Oshino Lamps Ltd.

Sub-Miniature Lamps
Product Catalogue

サブミニチュアランプ
製品カタログ

株式会社 押野電気製作所

Established in 1931

INDEX

Oshino Lamps Ltd.

※Please note that product specifications and appearance are subject to change without notice so contact us for confirmation before placing an order.

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SML（Sub-Miniature Lamp）（1/7）

Sub-Miniature Lamps (SML) are small tungsten filament vacuum lamps. Key characteristics and terminology for these is as follows.

Ⅰ. Standard Size

Small size vacuumed lamps are called "SML" and are produced in a size (glass bulb diameter) range of 2.3～7.0㎜. These lamps are normally referred to as T-1, T-1¼ etc. This refers to the bulb diameter. T-1 equates to 1/8-inch and therefore size is calculated by the following formula.

Example:

T-1 = 1/8inch = 25.4㎜ x 1/8 = 3.175㎜ → Bulb diameter 3.05mm

T-1 ¼ = 1/8inch x 5/4 = 25.4㎜ x 1/8 x 5/4 ≒ 3.969㎜ → Bulb diameter 4.1mm

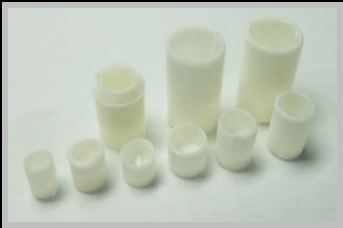
The following table shows the relationship between Standard-size vs Bulb-diameter.

T-3/4	T-1	T-1 ¼	T-1 ½	T-1 ¾	T-6.5
2.30mm	3.05mm	4.10mm	4.70mm	4.70mm 5.30mm	6.50mm

Ⅱ. Main Parts

The main components of SML products are as follows:

1.Wire Terminal　2.Base/Terminal　3.Silicone Rubber Boots

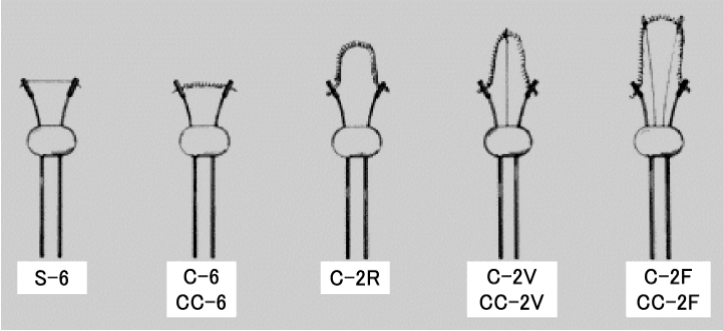
【Wire Terminal Lamp】	
【Base/Terminal】	 
【Silicone Rubber Boots】	

Ⅲ. Filament

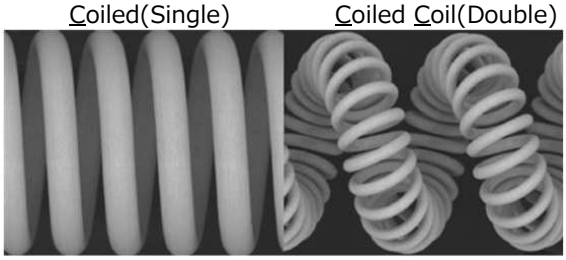
Our SML filament shapes are based on the global specification JIS C 7711. Please see the following table and image for reference.

【Filament Shape】

Coiling / Mounting Shape	C Coiled (Single)	CC Coiled Coil (Double)	S Straight (Uncoiled)
6 (Straight Shape)	C-6	CC-6	S-6
2V (Single Support)	C-2V	CC-2V	
2F (Double Support)	C-2F	CC-2V	
2R (Round Shape)	C-2R		

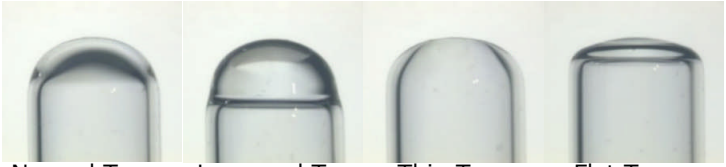


Coiled(Single) Coiled Coil(Double)



Ⅳ. Glass Bulb

There are various shapes of glass bulbs for supporting customer's requirement.



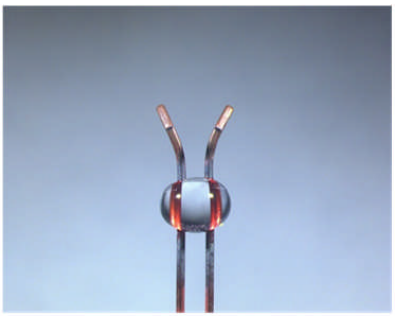
Normal Type Lens-end Type Thin Type Flat Type

SML (Sub-Miniature Lamp) (3/7)

V. Wire-Terminal Manufacturing Process

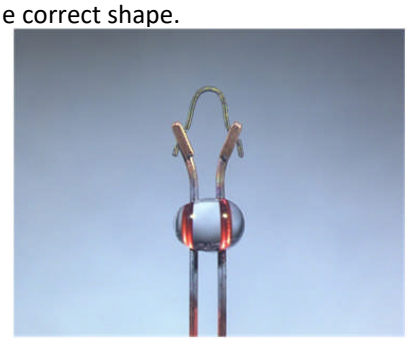
❶ Welded stem

Dumet wire is welded to glass bead.



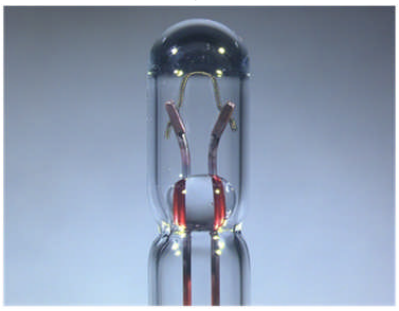
❷ Connecting filament

Filament is mounted and formed into the correct shape.



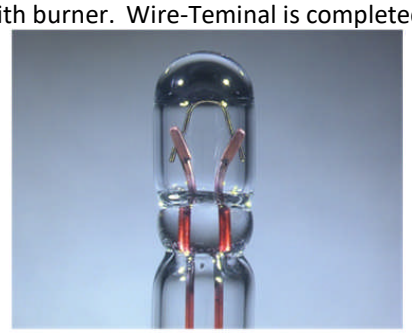
❸ Inserting glass bulb and Vacuum

Stem❷ is inserted into glass bulb and vacuum is created by exhaust machine.



❹ Sealing

Finally, stem and glass bulb are welded with burner. Wire-Teminal is completed.



VI. Base / Terminal

Bases/Terminals are the items covering the SML electrodes. These materials can be either plastic or metal.

Plastic Bases			Metal Bases
Bi-Pin Type *For PCB Assembly	Neo-Wedge Type *Twist-in type. Mainly used for automotive	**SMD Type** *Automated PCB mounting	*Mainly used for aviation and industrial applications.
			

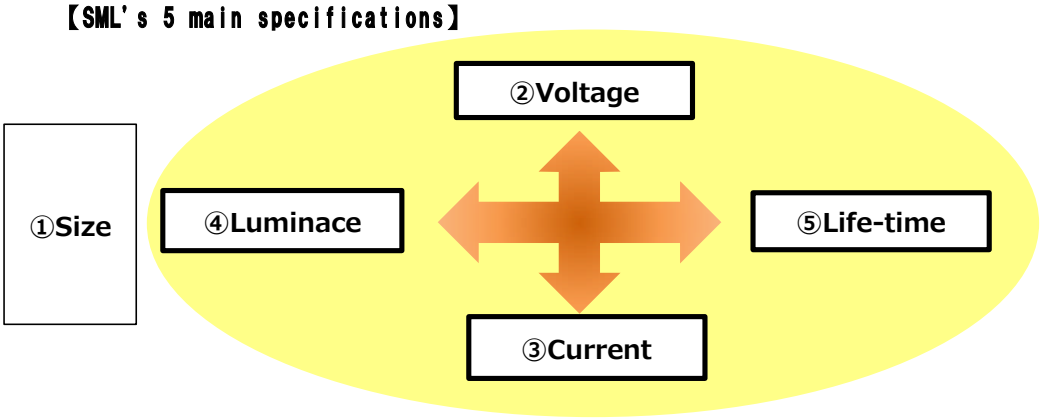
Ⅶ. Characteristics

The characteristics of tungsten filament vacuum lamps are related to each other. Gaining an understanding of this relationship will help explain an SML's capabilities and limitations.

■The Voltage, Current, Luminance and Life-time relationship

SML's 5 main specifications are 1.Size, 2.Voltage, 3.Current, 4.Luminance, 5.Life-time. Voltage, current, luminance and life-time are strongly inter-related. When 3 of these values are set during lamp design, the 4th is automatically decided.
For example, if you want to increase luminance, it is impossible to maintain the same voltage, current and life-time values.

【SML's 5 main specifications】



■Relationship between Luminance and Life-time

When calculating the life-time of an SML, luminance efficiency (MSCP/Watt) has the largest impact. As life-time increases, luminance efficiency decreases and colour temperature also shifts. This is reflected in the following table.

Table1. T-1 ¾, 28V SML

P/N.	Current (A)	Current (W)	Luminance MSCP (cd)	Luminous Efficiency (MSCP/W)	Life-time (Hours)	Colour Temp. (K)	Filament Diameter (μm)	Filament Length (mm)
OL-1764	**0.04**	**1.12**	**0.34**	**0.306**	**4,000**	**2,200**	**11.24**	**104.0**
OL-2187	**0.04**	**1.12**	**0.30**	**0.270**	**7,000**	**2,075**	**11.78**	**121.5**
OL-2185	**0.04**	**1.12**	**0.20**	**0.180**	**25,000**	**1,925**	**12.62**	**146.0**
OL-1764LSV	**0.06**	**1.68**	**0.34**	**0.201**	**25,000**	**2,125**	**15.54**	**151.0**

※Please refer to further explanations on the next page.

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Ⅶ. Characteristics (Continued from the previous page)

■Relationship between luminance and life-time (Continued)

1) Comparison 1. OL-2187 & OL-2185 vs OL-1764

As shown in the previous table, lamps OL-2187, OL-2185 and OL-1764 have the same electric power (28V), but OL-2187 and OL-2185 are designed to provide lower luminance than OL-1764. With lower luminance and lower colour-temperature, the filament evaporation speed for OL-2185 and OL-2187 is slower than OL-1764's. As a result, OL-2187 and OL-2185 have longer life-time than OL-1764.

When comparing OL-2185 with OL-2187, it can be seen that OL-2185 has much lower luminance and colour temperature than OL-2187 while having a much longer life-time.

2) Comparison 2. OL-1764 vs OL-1764LSV

OL-1764LSV is designed not only to keep the same luminance as OL-1764 but also to provide a longer life-time than OL-1764. To achieve the same luminance and longer life-time, OL-1764LSV's filament's diameter is thicker and length are longer.

By increasing filament thickness, luminance and colour-temperature is increased and luminous efficiency is also increased. By increasing filament length, filament resistance is increased and power consumption is also increased. As a result, luminous efficiency (MSCP/Watt) is decreased.

When filament thickness and length are adjusted to get the same luminance as OL-1764, longer life-time can be achieved. However, power consumption will be increased due to lower luminous efficiency.

Comparing the 4 lamp codes in Table 1, you can see the relativity of luminance, power consumption (voltage x current) and life-time.

● **Technical Term："Brightness"**

Brightness means the amount of luminance gained when the rated voltage is applied to an SML. Generally, SML brightness is expressed by MSCP（Mean Spherical Candle Power) and light flux.

● **Technical Term："MSCP / Mean Spherical Candle Power"**

MSCP（Mean Spherical Candle Power) means average of candle power emitted from SML when the lamp is placed on the centre of a measuring sphere.

MSCP is usually quoted in industry and MIL standards. By using the following equation, MSCP can be converted into total light flux.

※ Total Light Flux／Lumens(lm) = MSCP × 4π

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Ⅶ. Characteristics (Continued from the previous page)

● About Life-Time

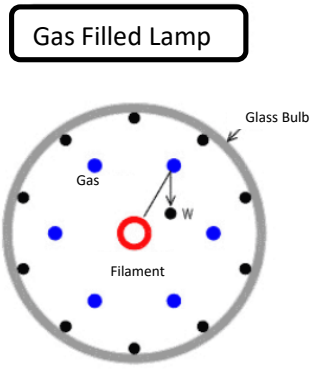
We would like to explain our definition of the Life-time of an SML.
There are various views on the end of life of an illumination device. For SML's, generally speaking, the status which light is no longer emitted is the end of life. Oshino Lamps also define SML's end of life as no light emission. Did you have a chance to carefully check the SML at end of life? You can see that the filament is disconnected. Do you know how filament disconnection happens? An SML is a light emission device using light from filament heated by electrical energy (a tungsten filament, whose melting point is 3,387℃, reaches around 1,800℃～2,000℃, when lit). About 85% of input energy is consumed as heat and the rest of them is converted to light. Even though the inside of a bulb is a vacuum to prevent the filament from burning out, filaments are gradually evaporated by the lamp lighting up. Eventually a lamp filament fails due to the filament becoming thinner and thinner due to evaporation until disconnection and end of life occurs.

● About Averaged Life-Time

Oshino Lamps defines an SML's average life-time as a point of time when filament in 50% of samples becoming disconnected. Life-time test is performed in a test room kept at a constant temperature with no vibration and no shock on the lamp. Electrical power is then applied to the lamp and controlled with a tolerance of less than ±1%.
Tungsten filament wire is very thin and is formed into a complex shape and , as previously mentioned, the filament become even thinner due to the evaporation by light emission. Therefore, a filament in the last stage of life is very delicate and disconnection can occur easily with slight vibration or small shock. Life time is measured under AC (Alternating Current) power supply. If DC (Direct Current) power is applied then lamp life-time may be decreased by around 50% or more.

● Reference : Gas Filled Lamp

Some lamps are filled with noble gas like Argon(Ar), Krypton (Kr), Xenon(Xe) and so on in glass bulbs.
By filling with noble gas, the tungsten evaporation is suppressed. As a result, lamp life can be extended. The effect of filling with noble gas is not only extended life-time but also to be able to apply a larger electrical current.
By applying higher current, higher luminous efficiency and colour-temperature can be obtained.
If higher luminance is required, then a gas-filled lamp is recommended. If you are interest in our gas-filled lamp range, please contact us.

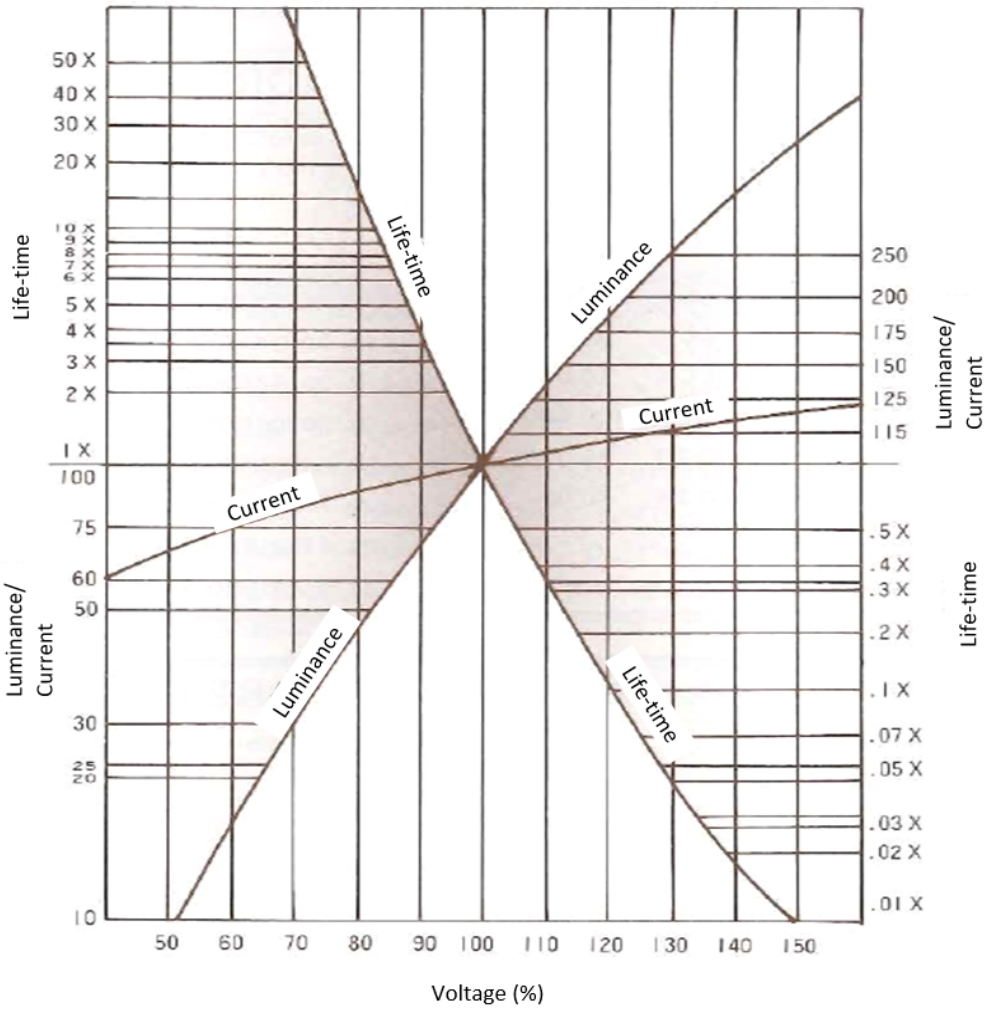


Ⅶ. Characteristics (Continued from the previous page)

■ Over-voltage/Low-voltage Operation

You can see the correlation of Voltage, Current, Luminance & Life-time from the following graph at over-voltage or low-voltage operation.

【Correlation graph when used in Over-voltage/Low-voltage】



Note: Depending on the type of SML, the curve shape in the graph can be quite different. This graph can be only be held true for an SML which is put on voltage (around 90-110%) and has averaged life-time less than 5,000 hours.

■ Surface Temperature

The surface temperature of an SML bulb is around 60℃～100℃ when operating at designed voltage. The temperature depends on its wattage or luminous efficiency etc. If an SML is used in sealed case, the inner temperature in the case will increase and can provide a remarkable influence on the lamps performance.

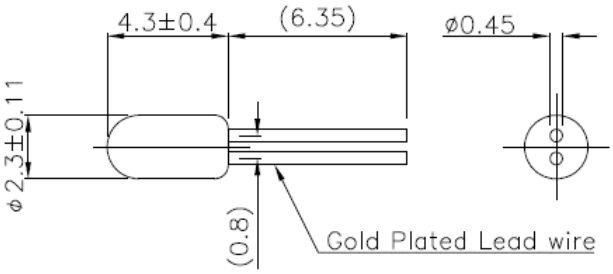
T-3/4 IBP

T-3/4IBPS

Pin Spacing 0.8mm

Maximum Length
4.7mm

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-2404IBPS	5.0	0.020	0.02	CC-6
OL-2400IBPS	5.0	0.021	0.034	CC-6
OL-6833IBPS	5.0	0.060	0.05	C-2R
OL-7133IBPS	5.0	0.075	0.09	C-2R
OL-7153IBPS	5.0	0.115	0.15	C-2R

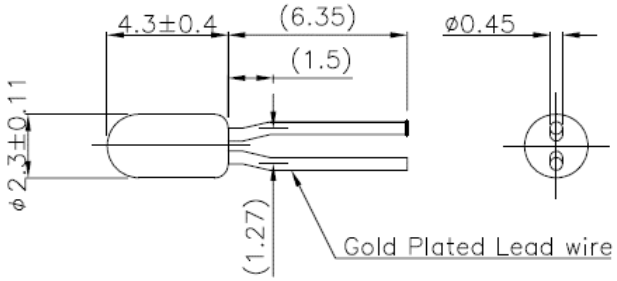


T-3/4IBPS (Type-A)

Pin Spacing 1.27mm

Maximum Length
4.7mm

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-2404IBPS/A	5.0	0.020	0.02	CC-6
OL-2400IBPS/A	5.0	0.021	0.034	CC-6
OL-6833IBPS/A	5.0	0.060	0.05	C-2R
OL-7133IBPS/A	5.0	0.075	0.09	C-2R
OL-7153IBPS/A	5.0	0.115	0.15	C-2R

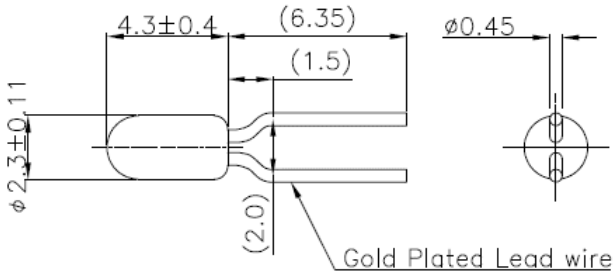


T-3/4IBPS (Type-G)

Pin Spacing 2.0mm

Maximum Length
4.7mm

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-2404IBPS/G	5.0	0.020	0.02	CC-6
OL-2400IBPS/G	5.0	0.021	0.034	CC-6
OL-6833IBPS/G	5.0	0.060	0.05	C-2R
OL-7133IBPS/G	5.0	0.075	0.09	C-2R
OL-7153IBPS/G	5.0	0.115	0.15	C-2R



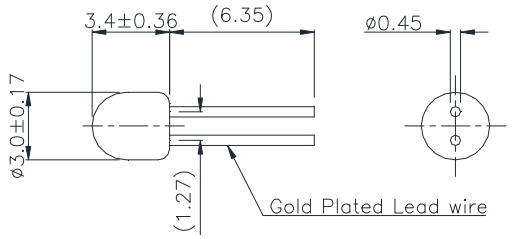
T-1 Short IBP

T-1 Short IBP (Type-A)

Pin Spacing 1.27mm

Maximum Length
3.76mm

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-30432IBP/A	5.0	0.020	0.02	C-2R
OL-30192IBP/A	5.0	0.021	0.034	C-2R
OL-30702IBP/A	5.0	0.060	0.15	C-2R
OL-6832IBP/A	5.0	0.060	0.05	C-2R
OL-7132IBP/A	5.0	0.075	0.09	C-2R
OL-7152IBP/A	5.0	0.115	0.15	C-2R
OL-8552IBP/A *	28.0	0.020	0.15	CC-2F



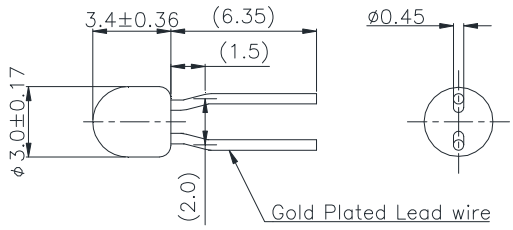
*Maximum length 4.06mm

T-1 Short IBP (Type-G)

Pin Spacing 2.0mm

Maximum Length
3.76mm

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-30432IBP/G	5.0	0.020	0.02	C-2R
OL-30192IBP/G	5.0	0.021	0.034	C-2R
OL-30702IBP/G	5.0	0.060	0.15	C-2R
OL-6832IBP/G	5.0	0.060	0.05	C-2R
OL-7132IBP/G	5.0	0.075	0.09	C-2R
OL-7152IBP/G	5.0	0.115	0.15	C-2R
OL-8552IBP/G *	28.0	0.020	0.15	CC-2F



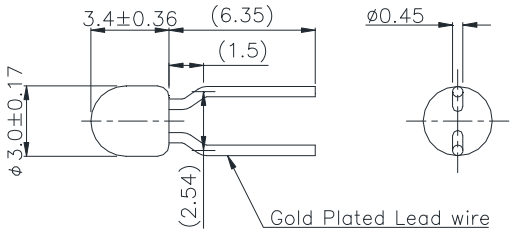
*Maximum length 4.06mm

T-1 Short IBP (Type-E)

Pin Spacing 2.54mm

Maximum Length
3.76mm

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-30432IBP/E	5.0	0.020	0.02	C-2R
OL-30192IBP/E	5.0	0.021	0.034	C-2R
OL-30702IBP/E	5.0	0.060	0.15	C-2R
OL-6832IBP/E	5.0	0.060	0.05	C-2R
OL-7132IBP/E	5.0	0.075	0.09	C-2R
OL-7152IBP/E	5.0	0.115	0.15	C-2R
OL-8552IBP/E *	28.0	0.020	0.15	CC-2F



*Maximum length 4.06mm

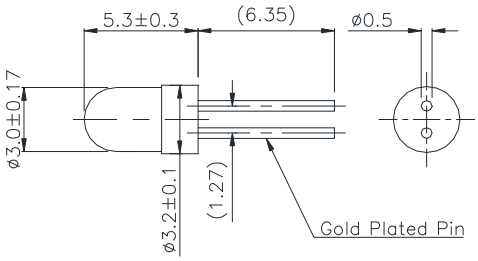
T-1Short Bi-Pin

T-1 Short BPA

Pin Spacing 1.27mm

Maximum Length
5.6mm

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-30442BPA	5.0	0.020	0.02	C-2R
OL-30202BPA	5.0	0.021	0.034	C-2R
OL-30712BPA	5.0	0.060	0.15	C-2R
OL-6852BPA	5.0	0.060	0.05	C-2R
OL-7142BPA	5.0	0.075	0.09	C-2R
OL-7182BPA	5.0	0.115	0.15	C-2R

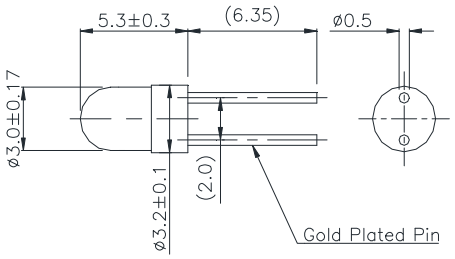


T-1 Short BPG

Pin Spacing 2.0mm

Maximum Length
5.6mm

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-30442BPG	5.0	0.020	0.02	C-2R
OL-30202BPG	5.0	0.021	0.034	C-2R
OL-30712BPG	5.0	0.060	0.15	C-2R
OL-6852BPG	5.0	0.060	0.05	C-2R
OL-7142BPG	5.0	0.075	0.09	C-2R
OL-7182BPG	5.0	0.115	0.15	C-2R

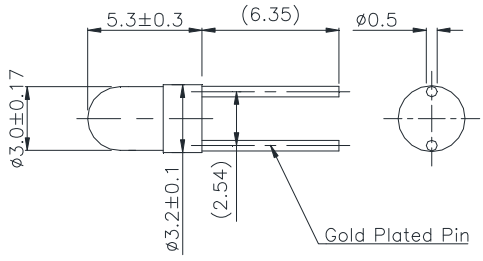


T-1 Short BPE

Pin Spacing 2.54mm

Maximum Length
5.6mm

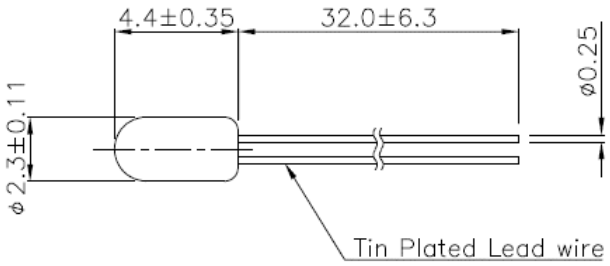
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-30442BPE	5.0	0.020	0.02	C-2R
OL-30202BPE	5.0	0.021	0.034	C-2R
OL-30712BPE	5.0	0.060	0.15	C-2R
OL-6852BPE	5.0	0.060	0.05	C-2R
OL-7142BPE	5.0	0.075	0.09	C-2R
OL-7182BPE	5.0	0.115	0.15	C-2R



T-3/4 Wire Terminal

Standard Bulb Length

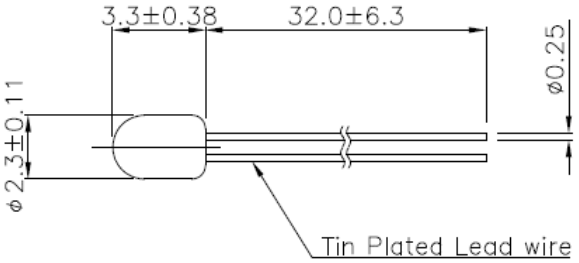
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-2404	5.0	0.020	0.02	CC-6
OL-2400	5.0	0.021	0.034	CC-6
OL-2426	5.0	0.030	0.03	C-2R
OL-2415	5.0	0.040	0.025	C-2R
OL-6803	5.0	0.060	0.03	C-2R
OL-6803AS15*	5.0	0.060	0.03	C-2R
OL-6833	5.0	0.060	0.05	C-2R
OL-6833AS15*	5.0	0.060	0.05	C-2R
OL-2436	5.0	0.060	0.15	C-2R
OL-7133	5.0	0.075	0.09	C-2R
OL-7133AS15*	5.0	0.075	0.09	C-2R
OL-7153	5.0	0.115	0.15	C-2R
OL-7153AS15*	5.0	0.115	0.15	C-2R
OL-2449	5.0	0.115	0.2	C-2R
OL-2411	5.0	0.125	0.22	C-2R



*U.S Military Standard MS90452

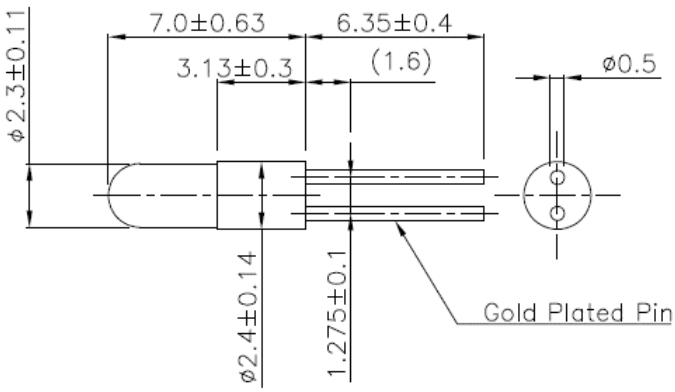
Short Bulb Length

OL-24042	5.0	0.020	0.02	CC-6
OL-68032	5.0	0.060	0.03	C-2R
OL-68332	5.0	0.060	0.05	C-2R
OL-24362	5.0	0.060	0.15	C-2R
OL-71332	5.0	0.075	0.09	C-2R
OL-71532	5.0	0.115	0.15	C-2R
OL-24112	5.0	0.125	0.22	C-2R



T-3/4 Bi-Pin

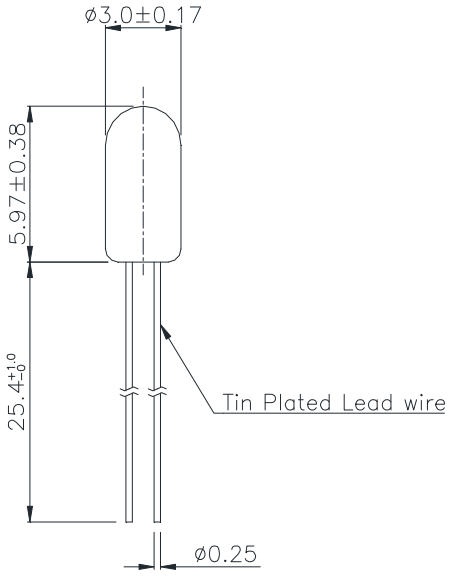
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-2405BP	5.0	0.020	0.02	CC-6
OL-2401BP	5.0	0.021	0.034	CC-6
OL-2427BP	5.0	0.030	0.03	C-2R
OL-2416BP	5.0	0.040	0.025	C-2R
OL-8587BP	5.0	0.060	0.03	C-2R
OL-8913BP	5.0	0.060	0.05	C-2R
OL-2437BP	5.0	0.060	0.15	C-2R
OL-8828BP	5.0	0.075	0.09	C-2R
OL-8270BP	5.0	0.115	0.15	C-2R



T-1 Wire Terminal

Standard Bulb Length

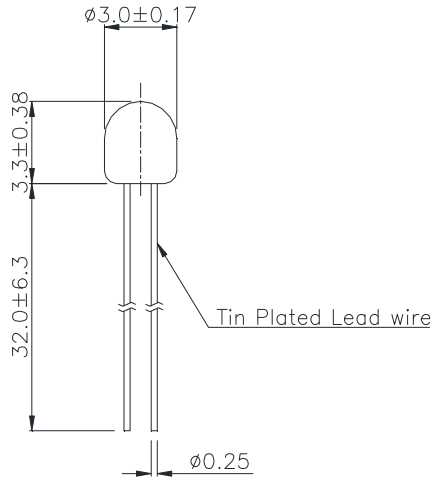
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-3037	3.0	0.040	0.03	C-2R
OL-3010	3.0	0.060	0.03	C-2R
OL-3043	5.0	0.020	0.02	C-2R
OL-3019	5.0	0.021	0.034	C-2R
OL-3056	5.0	0.030	0.03	C-2R
OL-3009	5.0	0.040	0.025	C-2R
OL-680*	5.0	0.060	0.03	C-2R
OL-680AS15*	5.0	0.060	0.03	C-2R
OL-683*	5.0	0.060	0.05	C-2R
OL-683AS15*	5.0	0.060	0.05	C-2R
OL-3070	5.0	0.060	0.15	C-2R
OL-713*	5.0	0.075	0.09	C-2R
OL-713AS15*	5.0	0.075	0.09	C-2R
OL-715*	5.0	0.115	0.15	C-2R
OL-715AS15*	5.0	0.115	0.15	C-2R
OL-715F1	5.0	0.125	0.22	C-2R
OL-3093	6.0	0.040	0.04	C-2R
OL-3041	6.0	0.060	0.13	C-2R
OL-1088	10.0	0.027	0.09	C-2F
OL-3023	12.0	0.030	0.1	C-2F
OL-1089	12.0	0.060	0.15	C-2F
OL-3228	14.0	0.040	0.15	C-2F
OL-1111	14.0	0.065	0.15	C-2F
OL-1092	18.0	0.026	0.15	C-2F
OL-3091	28.0	0.020	0.05	C-2F
OL-6838	28.0	0.024	0.15	C-2F



*U.S Military Standard MS24367

Short Bulb Length

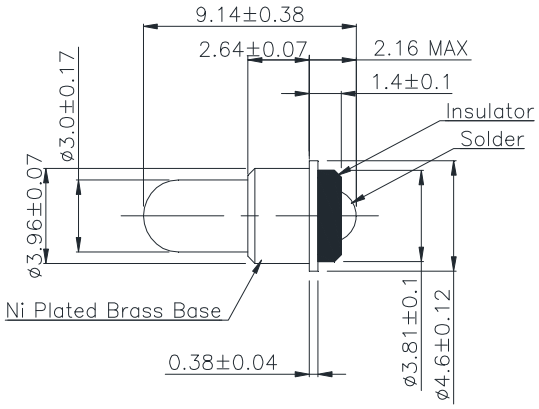
OL-6802	5.0	0.060	0.03	C-2R
OL-6802AS15**	5.0	0.060	0.03	C-2R
OL-6832	5.0	0.060	0.05	C-2R
OL-6832AS15**	5.0	0.060	0.05	C-2R
OL-30702	5.0	0.060	0.15	C-2R
OL-7132	5.0	0.075	0.09	C-2R
OL-7132AS15**	5.0	0.075	0.09	C-2R
OL-7152	5.0	0.115	0.15	C-2R
OL-7152AS15**	5.0	0.115	0.15	C-2R
OL-7152F1	5.0	0.125	0.22	C-2R
OL-8552	28.0	0.020	0.15	CC-2F



**U.S Military Standard MS90451

T-1 Sub-Midget Flanged

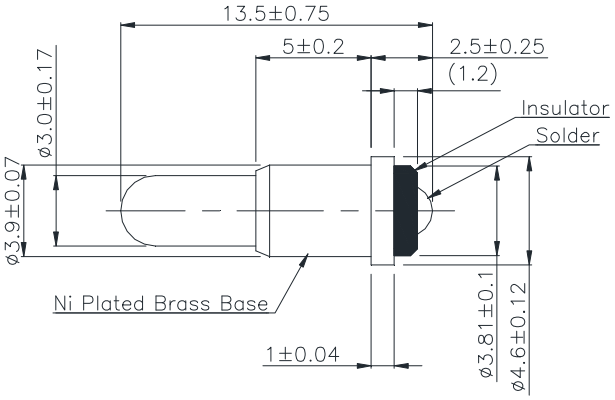
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-3038	3.0	0.040	0.03	C-2R
OL-3008	3.0	0.060	0.03	C-2R
OL-3044	5.0	0.020	0.02	C-2R
OL-3020	5.0	0.021	0.034	C-2R
OL-3057	5.0	0.030	0.03	C-2R
OL-3007	5.0	0.040	0.025	C-2R
OL-682*	5.0	0.060	0.03	C-2R
OL-682AS15*	5.0	0.060	0.03	C-2R
OL-685*	5.0	0.060	0.05	C-2R
OL-685AS15*	5.0	0.060	0.05	C-2R
OL-3071	5.0	0.060	0.15	C-2R
OL-714*	5.0	0.075	0.09	C-2R
OL-714AS15*	5.0	0.075	0.09	C-2R
OL-718*	5.0	0.115	0.15	C-2R
OL-718AS15*	5.0	0.115	0.15	C-2R
OL-718F1	5.0	0.125	0.22	C-2R
OL-3094	6.0	0.040	0.04	C-2R
OL-3042	6.0	0.060	0.13	C-2R
OL-1098	10.0	0.027	0.09	C-2F
OL-3024	12.0	0.030	0.1	C-2F
OL-1099	12.0	0.060	0.15	C-2F
OL-3229	14.0	0.040	0.15	C-2F
OL-1112	14.0	0.065	0.15	C-2F
OL-1100	18.0	0.026	0.15	C-2F
OL-3092	28.0	0.020	0.05	CC-2F
OL-6839	28.0	0.024	0.15	CC-2F



*U.S Military Standard MS24515

French Norm

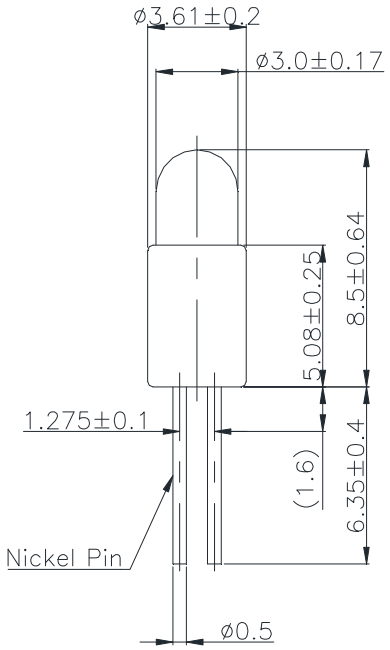
OL-3104	5.0	0.060	0.05	C-2R
OL-3106	5.0	0.115	0.15	C-2R
OL-3109	12.0	0.060	0.15	C-2F
OL-3111	18.0	0.026	0.15	C-2F
OL-3112	28.0	0.024	0.15	CC-2F
OL-3115	28.0	0.040	0.3	CC-2F



T-1 Bi-Pin (Standard)

Maximum Diameter 3.81mm Pin Spacing 1.275mm

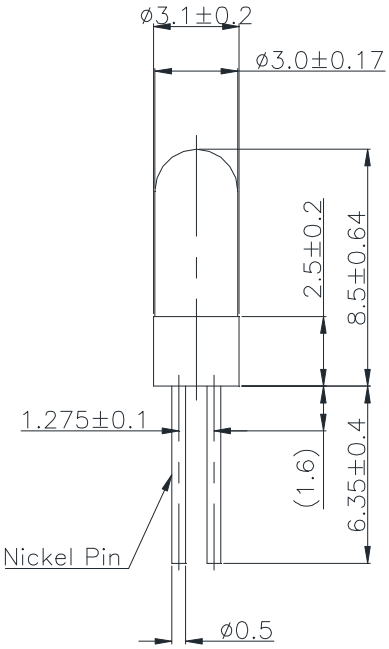
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-3038BP	3.0	0.040	0.03	C-2R
OL-3008BP	3.0	0.060	0.03	C-2R
OL-3044BP	5.0	0.020	0.02	C-2R
OL-3020BP	5.0	0.021	0.034	C-2R
OL-3057BP	5.0	0.030	0.03	C-2R
OL-3007BP	5.0	0.040	0.025	C-2R
OL-682BP	5.0	0.060	0.03	C-2R
OL-682BP/AS15	5.0	0.060	0.03	C-2R
OL-685BP	5.0	0.060	0.05	C-2R
OL-685BP/AS15	5.0	0.060	0.05	C-2R
OL-3071BP	5.0	0.060	0.15	C-2R
OL-714BP	5.0	0.075	0.09	C-2R
OL-714BP/AS15	5.0	0.075	0.09	C-2R
OL-718BP	5.0	0.115	0.15	C-2R
OL-718BP/AS15	5.0	0.115	0.15	C-2R
OL-718F1BP	5.0	0.125	0.22	C-2R
OL-3094BP	6.0	0.040	0.04	C-2R
OL-3042BP	6.0	0.060	0.13	C-2R
OL-1098BP	10.0	0.027	0.09	C-2F
OL-3024BP	12.0	0.030	0.1	C-2F
OL-1099BP	12.0	0.060	0.15	C-2F
OL-3229BP	14.0	0.040	0.15	C-2F
OL-1112BP	14.0	0.065	0.15	C-2F
OL-1100BP	18.0	0.026	0.15	C-2F
OL-3092BP	28.0	0.020	0.05	CC-2F
OL-6839BP	28.0	0.024	0.15	CC-2F



T-1 Bi-Pin (Type-A)

Maximum Diameter 3.3mm Pin Spacing 1.275mm

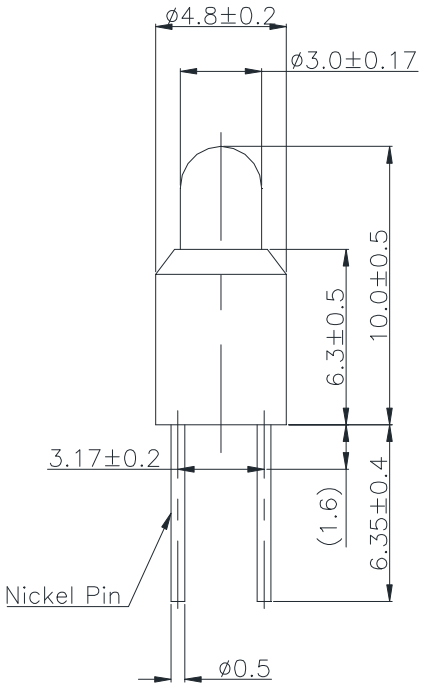
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-3038BPA	3.0	0.040	0.03	C-2R
OL-3008BPA	3.0	0.060	0.03	C-2R
OL-3044BPA	5.0	0.020	0.02	C-2R
OL-3020BPA	5.0	0.021	0.034	C-2R
OL-3057BPA	5.0	0.030	0.03	C-2R
OL-3007BPA	5.0	0.040	0.025	C-2R
OL-682BPA	5.0	0.060	0.03	C-2R
OL-682BPA/AS15	5.0	0.060	0.03	C-2R
OL-685BPA	5.0	0.060	0.05	C-2R
OL-685BPA/AS15	5.0	0.060	0.05	C-2R
OL-3071BPA	5.0	0.060	0.15	C-2R
OL-714BPA	5.0	0.075	0.09	C-2R
OL-714BPA/AS15	5.0	0.075	0.09	C-2R
OL-718BPA	5.0	0.115	0.15	C-2R
OL-718BPA/AS15	5.0	0.115	0.15	C-2R
OL-718F1BPA	5.0	0.125	0.22	C-2R
OL-3094BPA	6.0	0.040	0.04	C-2R
OL-3042BPA	6.0	0.060	0.13	C-2R
OL-1098BPA	10.0	0.027	0.09	C-2F
OL-3024BPA	12.0	0.030	0.1	C-2F
OL-1099BPA	12.0	0.060	0.15	C-2F
OL-3229BPA	14.0	0.040	0.15	C-2F
OL-1112BPA	14.0	0.065	0.15	C-2F
OL-1100BPA	18.0	0.026	0.15	C-2F
OL-3092BPA	28.0	0.020	0.05	CC-2F
OL-6839BPA	28.0	0.024	0.15	CC-2F



T-1 Bi-Pin (Type-C)

Maximum Diameter 5mm Pin Spacing 3.17mm

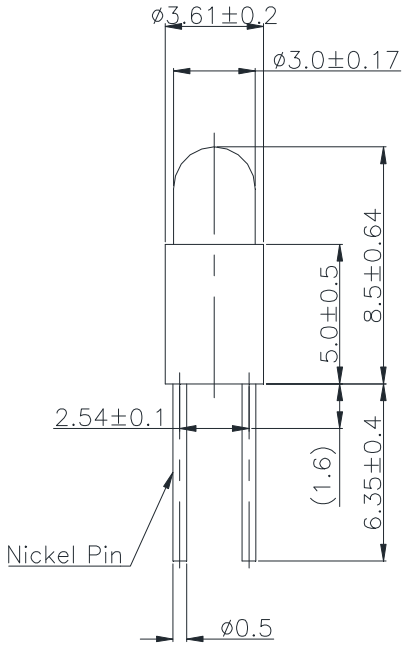
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-3038BPC	3.0	0.040	0.03	C-2R
OL-3008BPC	3.0	0.060	0.03	C-2R
OL-3044BPC	5.0	0.020	0.02	CC-6
OL-3020BPC	5.0	0.021	0.034	C-2R
OL-3057BPC	5.0	0.030	0.03	C-2R
OL-3007BPC	5.0	0.040	0.025	C-2R
OL-682BPC	5.0	0.060	0.03	C-2R
OL-682BPC/AS15	5.0	0.060	0.03	C-2R
OL-685BPC	5.0	0.060	0.05	C-2R
OL-685BPC/AS15	5.0	0.060	0.05	C-2R
OL-3071BPC	5.0	0.060	0.15	C-2R
OL-714BPC	5.0	0.075	0.09	C-2R
OL-714BPC/AS15	5.0	0.075	0.09	C-2R
OL-718BPC	5.0	0.115	0.15	C-2R
OL-718BPC/AS15	5.0	0.115	0.15	C-2R
OL-718F1BPC	5.0	0.125	0.22	C-2R
OL-3094BPC	6.0	0.040	0.04	C-2R
OL-3042BPC	6.0	0.060	0.13	C-2R
OL-1098BPC	10.0	0.027	0.09	C-2F
OL-3024BPC	12.0	0.030	0.1	C-2F
OL-1099BPC	12.0	0.060	0.15	C-2F
OL-3229BPC	14.0	0.040	0.15	C-2F
OL-1112BPC	14.0	0.065	0.15	C-2F
OL-1100BPC	18.0	0.026	0.15	C-2F
OL-3092BPC	28.0	0.020	0.05	CC-2F
OL-6839BPC	28.0	0.024	0.15	CC-2F



T-1 Bi-Pin (Type-E)

Maximum Diameter 3.81mm Pin Spacing 2.54mm

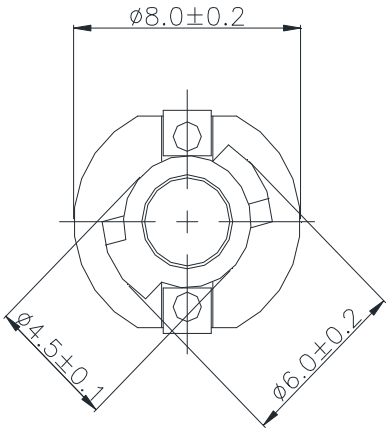
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-3038BPE	3.0	0.040	0.03	C-2R
OL-3008BPE	3.0	0.060	0.03	C-2R
OL-3044BPE	5.0	0.020	0.02	CC-6
OL-3020BPE	5.0	0.021	0.034	C-2R
OL-3057BPE	5.0	0.030	0.03	C-2R
OL-3007BPE	5.0	0.040	0.025	C-2R
OL-682BPE	5.0	0.060	0.03	C-2R
OL-682BPE/AS15	5.0	0.060	0.03	C-2R
OL-685BPE	5.0	0.060	0.05	C-2R
OL-685BPE/AS15	5.0	0.060	0.05	C-2R
OL-3071BPE	5.0	0.060	0.15	C-2R
OL-714BPE	5.0	0.075	0.09	C-2R
OL-714BPE/AS15	5.0	0.075	0.09	C-2R
OL-718BPE	5.0	0.115	0.15	C-2R
OL-718BPE/AS15	5.0	0.115	0.15	C-2R
OL-718F1BPE	5.0	0.125	0.22	C-2R
OL-3094BPE	6.0	0.040	0.04	C-2R
OL-3042BPE	6.0	0.060	0.13	C-2R
OL-1098BPE	10.0	0.027	0.09	C-2F
OL-3024BPE	12.0	0.030	0.1	C-2F
OL-1099BPE	12.0	0.060	0.15	C-2F
OL-3229BPE	14.0	0.040	0.15	C-2F
OL-1112BPE	14.0	0.065	0.15	C-2F
OL-1100BPE	18.0	0.026	0.15	C-2F
OL-3092BPE	28.0	0.020	0.05	CC-2F
OL-6839BPE	28.0	0.024	0.15	CC-2F

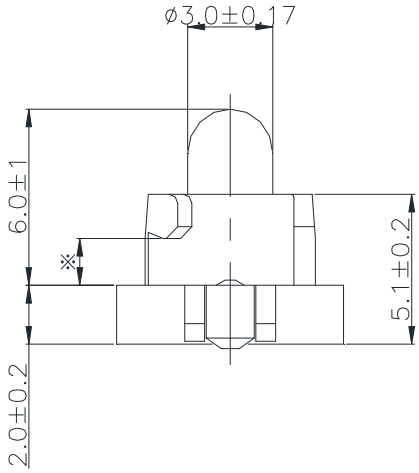


T-1 Neowedge

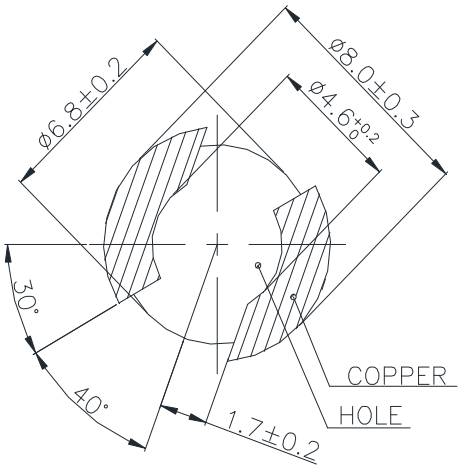
Base Diameter 8mm

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-3007NW	5.0	0.040	0.025	C-2R
OL-682NW	5.0	0.060	0.03	C-2R
OL-685NW	5.0	0.060	0.05	C-2R
OL-3071NW	5.0	0.060	0.15	C-2R
OL-714NW	5.0	0.075	0.09	C-2R
OL-718NW	5.0	0.115	0.15	C-2R
OL-718F1NW	5.0	0.125	0.22	C-2R
OL-3094NW	6.0	0.040	0.04	C-2R
OL-3042NW	6.0	0.060	0.13	C-2R
OL-1098NW	10.0	0.027	0.09	C-2F
OL-3024NW	12.0	0.030	0.1	C-2F
OL-1099NW	12.0	0.060	0.15	C-2F
OL-3507NW	12.0	0.060	0.2	C-2F
OL-3480NW	14.0	0.040	0.05	C-2F
OL-3229NW	14.0	0.040	0.15	C-2F
OL-1112NW	14.0	0.065	0.15	C-2F
OL-1100NW	18.0	0.026	0.15	C-2F
OL-3317NW	18.0	0.035	0.15	C-2F
OL-3092NW	28.0	0.020	0.05	CC-2F
OL-6839NW	28.0	0.024	0.15	CC-2F



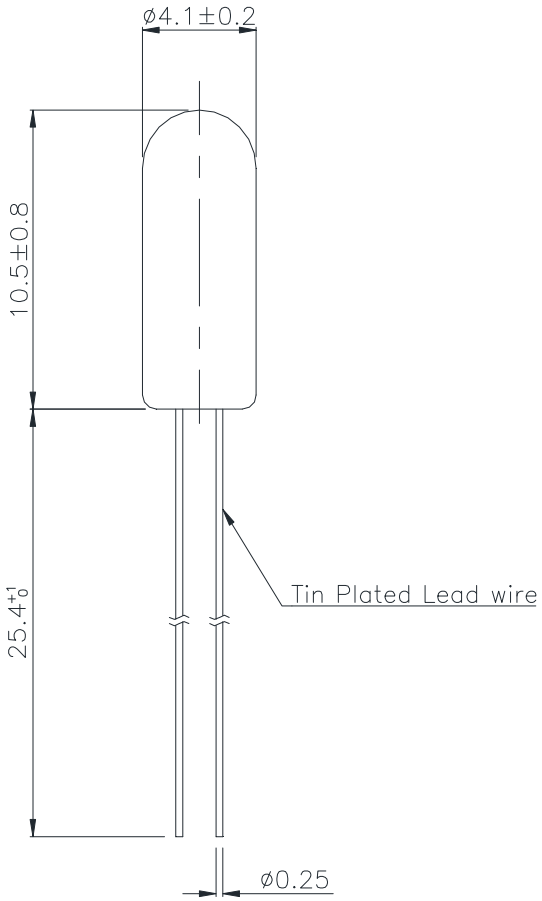


※ PCB THICKNESS 1.45mm~1.65mm



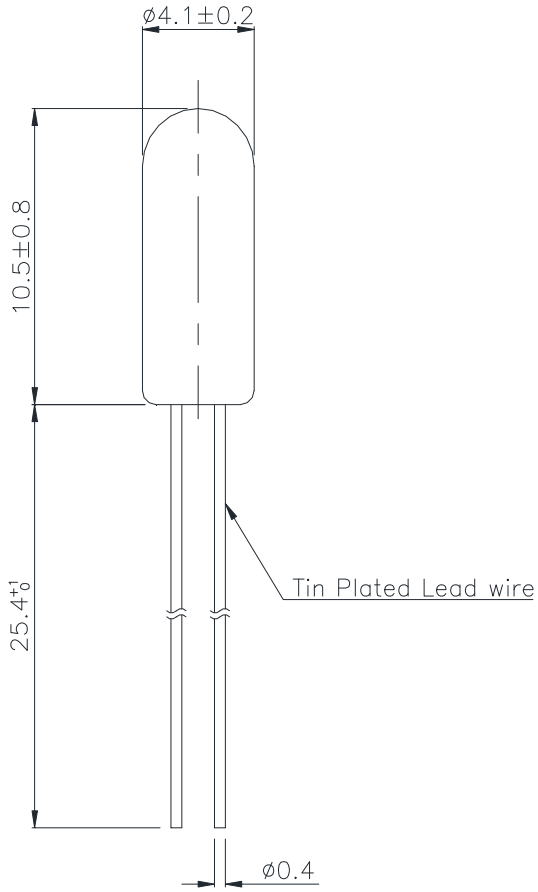
T-1 1/4 Wire Terminal

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-580	5.0	0.060	0.03	C-2R
OL-583	5.0	0.060	0.05	C-2R
OL-4003	5.0	0.075	0.09	C-2R
OL-515	5.0	0.115	0.15	C-2R
OL-634	6.0	0.200	0.63	C-2R
OL-4031	12.0	0.040	0.12	C-2F
OL-4054	12.0	0.060	0.15	C-2F
OL-4193	12.0	0.100	0.36	C-2F
OL-4369	13.5	0.048	0.06	C-2F
OL-4341	14.0	0.040	0.08	C-2F
OL-4239	14.0	0.040	0.15	C-2F
OL-4168	14.0	0.067	0.175	C-2F
OL-640	14.0	0.080	0.3	C-2F
OL-4029	14.0	0.080	0.5	C-2F
OL-4185	14.0	0.100	0.5	C-2F
OL-4300	14.0	0.100	0.7	C-2F
OL-4388	14.0	0.115	0.6	C-2F
OL-4073	28.0	0.024	0.15	C-2F
OL-4132	28.0	0.040	0.2	C-2F
OL-4008	28.0	0.040	0.3	C-2F
OL-627	28.0	0.040	0.34	C-2F



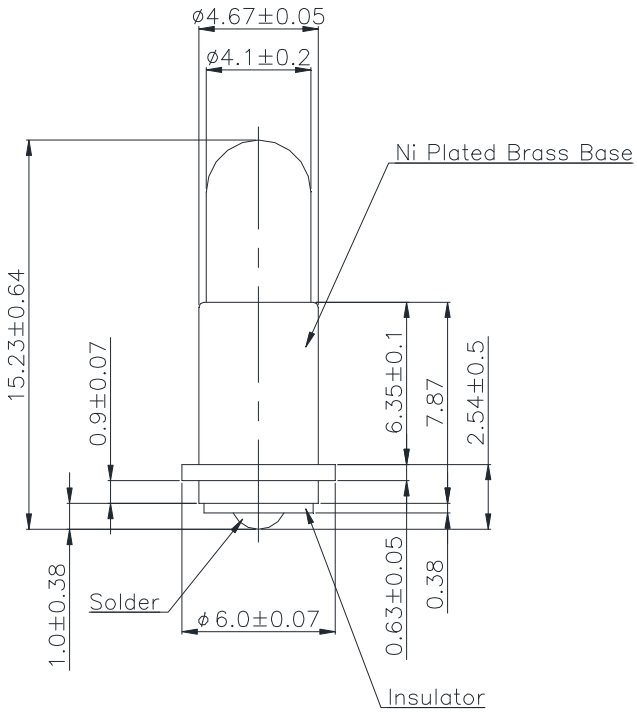
T-1 1/4 IBP ϕ0.4mm(.016")Pins

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-580IBP	5.0	0.060	0.03	C-2R
OL-583IBP	5.0	0.060	0.05	C-2R
OL-4003IBP	5.0	0.075	0.09	C-2R
OL-515IBP	5.0	0.115	0.15	C-2R
OL-634IBP	6.0	0.200	0.63	C-2R
OL-4031IBP	12.0	0.040	0.12	C-2F
OL-4239IBP	14.0	0.040	0.15	C-2F
OL-4168IBP	14.0	0.067	0.175	C-2F
OL-640IBP	14.0	0.080	0.3	C-2F
OL-4029IBP	14.0	0.080	0.5	C-2F
OL-4185IBP	14.0	0.100	0.5	C-2F
OL-4073IBP	28.0	0.024	0.15	C-2F
OL-4132IBP	28.0	0.040	0.2	C-2F
OL-4008IBP	28.0	0.040	0.3	C-2F
OL-627IBP	28.0	0.040	0.34	C-2F



T-1 1/4 Midget Flanged (Special)

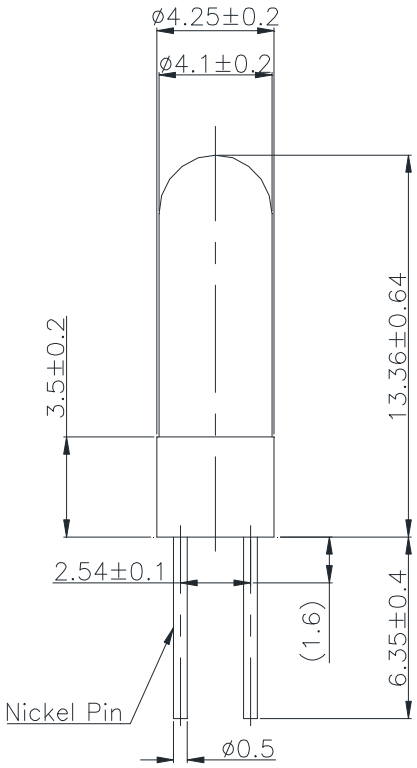
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-582	5.0	0.060	0.03	C-2R
OL-585	5.0	0.060	0.05	C-2R
OL-4004	5.0	0.075	0.09	C-2R
OL-518	5.0	0.115	0.15	C-2R
OL-628	6.0	0.200	0.63	C-2R
OL-4032	12.0	0.040	0.12	C-2F
OL-4030	14.0	0.080	0.3	C-2F
OL-646	14.0	0.080	0.5	C-2F
OL-4074	28.0	0.024	0.15	C-2F
OL-4133	28.0	0.040	0.2	C-2F
OL-4009	28.0	0.040	0.3	C-2F
OL-632	28.0	0.040	0.34	C-2F



T-1 1/4 Bi-Pin (Type-A)

Maximum Diameter 4.45mm Pin Spacing 2.54mm

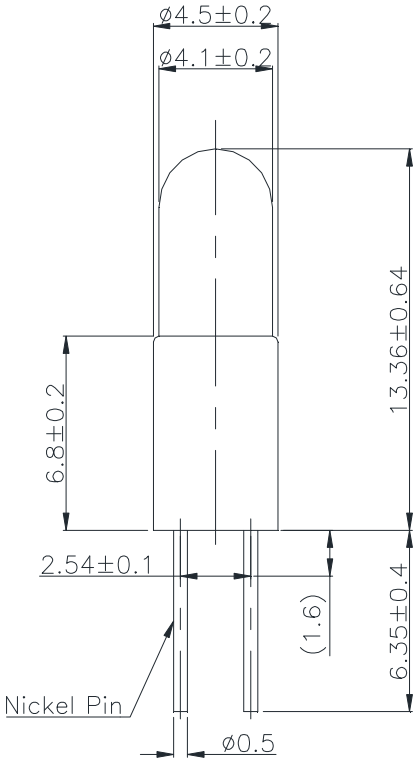
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-585BPA	5.0	0.060	0.05	C-2R
OL-4004BPA	5.0	0.075	0.09	C-2R
OL-518BPA	5.0	0.115	0.15	C-2R
OL-4042BPA	6.0	0.040	0.04	C-2V
OL-4015BPA	6.0	0.060	0.13	C-2R
OL-628BPA	6.0	0.200	0.63	C-2R
OL-4032BPA	12.0	0.040	0.12	C-2F
OL-4030BPA	14.0	0.080	0.3	C-2F
OL-646BPA	14.0	0.080	0.5	C-2F
OL-4097BPA	16.0	0.030	0.034	C-2F
OL-4060BPA	24.0	0.035	0.13	C-2F
OL-4074BPA	28.0	0.024	0.15	C-2F
OL-4133BPA	28.0	0.040	0.2	C-2F
OL-4009BPA	28.0	0.040	0.3	C-2F
OL-632BPA	28.0	0.040	0.34	C-2F



T-1 1/4 Bi-Pin (Type-E)

Maximum Diameter 4.7mm Pin Spacing 2.54mm

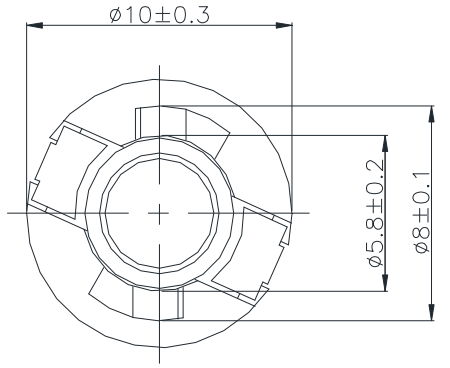
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-582BPE	5.0	0.060	0.03	C-2R
OL-585BPE	5.0	0.060	0.05	C-2R
OL-4004BPE	5.0	0.075	0.09	C-2R
OL-518BPE	5.0	0.115	0.15	C-2R
OL-628BPE	6.0	0.200	0.63	C-2R
OL-4032BPE	12.0	0.040	0.12	C-2F
OL-4240BPE	14.0	0.040	0.15	C-2F
OL-4222BPE	14.0	0.067	0.175	C-2F
OL-4030BPE	14.0	0.080	0.3	C-2F
OL-646BPE	14.0	0.080	0.5	C-2F
OL-4074BPE	28.0	0.024	0.15	C-2F
OL-4133BPE	28.0	0.040	0.2	C-2F
OL-4009BPE	28.0	0.040	0.3	C-2F
OL-632BPE	28.0	0.040	0.34	C-2F

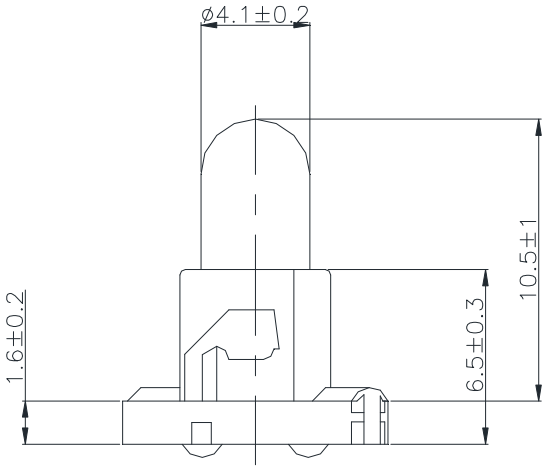


T-1 1/4 Neowedge

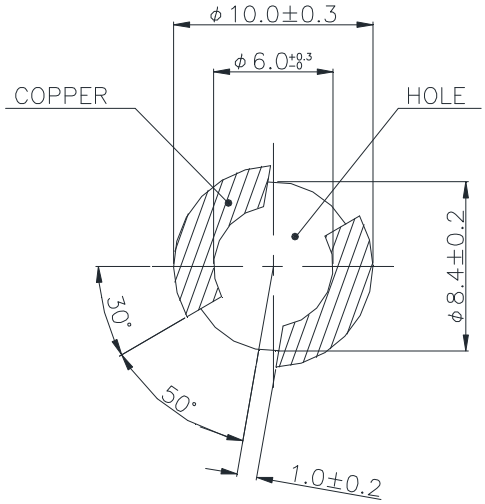
Base Diameter 10mm

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-582NW	5.0	0.060	0.03	C-2R
OL-585NW	5.0	0.060	0.05	C-2R
OL-4004NW	5.0	0.075	0.09	C-2R
OL-518NW	5.0	0.115	0.15	C-2R
OL-628NW	6.0	0.200	0.63	C-2R
OL-4032NW	12.0	0.040	0.12	C-2F
OL-4106NW	12.0	0.060	0.15	C-2F
OL-4194NW	12.0	0.100	0.36	C-2F
OL-4370NW	13.5	0.048	0.06	C-2F
OL-4342NW	14.0	0.040	0.08	C-2F
OL-4240NW	14.0	0.040	0.15	C-2F
OL-4030NW	14.0	0.080	0.3	C-2F
OL-646NW	14.0	0.080	0.5	C-2F
OL-4186NW	14.0	0.100	0.5	C-2F
OL-4301NW	14.0	0.100	0.7	C-2F
OL-4389NW	14.0	0.115	0.6	C-2F
OL-4074NW	28.0	0.024	0.15	C-2F
OL-4133NW	28.0	0.040	0.2	C-2F
OL-4009NW	28.0	0.040	0.3	C-2F
OL-632NW	28.0	0.040	0.34	C-2F





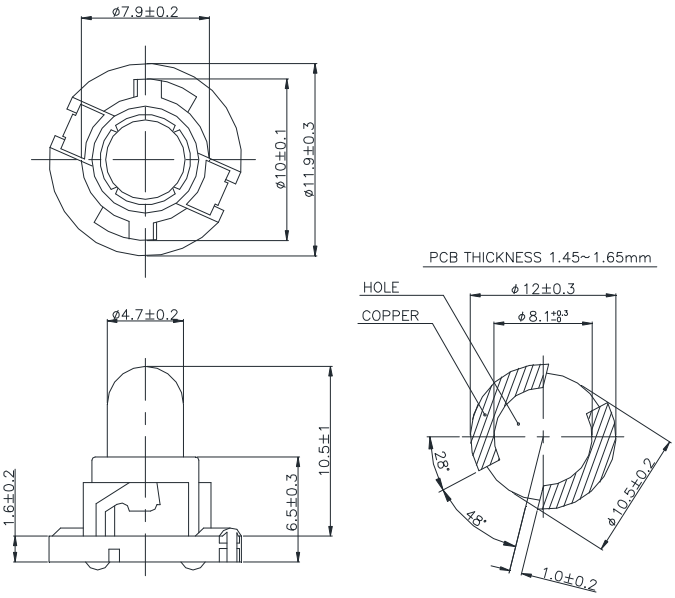
PCB THICKNESS 1.45~1.65mm



T-1 1/2 Neowedge

Base Diameter 11.9mm

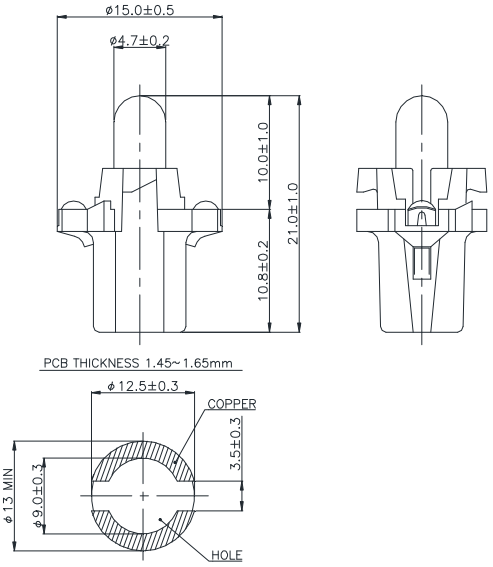
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-5061NW	5.0	0.060	0.03	C-2R
OL-5001NW	5.0	0.060	0.05	C-2R
OL-5062NW	5.0	0.060	0.15	C-2R
OL-5002NW	5.0	0.115	0.15	C-2R
OL-5023NW	6.0	0.060	0.13	C-2R
OL-5013NW	6.0	0.200	0.63	C-2R
OL-5006NW	12.0	0.040	0.12	C-2F
OL-5025NW	12.0	0.060	0.15	C-2F
OL-5059NW	14.0	0.040	0.15	C-2F
OL-5015NW	14.0	0.080	0.3	C-2F
OL-5014NW	14.0	0.080	0.5	C-2F
OL-5021NW	14.0	0.100	0.5	C-2F
OL-5026NW	24.0	0.035	0.13	C-2F
OL-5060NW	28.0	0.024	0.15	C-2F
OL-5018NW	28.0	0.040	0.2	C-2F
OL-5017NW	28.0	0.040	0.3	C-2F
OL-5016NW	28.0	0.040	0.34	C-2F



T-1 1/2 P.C.Board Bayonet(Type-A)

Single Contact

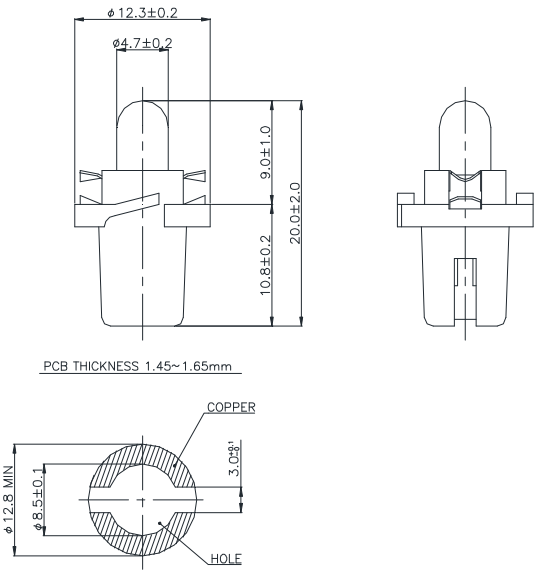
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-5001PBA	5.0	0.060	0.05	C-2R
OL-5002PBA	5.0	0.115	0.15	C-2R
OL-5023PBA	6.0	0.060	0.13	C-2R
OL-5024PBA	6.3	0.200	0.55	C-2R
OL-5025PBA	12.0	0.060	0.15	C-2F
OL-5033PBA	12.0	0.100	0.36	C-2F
OL-5034PBA	12.0	0.150	0.45	C-2F
OL-5037PBA	14.0	0.067	0.175	C-2F
OL-5015PBA	14.0	0.080	0.3	C-2F
OL-5026PBA	24.0	0.035	0.13	C-2F
OL-5027PBA	24.0	0.050	0.5	C-2F
OL-5017PBA	28.0	0.040	0.3	C-2F



T-1 1/2 P.C.Board Bayonet(Type-B)

Double Contact

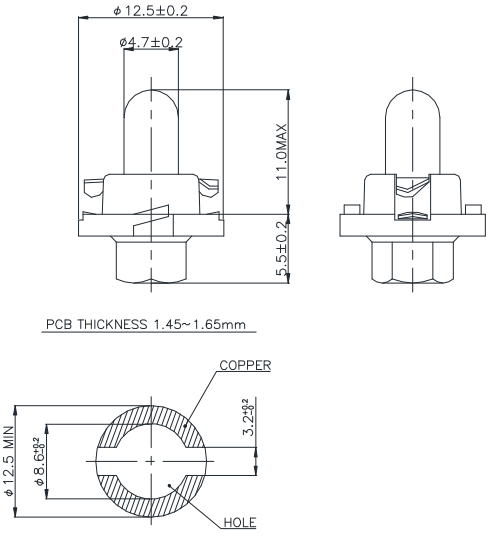
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-5001PBB	5.0	0.060	0.05	C-2R
OL-5002PBB	5.0	0.115	0.15	C-2R
OL-5023PBB	6.0	0.060	0.13	C-2R
OL-5024PBB	6.3	0.200	0.55	C-2R
OL-5025PBB	12.0	0.060	0.15	C-2F
OL-5033PBB	12.0	0.100	0.36	C-2F
OL-5034PBB	12.0	0.150	0.45	C-2F
OL-5037PBB	14.0	0.067	0.175	C-2F
OL-5015PBB	14.0	0.080	0.3	C-2F
OL-5026PBB	24.0	0.035	0.13	C-2F
OL-5027PBB	24.0	0.050	0.5	C-2F
OL-5017PBB	28.0	0.040	0.3	C-2F



T-1 1/2 P.C.Board Bayonet(Type-C)

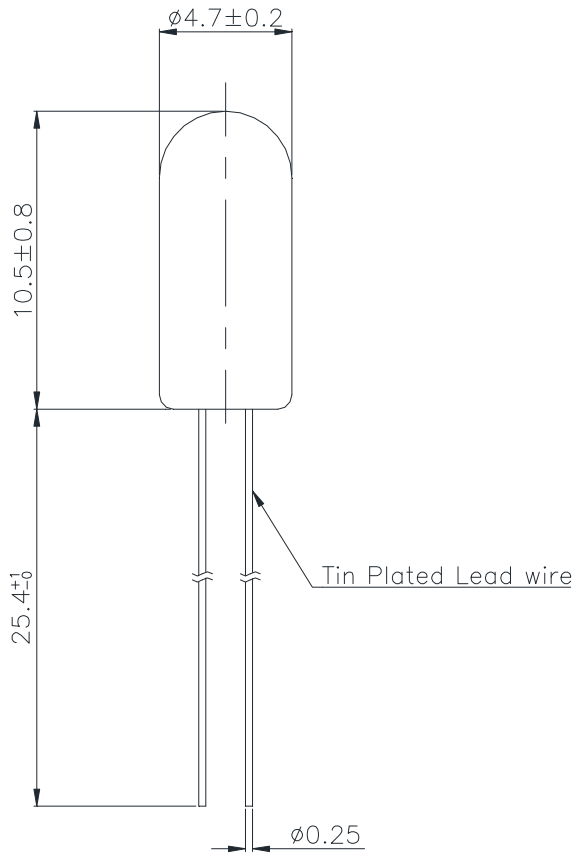
Double Contact

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-5001PBC	5.0	0.060	0.05	C-2R
OL-5002PBC	5.0	0.115	0.15	C-2R
OL-5023PBC	6.0	0.060	0.13	C-2R
OL-5024PBC	6.3	0.200	0.55	C-2R
OL-5025PBC	12.0	0.060	0.15	C-2F
OL-5033PBC	12.0	0.100	0.36	C-2F
OL-5034PBC	12.0	0.150	0.45	C-2F
OL-5037PBC	14.0	0.067	0.175	C-2F
OL-5015PBC	14.0	0.080	0.3	C-2F
OL-5026PBC	24.0	0.035	0.13	C-2F
OL-5027PBC	24.0	0.050	0.5	C-2F
OL-5017PBC	28.0	0.040	0.3	C-2F



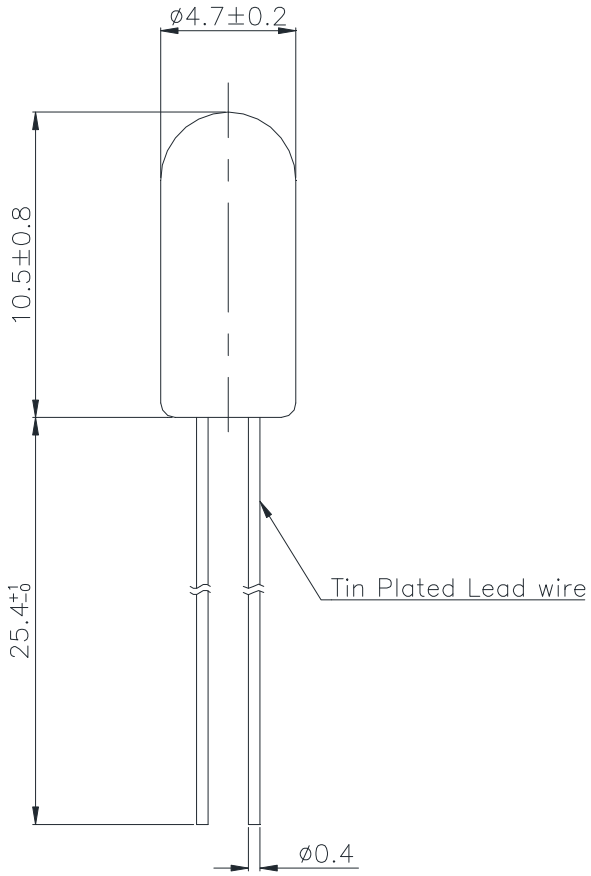
T-1 3/4 Wire Terminal

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-1783	2.5	0.200	0.2	C-2R
OL-2169	2.5	0.350	0.21	C-2R
OL-1738	2.7	0.060	0.04	C-2R
OL-6134	5.0	0.030	0.03	C-2R
OL-6062	5.0	0.040	0.025	C-2R
OL-805	5.0	0.060	0.03	C-2R
OL-806	5.0	0.060	0.05	C-2R
OL-6083	5.0	0.060	0.15	C-2R
OL-6232	5.0	0.075	0.09	C-2R
OL-807	5.0	0.115	0.15	C-2R
OL-1730	6.0	0.040	0.04	C-2V
OL-6225	6.0	0.060	0.13	C-2R
OL-1784	6.0	0.200	0.34@5V	C-2R
OL-2180	6.3	0.040	0.03	C-2V
OL-1739	6.3	0.075	0.23	C-2R
OL-6048	6.3	0.150	0.45	C-2R
OL-2181	6.3	0.200	0.4	C-2F
OL-2112	6.3	0.200	0.55	C-2R
OL-2107	10.0	0.040	0.08	C-2F
OL-2174	12.0	0.040	0.12	C-2F
OL-6037	12.0	0.060	0.15	C-2F
OL-2182	14.0	0.080	0.3	C-2F
OL-1705	14.0	0.080	0.5	C-2F
OL-1705L	14.0	0.088	0.5	C-2F
OL-2162	14.0	0.100	0.5	C-2F
OL-6425	14.0	0.125	0.7	C-2F
OL-6002	15.0	0.037	0.075	C-2F
OL-2102	18.0	0.040	0.15	C-2F
OL-6004	24.0	0.050	0.5	C-2F
OL-6033	28.0	0.024	0.15	C-2F
OL-2185	28.0	0.040	0.2	C-2F
OL-2187	28.0	0.040	0.3	C-2F
OL-1764	28.0	0.040	0.34	C-2F
OL-1764LSV	28.0	0.060	0.34	C-2F
OL-361	28.0	0.060	0.6	C-2F
OL-6435	28.0	0.065	0.65	C-2F



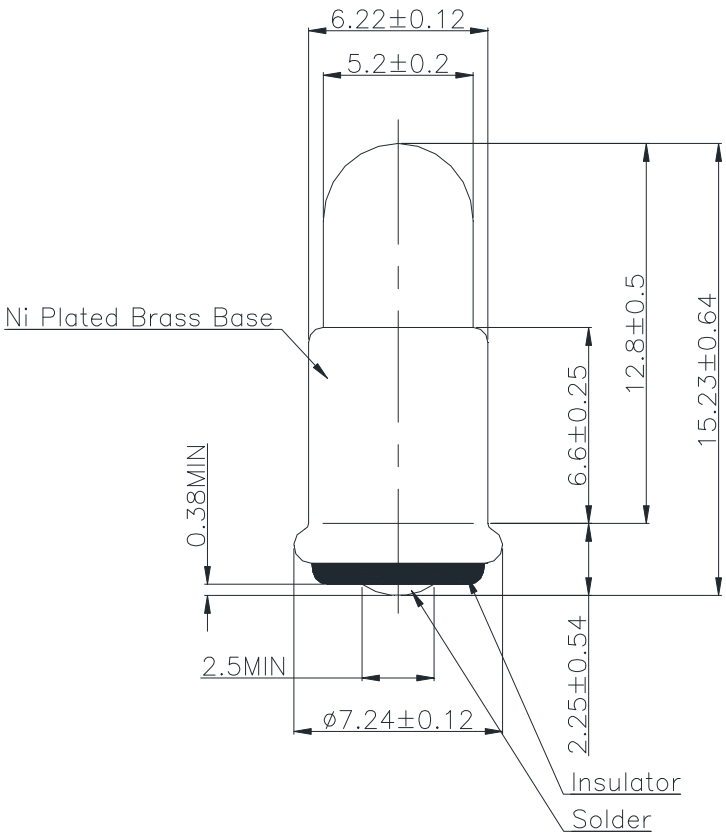
T-1 3/4 IBP ϕ0.4mm(.016")Pins

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-806IBP	5.0	0.060	0.05	C-2R
OL-6083IBP	5.0	0.060	0.15	C-2R
OL-6232IBP	5.0	0.075	0.09	C-2R
OL-807IBP	5.0	0.115	0.15	C-2R
OL-6225IBP	6.0	0.060	0.13	C-2R
OL-1784IBP	6.0	0.200	0.34@5V	C-2R
OL-6048IBP	6.3	0.150	0.45	C-2R
OL-2181IBP	6.3	0.200	0.4	C-2F
OL-2112IBP	6.3	0.200	0.55	C-2R
OL-2107IBP	10.0	0.040	0.08	C-2F
OL-6037IBP	12.0	0.060	0.15	C-2F
OL-2182IBP	14.0	0.080	0.3	C-2F
OL-1705IBP	14.0	0.080	0.5	C-2F
OL-2162IBP	14.0	0.100	0.5	C-2F
OL-2102IBP	18.0	0.040	0.15	C-2F
OL-6004IBP	24.0	0.050	0.5	C-2F
OL-2185IBP	28.0	0.040	0.2	C-2F
OL-2187IBP	28.0	0.040	0.3	C-2F
OL-1764IBP	28.0	0.040	0.34	C-2F
OL-1764LSV-IBP	28.0	0.060	0.34	C-2F
OL-361IBP	28.0	0.060	0.6	C-2F



T-1 3/4 Midget Flanged

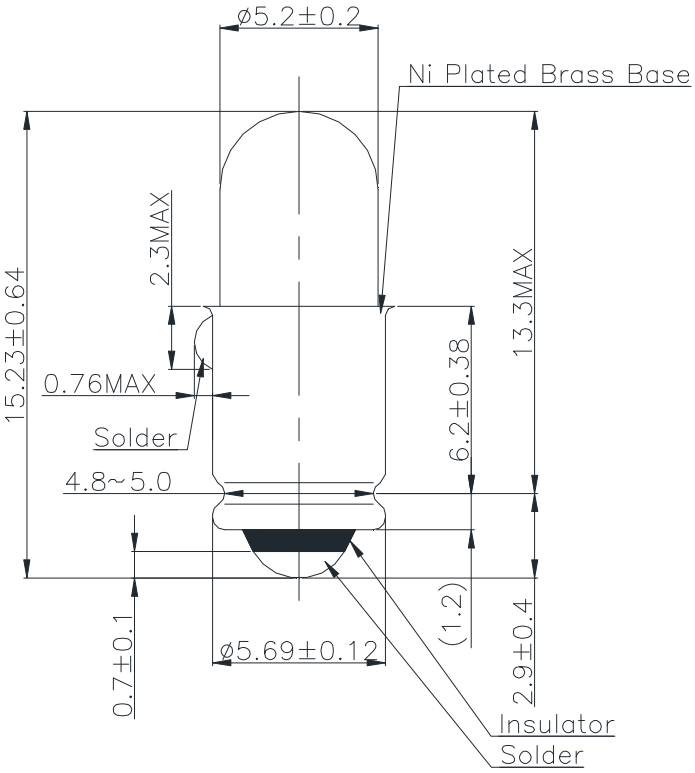
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-368*	2.5	0.200	0.2	C-2R
OL-338*	2.7	0.060	0.04	C-2R
OL-6063	5.0	0.040	0.025	C-2R
OL-782	5.0	0.060	0.03	C-2R
OL-783	5.0	0.060	0.05	C-2R
OL-6084	5.0	0.060	0.15	C-2R
OL-815	5.0	0.115	0.15	C-2R
OL-428	5.0	0.180	0.35	C-2R
OL-345	6.0	0.040	0.04	C-2V
OL-328*	6.0	0.200	0.34@5V	C-2R
OL-380	6.3	0.040	0.03	C-2V
OL-377	6.3	0.075	0.23	C-2R
OL-381*	6.3	0.200	0.4	C-2F
OL-349	6.3	0.200	0.55	C-2R
OL-367	10.0	0.040	0.08	C-2F
OL-394	12.0	0.040	0.12	C-2F
OL-382	14.0	0.080	0.3	C-2F
OL-330*	14.0	0.080	0.5	C-2F
OL-6006	14.0	0.088	0.5	C-2F
OL-8918*	14.0	0.100	0.5	C-2F
OL-6003	15.0	0.037	0.075	C-2F
OL-370	18.0	0.040	0.15	C-2F
OL-6005	24.0	0.050	0.5	C-2F
OL-6034	28.0	0.024	0.15	C-2F
OL-385	28.0	0.040	0.2	C-2F
OL-385AS15*	28.0	0.040	0.2	C-2F
OL-387*	28.0	0.040	0.3	C-2F
OL-327*	28.0	0.040	0.34	C-2F
OL-327LSV	28.0	0.060	0.34	C-2F
OL-365	28.0	0.060	0.6	C-2F
OL-6436	28.0	0.065	0.65	C-2F



*U.S Military Standard MS25237 Japan industry standard JIS C7522

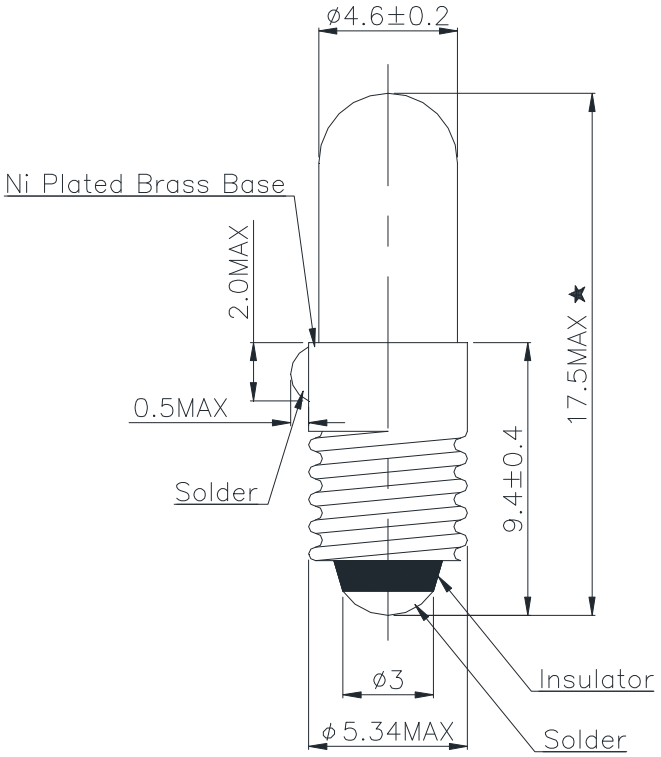
T-1 3/4 Midget Grooved

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-6039	5.0	0.060	0.03	C-2R
OL-6043	5.0	0.115	0.15	C-2R
OL-337	6.0	0.200	0.34@5V	C-2R
OL-6381	6.3	0.150	0.45	C-2R
OL-379	6.3	0.200	0.4	C-2F
OL-398	6.3	0.200	0.55	C-2R
OL-6045	12.0	0.040	0.12	C-2F
OL-386	14.0	0.080	0.3	C-2F
OL-336	14.0	0.080	0.5	C-2F
OL-6339	14.0	0.100	0.5	C-2F
OL-6219	28.0	0.024	0.15	C-2F
OL-6047	28.0	0.040	0.2	C-2F
OL-388	28.0	0.040	0.3	C-2F
OL-334	28.0	0.040	0.34	C-2F
OL-334LSV	28.0	0.060	0.34	C-2F



T-1 3/4 Midget Screw

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-1767*	2.5	0.200	0.2	C-2R
OL-1769*	2.5	0.200	0.2	C-2R
OL-693	2.7	0.060	0.04	C-2R
OL-6015	5.0	0.060	0.03	C-2R
OL-6040	5.0	0.060	0.05	C-2R
OL-6042	5.0	0.115	0.15	C-2R
OL-342*	6.0	0.040	0.04	C-2V
OL-1768*	6.0	0.200	0.34@5V	C-2R
OL-1775	6.3	0.075	0.23	C-2R
OL-6008	6.3	0.150	0.45	C-2R
OL-1768L	6.3	0.200	0.55	C-2R
OL-378	6.3	0.200	0.4	C-2F
OL-691	10.0	0.014	0.004	C-2F
OL-6044	12.0	0.040	0.12	C-2F
OL-362	14.0	0.080	0.3	C-2F
OL-373	14.0	0.080	0.5	C-2F
OL-536	18.0	0.040	0.15	C-2F
OL-384	28.0	0.040	0.2	C-2F
OL-399	28.0	0.040	0.3	C-2F
OL-335*	28.0	0.040	0.34	C-2F
OL-335LSV	28.0	0.060	0.34	C-2F

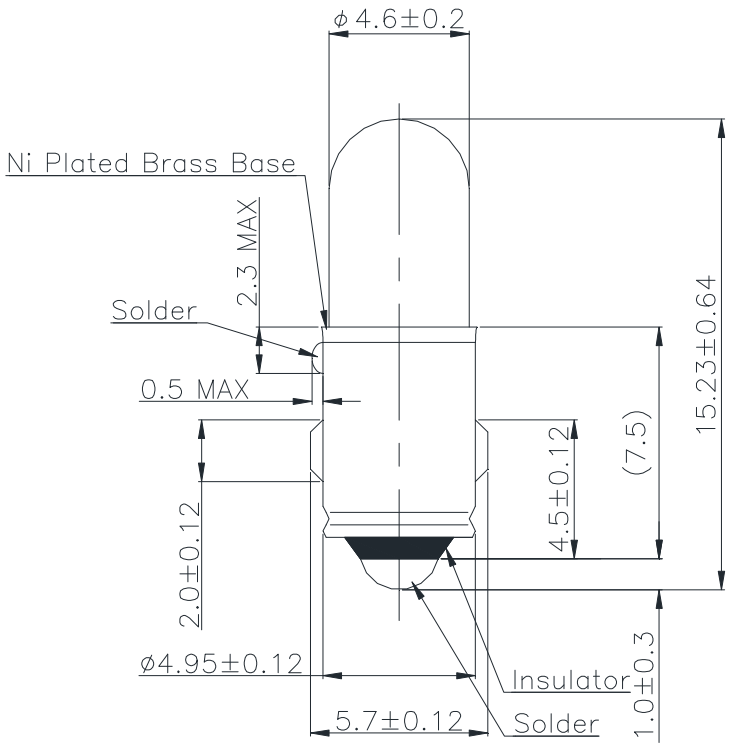


★MS15612
OL-1767 15.88mm
OL-1768 15.88mm
OL-335 18.26mm
OL-342 18.26mm
OL-1769 18.26mm

*U.S Military Standard MS15612

T-1 3/4 Midget Bayonet

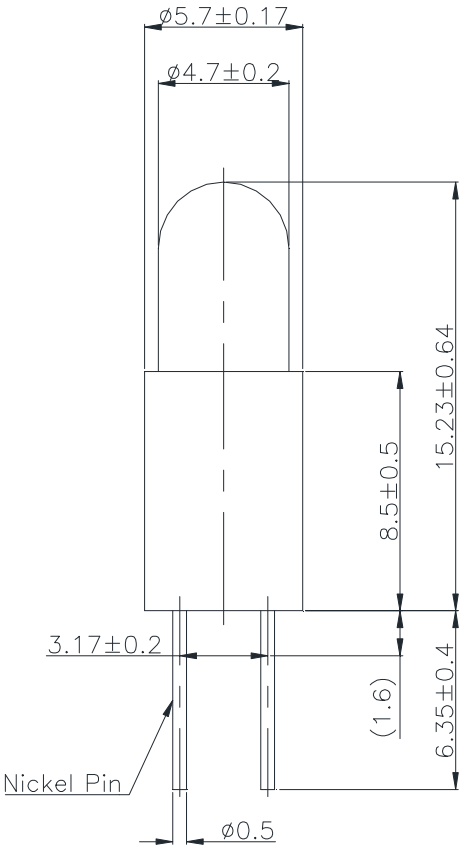
Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-368MB	2.5	0.200	0.2	C-2R
OL-268MB	2.5	0.350	0.21	C-2R
OL-338MB	2.7	0.060	0.04	C-2R
OL-6133MB	3.0	0.040	0.03	C-2R
OL-6049MB	4.5	0.120	0.045	C-2V
OL-783MB	5.0	0.060	0.05	C-2R
OL-6084MB	5.0	0.060	0.15	C-2R
OL-6233MB	5.0	0.075	0.09	C-2R
OL-815MB	5.0	0.115	0.15	C-2R
OL-345MB	6.0	0.040	0.04	C-2V
OL-6226MB	6.0	0.060	0.13	C-2R
OL-380MB	6.3	0.040	0.03	C-2V
OL-350MB	6.3	0.150	0.45	C-2R
OL-381MB	6.3	0.200	0.4	C-2F
OL-367MB	10.0	0.040	0.08	C-2F
OL-394MB	12.0	0.040	0.12	C-2F
OL-382MB	14.0	0.080	0.3	C-2F
OL-330MB	14.0	0.080	0.5	C-2F
OL-6006MB	14.0	0.088	0.5	C-2F
OL-6003MB	15.0	0.037	0.075	C-2F
OL-370MB	18.0	0.040	0.15	C-2F
OL-6005MB	24.0	0.050	0.5	C-2F



T-1 3/4 Bi-Pin

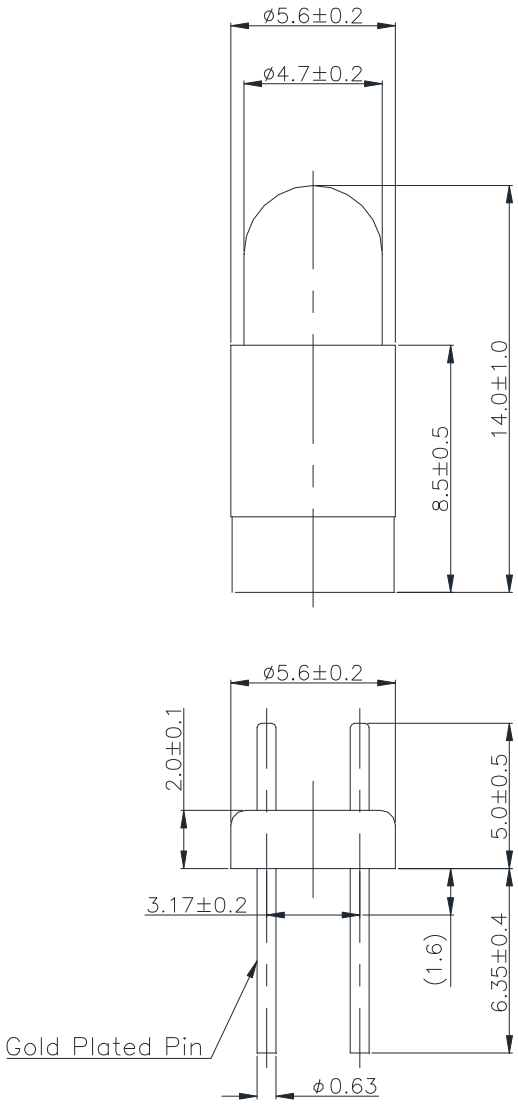
Maximum Diameter 5.87mm(.230") Pin Spacing 3.17mm(.125")

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-368BP	2.5	0.200	0.2	C-2R
OL-268BP	2.5	0.350	0.21	C-2R
OL-338BP	2.7	0.060	0.04	C-2R
OL-6135BP	5.0	0.030	0.03	C-2R
OL-6063BP	5.0	0.040	0.025	C-2R
OL-782BP	5.0	0.060	0.03	C-2R
OL-783BP	5.0	0.060	0.05	C-2R
OL-6084BP	5.0	0.060	0.15	C-2R
OL-6233BP	5.0	0.075	0.09	C-2R
OL-815BP	5.0	0.115	0.15	C-2R
OL-428BP	5.0	0.180	0.35	C-2R
OL-345BP	6.0	0.040	0.04	C-2V
OL-6226BP	6.0	0.060	0.13	C-2R
OL-328BP	6.0	0.200	0.34@5V	C-2R
OL-380BP	6.3	0.040	0.03	C-2V
OL-377BP	6.3	0.075	0.23	C-2R
OL-350BP	6.3	0.150	0.45	C-2R
OL-381BP	6.3	0.200	0.4	C-2F
OL-349BP	6.3	0.200	0.55	C-2R
OL-367BP	10.0	0.040	0.08	C-2F
OL-394BP	12.0	0.040	0.12	C-2F
OL-6038BP	12.0	0.060	0.15	C-2F
OL-382BP	14.0	0.080	0.3	C-2F
OL-330BP	14.0	0.080	0.5	C-2F
OL-6006BP	14.0	0.088	0.5	C-2F
OL-8918BP	14.0	0.100	0.5	C-2F
OL-6426BP	14.0	0.125	0.7	C-2F
OL-6003BP	15.0	0.037	0.075	C-2F
OL-370BP	18.0	0.040	0.15	C-2F
OL-6005BP	24.0	0.050	0.5	C-2F
OL-6034BP	28.0	0.024	0.15	C-2F
OL-385BP	28.0	0.040	0.2	C-2F
OL-387BP	28.0	0.040	0.3	C-2F
OL-327BP	28.0	0.040	0.34	C-2F
OL-327LSV-BP	28.0	0.060	0.34	C-2F
OL-365BP	28.0	0.060	0.6	C-2F



T-1 3/4 Bi-Pin(Relampable)

Oshino Lamp Numbers	Design Volt(V)	Design Amp(A)	MSCP (cd)	Filament shape
OL-368BPR	2.5	0.200	0.2	C-2R
OL-268BPR	2.5	0.350	0.21	C-2R
OL-338BPR	2.7	0.060	0.04	C-2R
OL-375BPR	3.0	0.015	0.003	C-2R
OL-6135BPR	5.0	0.030	0.03	C-2R
OL-6063BPR	5.0	0.040	0.025	C-2R
OL-782BPR	5.0	0.060	0.03	C-2R
OL-783BPR	5.0	0.060	0.05	C-2R
OL-6084BPR	5.0	0.060	0.15	C-2R
OL-6233BPR	5.0	0.075	0.09	C-2R
OL-815BPR	5.0	0.115	0.15	C-2R
OL-428BPR	5.0	0.180	0.35	C-2R
OL-345BPR	6.0	0.040	0.04	C-2V
OL-6226BPR	6.0	0.060	0.13	C-2R
OL-328BPR	6.0	0.200	0.34@5V	C-2R
OL-380BPR	6.3	0.040	0.03	C-2V
OL-377BPR	6.3	0.075	0.23	C-2R
OL-350BPR	6.3	0.150	0.45	C-2R
OL-381BPR	6.3	0.200	0.4	C-2F
OL-349BPR	6.3	0.200	0.55	C-2R
OL-367BPR	10.0	0.040	0.08	C-2F
OL-394BPR	12.0	0.040	0.12	C-2F
OL-6038BPR	12.0	0.060	0.15	C-2F
OL-382BPR	14.0	0.080	0.3	C-2F
OL-330BPR	14.0	0.080	0.5	C-2F
OL-6006BPR	14.0	0.088	0.5	C-2F
OL-8918BPR	14.0	0.100	0.5	C-2F
OL-6426BPR	14.0	0.125	0.7	C-2F
OL-6003BPR	15.0	0.037	0.075	C-2F
OL-370BPR	18.0	0.040	0.15	C-2F
OL-6005BPR	24.0	0.050	0.5	C-2F
OL-6034BPR	28.0	0.024	0.15	C-2F
OL-385BPR	28.0	0.040	0.2	C-2F
OL-387BPR	28.0	0.040	0.3	C-2F
OL-327BPR	28.0	0.040	0.34	C-2F
OL-327LSV/BPR	28.0	0.060	0.34	C-2F
OL-365BPR	28.0	0.060	0.6	C-2F



※Please note that product specifications and appearance are subject to change without notice so contact us for confirmation before placing an ord