

Reed Relay Applications

Introduction

Reed Relay applications continue to grow every year despite severe competition from other small switching devices such as semiconductors and electromechanical armature style relays.

Because the contacts in a Reed Relay are hermetically sealed, the contacts can switch low level signals as low as femtoamps and nanovolts. Electromechanical relays cannot do this because they are not hermetically sealed and have polymer films build up on their contacts that require a voltage arc to break through this layer before conduction can take place. Similarly, semiconductors have capacitance, leakage currents and semiconductor offsets to deal with that clearly limit the switching and detection of low voltages and currents.

Also, electromechanical relays, at best, can switch up to low millions of operations. Because its armature moves about a pivot point, wearing occurs, reducing life. The Reed Switch has no wearing parts and therefore, under signal conditions will switch into the billions of operation with fault free operation.

Reed Relays are ideally used for switching applications requiring low and stable contact resistance, low capacitance, high insulation resistance, long life and small size. For specialty requirements such as high RF switching, very high voltage switching, extremely low voltage or low current switching, again Reed Relays are also ideal.

Reed Relay Features

- Long life (billions of operations)
- Multi-pole configurations up to 5 poles.
- Form A (normally open switching)
- Form B (normally closed switching)
- Form C (single pole double throw - normally closed contacts break before the normally open makes)
- Form D (single pole double throw - normally open contacts make before the normally closed breaks)
- Form E (latching – bi-stable state switching)
- Low contact resistance (less than 50 milliohms)
- High insulation resistance (greater than 1015 ohms)
- Ability to switch up to 10,000 volts
- High current carrying ability
- Ability to switch and carry signals as low as 10 nanovolts
- Ability to switch and carry signals in the femptoamp range
- Capable of switching and carrying signals up to 6 Gigahertz
- Operate times in the 100 μ s to 300 μ s range
- Capable of operating over extreme temperature ranges from -55 °C to 100 Special Matrix Applications
- Capable of operating in all types of environments including air, water, vacuum, oil, fuels, and dust laden atmospheres.
- Ability to withstand shocks up to 200 Gs
- Ability to withstand vibration environments of 50 Hz to 2000 Hz at up to 30 Gs
- Very small sizes now available
- Auto-insertable
- Standard pin-outs
- Large assortment of package styles available
- Large assortment of Reed Switch options available
- Large assortment of coil resistances
- Relays can be driven in a current or voltage mode.
- UL, CSA, EN60950, VDE, BABT 223ZV5 approved on many of our relays
- Magnetic shielding available on many of our relays