

## Syfer motors in with new 500Vdc X2Y components for HV industrial and medical applications



Manufacturers of motorised electronic equipment, struggling to meet stringent EMC and safety standards, are the target for Syfer Technology's extended range of high voltage X2Y chip capacitor filters. A working voltage extended from 100Vdc maximum to 200Vdc and even 500Vdc significantly broadens the market for these devices, appealing to designers in industrial, medical and telecoms sectors.

Already popular in many applications in the automotive industry, these X2Y three terminal capacitors provide simultaneous line to line and line to ground filtering for balanced line, EMI suppression in DC motors. One of the most important features of X2Y dielectric technology is that it exhibits extremely low self-inductance, making it particularly suitable for high frequency decoupling applications.

Delivering both differential and common mode filtering, these RoHS-compliant components are particularly attractive for designs where space is at a premium. Being an Integrated Passive Component, providing three capacitors in one device, the X2Y chip dramatically reduces the number of standard passive components required.

The new devices are available with a rated voltage of 200Vdc and 500Vdc, in COG and X7R dielectrics, across a number of case sizes from 1206 to 2220. For example, the capacitance of devices at 200Vdc, range from 22pF to 1nF (COG) in the 1206 package to 4.7nF to 470nF (X7R) in the 2220 case size. For higher voltage (500V dc) applications, devices range from 820pF to 3.9nF (COG) in 1812 case size, to 4.7nF to 180nF (X7R) in the 2220 package.

A recent application example is the design of a retail food dispensing machine for fast food outlets. The machine is required to meet various EMC and safety specifications, including BS EN55022, and the motor which pumps the drinks needs to be filtered. Syfer's new 500Vdc X2Y chip is believed by the manufacturing company to be the only available solution capable of handling the voltage requirement. Testing is ongoing and results to date are positive.

Further applications include filtering motors on hand held power tools, audio amplifiers, IP based communications products, and medical implantable devices such as pacemakers.

In the automotive sector, these components have been used as a broad band filter in car seat

and window motors, automatic interior mirror adjustment, suspension ride height sensing and crankshaft position detection. With an increasing quantity of sensitive electronic circuitry now incorporated into vehicles, it is of paramount importance to prevent the electrical noise generated by the motors adversely affecting electronic control subsystems such as ABS systems or engine control units.

These X2Y capacitors are optionally available with Syfer's innovative flexible terminations, called FlexiCap. This technology, unique to Syfer, is designed to reduce the risk of mechanical damage, such as cracking, during handling and PCB assembly processes. FlexiCap is applied to the termination areas underneath the nickel barrier coating and tin plated finish.

The devices are manufactured at Syfer's Norwich, UK facility and are already available on a 9-week lead time for delivery loose, or taped and reeled for automated assembly systems.

For more information, or details on the full range of Syfer products available from Anglia, please email [info@anglia.com](mailto:info@anglia.com)

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