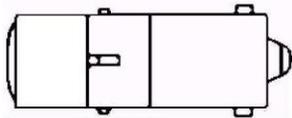


binay
MULTICHIP LED LAMPS

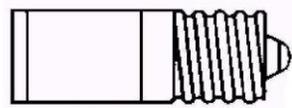
BINAY Multichip LED lamps offer the advantage of immediate one-to-one retrofit replacements to existing filament indicator bulbs. The light emission is characterised by a high degree of angular dispersion, making them ideal for use in applications requiring the backlighting of inscribed legends (such as annunciator window fascias and illuminated pushbutton switches).

BASE/CAP CONNECTION

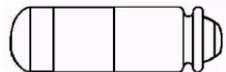
BA9S bayonet cap



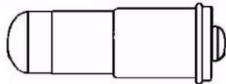
E10 screw cap



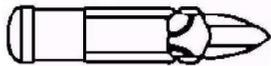
Midget Groove



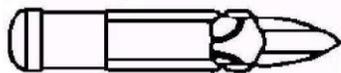
Midget Flange



5.5 slide contact



T6.8 slide contact



Bipin



Wedge Base (5 mm dia.)



BINAY Multichip LED lamps are constructed to the same physical dimensions as the existing filament bulbs, and can be used to make direct replacements in the existing holders. They provide an average life of more than 50,000 hours under normal use, thus requiring **no further replacement once fitted** (as such, they are a ONE-TIME EXPENSE). They have very low current consumption, a vibration-resistant construction, and can withstand a wide range of fluctuations in input voltage.

These bulbs incorporate multiple P-N junction LED chips mounted on a ceramic or DMC header, along with appropriate voltage and current controlling circuitry. These chips are attached to a special substrate by a die-attaching solution, after which they are thermosonically bonded to a fine wire by means of a special bonder; the other end of the wire is then bonded on to the substrate. The assembly is then encapsulated in clear optical grade epoxy. The chips are connected in series (or series-parallel combinations), and an appropriate impedance is used to drop the balance of the applied voltage. The entire assembly is mounted in a base (cap) similar to the existing filament bulb.

The use of very high intensity chips enables the manufacture of multichip LED lamps in low current versions in 6V, 12V, 24V, 48V, 60V, and even in 110V and 230V ratings. **A significant advantage of the use of these high diffusion chips is the improved light dispersion possible. Multichip construction provides extremely wide-angle and dispersed light emission (as compared to discrete 3mm or 5mm LEDs). As such, these multichip LED lamps are ideal for use in applications such as annunciator window fascias and illuminated pushbutton switches (which require effective wide-angle backlighting of inscribed legends).**

The use of ceramic or DMC substrates in the construction is of particular importance, as this allows rapid heat dissipation of the heat generated in the chip. BINAY Multichip LED lamps are NOT constructed with plastic substrates (as plastic will trap the heat inside the chip, resulting in heat build-up and subsequent premature chip failure).

BINAY Multichip LED bulbs are available in a variety of different dimensions and bases (caps), such as BA7S, BA9S, B15 (bayonet); midget groove, midget flange; 5530 and 6844 telephone (slide contact) type; bipin; wedge base; E10, E12, E14 (screw cap base).

The following data is required to correctly specify a proper multichip lamp replacement:

- Cap/base type
- **Exact** voltage rating
- Colour
- AC or DC
- Polarity of contact – i.e., centre point positive/body negative, OR centre point negative/body positive (for BA9S, E10, Midget Groove and Midget Flange caps)

NOTE ON UTILISATION: These multichip LED lamps will generally have lower current ratings than the existing filament bulb they are replacing. Occasionally, in some situations, the existing filament bulb is operated at a lower voltage which is derived from a higher voltage by dropping through an external series resistor. In such cases, the current rating of the existing bulb circuit becomes important, since the voltage dropped in the external series resistor will be dependent on the current passed through the resistor (V across the resistor = $I \times R$). If a multichip LED lamp of lower current is installed in such a position, the voltage drop across the external series resistor will be very much lower due to the lower current rating of the LED multichip lamp, leaving a high remainder voltage to be applied to the multichip LED lamp. This will cause the multichip lamp to be overloaded, affecting its performance. For such positions, we can design a suitable multichip LED lamp replacement if the following data is provided to us:

- The initial higher voltage (which is dropped through external series resistor to provide the lower voltage for the lamp)
- The value of the external series resistor in ohms.



binay opto electronics private ltd.

44, Armenian Street, Calcutta 700 001, India
Telephone: (033) 2429082, 2102039, 2103807 Fax: 91-33-2421493

Website: www.binayLED.com
email: binay@vsnl.com, info@binayLED.com