

# LEADED MINI-DISCOIDAL CAPACITOR

## Description:

The PAE Filter Division “Leaded Discoidal Capacitor” was developed to provide the highest packing density of any through bulkhead EMI filter available on the market today. It consists of a discoidal capacitor with a through lead pre-installed at the factory and ready for installation in the customer’s systems. The advantage of this device is that the weight and volume of the conventional packaging is eliminated thereby allowing installations at significantly smaller pitch dimensions. With the utilization of our .050” diameter capacitor\*, a pitch of less than .075” can be attained.

\*Because of the very small size of this device, the physical geometry of the installation could have an effect on the attainable DWV. Please consult the factory for all applications above 100VDC.

## Applications:

The PAE Filter Division “Leaded Discoidal Capacitor” can be installed in a straight bore hole, a counter bored hole or flush mounted on a PCB (see illustrations). Soldering is the preferred method, but silver filled polymers can also be used.

The hole in which the discoidal is to be install should be plated with Silver (preferred) or Gold over Nickel.

Elaborate fixturing is not required when soldering since the surface tension of molten solder will automatically center the device in the hole.

For bulkhead through hole applications, solder performs should be used.

For PCB or bulkhead flush mount applications, solder paste applied by silk screen provides good dimensional and volume control.

When installed in straight or counter bored holes, these devices have produced hermetic seals of better than  $1 \times 10^{-8}$  Atm-cc/sec.

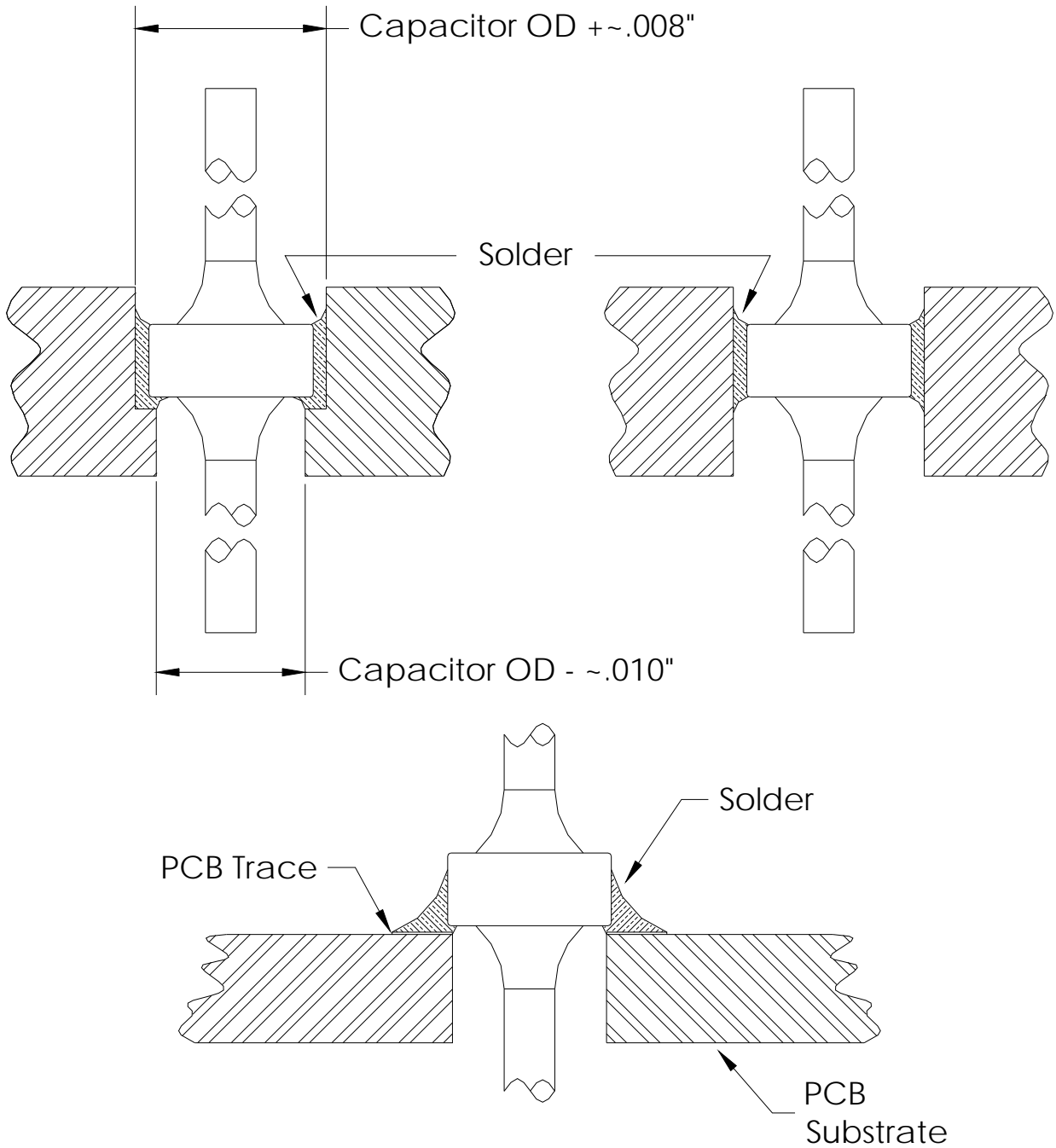
Optimum installation design provides for a .004” annular space between the OD of the capacitor and the ID of the hole.

Attachment to the center terminal can be by soldering, ultrasonic bonding or parallel gap welding. When soldering, observe the precautions referred to above. When welding or bonding, it will be necessary to provide some sort of clamping support to the lead to prevent transfer of radial stress to the ceramic.

In applications using any lead material harder than copper, it is advisable to immobilize the lead by potting to prevent damage to the ceramic. Use any encapsulating material suitable for bare chip potting of hybrid circuits.

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FOR FURTHER INFORMATION, PLEASE CONTACT THE FACTORY.



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**Mechanical**  
 Capacitor: Multi-layer Ceramic (X7R)  
 Capacitor Finish: Silver-Platinum  
 Lead Material: Copper (preferred), Beryllium Copper, Phosphor Bronze, Cold Rolled Steel, or Kovar  
 Lead Plating: Underplate - Nickel per QQ-N-290, 100u-in min. Finish Plate - Silver per QQ-S-365 (preferred) or Gold per Mil-G-45204, Type III Grade

**General Specifications**  
 Operating Temperature Range: -55°C to +125°C  
 Voltage Rating: 50 VDC  
 Temperature Coefficient: X7R  
 Capacitance: 5pF - 10,000pF  
 Capacitance tolerance: +100%, -0% standard  
 Dissipation Factor: 2.5% maximum  
 Current Rating: 5 Amperes maximum  
 DCR: .01 Ohm maximum

**Test Level "A" per PAE Filter Division Catalog:**  
 Capacitance  
 Dissipation Factor  
 Insulation Resistance: 100 G-Ohms minimum @ 50VDC  
 Dielectric Withstanding Voltage: 125VDC for 5 seconds minimum

Dimensions: ±.005, unless otherwise noted

**NOTE:**  
 1. xxx in part number designates capacitance value  
 First two digits are significant figure.  
 Third digit is multiplier, i.e.  
 272 = 2700pF  
 2. Reference the Part Numbering System decoder page in the PAE Catalog.  
 3. Alternate lead lengths and configurations available upon request.  
 4. Higher voltage ratings available.  
 5. Other capacitor sizes available pre-leaded.  
 6. See Leaded Discoidal applications notes for installation suggestions.

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**CS70CXxxxP1PI**  
 Leaded Mini Discoidal Capacitor