



# Resistor Handling Manual

**Static Discharge:** Protect resistors from electro-static charges.

**Removal of Resistors from Package:** The chip resistors should not be touched with fingers as skin oils may act as contaminants. Handle chip resistors with tweezers and leaded resistors with tweezers or gloves.

**Cleaning:** Eltec resistors can be cleaned with most agents recommended for electronic components, with the exception of alcohol and acetone. After cleaning, a final rinse in deionized water, followed by a 24 hour bake out at 110°C is suggested.

**Mounting and Connecting to Chip Resistors:** Chip resistors can be mounted and secured with a small amount of epoxy. The 112 type resistors which have platinum/gold terminals can be soldered or ultrasonic ball bonded using gold wire. The 114 type resistors which have gold terminals can be ultrasonic ball bonded using gold wire or TC bonded using gold or aluminum wire.

**Soldering to Chip Resistors:** Soldering to the 112 type resistor terminals should be performed by hand with a small 15W pencil soldering iron.

**Mounting of Resistors with Leads:** The leaded resistors can be mounted/soldered to pads or thru holes on a pc board. Lead forming should be done carefully. Bend leads as far away from the resistor body as possible to avoid stress to the resistor/lead connections.

**Soldering of Resistors with Lead:** Eltec recommends soldering by hand using a small 15W pencil soldering iron and a small copper-plated smooth end microclip (Radio Shack #270-373) as a heat sink. Leave lead length as is (un-cut) until after soldering. Place the heat sink between the resistor body and the end of the lead, close to where the solder joint will be made. Avoid applying any mechanical stress to the part during the soldering process. Beware that the new RoHS compliant solders require a higher soldering temperature making heat sinking extremely important.

**Soldering Temperature:** 665°F to 700°F for 3 seconds with a minimum distance of 0.100 inches from the resistor body. Longer times or higher temperatures can cause resistor value changes and/or failure.

**Reliability:** All Eltec resistors are individually tested prior to shipping. Eltec resistors are widely known for their high level of stability and low noise quality. However, before using these resistors in equipment, be sure to perform adequate testing, including safety margins in design specifications.

**NOTICE:** The information provided herein is believed to be reliable. However, ELTEC Instruments, Inc. assumes no responsibility for inaccuracies or omissions. Due to industry components being incorporated into ELTEC's devices and ELTEC continually striving for product improvement, specifications may change without notice.



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