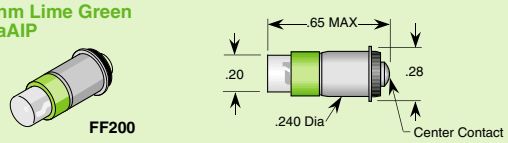
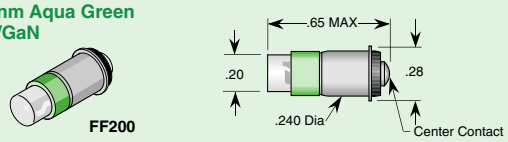
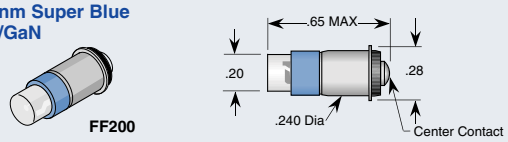
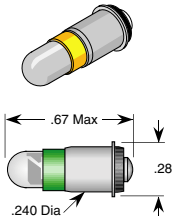
T1-3/4 (5mm) Midget Flange Based LEDs

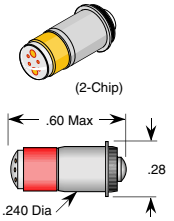
Subminiature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAlAs 	328,345,350	FF200-0UR-006B	5/6V	20	115	120º	Center Contact Polarity B = BiPolar AC/DC Replace FF200 With F200 Narrow Beam (15º) Intensity 1.6K mcd/52 Ft.Cd @20 mA
	330,382,394	FF200-0UR-014B	12/14V	20	115		
	327,376,387	FF200-0UR-024B	24V	15	85		
	327,376,387	FF200-0UR-028B	28V	15	85		
612nm Super Orange InGaAlP 	328,345,350	FF200-0UO-006B	5/6V	20	130	120º	Center Contact Polarity B = BiPolar AC/DC Replace FF200 With F200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA
	330,382,394	FF200-0UO-014B	12/14V	20	130		
	327,376,387	FF200-0UO-024B	24V	15	98		
	327,376,387	FF200-0UO-028B	28V	15	98		
595nm Super Yellow InGaAlP 	328,345,350	FF200-0UY-006B	5/6V	20	116	120º	Center Contact Polarity B = BiPolar AC/DC Replace FF200 With F200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA
	330,382,394	FF200-0UY-014B	12/14V	20	116		
	327,376,387	FF200-0UY-024B	24V	15	75		
	327,376,387	FF200-0UY-028B	28V	15	75		
8000K Cool White SiC/GaN 	328,345,350	FF200-0CW-006B	5V	15	160	120º	Center Contact Polarity B = BiPolar AC/DC Replace FF200 With F200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd
	330,382,394	FF200-0CW-014B	12/14V	15	160		
	327,376,387	FF200-0CW-024B	24V	15	160		
	327,376,387	FF200-0CW-028B	28V	15	160		
570nm Lime Green InGaAlP 	328,345,350	FF200-0UG-006B	5/6V	20	58	120º	Center Contact Polarity B = BiPolar AC/DC Replace FF200 With F200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA
	330,382,394	FF200-0UG-014B	12/14V	20	58		
	327,376,387	FF200-0UG-024B	24V	15	44		
	327,376,387	FF200-0UG-028B	28V	15	44		
525nm Aqua Green SiC/GaN 	328,345,350	FF200-0AG-006B	5/6V	15	400	120º	Center Contact Polarity B = BiPolar AC/DC Replace FF200 With F200 Narrow (15º) Beam Intensity 7K mcd/250 Ft.Cd
	330,382,394	FF200-0AG-014B	12/14V	15	400		
	327,376,387	FF200-0AG-024B	24V	15	400		
	327,376,387	FF200-0AG-028B	28V	15	400		
470nm Super Blue SiC/GaN 	328,345,350	FF200-0PB-006B	5/6V	15	125	120º	Center Contact Polarity B = BiPolar AC/DC Replace FF200 With F200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd
	330,382,394	FF200-0PB-014B	12/14V	15	125		
	327,376,387	FF200-0PB-024B	24V	15	125		
	327,376,387	FF200-0PB-028B	28V	15	125		

All dimensions in inches. For millimeters multiply by 25.4

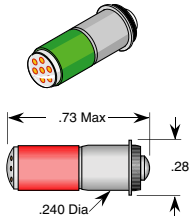
Options



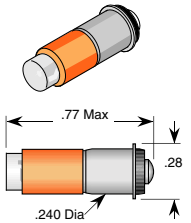
Series: F200
PN Example: F200-0AG-006B



Series: F206
PN Example: F206-0UR-006B



Series: FL206
PN Example: FL206-0UR-006B



Series: FFL200
PN Example: FFL200-0UO-006B

Log # 122Dd Rev 09-2000

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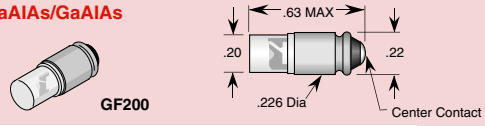
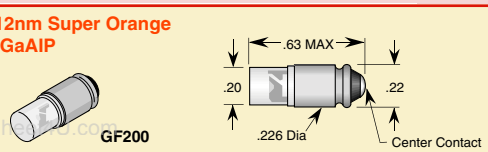
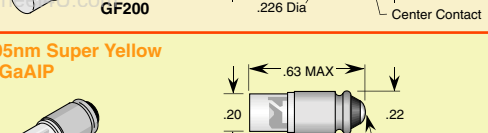
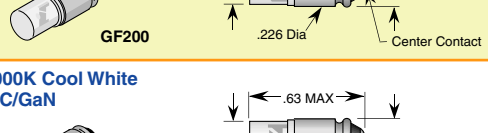
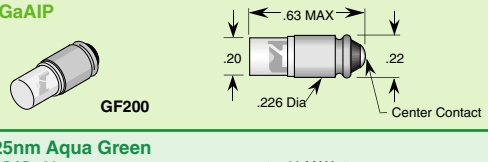
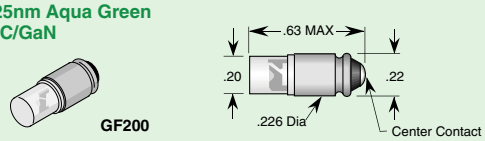
Website: www.ledtronics.com

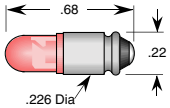
T1-3/4 (5mm) Midget Groove Based LEDs

Subminiature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAlAs 	337,379,398	GF200-0UR-006B	5/6V	20	115	120º	Center Contact Polarity B = BiPolar AC/DC Replace GF200 With G200 Narrow (15º) Beam Intensity 1.6K mcd/52 Ft.Cd @20 mA
	386	GF200-0UR-014B	12/14V	20	115		
	334,388	GF200-0UR-024B	24V	15	85		
	334,388	GF200-0UR-028B	28V	15	85		
612nm Super Orange InGaAlP 	337,379,398	GF200-0UO-006B	5/6V	20	130	120º	Center Contact Polarity B = BiPolar AC/DC Replace GF200 With G200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA
	386	GF200-0UO-014B	12/14V	20	130		
	334,388	GF200-0UO-024B	24V	15	98		
	334,388	GF200-0UO-028B	28V	15	98		
595nm Super Yellow InGaAlP 	337,379,398	GF200-0UY-006B	5/6V	20	116	120º	Center Contact Polarity B = BiPolar AC/DC Replace GF200 With G200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA
	386	GF200-0UY-014B	12/14V	20	116		
	334,388	GF200-0UY-024B	24V	15	75		
	334,388	GF200-0UY-028B	28V	15	75		
8000K Cool White SiC/GaN 	337,379,398	GF200-0CW-006B	5/6V	15	160	120º	Center Contact Polarity B = BiPolar AC/DC Replace GF200 With G200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd
	386	GF200-0CW-014B	12/14V	15	160		
	334,388	GF200-0CW-024B	24V	15	160		
	334,388	GF200-0CW-028B	28V	15	160		
570nm Lime Green InGaAlP 	337,379,398	GF200-0UG-006B	5/6V	20	58	120º	Center Contact Polarity B = BiPolar AC/DC Replace GF200 With G200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA
	386	GF200-0UG-014B	12/14V	20	58		
	334,388	GF200-0UG-024B	24V	15	44		
	334,388	GF200-0UG-028B	28V	15	44		
525nm Aqua Green SiC/GaN 	337,379,398	GF200-0AG-006B	5/6V	15	400	120º	Center Contact Polarity B = BiPolar AC/DC Replace GF200 With G200 Narrow (15º) Beam Intensity 7Kmcd/250 Ft.Cd
	386	GF200-0AG-014B	12/14V	15	400		
	334,388	GF200-0AG-024B	24V	15	400		
	334,388	GF200-0AG-028B	28V	15	400		
470nm Super Blue SiC/GaN 	337,379,398	GF200-0PB-006B	5/6V	15	125	120º	Center Contact Polarity B = BiPolar AC/DC Replace GF200 With G200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd
	386	GF200-0PB-014B	12/14V	15	125		
	334,388	GF200-0PB-024B	24V	15	125		
	334,388	GF200-0PB-028B	28V	15	125		

All dimensions in inches. For millimeters multiply by 25.4

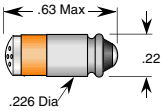
Options

Single Chip



Series: G200
PN Example: G200-0UR-028B

6 Multichip



Series: G206
PN Example: G206-0UO-028B

Log # 122E Rev 09-2000

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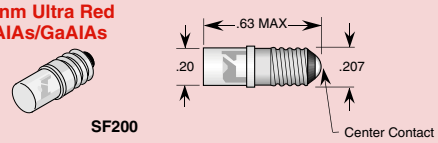
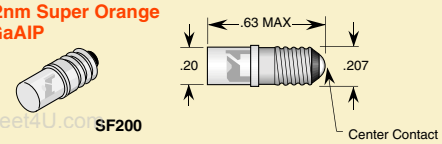
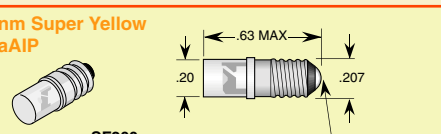
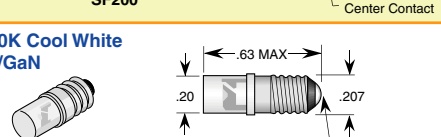
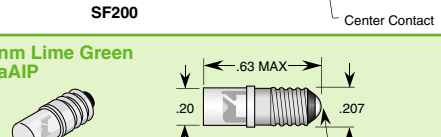
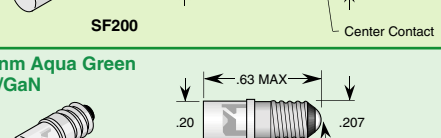
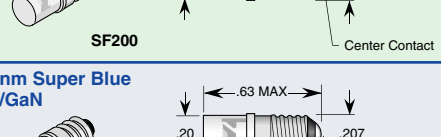
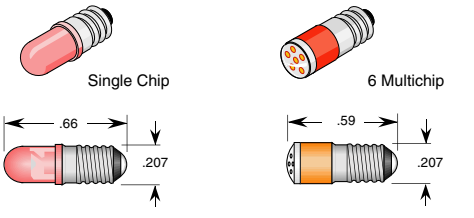
Website: www.ledtronics.com

T1-3/4 (5mm) Midget Screw Based LEDs

Subminiature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAlAs 	378,1768,1775	SF200-0UR-005P	5V	20	115	120º	Center Contact Polarity P = Positive N = Negative Replace SF200 With S200 Narrow (15º) Beam Intensity 1.6K mcd/52 Ft.Cd @20 mA
	336,383	SF200-0UR-014P	12/14V	20	115		
	342	SF200-0UR-024P	24V	15	85		
	335,342,369,399	SF200-0UR-028P	28V	15	85		
612nm Super Orange InGaAlP 	378,1768,1775	SF200-0UO-005P	5V	20	130	120º	Center Contact Polarity P = Positive N = Negative Replace SF200 With S200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA
	336,383	SF200-0UO-014P	12/14V	20	130		
	342	SF200-0UO-024P	24V	15	98		
	335,342,369,399	SF200-0UO-028P	28V	15	98		
595nm Super Yellow InGaAlP 	378,1768,1775	SF200-0UY-005P	5V	20	116	120º	Center Contact Polarity P = Positive N = Negative Replace SF200 With S200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA
	336,383	SF200-0UY-014P	12/14V	20	116		
	342	SF200-0UY-024P	24V	15	75		
	335,342,369,399	SF200-0UY-028P	28V	15	75		
8000K Cool White SiC/GaN 	378,1768,1775	SF200-0CW-005P	5/6V	15	160	120º	Center Contact Polarity P = Positive N = Negative Replace SF200 With S200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd
	336,383	SF200-0CW-014P	12/14V	15	160		
	342	SF200-0CW-024P	24V	15	160		
	335,342,369,399	SF200-0CW-028P	28V	15	160		
570nm Lime Green InGaAlP 	378,1768,1775	SF200-0UG-005P	5V	20	58	120º	Center Contact Polarity P = Positive N = Negative Replace SF200 With S200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA
	336,383	SF200-0UG-014P	12/14V	20	58		
	342	SF200-0UG-024P	24V	15	44		
	335,342,369,399	SF200-0UG-028P	28V	15	44		
525nm Aqua Green SiC/GaN 	378,1768,1775	SF200-0AG-005P	5V	15	400	120º	Center Contact Polarity P = Positive N = Negative Replace SF200 With S200 Narrow (15º) Beam Intensity 7Kmcd/250 Ft.Cd
	336,383	SF200-0AG-014P	12/14V	15	400		
	342	SF200-0AG-024P	24V	15	400		
	335,342,369,399	SF200-0AG-028P	28V	15	400		
470nm Super Blue SiC/GaN 	378,1768,1775	SF200-0PB-005P	5V	15	125	120º	Center Contact Polarity P = Positive N = Negative Replace SF200 With S200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd
	336,383	SF200-0PB-014P	12/14V	15	125		
	342	SF200-0PB-024P	24V	15	125		
	335,342,369,399	SF200-0PB-028P	28V	15	125		

All dimensions in inches. For millimeters multiply by 25.4

Options



Series: S200
PN Example: S200-0UR-024P

Series: S206
PN Example: S206-0UY-024B

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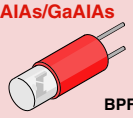
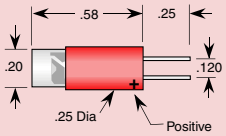
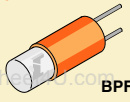
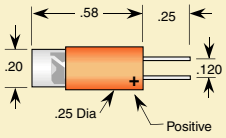
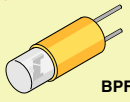
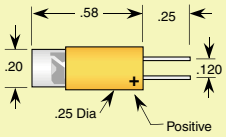
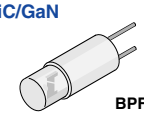
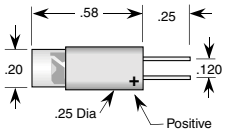
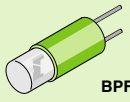
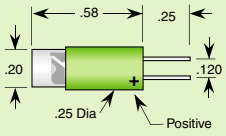
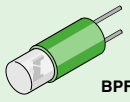
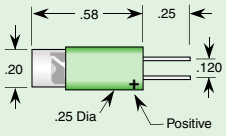
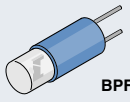
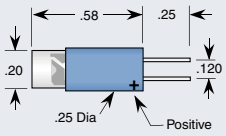
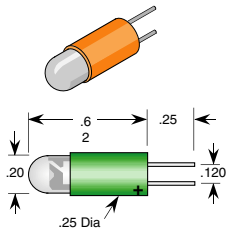
Website: www.ledtronics.com

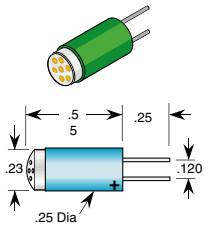
T1-3/4 (5mm) Midget Bi-Pin Based LEDs

Subminiature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAlAs  BPF200 	7328	BPF200-0UR-005V	5V	20	115	120º	Contact Polarity V = DC only Replace BPF200 With BP200 Narrow (15º) Beam Intensity 1.6K mcd/52 Ft.Cd @20 mA
	7371	BPF200-0UR-012V	12V	20	115		
	7330,7382	BPF200-0UR-014V	12/14V	20	115		
	7327,7387	BPF200-0UR-024V	24V	15	85		
	7327,7387	BPF200-0UR-028V	28V	15	85		
612nm Super Orange InGaAlP  BPF200 	7328	BPF200-0UO-005V	5V	20	130	120º	Contact Polarity V = DC only Replace BPF200 With BP200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA
	7371	BPF200-0UO-012V	12V	20	130		
	7330,7382	BPF200-0UO-014V	12/14V	20	130		
	7327,7387	BPF200-0UO-024V	24V	15	98		
	7327,7387	BPF200-0UO-028V	28V	15	98		
595nm Super Yellow InGaAlP  BPF200 	7328	BPF200-0UY-005V	5V	20	116	120º	Contact Polarity V = DC only Replace BPF200 With BP200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA
	7371	BPF200-0UY-012V	12V	20	116		
	7330,7382	BPF200-0UY-014V	12/14V	20	116		
	7327,7387	BPF200-0UY-024V	24V	15	75		
	7327,7387	BPF200-0UY-028V	28V	15	75		
8000K Cool White SiC/GaN  BPF200 	7328	BPF200-0CW-005V	5V	15	160	120º	Contact Polarity V = DC only Replace BPF200 With BP200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd
	7371	BPF200-0CW-012V	12V	15	160		
	7330,7382	BPF200-0CW-014V	12/14V	15	160		
	7327,7387	BPF200-0CW-024V	24V	15	160		
	7327,7387	BPF200-0CW-028V	28V	15	160		
570nm Lime Green InGaAlP  BPF200 	7328	BPF200-0UG-005V	5V	20	58	120º	Contact Polarity V = DC only Replace BPF200 With BP200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA
	7371	BPF200-0UG-012V	12V	20	58		
	7330,7382	BPF200-0UG-014V	12/14V	20	58		
	7327,7387	BPF200-0UG-024V	24V	15	44		
	7327,7387	BPF200-0UG-028V	28V	15	44		
525nm Aqua Green SiC/GaN  BPF200 	7328	BPF200-0AG-005V	5V	15	400	120º	Contact Polarity V = DC only Replace BPF200 With BP200 Narrow (15º) Beam Intensity 7Kmcd/250 Ft.Cd
	7371	BPF200-0AG-012V	12V	15	400		
	7330,7382	BPF200-0AG-014V	12/14V	15	400		
	7327,7387	BPF200-0AG-024V	24V	15	400		
	7327,7387	BPF200-0AG-028V	28V	15	400		
470nm Super Blue SiC/GaN  BPF200 	7328	BPF200-0PB-005V	5V	15	125	120º	Contact Polarity V = DC only Replace BPF200 With BP200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd
	7371	BPF200-0PB-012V	12V	15	125		
	7330,7382	BPF200-0PB-014V	12/14V	15	125		
	7327,7387	BPF200-0PB-024V	24V	15	125		
	7327,7387	BPF200-0PB-028V	28V	15	125		

All dimensions in inches. For millimeters multiply by 25.4



Series: BP200
PN Example: BP200-0AG-014V



Series: BP203
PN Example: BP203-1UB-014V

Log # 122G Rev 08-2000

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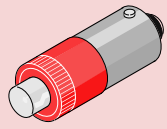
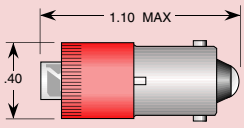
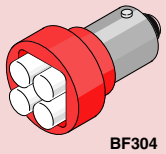
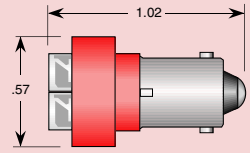
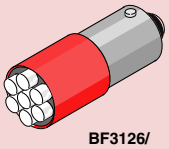
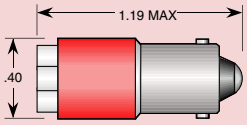
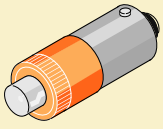
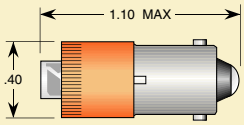
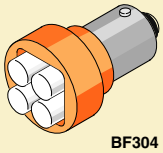
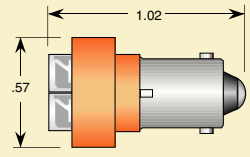
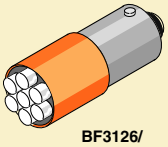
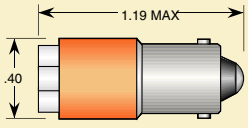
Website: www.ledtronics.com

T3-1/4 (9mm) Miniature Based LED Lamps

Miniature Packages		Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAs	**T3-1/4 (9mm) Miniature Bayonet**	6MB, 44, 47, 755	BF321-0UR-006B	5/6V	20	115	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF321 With B321 for Narrow Beam (15º) 1.6K mcd/52 Ft.Cd @ 20mA
 BF321		12MB, 756	BF321-0UR-014B	12/14V	20	115		
		24MB,	BF321-0UR-024B	24V	20	115		
		313,757,1819,1829	BF321-0UR-028B	28V	20	115		
		48MB	BF321-0UR-048B	48V	12	65		
		60MB,1835	BF321-0UR-060B	60V	12	65		
		120MB, NE51H	BF321-0UR-120A	120VAC	10	50		
			BF321-0UR-130B	130V	8	40		
660nm Ultra Red GaAlAs/GaAs	**T3-1/4 (9mm) Miniature Bayonet LED Cluster**	6MB, 44, 47, 755	BF304-0UR-006B	5/6V	80	460	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF304 With B304 for Narrow Beam (15º) 6.4K mcd/208 Ft.Cd @ 20mA
 BF304		12MB, 756	BF304-0UR-014B	12/14V	40	460		
		24MB,	BF304-0UR-024B	24V	20	460		
		313,757,1819,1829	BF304-0UR-028B	28V	20	460		
		48MB	BF304-0UR-048B	48V	12	260		
		60MB,1835	BF304-0UR-060B	60V	12	260		
		120MB, NE51H	BF304-0UR-120A	120VAC	10	200		
			BF304-0UR-130B	130V	8	160		
660nm Ultra Red GaAlAs/GaAs	**T3-1/4 (9mm) Miniature Bayonet LED Cluster**	6MB, 44, 47, 755	BF3126-0UR-006B	5/6V	120	600	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF3126/3127 With B3126/3127 for Narrow Beam (65º) 1.3K mcd/210 Ft.Cd @ 20mA
 BF3126/ BF3127		12MB, 756	BF3126-0UR-014B	12/14V	40	600		
		24MB,	BF3127-0UR-024B	24V	20	700		
		313,757,1819,1829	BF3127-0UR-028B	28V	20	700		
		48MB	BF3127-0UR-048B	48V	12	230		
		60MB,1835	BF3127-0UR-060B	60V	12	230		
		120MB, NE51H	BF3127-0UR-120A	120VAC	10	160		
			BF3127-0UR-130B	130V	8	140		
612nm Super Orange InGaAlP	**T3-1/4 (9mm) Miniature Bayonet**	6MB, 44, 47, 755	BF321-0UO-006B	5/6V	20	130	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF321 With B321 for Narrow Beam (15º) 3.5 K mcd@ 20mA
 BF321		12MB, 756	BF321-0UO-014B	12/14V	20	130		
		24MB,	BF321-0UO-024B	24V	20	130		
		313,757,1819,1829	BF321-0UO-028B	28V	20	130		
		48MB	BF321-0UO-048B	48V	12	78		
		60MB,1835	BF321-0UO-060B	60V	12	78		
		120MB, NE51H	BF321-0UO-120A	120VAC	10	65		
			BF321-0UO-130B	130V	8	52		
612nm Super Orange InGaAlP	**T3-1/4 (9mm) Miniature Bayonet LED Cluster**	6MB, 44, 47, 755	BF304-0UO-006B	5/6V	80	520	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF304 With B304 for Narrow Beam (15º) 14 K mcd@ 20mA
 BF304		12MB, 756	BF304-0UO-014B	12/14V	40	520		
		24MB,	BF304-0UO-024B	24V	20	520		
		313,757,1819,1829	BF304-0UO-028B	28V	20	520		
		48MB	BF304-0UO-048B	48V	12	312		
		60MB,1835	BF304-0UO-060B	60V	12	312		
		120MB, NE51H	BF304-0UO-120A	120VAC	10	260		
			BF304-0UO-130B	130V	8	208		
612nm Super Orange InGaAlP	**T3-1/4 (9mm) Miniature Bayonet LED Cluster**	6MB, 44, 47, 755	BF3126-0UO-006B	5/6V	120	510	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF3126/3127 With B3126/3127 for Medium Beam (50º) 2.45 K mcd @ 20mA
 BF3126/ BF3127		12MB, 756	BF3126-0UO-014B	12/14V	40	510		
		24MB,	BF3127-0UO-024B	24V	20	595		
		313,757,1819,1829	BF3127-0UO-028B	28V	20	595		
		48MB	BF3127-0UO-048B	48V	12	357		
		60MB,1835	BF3127-0UO-060B	60V	12	357		
		120MB, NE51H	BF3127-0UO-120A	120VAC	10	298		
			BF3127-0UO-130B	130V	8	238		

All dimensions in inches. For millimeters multiply by 25.4

Log # 122H Rev 10-2000

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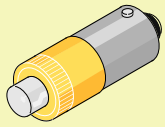
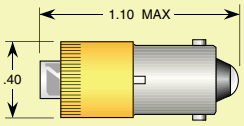
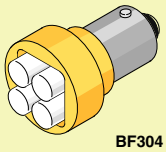
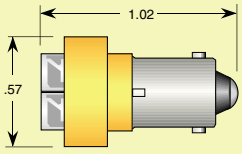
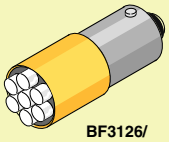
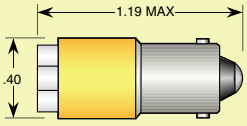
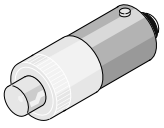
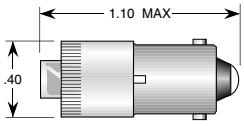
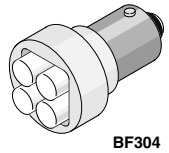
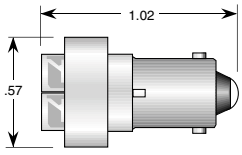
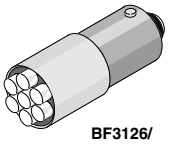
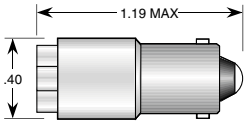
T3-1/4 (9mm) Miniature Based LED Lamps

Miniature Packages		Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC)			Angle of Illumi-nation	Special Features
				Voltage V typ	Current mA typ	Intensity mcd		
595nm Super Yellow InGaAlP	T3-1/4 (9mm) Miniature Bayonet	6MB, 44, 47, 755	BF321-0UY-006B	5/6V	20	116	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF321 With B321 for Narrow Beam (15º) 3.2K mcd@ 20mA
 BF321		12MB, 756	BF321-0UY-014B	12/14V	20	116		
		24MB,	BF321-0UY-024B	24V	20	116		
		313,757,1819,1829	BF321-0UY-028B	28V	20	116		
		48MB	BF321-0UY-048B	48V	12	54		
		60MB,1835	BF321-0UY-060B	60V	12	54		
		120MB, NE51H	BF321-0UY-120A	120VAC	10	39		
			BF321-0UY-130B	130V	8	24		
595nm Super Yellow InGaAlP	T3-1/4 (9mm) Miniature Bayonet LED Cluster	6MB, 44, 47, 755	BF304-0UY-006B	5/6V	80	464	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF304 With B304 for Narrow Beam (15º) 12.8K mcd@ 20mA
 BF304		12MB, 756	BF304-0UY-014B	12/14V	40	464		
		24MB,	BF304-0UY-024B	24V	20	464		
		313,757,1819,1829	BF304-0UY-028B	28V	20	464		
		48MB	BF304-0UY-048B	48V	12	216		
		60MB,1835	BF304-0UY-060B	60V	12	216		
		120MB, NE51H	BF304-0UY-120A	120VAC	10	156		
			BF304-0UY-130B	130V	8	96		
595nm Super Yellow InGaAlP	T3-1/4 (9mm) Miniature Bayonet LED Cluster	6MB, 44, 47, 755	BF3126-0UY-006B	5/6V	120	192	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF3126/3127 With B3126/3127 for Medium Beam (50º) 7K mcd @ 20mA
 BF3126/ BF3127		12MB, 756	BF3126-0UY-014B	12/14V	40	192		
		24MB,	BF3127-0UY-024B	24V	20	224		
		313,757,1819,1829	BF3127-0UY-028B	28V	20	224		
		48MB	BF3127-0UY-048B	48V	12	105		
		60MB,1835	BF3127-0UY-060B	60V	12	105		
		120MB, NE51H	BF3127-0UY-120A	120VAC	10	87		
			BF3127-0UY-130B	130V	8	70		
8000K Cool White SiC/GaN	T3-1/4 (9mm) Miniature Bayonet	6MB, 44, 47, 755	BF321-0CW-006B	5/6V	15	160	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF321 With B321 for Std. Beam (50º)
 BF321		12MB, 756	BF321-0CW-014B	12/14V	15	160		
		24MB,	BF321-0CW-024B	24V	15	160		
		313,757,1819,1829	BF321-0CW-028B	28V	15	160		
		48MB	BF321-0CW-048B	48V	12	128		
		60MB,1835	BF321-0CW-060B	60V	12	128		
		120MB, NE51H	BF321-0CW-120A	120VAC	10	106		
			BF321-0CW-130B	130V	8	85		
8000K Cool White SiC/GaN	T3-1/4 (9mm) Miniature Bayonet LED Cluster	6MB, 44, 47, 755	BF304-0CW-006B	5/6V	60	640	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF304 With B304 for Std. Beam (50º)
 BF304		12MB, 756	BF304-0CW-014B	12/14V	30	640		
		24MB,	BF304-0CW-024B	24V	15	640		
		313,757,1819,1829	BF304-0CW-028B	28V	15	640		
		48MB	BF304-0CW-48B	48V	12	512		
		60MB,1835	BF304-0CW-60B	60V	12	512		
		120MB, NE51H	BF304-0CW-120A	120VAC	10	424		
			BF304-0CW-130B	130V	8	340		
8000K Cool White SiC/GaN	T3-1/4 (9mm) Miniature Bayonet LED Cluster	6MB, 44, 47, 755	BF3126-0CW-006B	5/6V	90	900	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF3126/3127 With B3126/3127 for Std. Beam (50º)
 BF3126/ BF3127		12MB, 756	BF3126-0CW-014B	12/14V	30	900		
		24MB,	BF3126-0CW-024B	24V	15	900		
		313,757,1819,1829	BF3127-0CW-028B	28V	15	1050		
		48MB	BF3127-0CW-048B	48V	12	840		
		60MB,1835	BF3127-0CW-060B	60V	12	840		
		120MB, NE51H	BF3127-0CW-120A	120VAC	10	700		
			BF3127-0CW-130B	130V	8	560		

All dimensions in inches. For millimeters multiply by 25.4

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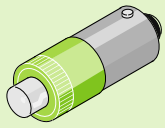
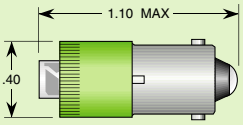
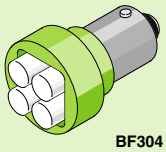
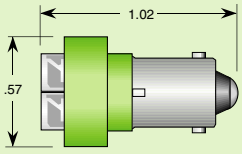
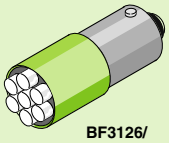
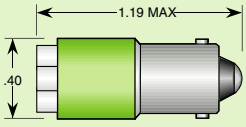
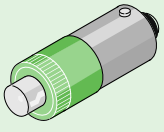
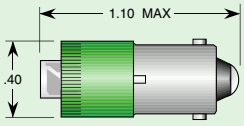
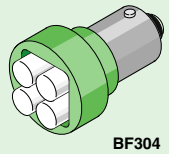
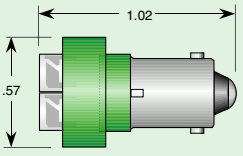
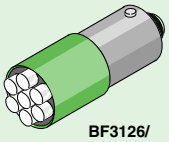
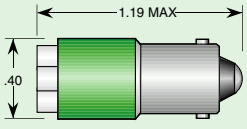
T3-1/4 (9mm) Miniature Based LED Lamps

Miniature Packages		Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
570nm Lime Green InGaAlP	T3-1/4 (9mm) Miniature Bayonet	6MB, 44, 47, 755	BF321-0UG-006B	5/6V	20	58	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF321 With B321 for Narrow Beam (12-15º) 1K mcd@ 20mA
 BF321		12MB, 756	BF321-0UG-014B	12/14V	20	58		
		24MB,	BF321-0UG-024B	24V	20	58		
		313,757,1819,1829	BF321-0UG-028B	28V	20	58		
		48MB	BF321-0UG-048B	48V	12	35		
		60MB,1835	BF321-0UG-060B	60V	12	35		
		120MB, NE51H	BF321-0UG-120A	120VAC	10	29		
			BF321-0UG-130B	130V	8	23		
570nm Lime Green InGaAlP	T3-1/4 (9mm) Miniature Bayonet LED Cluster	6MB, 44, 47, 755	BF304-0UG-006B	5/6V	80	232	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF304 With B304 for Narrow Beam (12-15º) 4K mcd@ 20mA
 BF304		12MB, 756	BF304-0UG-014B	12/14V	40	232		
		24MB,	BF304-0UG-024B	24V	20	232		
		313,757,1819,1829	BF304-0UG-028B	28V	20	232		
		48MB	BF304-0UG-048B	48V	12	140		
		60MB,1835	BF304-0UG-060B	60V	12	140		
		120MB, NE51H	BF304-0UG-120A	120VAC	10	116		
			BF304-0UG-130B	130V	8	92		
570nm Lime Green InGaAlP	T3-1/4 (9mm) Miniature Bayonet LED Cluster	6MB, 44, 47, 755	BF3126-0UG-006B	5/6V	120	216	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF3126/3127 With B3126/3127 for Medium Beam (50º) 1.2K mcd @ 20mA
 BF3126/ BF3127		12MB, 756	BF3126-0UG-014B	12/14V	40	216		
		24MB,	BF3127-0UG-024B	24V	20	252		
		313,757,1819,1829	BF3127-0UG-028B	28V	20	252		
		48MB	BF3127-0UG-048B	48V	12	154		
		60MB,1835	BF3127-0UG-060B	60V	12	154		
		120MB, NE51H	BF3127-0UG-120A	120VAC	10	126		
			BF3127-0UG-130B	130V	8	100		
525nm Aqua Green SiC/GaN	T3-1/4 (9mm) Miniature Bayonet	6MB, 44, 47, 755	BF321-0AG-006B	5/6V	15	400	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF321 With B321 for Narrow Beam (15º) 7K mcd/250 Ft.Cd @ 15mA
 BF321		12MB, 756	BF321-0AG-014B	12/14V	15	400		
		24MB,	BF321-0AG-024B	24V	15	400		
		313,757,1819,1829	BF321-0AG-028B	28V	15	400		
		48MB	BF321-0AG-048B	48V	12	320		
		60MB,1835	BF321-0AG-060B	60V	12	320		
		120MB, NE51H	BF321-0AG-120A	120VAC	10	275		
			BF321-0AG-130B	130V	8	230		
525nm Aqua Green SiC/GaN	T3-1/4 (9mm) Miniature Bayonet LED Cluster	6MB, 44, 47, 755	BF304-0AG-006B	5/6V	60	1600	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF304 With B304 for Narrow Beam (15º) 28K mcd/1000 Ft.Cd @ 15mA
 BF304		12MB, 756	BF304-0AG-014B	12/14V	30	1600		
		24MB,	BF304-0AG-024B	24V	15	1600		
		313,757,1819,1829	BF304-0AG-028B	28V	15	1600		
		48MB	BF304-0AG-048B	48V	12	1280		
		60MB,1835	BF304-0AG-060B	60V	12	1280		
		120MB, NE51H	BF304-0AG-120A	120VAC	10	1100		
			BF304-0AG-130B	130V	8	920		
525nm Aqua Green SiC/GaN	T3-1/4 (9mm) Miniature Bayonet LED Cluster	6MB, 44, 47, 755	BF3126-0AG-006B	5/6V	90	1200	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF3126/3127 With B3126/3127 for Narrow Beam (15º) 30K mcd/800 Ft.Cd @ 15mA
 BF3126/ BF3127		12MB, 756	BF3126-0AG-014B	12/14V	30	1200		
		24MB,	BF3126-0AG-024B	24V	15	1200		
		313,757,1819,1829	BF3127-0AG-028B	28V	15	1400		
		48MB	BF3127-0AG-048B	48V	12	1190		
		60MB,1835	BF3127-0AG-060B	60V	12	1190		
		120MB, NE51H	BF3127-0AG-120A	120VAC	10	1050		
			BF3127-0AG-130B	130V	8	910		

All dimensions in inches. For millimeters multiply by 25.4

Log # 122K Rev 10-2000

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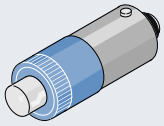
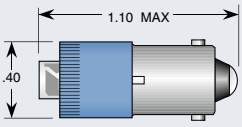
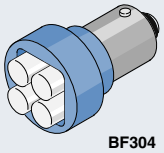
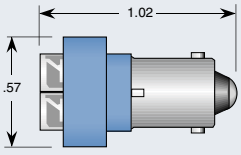
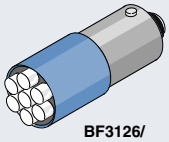
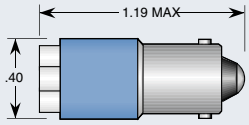
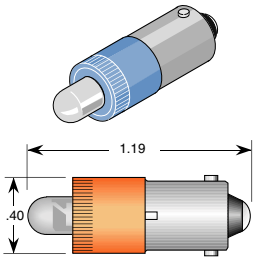
T3-1/4 (9mm) Miniature Based LED Lamps

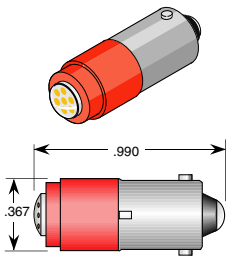
Miniature Packages		Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC)			Angle of Illumi-nation	Special Features
				Voltage V typ	Current mA typ	Intensity mcd		
470nm Super Blue SiC/GaN	**T3-1/4 (9mm) Miniature Bayonet**	6MB, 44, 47, 755	BF321-0PB-006B	5/6V	15	116	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only
		12MB, 756	BF321-0PB-014B	12/14V	15	116		
BF321	1.10 MAX, .40	24MB,	BF321-0PB-024B	24V	15	116		
		313,757,1819,1829	BF321-0PB-028B	28V	15	116		
		48MB	BF321-0PB-048B	48V	12	84		
		60MB,1835	BF321-0PB-060B	60V	12	84		Replace BF321 With B321 for Std. Beam (15º)
		120MB, NE51H	BF321-0PB-120A	120VAC	10	74		
			BF321-0PB-130B	130V	8	53		
470nm Super Blue SiC/GaN	**T3-1/4 (9mm) Miniature Bayonet LED Cluster**	6MB, 44, 47, 755	BF304-0PB-006B	5/6V	60	464	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only
		12MB, 756	BF304-0PB-014B	12/14V	30	464		
BF304	1.02, .57	24MB,	BF304-0PB-024B	24V	15	464		
		313,757,1819,1829	BF304-0PB-028B	28V	15	464		
		48MB	BF304-0PB-048B	48V	12	336		
		60MB,1835	BF304-0PB-060B	60V	12	336		Replace BF304 With B304 for Std. Beam (15º)
		120MB, NE51H	BF304-0PB-120A	120VAC	10	296		
			BF304-0PB-130B	130V	8	212		
470nm Super Blue SiC/GaN	**T3-1/4 (9mm) Miniature Bayonet LED Cluster**	6MB, 44, 47, 755	BF3126-0PB-006B	5/6V	90	360	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only
		12MB, 756	BF3126-0PB-014B	12/14V	30	360		
BF3126/ BF3127	1.19 MAX, .40	24MB,	BF3127-0PB-024B	24V	15	420		
		313,757,1819,1829	BF3127-0PB-028B	28V	15	420		
		48MB	BF3127-0PB-048B	48V	12	336		
		60MB,1835	BF3127-0PB-060B	60V	12	336		Replace BF3126/3127 With B3126/3127 for Std. Beam (15º)
		120MB, NE51H	BF3127-0PB-120A	120VAC	10	315		
			BF3127-0PB-130B	130V	8	252		

Options

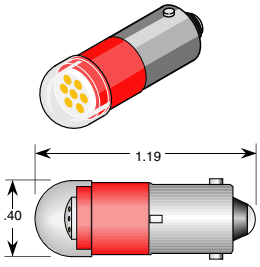
All dimensions in inches. For millimeters multiply by 25.4



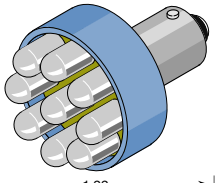
Series: B321
PN Example: B321-0UO-006B

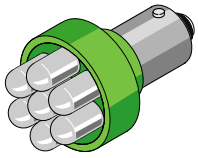


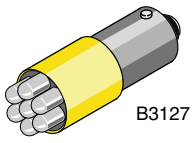
Series: BM326
PN Example: BM326-0UR-006B



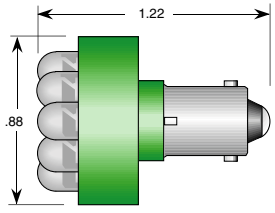
Series: B3206
PN Example: B3206-0UR-120A



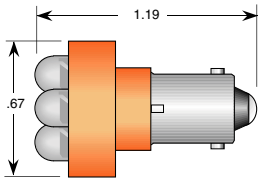




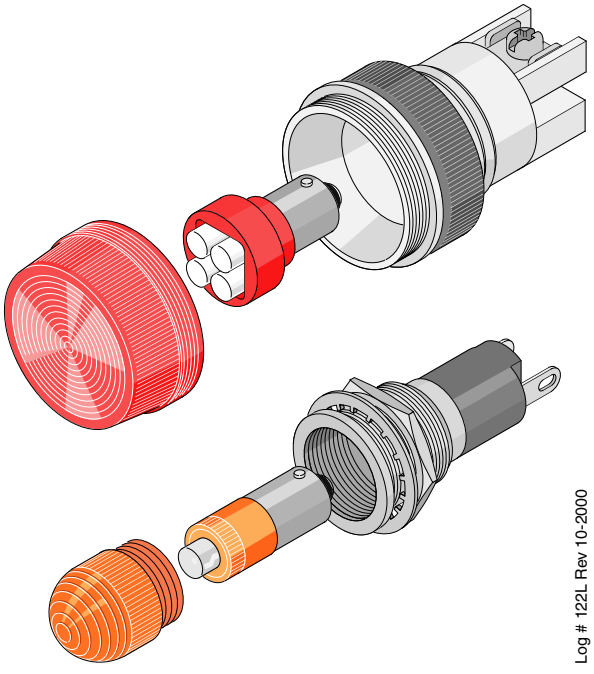
B3127



Series: BN309
PN Example: BN309-0AG-024B



Series: BN306/BN307
PN Example: BN306-0UO-006B



Log # 122L Rev 10-2000

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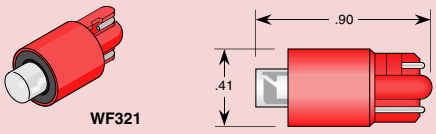
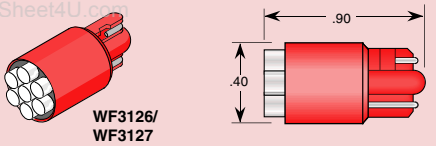
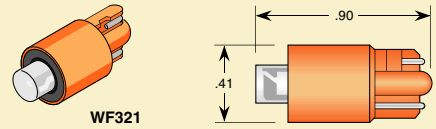
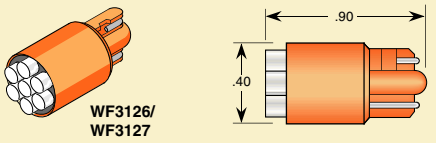
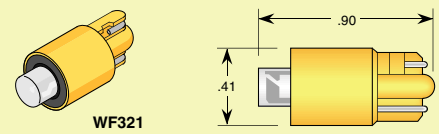
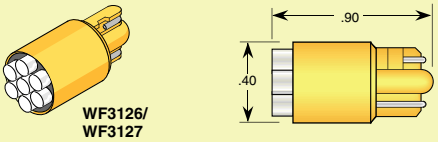
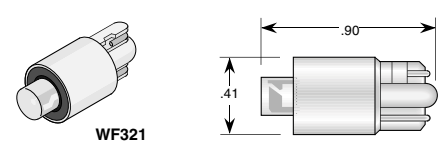
T3-1/4 (9mm) Miniature Wedge Based LEDs

Miniature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAs  WF321	159,259,555,1995-7	WF321-0UR-006B	5/6V	20	115	120º	Contact Polarity B = Bipolar AC/DC A = AC only V = DC only Replace WF321 With W321 for Narrow Beam (15º) 1.6K mcd/52Ft.Cd @ 20mA
	124,658,2080,936	WF321-0UR-014B	12/14V	20	115		
	656,657,400,464,655	WF321-0UR-024B	24V	20	115		
	656,657,400,464,655	WF321-0UR-028B	28V	20	115		
		WF321-0UR-048B	48V	12	65		
		WF321-0UR-120A	120VAC	10	50		
		WF321-0UR-130V	130V	8	40		
660nm Ultra Red GaAlAs/GaAs  WF3126/ WF3127	159,259,555,1995-7	WF3126-0UR-006B	5/6V	120	600	120º	Contact Polarity B = Bipolar AC/DC A = AC only V = DC only
	124,658,2080,936	WF3126-0UR-014B	12/14V	40	600		
	656,657,400,464,655	WF3127-0UR-024B	24V	20	700		
	656,657,400,464,655	WF3127-0UR-028B	28V	20	700		
		WF3127-0UR-048B	48V	12	230		
		WF3127-0UR-120A	120VAC	10	160		
		WF3127-0UR-130V	130V	8	140		
612nm Orange InGaAlP  WF321	159,259,555,1995-7	WF321-0UO-006B	5/6V	20	130	120º	Contact Polarity B = Bipolar AC/DC A = AC only V = DC only Replace WF321 With W321 for Narrow Beam (15º) 3.5 K mcd@ 20mA
	124,658,2080,936	WF321-0UO-014B	12/14V	20	130		
	656,657,400,464,655	WF321-0UO-024B	24V	20	130		
	656,657,400,464,655	WF321-0UO-028B	28V	20	130		
		WF321-0UO-048B	48V	12	78		
		WF321-0UO-120A	120VAC	10	65		
		WF321-0UO-130V	130V	8	52		
612nm Orange InGaAlP  WF3126/ WF3127	159,259,555,1995-7	WF3126-0UO-006B	5/6V	120	510	120º	Contact Polarity B = Bipolar AC/DC A = AC only V = DC only
	124,658,2080,936	WF3126-0UO-014B	12/14V	40	510		
	656,657,400,464,655	WF3127-0UO-024B	24V	20	595		
	656,657,400,464,655	WF3127-0UO-028B	28V	20	595		
		WF3127-0UO-048B	48V	12	357		
		WF3127-0UO-120A	120VAC	10	298		
		WF3127-0UO-130V	130V	8	238		
595nm Yellow InGaN  WF321	159,259,555,1995-7	WF321-0UY-006B	5/6V	20	116	120º	Contact Polarity B = Bipolar AC/DC A = AC only V = DC only Replace WF321 With W321 for Narrow Beam (15º) 3.2K mcd@ 20mA
	124,658,2080,936	WF321-0UY-014B	12/14V	20	116		
	656,657,400,464,655	WF321-0UY-024B	24V	20	116		
	656,657,400,464,655	WF321-0UY-028B	28V	20	116		
		WF321-0UY-048B	48V	12	54		
		WF321-0UY-120A	120VAC	10	39		
		WF321-0UY-130V	130V	8	24		
595nm Yellow InGaN  WF3126/ WF3127	159,259,555,1995-7	WF3126-0UY-006B	5/6V	120	192	120º	Contact Polarity B = Bipolar AC/DC A = AC only V = DC only
	124,658,2080,936	WF3126-0UY-014B	12/14V	40	192		
	656,657,400,464,655	WF3127-0UY-024B	24V	20	224		
	656,657,400,464,655	WF3127-0UY-028B	28V	20	224		
		WF3127-0UY-048B	48V	12	105		
		WF3127-0UY-120A	120VAC	10	87		
		WF3127-0UY-130V	130V	8	70		
8000K Cool White InGaN  WF321	159,259,555,1995-7	WF321-0CW-006B	5/6V	15	160	120º	Contact Polarity B = Bipolar AC/DC A = AC only V = DC only Replace WF321 With W321 for Std. Beam (50º)
	124,658,2080,936	WF321-0CW-014B	12/14V	15	160		
	656,657,400,464,655	WF321-0CW-024B	24V	15	160		
	656,657,400,464,655	WF321-0CW-028B	28V	15	160		
		WF321-0CW-048B	48V	12	128		
		WF321-0CW-120A	120VAC	10	106		
		WF321-0CW-130V	130V	8	85		

All dimensions in inches. For millimeters multiply by 25.4

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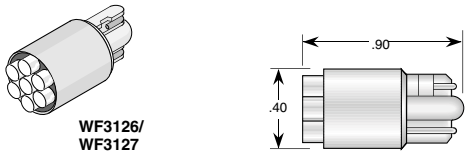
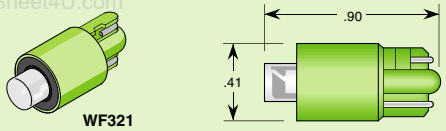
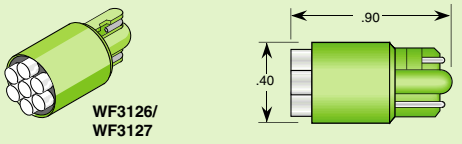
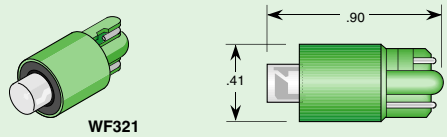
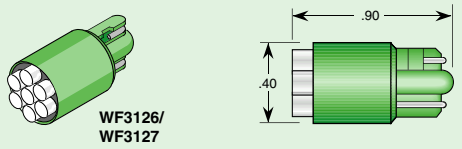
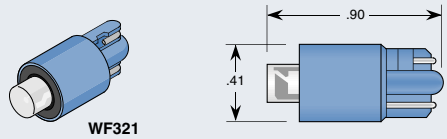
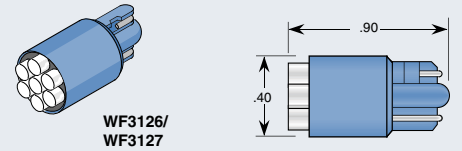
T3-1/4 (9mm) Miniature Wedge Based LEDs

Miniature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
8000K Cool White InGaN  WF3126/ WF3127	159,259,555,1995-7	WF3126-0CW-006B	5/6V	90	900	120º	Contact Polarity B = Bipolar AC/DC A = AC only V = DC only
	124,658,2080,936	WF3126-0CW-014B	12/14V	30	900		
	656,657,400,464,655	WF3126-0CW-024B	24V	15	900		
	656,657,400,464,655	WF3127-0CW-028B	28V	15	1050		
		WF3127-0CW-048B	48V	12	840		
		WF3127-0CW-120A	120VAC	10	700		
		WF3127-0CW-130V	130V	8	560		
570nm Lime Green InGaAlP  WF321	159,259,555,1995-7	WF321-0UG-006B	5/6V	20	58	120º	Contact Polarity B = Bipolar AC/DC A = AC only V = DC only Replace WF321 With W321 for Narrow Beam (12-15º) 1K mcd@ 20mA
	124,658,2080,936	WF321-0UG-014B	12/14V	20	58		
	656,657,400,464,655	WF321-0UG-024B	24V	20	58		
	656,657,400,464,655	WF321-0UG-028B	28V	20	58		
		WF321-0UG-048B	48V	12	35		
		WF321-0UG-120A	120VAC	10	29		
		WF321-0UG-130V	130V	8	23		
570nm Lime Green InGaAlP  WF3126/ WF3127	159,259,555,1995-7	WF3126-0UG-006B	5/6V	120	216	120º	Contact Polarity B = Bipolar AC/DC A = AC only V = DC only
	124,658,2080,936	WF3126-0UG-104B	12/14V	40	216		
	656,657,400,464,655	WF3127-0UG-024B	24V	20	252		
	656,657,400,464,655	WF3127-0UG-28B	28V	20	252		
		WF3127-0UG-48B	48V	12	154		
		WF3127-0UG-120A	120VAC	10	126		
		WF3127-0UG-130V	130V	8	100		
525nm Super Green InGaN  WF321	159,259,555,1995-7	WF321-0AG-006B	5/6V	15	400	120º	Contact Polarity B = Bipolar AC/DC A = AC only V = DC only Replace WF321 With W321 for Narrow Beam (15º) 7K mcd/250 Ft.Cd @ 15mA
	124,658,2080,936	WF321-0AG-014B	12/14V	15	400		
	656,657,400,464,655	WF321-0AG-024B	24V	15	400		
	656,657,400,464,655	WF321-0AG-028B	28V	15	400		
		WF321-0AG-048B	48V	12	320		
		WF321-0AG-120A	120VAC	10	275		
		WF321-0AG-130V	130V	8	230		
525nm Super Green InGaN  WF3126/ WF3127	159,259,555,1995-7	WF3126-0AG-006B	5/6V	90	1200	120º	Contact Polarity B = Bipolar AC/DC A = AC only V = DC only
	124,658,2080,936	WF3126-0AG-014B	12/14V	30	1200		
	656,657,400,464,655	WF3126-0AG-024B	24V	15	1200		
	656,657,400,464,655	WF3127-0AG-028B	28V	15	1400		
		WF3127-0AG-048B	48V	12	1190		
		WF3127-0AG-120A	120VAC	10	1050		
		WF3127-0AG-130V	130V	8	910		
470nm Super Blue InGaN  WF321	159,259,555,1995-7	WF321-0PB-006B	5/6V	15	116	120º	Contact Polarity B = Bipolar AC/DC A = AC only V = DC only Replace WF321 With W321 for Std. Beam (15º)
	124,658,2080,936	WF321-0PB-014B	12/14V	15	116		
	656,657,400,464,655	WF321-0PB-024B	24V	15	116		
	656,657,400,464,655	WF321-0PB-028B	28V	15	116		
		WF321-0PB-048B	48V	12	84		
		WF321-0PB-120A	120VAC	10	106		
		WF321-0PB-130V	130V	8	53		
470nm Super Blue InGaN  WF3126/ WF3127	159,259,555,1995-7	WF3126-0PB-006B	5/6V	90	360	120º	Contact Polarity B = Bipolar AC/DC A = AC only V = DC only
	124,658,2080,936	WF3126-0PB-014B	12/14V	30	360		
	656,657,400,464,655	WF3127-0PB-024B	24V	15	420		
	656,657,400,464,655	WF3127-0PB-028B	28V	15	420		
		WF3127-0PB-048B	48V	12	336		
		WF3127-0PB-120A	120VAC	10	315		
		WF3127-0PB-130V	130V	8	252		

All dimensions in inches. For millimeters multiply by 25.4

Log # 122LLL Rev 08-2000

LEDTRONICS, INC.
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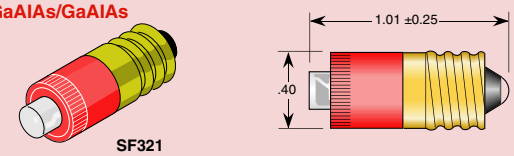
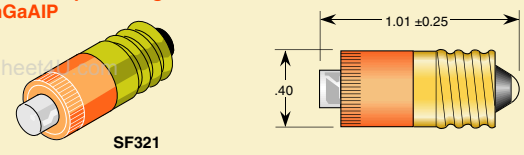
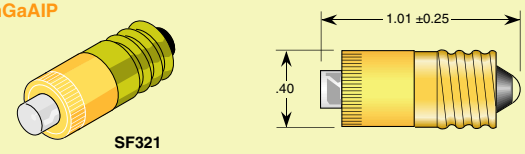
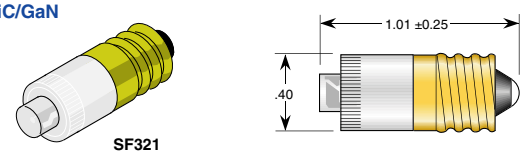
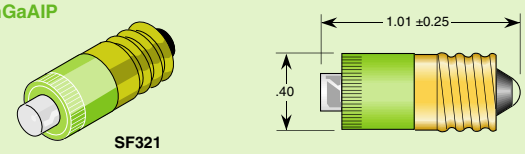
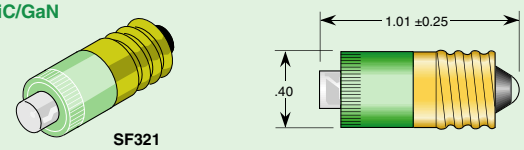
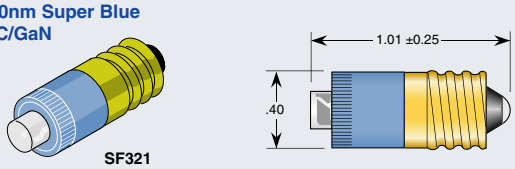
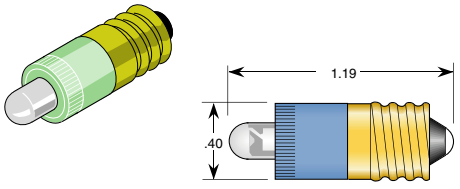
T3-1/4 (9mm) Miniature Screw Based LEDs

Miniature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAlAs 	407,502,3708	SF321-0UR-006B	5/6V	20	115	120º	Center Contact Polarity B = BiPolar AC/DC A = AC only Replace SF321 With S321 Narrow Beam (15º) Intensity 1.6K mcd/52 Ft.Cd @20 mA
	3724,1446	SF321-0UR-014B	12/14V	20	115		
	1449,52	SF321-0UR-024B	24V	15	85		
		SF321-0UR-028B	28V	15	85		
		SF321-0UR-120A	120VAC	10	50		
612nm Super Orange InGaAlP 	407,502,3708	SF321-0UO-006B	5/6V	20	130	120º	Center Contact Polarity B = BiPolar AC/DC A = AC only Replace SF321 With S321 Narrow (15º) Beam Intensity 3.5K mcd@20 mA
	3724,1446	SF321-0UO-014B	12/14V	20	130		
	1449,52	SF321-0UO-024B	24V	15	98		
		SF321-0UO-028B	28V	15	98		
		SF321-0UO-120A	120VAC	10	65		
595nm Super Yellow InGaAlP 	407,502,3708	SF321-0UY-006B	5/6V	20	116	120º	Center Contact Polarity B = BiPolar AC/DC A = AC only Replace SF321 With S321 Narrow (15º) Beam Intensity 3.2K mcd@20 mA
	3724,1446	SF321-0UY-014B	12/14V	20	116		
	1449,52	SF321-0UY-024B	24V	15	75		
		SF321-0UY-028B	28V	15	75		
		SF321-0UY-120A	120VAC	10	39		
8000K Cool White SiC/GaN 	407,502,3708	SF321-0CW-006B	5V	15	160	120º	Center Contact Polarity B = BiPolar AC/DC A = AC only Replace SF321 With S321 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd
	3724,1446	SF321-0CW-014B	12/14V	15	160		
	1449,52	SF321-0CW-024B	24V	15	160		
		SF321-0CW-028B	28V	15	160		
		SF321-0CW-120A	120VAC	10	106		
570nm Lime Green InGaAlP 	407,502,3708	SF321-0UG-006B	5/6V	20	58	120º	Center Contact Polarity B = BiPolar AC/DC A = AC only Replace SF321 With S321 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA
	3724,1446	SF321-0UG-014B	12/14V	20	58		
	1449,52	SF321-0UG-024B	24V	15	44		
		SF321-0UG-028B	28V	15	44		
		SF321-0UG-120A	120VAC	10	29		
525nm Aqua Green SiC/GaN 	407,502,3708	SF321-0AG-006B	5/6V	15	400	120º	Center Contact Polarity B = BiPolar AC/DC A = AC only Replace SF321 With S321 Narrow (15º) Beam Intensity 7K mcd/250 Ft.Cd
	3724,1446	SF321-0AG-014B	12/14V	15	400		
	1449,52	SF321-0AG-024B	24V	15	400		
		SF321-0AG-028B	28V	15	400		
		SF321-0AG-120A	120VAC	10	275		
470nm Super Blue SiC/GaN 	407,502,3708	SF321-0PB-006B	5/6V	15	125	120º	Center Contact Polarity B = BiPolar AC/DC A = AC only Replace SF321 With S321 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd
	3724,1446	SF321-0PB-014B	12/14V	15	125		
	1449,52	SF321-0PB-024B	24V	15	125		
		SF321-0PB-028B	28V	15	125		
		SF321-0PB-120A	120VAC	10	74		

All dimensions in inches. For millimeters multiply by 25.4

Options



Series: S321CB1K (15º Illumination)
PN Example: S321-0PB-024B

Log # 122M Rev 09-2000

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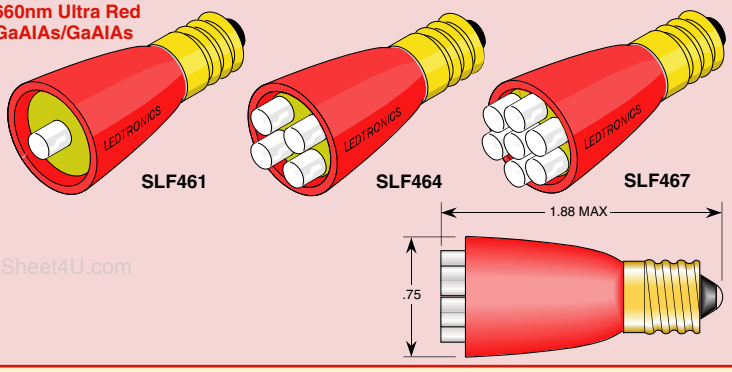
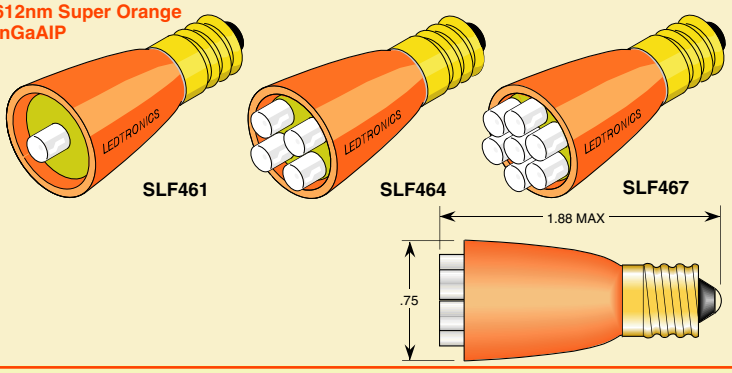
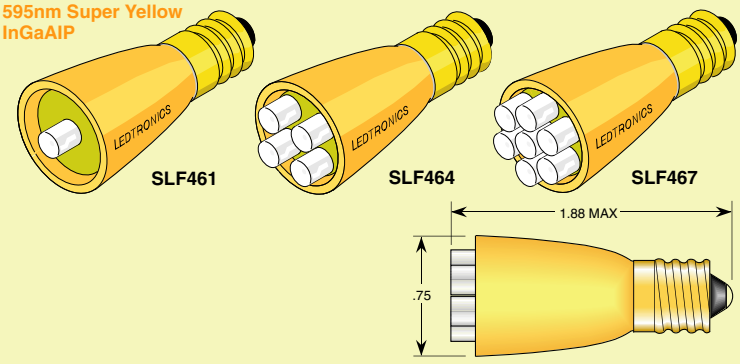
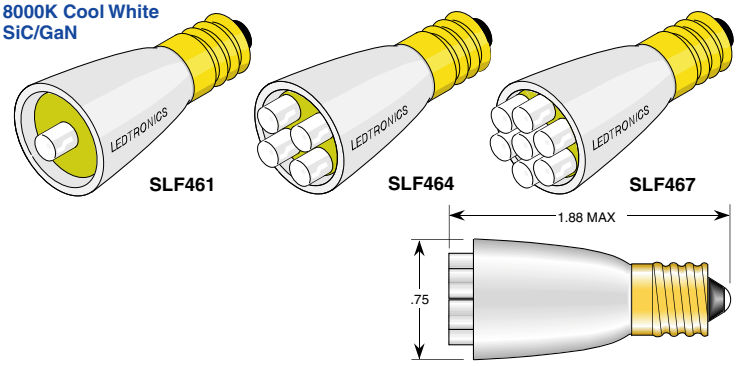
S6 Candelabra Screw Based LEDs

Miniature Packages	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAlAs 	SLF461-0UR-024B	24V	20	115	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only
	SLF461-0UR-120A	120VAC	10	50		
	SLF461-0UR-130B	130V	8	40		
	SLF461-0UR-220A	220VAC	4	15		
	SLF464-0UR-024B	24V	20	460		
	SLF464-0UR-120A	120VAC	10	200		
	SLF464-0UR-130B	130V	8	160		
	SLF464-0UR-220A	220VAC	4	60		Replace SLF461 With SL461 for Narrow Beam (15º) 1.6K mcd/52Ft.Cd @ 20mA
	SLF467-0UR-024B	24V	20	800		
	SLF467-0UR-120A	120VAC	10	350		
	SLF467-0UR-130B	130V	8	280		
	SLF467-0UR-220A	220VAC	4	105		
612nm Super Orange InGaAlP 	SLF461-0UO-024B	24V	20	130	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only
	SLF461-0UO-120A	120VAC	10	65		
	SLF461-0UO-130B	130V	8	52		
	SLF461-0UO-220A	220VAC	4	26		
	SLF464-0UO-024B	24V	20	520		
	SLF464-0UO-120A	120VAC	10	260		
	SLF464-0UO-130B	130V	8	208		
	SLF464-0UO-220A	220VAC	4	104		Replace SLF461 With SL461 for Narrow Beam (15º) 3.5 K mcd@ 20mA
	SLF467-0UO-024B	24V	20	910		
	SLF467-0UO-120A	120VAC	10	455		
	SLF467-0UO-130B	130V	8	364		
	SLF467-0UO-220A	220VAC	4	182		
595nm Super Yellow InGaAlP 	SLF461-0UY-024B	24V	20	116	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only
	SLF461-0UY-120A	120VAC	10	39		
	SLF461-0UY-130B	130V	8	24		
	SLF461-0UY-220A	220VAC	4	4		
	SLF464-0UY-024B	24V	20	464		
	SLF464-0UY-120A	120VAC	10	156		
	SLF464-0UY-130B	130V	8	96		
	SLF464-0UY-220A	220VAC	4	16		Replace SLF461 With SL461 for Narrow Beam (15º) 3.2K mcd@ 20mA
	SLF467-0UY-024B	24V	20	812		
	SLF467-0UY-120A	120VAC	10	273		
	SLF467-0UY-130B	130V	8	168		
	SLF467-0UY-220A	220VAC	4	28		
8000K Cool White SiC/GaN 	SLF461-0CW-024B	24V	15	160	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only
	SLF461-0CW-120A	120VAC	10	106		
	SLF461-0CW-130B	130V	8	85		
	SLF461-0CW-220A	220VAC	4	42		
	SLF464-0CW-024B	24V	15	640		
	SLF464-0CW-120A	120VAC	10	424		
	SLF464-0CW-130B	130V	8	340		
	SLF464-0CW-220A	220VAC	4	168		
	SLF466-0CW-024B	24V	15	960		Replace BF321 With B321 for Std. Beam (50º)
	SLF467-0CW-120A	120VAC	10	742		
	SLF467-0CW-130B	130V	8	595		
	SLF467-0CW-220A	220VAC	4	294		

All dimensions in inches. For millimeters multiply by 25.4

Log # 122N Rev 09-2000

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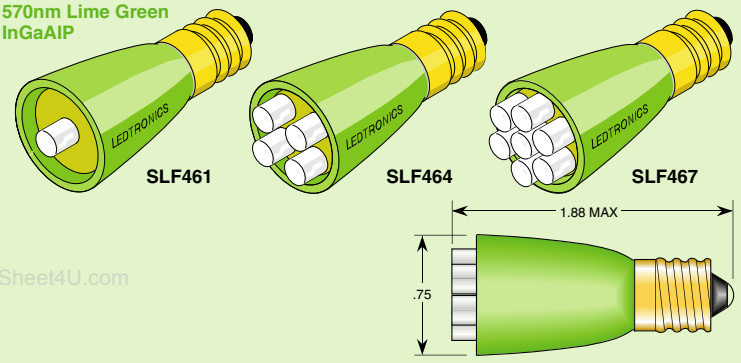
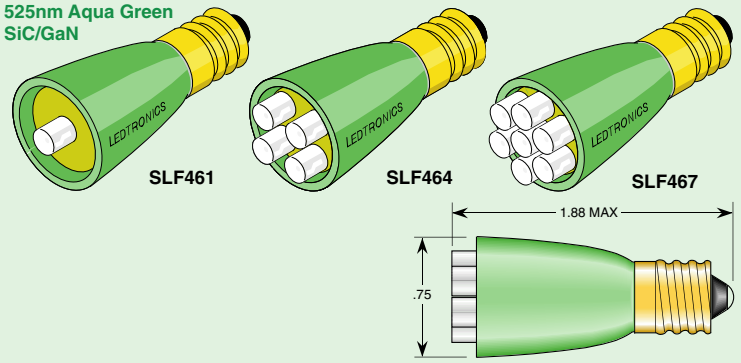
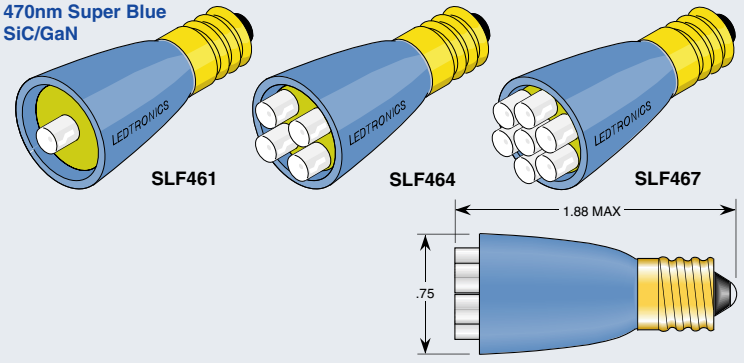
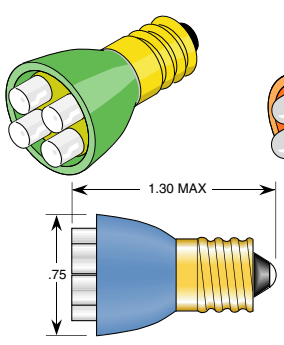
S6 Candelabra Screw Based LEDs

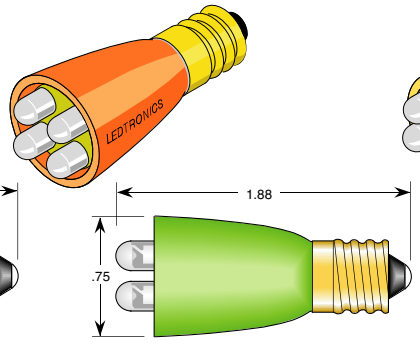
Miniature Packages	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
570nm Lime Green InGaAlP 	SLF461-0UG-024B	24V	20	58	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace SLF461 With SL461 for Narrow Beam (12-15º) 1K mcd @ 20mA
	SLF461-0UG-120A	120VAC	10	29		
	SLF461-0UG-130B	130V	8	23		
	SLF461-0UG-220A	220VAC	4	12		
	SLF464-0UG-024B	24V	20	232		
	SLF464-0UG-120A	120VAC	10	116		
	SLF464-0UG-130B	130V	8	92		
	SLF464-0UG-220A	220VAC	4	48		
	SLF467-0UG-024B	24V	20	406		
	SLF467-0UG-120A	120VAC	10	203		
	SLF467-0UG-130B	130V	8	161		
	SLF467-0UG-220A	220VAC	4	84		
525nm Aqua Green SiC/GaN 	SLF461-0AG-024B	24V	15	400	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace SLF461 With SL461 for Narrow Beam (15º) 7K mcd/250 Ft.Cd @ 15mA
	SLF461-0AG-120A	120VAC	10	275		
	SLF461-0AG-130B	130V	8	230		
	SLF461-0AG-220A	220VAC	4	140		
	SLF464-0AG-024B	24V	15	1600		
	SLF464-0AG-120A	120VAC	10	1100		
	SLF464-0AG-130B	130V	8	920		
	SLF464-0AG-220A	220VAC	4	560		
	SLF466-0AG-024B	24V	15	2400		
	SLF467-0AG-120A	120VAC	10	1900		
	SLF467-0AG-130B	130V	8	1600		
	SLF467-0AG-220A	220VAC	4	980		
470nm Super Blue SiC/GaN 	SLF461-0PB-024B	24V	15	116	120º	Center Contact Polarity B = Bipolar AC/DC A = AC only Replace BF321 With B321 for Std. Beam (15º)
	SLF461-0PB-120A	120VAC	10	74		
	SLF461-0PB-130B	130V	8	53		
	SLF461-0PB-220A	220VAC	4	7		
	SLF464-0PB-024B	24V	15	464		
	SLF464-0PB-120A	120VAC	10	296		
	SLF464-0PB-130B	130V	8	212		
	SLF464-0PB-220A	220VAC	4	28		
	SLF467-0PB-024B	24V	15	812		
	SLF467-0PB-120A	120VAC	10	518		
	SLF467-0PB-130B	130V	8	370		
	SLF467-0PB-220A	220VAC	4	49		

Options

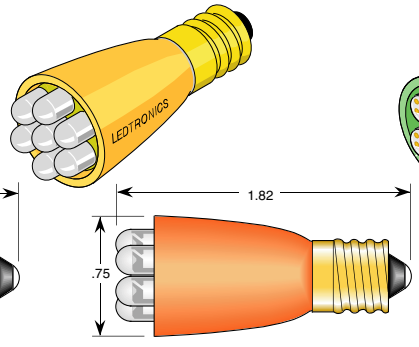
All dimensions in inches. For millimeters multiply by 25.4



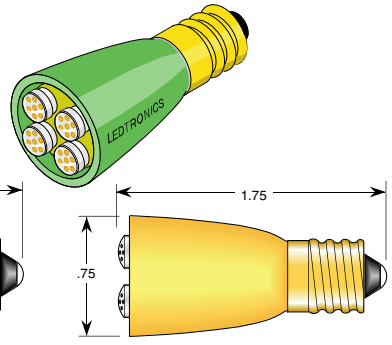
Series: SF464
PN Example: SF464-0PB-024B



Series: SL464 (15º Illumination)
PN Example: SL464-0UG-024B



Series: SL467 (15º Illumination)
PN Example: SL467-0UO-024B



Series: SL424
PN Example: SL424-0UY-006B

Log # 122P Rev 10-2000

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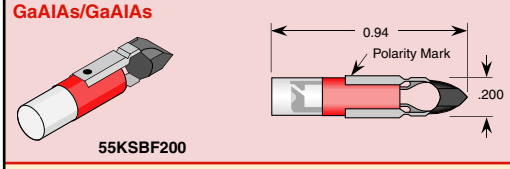
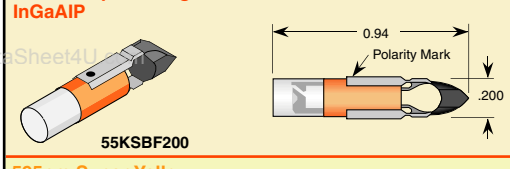
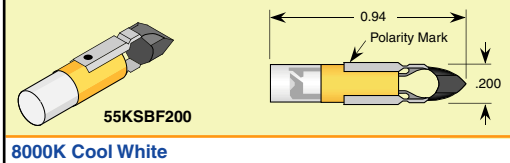
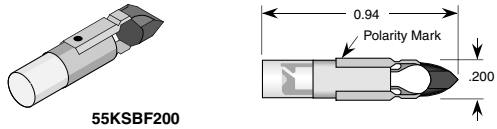
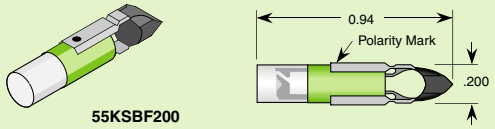
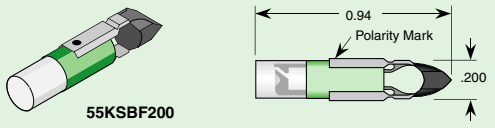
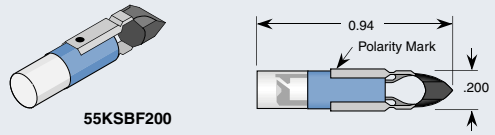
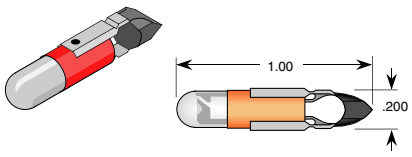
T5.5K European Telephone Slide Based LEDs

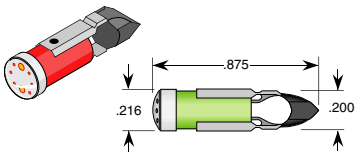
Subminiature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAlAs 		55KSBF200-0UR-006V	5/6V	20	115	120º	Contact Polarity V = DC only A = AC only Replace 55KSBF200 With 55KSB200 Narrow Beam (15º) Intensity 1.6K mcd/52 Ft.Cd @20 mA
		55KSBF200-0UR-014V	12/14V	20	115		
		55KSBF200-0UR-024V	24V	15	85		
		55KSBF200-0UR-028V	28V	15	85		
		55KSBF200-0UR-048V	48V	12	65		
		55KSBF200-0UR-120A	120VAC	10	50		
612nm Super Orange InGaAlP 		55KSBF200-0UO-006V	5/6V	20	130	120º	Contact Polarity V = DC only A = AC only Replace 55KSBF200 With 55KSB200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA
		55KSBF200-0UO-014V	12/14V	20	130		
		55KSBF200-0UO-024V	24V	15	98		
		55KSBF200-0UO-028V	28V	15	98		
		55KSBF200-0UO-048V	48V	12	78		
		55KSBF200-0UO-120A	120VAC	10	65		
595nm Super Yellow InGaAlP 		55KSBF200-0UY-006V	5/6V	20	116	120º	Contact Polarity V = DC only A = AC only Replace 55KSBF200 With 55KSB200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA
		55KSBF200-0UY-014V	12/14V	20	116		
		55KSBF200-0UY-024V	24V	15	75		
		55KSBF200-0UY-028V	28V	15	75		
		55KSBF200-0UY-048V	48V	12	54		
		55KSBF200-0UY-120A	120VAC	10	39		
8000K Cool White SiC/GaN 		55KSBF200-0CW-006V	5V	15	160	120º	Contact Polarity V = DC only A = AC only Replace 55KSBF200 With 55KSB200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd
		55KSBF200-0CW-014V	12/14V	15	160		
		55KSBF200-0CW-024V	24V	15	160		
		55KSBF200-0CW-028V	28V	15	160		
		55KSBF200-0CW-048V	48V	12	128		
		55KSBF200-0CW-120A	120VAC	10	106		
570nm Lime Green InGaAlP 		55KSBF200-0UG-006V	5/6V	20	58	120º	Contact Polarity V = DC only A = AC only Replace 55KSBF200 With 55KSB200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA
		55KSBF200-0UG-014V	12/14V	20	58		
		55KSBF200-0UG-024V	24V	15	44		
		55KSBF200-0UG-028V	28V	15	44		
		55KSBF200-0UG-048V	48V	12	35		
		55KSBF200-0UG-120A	120VAC	10	29		
525nm Aqua Green SiC/GaN 		55KSBF200-0AG-006V	5/6V	15	400	120º	Contact Polarity V = DC only A = AC only Replace 55KSBF200 With 55KSB200 Narrow (15º) Beam Intensity 7K mcd/250 Ft.Cd
		55KSBF200-0AG-014V	12/14V	15	400		
		55KSBF200-0AG-024V	24V	15	400		
		55KSBF200-0AG-028V	28V	15	400		
		55KSBF200-0AG-048V	48V	12	320		
		55KSBF200-0AG-120A	120VAC	10	275		
470nm Super Blue SiC/GaN 		55KSBF200-0PB-006V	5/6V	15	125	120º	Contact Polarity V = DC only A = AC only Replace 55KSBF200 With 55KSB200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd
		55KSBF200-0PB-014V	12/14V	15	125		
		55KSBF200-0PB-024V	24V	15	125		
		55KSBF200-0PB-028V	28V	15	125		
		55KSBF200-0PB-048V	48V	12	84		
		55KSBF200-0PB-120A	120VAC	10	74		

Options

All dimensions in inches. For millimeters multiply by 25.4



Series: 55KSB200 (15º Illumination)
PN Example: 55KSB200-0UO-024V



Series: 55KSB206 (160º Illumination)
PN Example: 55KSB206-0AG-024V

Log # 122R Rev 09-2000

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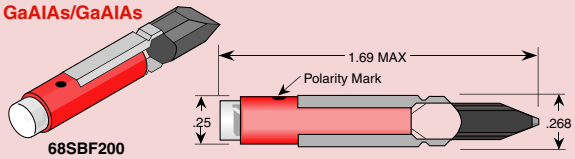
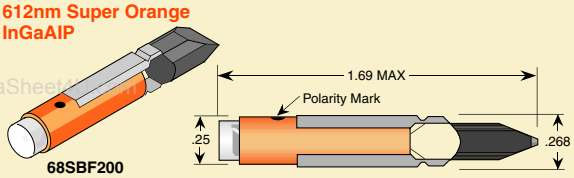
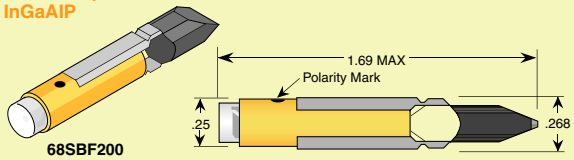
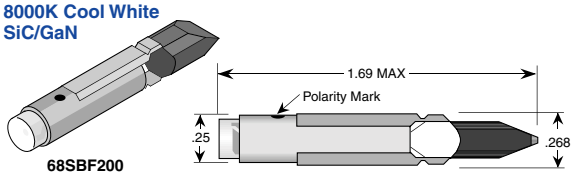
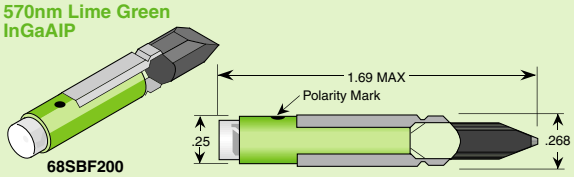
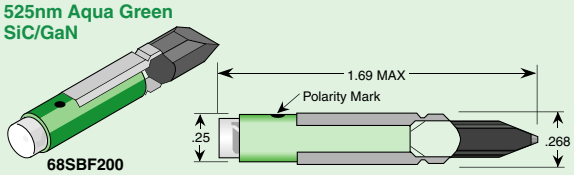
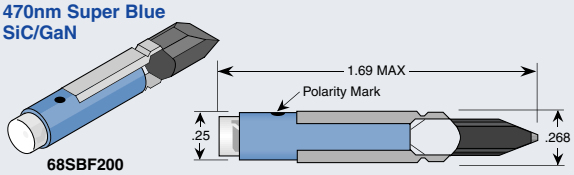
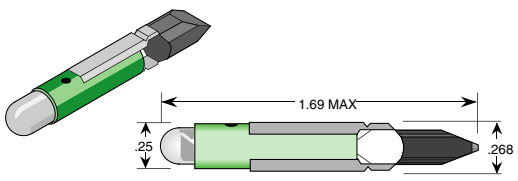
T6.8 European Telephone Slide Based LEDs

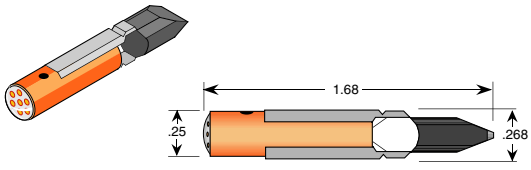
Subminiature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAlAs 		68SBF200-0UR-006B	5/6V	20	115	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 68SBF200 With 68SB200 Narrow Beam (15º) Intensity 1.6K mcd/52 Ft.Cd @20 mA
		68SBF200-0UR-014B	12/14V	20	115		
		68SBF200-0UR-024B	24V	15	85		
		68SBF200-0UR-028B	28V	15	85		
		68SBF200-0UR-048B	48V	12	65		
		68SBF200-0UR-120A	120VAC	10	50		
612nm Super Orange InGaAlP 		68SBF200-0UO-006B	5/6V	20	130	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 68SBF200 With 68SB200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA
		68SBF200-0UO-014B	12/14V	20	130		
		68SBF200-0UO-024B	24V	15	98		
		68SBF200-0UO-028B	28V	15	98		
		68SBF200-0UO-048B	48V	12	78		
		68SBF200-0UO-120A	120VAC	10	65		
595nm Super Yellow InGaAlP 		68SBF200-0UY-006B	5/6V	20	116	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 68SBF200 With 68SB200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA
		68SBF200-0UY-014B	12/14V	20	116		
		68SBF200-0UY-024B	24V	15	75		
		68SBF200-0UY-028B	28V	15	75		
		68SBF200-0UY-048B	48V	12	54		
		68SBF200-0UY-120A	120VAC	10	39		
8000K Cool White SiC/GaN 		68SBF200-0CW-006B	5V	15	160	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 68SBF200 With 68SB200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd
		68SBF200-0CW-014B	12/14V	15	160		
		68SBF200-0CW-024B	24V	15	160		
		68SBF200-0CW-028B	28V	15	160		
		68SBF200-0CW-048B	48V	12	128		
		68SBF200-0CW-120A	120VAC	10	106		
570nm Lime Green InGaAlP 		68SBF200-0UG-006B	5/6V	20	58	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 68SBF200 With 68SB200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA
		68SBF200-0UG-014B	12/14V	20	58		
		68SBF200-0UG-024B	24V	15	44		
		68SBF200-0UG-028B	28V	15	44		
		68SBF200-0UG-048B	48V	12	35		
		68SBF200-0UG-120A	120VAC	10	29		
525nm Aqua Green SiC/GaN 		68SBF200-0AG-006B	5/6V	15	400	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 68SBF200 With 68SB200 Narrow (15º) Beam Intensity 7K mcd/250 Ft.Cd
		68SBF200-0AG-014B	12/14V	15	400		
		68SBF200-0AG-024B	24V	15	400		
		68SBF200-0AG-028B	28V	15	400		
		68SBF200-0AG-048B	48V	12	320		
		68SBF200-0AG-120A	120VAC	10	275		
470nm Super Blue SiC/GaN 		68SBF200-0PB-006B	5/6V	15	125	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 68SBF200 With 68SB200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd
		68SBF200-0PB-014B	12/14V	15	125		
		68SBF200-0PB-024B	24V	15	125		
		68SBF200-0PB-028B	28V	15	125		
		68SBF200-0PB-048B	48V	12	84		
		68SBF200-0PB-120A	120VAC	10	74		

Options

All dimensions in inches. For millimeters multiply by 25.4



Series: 68SB200 (15º Illumination)
PN Example: 68SB200-0AG-024B



Series: 68SB206 (6 Chip 160º Illumination)
PN Example: 68SB206-0UO-120A

Log # 122T Rev 09-2000

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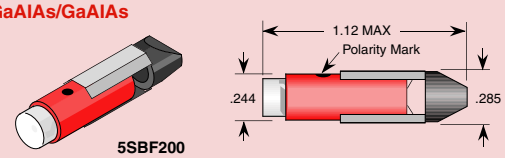
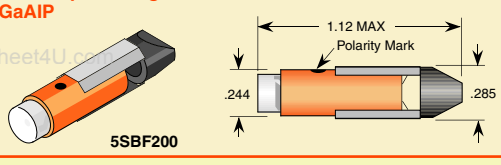
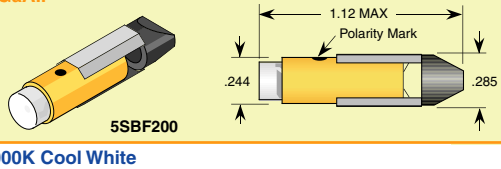
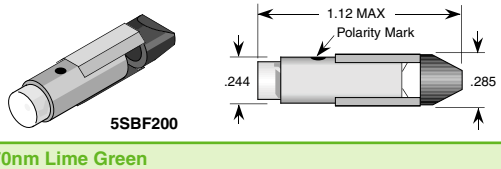
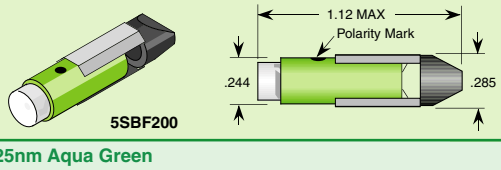
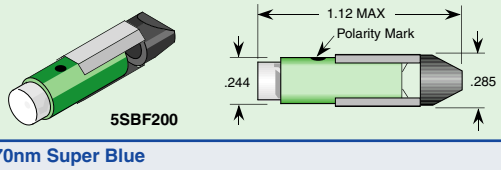
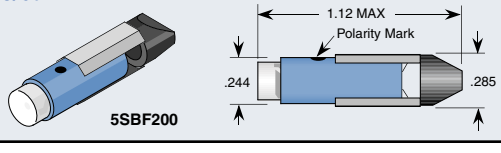
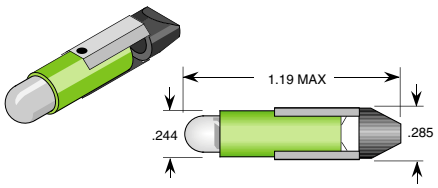
Website: www.ledtronics.com

T2 ANSI #5 Telephone Slide Based LEDs

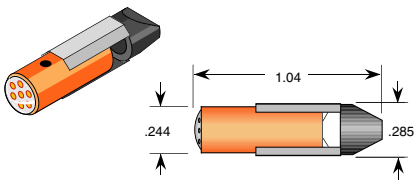
Subminiature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAlAs 	6 PSB	5SBF200-0UR-006B	5/6V	20	115	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 5SBF200 With 5SB200 Narrow Beam (15º) Intensity 1.6K mcd/52 Ft.Cd @20 mA
	12 PSB	5SBF200-0UR-014B	12/14V	20	115		
	24 PSB	5SBF200-0UR-024B	24V	15	85		
	28 PSB	5SBF200-0UR-028B	28V	15	85		
		5SBF200-0UR-048B	48V	12	65		
	120 PSB	5SBF200-0UR-120A	120VAC	10	50		
612nm Super Orange InGaAlP 	6 PSB	5SBF200-0UO-006B	5/6V	20	130	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 5SBF200 With 5SB200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA
	12 PSB	5SBF200-0UO-014B	12/14V	20	130		
	24 PSB	5SBF200-0UO-024B	24V	15	98		
	28 PSB	5SBF200-0UO-028B	28V	15	98		
		5SBF200-0UO-048B	48V	12	78		
	120 PSB	5SBF200-0UO-120A	120VAC	10	65		
595nm Super Yellow InGaAlP 	6 PSB	5SBF200-0UY-006B	5/6V	20	116	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 5SBF200 With 5SB200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA
	12 PSB	5SBF200-0UY-014B	12/14V	20	116		
	24 PSB	5SBF200-0UY-024B	24V	15	75		
	28 PSB	5SBF200-0UY-028B	28V	15	75		
		5SBF200-0UY-048B	48V	12	54		
	120 PSB	5SBF200-0UY-120A	120VAC	10	39		
8000K Cool White SiC/GaN 	6 PSB	5SBF200-0CW-006B	5V	15	160	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 5SBF200 With 5SB200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd
	12 PSB	5SBF200-0CW-014B	12/14V	15	160		
	24 PSB	5SBF200-0CW-024B	24V	15	160		
	28 PSB	5SBF200-0CW-028B	28V	15	160		
		5SBF200-0CW-048B	48V	12	128		
	120 PSB	5SBF200-0CW-120A	120VAC	10	106		
570nm Lime Green InGaAlP 	6 PSB	5SBF200-0UG-006B	5/6V	20	58	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 5SBF200 With 5SB200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA
	12 PSB	5SBF200-0UG-014B	12/14V	20	58		
	24 PSB	5SBF200-0UG-024B	24V	15	44		
	28 PSB	5SBF200-0UG-028B	28V	15	44		
		5SBF200-0UG-048B	48V	12	35		
	120 PSB	5SBF200-0UG-120A	120VAC	10	29		
525nm Aqua Green SiC/GaN 	6 PSB	5SBF200-0AG-006B	5/6V	15	400	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 5SBF200 With 5SB200 Narrow (15º) Beam Intensity 7K mcd/250 Ft.Cd
	12 PSB	5SBF200-0AG-014B	12/14V	15	400		
	24 PSB	5SBF200-0AG-024B	24V	15	400		
	28 PSB	5SBF200-0AG-028B	28V	15	400		
		5SBF200-0AG-048B	48V	12	320		
	120 PSB	5SBF200-0AG-120A	120VAC	10	275		
470nm Super Blue SiC/GaN 	6 PSB	5SBF200-0PB-006B	5/6V	15	125	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 5SBF200 With 5SB200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd
	12 PSB	5SBF200-0PB-014B	12/14V	15	125		
	24 PSB	5SBF200-0PB-024B	24V	15	125		
	28 PSB	5SBF200-0PB-028B	28V	15	125		
		5SBF200-0PB-048B	48V	12	84		
	120 PSB	5SBF200-0PB-120A	120VAC	10	74		

Options

All dimensions in inches. For millimeters multiply by 25.4



Series: 5SB200 (15º Illumination)
PN Example: 5SB200-0UG-024B



Series: 5SB206 (160º Illumination)
PN Example: 5SB206-0UO-028B

Log # 122S Rev 09-2000

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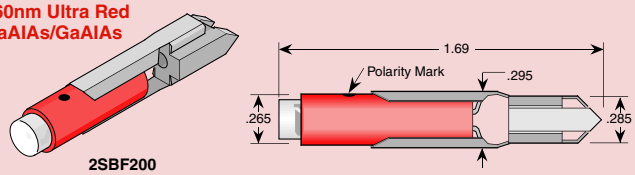
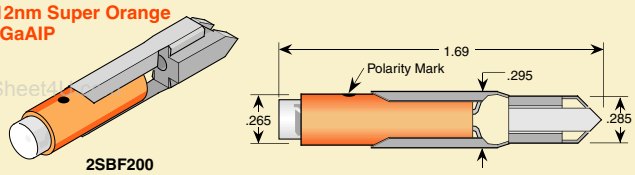
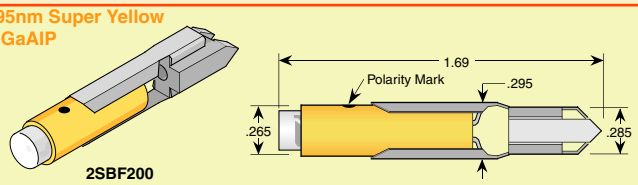
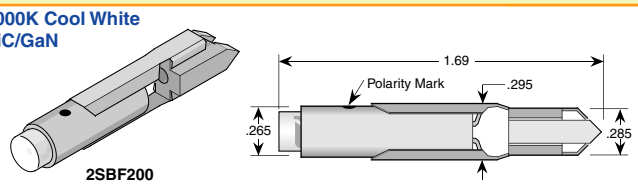
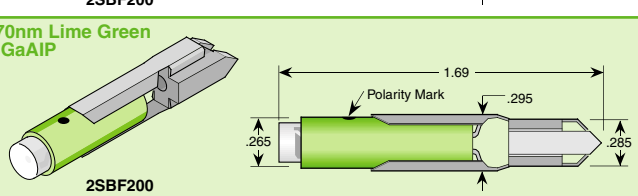
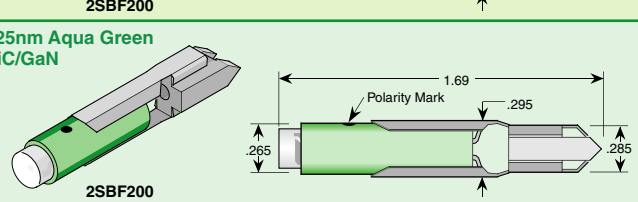
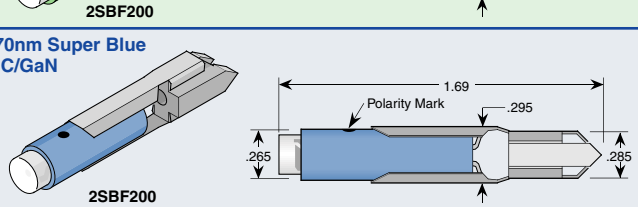
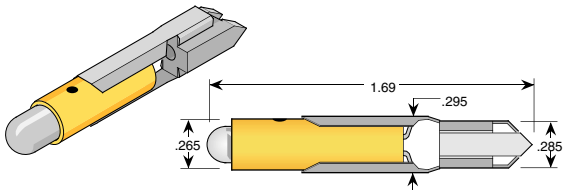
T2 ANSI #2 & #3 Telephone Slide Based LEDs

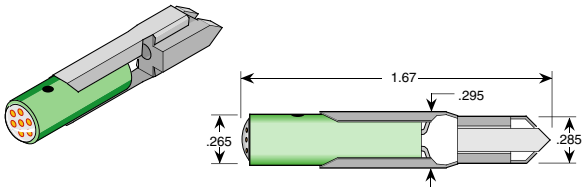
Miniature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAlAs 		2SBF200-0UR-006B	5/6V	20	115	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow Beam (15º) Intensity 1.6K mcd/52 Ft.Cd @20 mA
		2SBF200-0UR-014B	12/14V	20	115		
	24E,24X	2SBF200-0UR-024B	24V	15	85		
		2SBF200-0UR-028B	28V	15	85		
	48A,D,C	2SBF200-0UR-048B	48V	12	65		
		2SBF200-0UR-120A	120VAC	10	50		
612nm Super Orange InGaAlP 		2SBF200-0UO-006B	5/6V	20	130	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA
		2SBF200-0UO-014B	12/14V	20	130		
	24E,24X	2SBF200-0UO-024B	24V	15	98		
		2SBF200-0UO-028B	28V	15	98		
	48A,D,C	2SBF200-0UO-048B	48V	12	78		
		2SBF200-0UO-120A	120VAC	10	65		
595nm Super Yellow InGaAlP 		2SBF200-0UY-006B	5/6V	20	116	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA
		2SBF200-0UY-014B	12/14V	20	116		
	24E,24X	2SBF200-0UY-024B	24V	15	75		
		2SBF200-0UY-028B	28V	15	75		
	48A,D,C	2SBF200-0UY-048B	48V	12	54		
		2SBF200-0UY-120A	120VAC	10	39		
8000K Cool White SiC/GaN 		2SBF200-0CW-006B	5V	15	160	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd
		2SBF200-0CW-014B	12/14V	15	160		
	24E,24X	2SBF200-0CW-024B	24V	15	160		
		2SBF200-0CW-028B	28V	15	160		
	48A,D,C	2SBF200-0CW-048B	48V	12	128		
		2SBF200-0CW-120A	120VAC	10	106		
570nm Lime Green InGaAlP 		2SBF200-0UG-006B	5/6V	20	58	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA
		2SBF200-0UG-014B	12/14V	20	58		
	24E,24X	2SBF200-0UG-024B	24V	15	44		
		2SBF200-0UG-028B	28V	15	44		
	48A,D,C	2SBF200-0UG-048B	48V	12	35		
		2SBF200-0UG-120A	120VAC	10	29		
525nm Aqua Green SiC/GaN 		2SBF200-0AG-006B	5/6V	15	400	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (15º) Beam Intensity 7K mcd/250 Ft.Cd
		2SBF200-0AG-014B	12/14V	15	400		
	24E,24X	2SBF200-0AG-024B	24V	15	400		
		2SBF200-0AG-028B	28V	15	400		
	48A,D,C	2SBF200-0AG-048B	48V	12	320		
		2SBF200-0AG-120A	120VAC	10	275		
470nm Super Blue SiC/GaN 		2SBF200-0PB-006B	5/6V	15	125	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd
		2SBF200-0PB-014B	12/14V	15	125		
	24E,24X	2SBF200-0PB-024B	24V	15	125		
		2SBF200-0PB-028B	28V	15	125		
	48A,D,C	2SBF200-0PB-048B	48V	12	84		
		2SBF200-0PB-120A	120VAC	10	74		

Options

All dimensions in inches. For millimeters multiply by 25.4



Series: 2SB200 (15º Illumination)
PN Example: 2SB200-0UY-024B



Series: 2SB206 (160º Illumination)
PN Example: 2SB206-0AG-028B

Log # 122U Rev 09-2000

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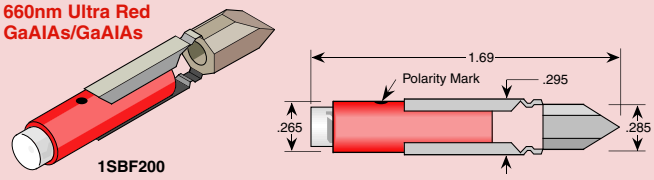
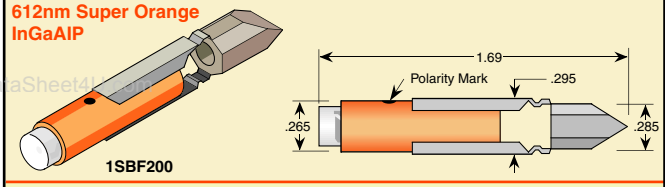
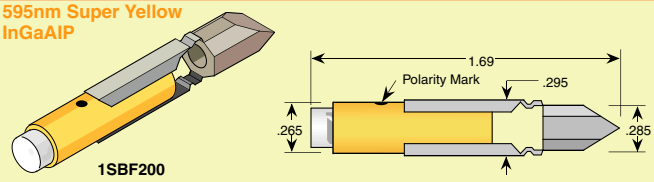
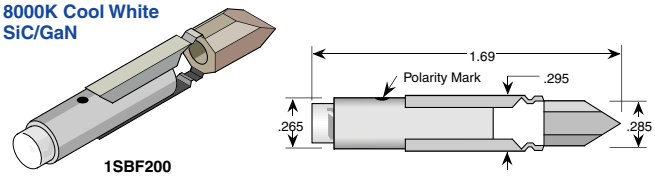
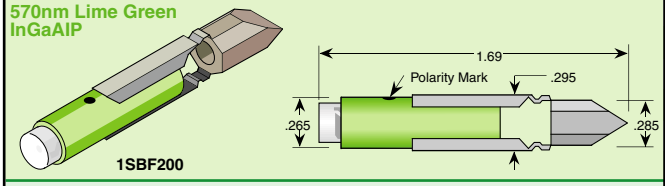
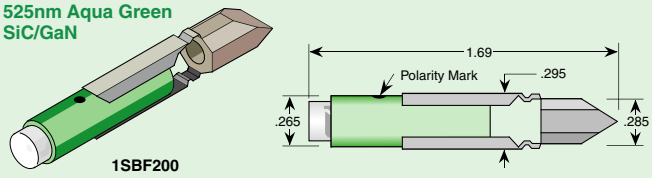
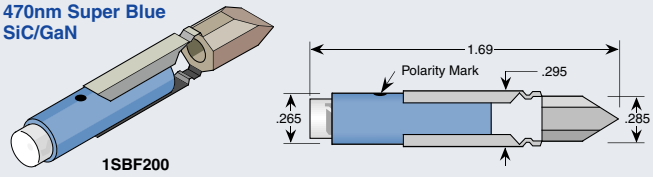
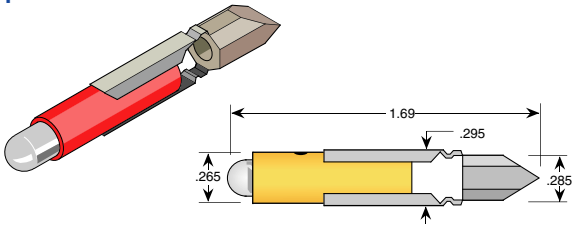
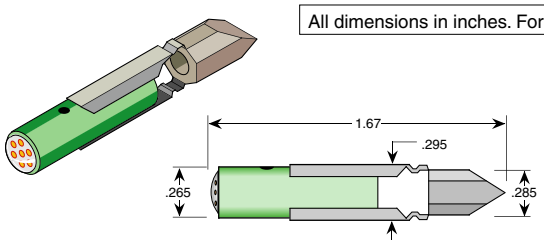
T2 #1 Telephone Slide Based LEDs

Miniature Packages	Replaces Incandescent	Part Number	Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ	Current mA typ	Intensity mcd	Angle of Illumination	Special Features
660nm Ultra Red GaAlAs/GaAlAs 		1SBF200-0UR-006B	5/6V	20	115	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow Beam (15º) Intensity 1.6K mcd/52 Ft.Cd @20 mA
		1SBF200-0UR-014B	12/14V	20	115		
		1SBF200-0UR-024B	24V	15	85		
		1SBF200-0UR-028B	28V	15	85		
		1SBF200-0UR-048B	48V	12	65		
		1SBF200-0UR-120A	120VAC	10	50		
612nm Super Orange InGaAlP 		1SBF200-0UO-006B	5/6V	20	130	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA
		1SBF200-0UO-014B	12/14V	20	130		
		1SBF200-0UO-024B	24V	15	98		
		1SBF200-0UO-028B	28V	15	98		
		1SBF200-0UO-048B	48V	12	78		
		1SBF200-0UO-120A	120VAC	10	65		
595nm Super Yellow InGaAlP 		1SBF200-0UY-006B	5/6V	20	116	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA
		1SBF200-0UY-014B	12/14V	20	116		
		1SBF200-0UY-024B	24V	15	75		
		1SBF200-0UY-028B	28V	15	75		
		1SBF200-0UY-048B	48V	12	54		
		1SBF200-0UY-120A	120VAC	10	39		
8000K Cool White SiC/GaN 		1SBF200-0CW-006B	5V	15	160	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd
		1SBF200-0CW-014B	12/14V	15	160		
		1SBF200-0CW-024B	24V	15	160		
		1SBF200-0CW-028B	28V	15	160		
		1SBF200-0CW-048B	48V	12	128		
		1SBF200-0CW-120A	120VAC	10	106		
570nm Lime Green InGaAlP 		1SBF200-0UG-006B	5/6V	20	58	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA
		1SBF200-0UG-014B	12/14V	20	58		
		1SBF200-0UG-024B	24V	15	44		
		1SBF200-0UG-028B	28V	15	44		
		1SBF200-0UG-048B	48V	12	35		
		1SBF200-0UG-120A	120VAC	10	29		
525nm Aqua Green SiC/GaN 		1SBF200-0AG-006B	5/6V	15	400	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (15º) Beam Intensity 7K mcd/250 Ft.Cd
		1SBF200-0AG-014B	12/14V	15	400		
		1SBF200-0AG-024B	24V	15	400		
		1SBF200-0AG-028B	28V	15	400		
		1SBF200-0AG-048B	48V	12	320		
		1SBF200-0AG-120A	120VAC	10	275		
470nm Super Blue SiC/GaN 		1SBF200-0PB-006B	5/6V	15	125	120º	Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd
		1SBF200-0PB-014B	12/14V	15	125		
		1SBF200-0PB-024B	24V	15	125		
		1SBF200-0PB-028B	28V	15	125		
		1SBF200-0PB-048B	48V	12	84		
		1SBF200-0PB-120A	120VAC	10	74		

Options



Series: 1SB200 (15º Illumination)
PN Example: 1SB200-0UY-024B



Series: BSD-1174 (160º Illumination)
PN Example: BSD-1174-0AG-028B

All dimensions in inches. For millimeters multiply by 25.4

Log # 122V Rev 09-2000

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LED Color Chart

LEDtronics Code	LED Chip Code	Wavelength nm	Color Name	Fwd Voltage Vf @ 20mA	Intensity 5mm LEDs	Viewing Angle	LED Dye Material
941	IR941	940	Infrared	1.5	16mW @ 50mA	15º	GaAlAs/GaAs - Gallium Aluminum Arsenide/ Gallium Arsenide
881	IR881	880	Infrared	1.7	18mW @ 50mA	15º	GaAlAs/GaAs - Gallium Aluminum Arsenide/ Gallium Arsenide
851	IR851	850	Infrared	1.7	26mW @ 50mA	15º	GaAlAs/GaAlAs - Gallium Aluminum Arsenide/ Gallium Aluminum Arsenide
0UR	R3KF	660	Ultra Red	1.8	2000mcd @ 20mA	15º	GaAlAs/GaAlAs - Gallium Aluminum Arsenide/ Gallium Aluminum Arsenide
00R	R3/R4/R5	635	High Eff. Red	2.0	200mcd @ 20mA	15º	GaAsP/GaP - Gallium Arsenic Phosphide /Gallium Phosphide
0ER	E3K	633	Super Red	2.2	3500mcd @ 20mA	15º	InGaAlP - Indium Gallium Aluminum Phosphide
0UO	O3K/O6K	620	Super Orange	2.2	4500mcd @ 20mA	15º	InGaAlP - Indium Gallium Aluminum Phosphide
0UO	O3KF	612	Super Orange	2.2	6500mcd @ 20mA	15º	InGaAlP - Indium Gallium Aluminum Phosphide
00O	O4/O5	605	Orange	2.1	160mcd @ 20mA	15º	GaAsp/GaP - Gallium Arsenic Phosphide /Gallium Phosphide
0UY	Y3KF	595	Super Yellow	2.2	5500mcd @ 20mA	15º	InGaAlP - Indium Gallium Aluminum Phosphide
0PY	Y3KH	592	Super Pure Yellow	2.1	7000mcd @ 20mA	15º	InGaAlP - Indium Gallium Aluminum Phosphide
00Y	Y3/Y4/Y5	585	Yellow	2.1	100mcd @ 20mA	15º	GaAsp/GaP - Gallium Arsenic Phosphide /Gallium Phosphide
0IW	IW2K	4500K	Incand White	3.6	2000mcd @ 20mA	20º	SiC/GaN - Silicon Carbide/Gallium Nitride
0PW	PW4K	6500K	Pale White	3.6	4000mcd @ 20mA	20º	SiC/GaN - Silicon Carbide/Gallium Nitride
0CW	CW6K	8000K	Cool White	3.6	6000mcd @ 20mA	20º	SiC/GaN - Silicon Carbide/Gallium Nitride
0LY	LY1K	574	Super Lime Yellow	2.4	1000mcd @ 20mA	15º	InGaAlP - Indium Gallium Aluminum Phosphide
0UG	G1K	570	Super Lime Green	2.0	1000mcd @ 20mA	15º	InGaAlP - Indium Gallium Aluminum Phosphide
00G	G3/G4/G5	565	High Eff. Green	2.1	200mcd @ 20mA	15º	GaP/GaP - Gallium Phosphide/Gallium Phosphide
UPG	PG350	560	Super Pure Green	2.1	350mcd @ 20mA	15º	InGaAlP - Indium Gallium Aluminum Phosphide
0PG	PG5	555	Pure Green	2.1	80mcd @ 20mA	15º	GaP/GaP - Gallium Phosphide/Gallium Phosphide
0AG	AG10K	525	Aqua Green	3.5	10,000mcd @ 20mA	15º	SiC/GaN - Silicon Carbide/Gallium Nitride
0BG	BG2K	505	Blue Green	3.5	2000mcd @ 20mA	45º	SiC/GaN - Silicon Carbide/Gallium Nitride
0PB	PB3K	470	Super Blue	3.6	3000mcd @ 20mA	15º	SiC/GaN - Silicon Carbide/Gallium Nitride
00B	UB500	430	Ultra Blue	3.8	100mcd @ 20mA	15º	SiC/GaN - Silicon Carbide/Gallium Nitride

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