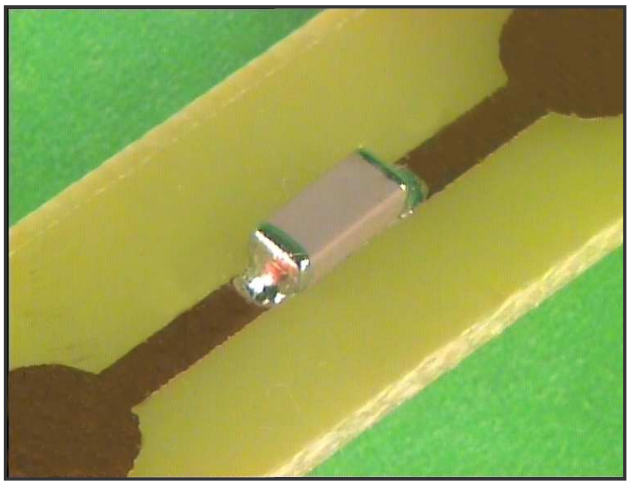
Syfer Technology Limited
Old Stoke Road
Arminghall, Norwich, Norfolk
NR14 8SQ England

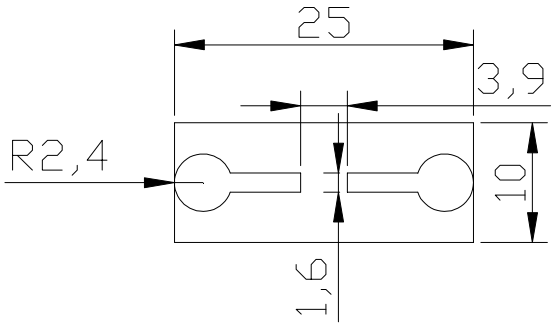
Tel: +44 (0)1603 723300
Fax: +44 (0)1603 723301
Email: sales@syfer.com
Web: www.syfer.com

LCD Inverter Range - 5kV and 6kV Surface Mount Capacitors

Introduction

Syfer Technology Ltd has developed a new range of capacitors aimed specifically at the high voltage LCD inverter market. The requirement is for a surface mountable device which can replace leaded components used at present. Syfer has produced components in 1808 and 1812 case sizes which are capable of withstanding greater than 6kV prior to the inception of surface arcing without the need for conformal coating post soldering. This breakthrough in surface mount technology has been achieved by the combination of the use of a unique C0G type dielectric material and the optimisation of physical and electrical design.



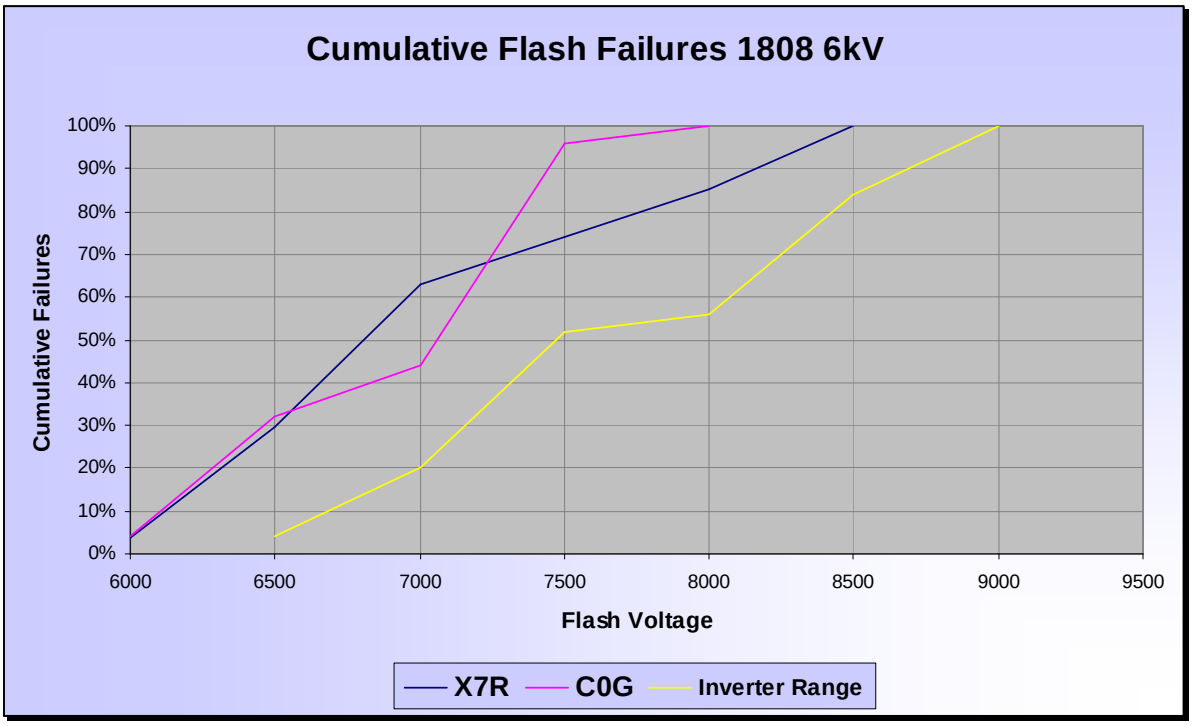


Above: Test Board and Dimensions (mm)

Testing

Testing has been undertaken at Syfer in order to demonstrate and verify the advantages of the LCD inverter range over standard X7R and C0G product. Components were mounted onto FR4 PCB substrates using SN62A solder with no clean flux and a reflow soldering process. Testing was conducted using a Sefelec MPC47P Dielectrimeter and a Glassman High Voltage power supply, parts were subjected to Voltage Proof testing at increasing levels of DC voltage until failure occurred, failure was considered as a single visible arc, multiple arcs or dielectric breakdown

Results



Testing conducted at approx. 24℃ and 30% RH

Results show a significant improvement in performance over Syfer standard high voltage components manufactured from both X7R and C0G materials, arcing inception is increased by 500V to 6.5kV and ultimate performance is improved by up to 1kV.

Conclusion

Whilst standard Syfer 1808 and 1812 high voltage capacitors offer excellent performance, at voltages of 4kV and greater conformal coating may be required post soldering in order to ensure that no surface arcing will occur. The LCD inverter range, variation due to PCB design and atmospheric conditions accepted, is capable of withstanding greater than 6kV as supplied, this ability allows for the replacement of more bulky leaded radial components.

Ordering Information

The LCD inverter range can be ordered using a standard Syfer product code with the addition of suffix code FB9.

Examples: 1808J6K00150FCTFB9 or
1812J6K00220GCTFB9

LCD Inverter Range

1808		1812	
5kV	*6kV*	*5kV*	*6kV*
1.5pF	1.5pF	3.9pF	3.9pF
1.8pF	1.8pF	4.7pF	4.7pF
2.2pF	2.2pF	5.6pF	5.6pF
2.7pF	2.7pF	6.8pF	6.8pF
3.3pF	3.3pF	8.2pF	8.2pF
3.9pF	3.9pF	10pF	10pF
4.7pF	4.7pF	12pF	12pF
5.6pF	5.6pF	15pF	15pF
6.8pF	6.8pF	18pF	18pF
8.2pF	8.2pF	22pF	22pF
10pF	10pF	27pF	27pF
12pF	12pF	33pF	33pF
15pF	-	39pF	-
18pF	-	47pF	-
22pF	-	56pF	-
-	-	68pF	-