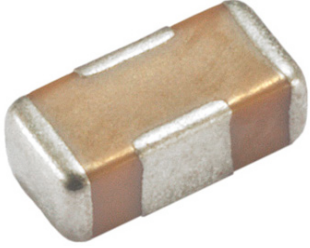
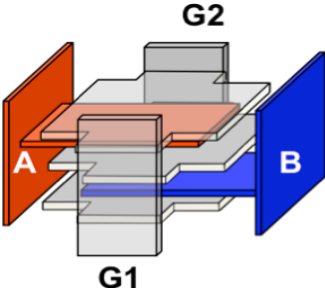
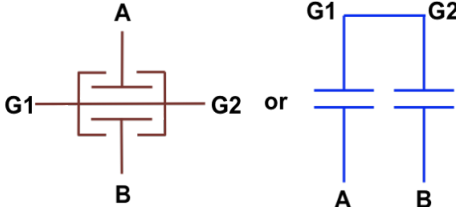


"X2Y® Capacitance Ratings & Measurement"

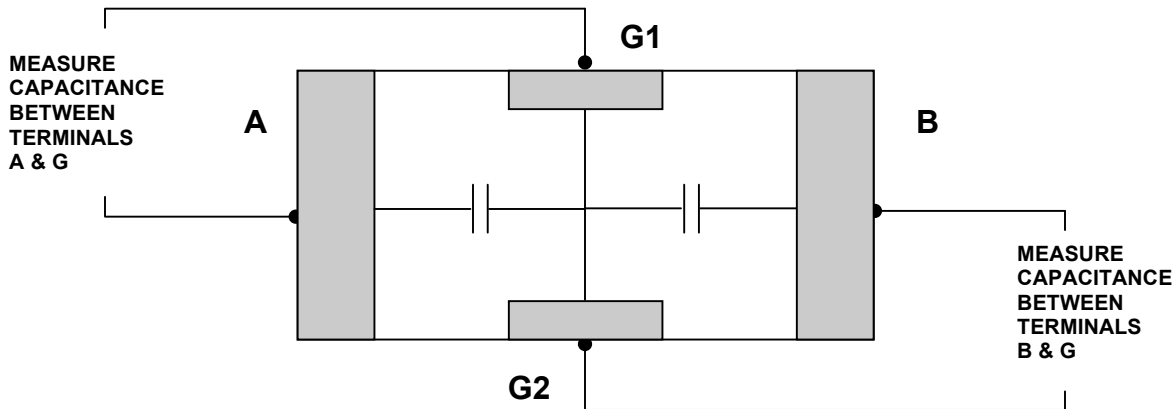
By [Steve Cole](#) – X2Y Product Manager
Johanson Dielectrics, Inc.

X2Y® Capacitors are surface mount components that excel in EMI/RFI Filtering and IC Power Bypassing applications.

		
<p>Four Terminal Connections</p>	<p>Ultra-low Inductance, balanced electrode structure</p>	<p>Simplified schematic equivalent circuits</p>

The X2Y Capacitor is a four terminal component consisting of two capacitors, A & B, each sharing a common connection at terminals G1 & G2. Capacitors A & B are always the same nominal value. The X2Y part number's rated capacitance value is the value of the single A (or B) capacitor.

In order to accurately measure an X2Y capacitor, a capacitance bridge must be connected between terminal A (or B) and one of the G terminals as shown in the diagram below. The single A (or B) capacitor value measured is useful for dual line filter application of X2Y (Circuit 1.)



Typical use of X2Y in power bypass applications connects the A and B terminals to system power and the G1 and G2 terminals to system ground (Circuit 2.) In this use, the A and B capacitors are in parallel and the effective capacitance is twice the P/N's rated capacitance. The Circuit 2 capacitance value is not easily measure without special capacitance bridge connections between *both* A and B terminals *and* one of the G terminals. The Circuit 2 capacitance value is listed on the X2Y data sheet as a reminder of the total capacitance when using X2Y in Circuit 2.

Measuring the X2Y component's end-to-end (A-to-B) capacitance does not represent typical application of X2Y as this connection places the A and B capacitors in series and accordingly will report approximately one half (50%) of the rated Circuit 1 capacitance.