

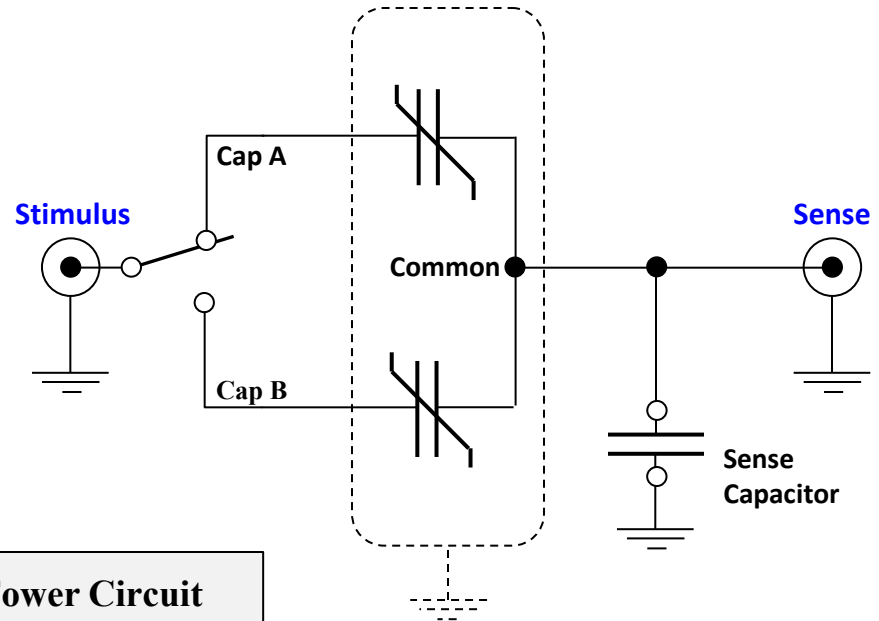
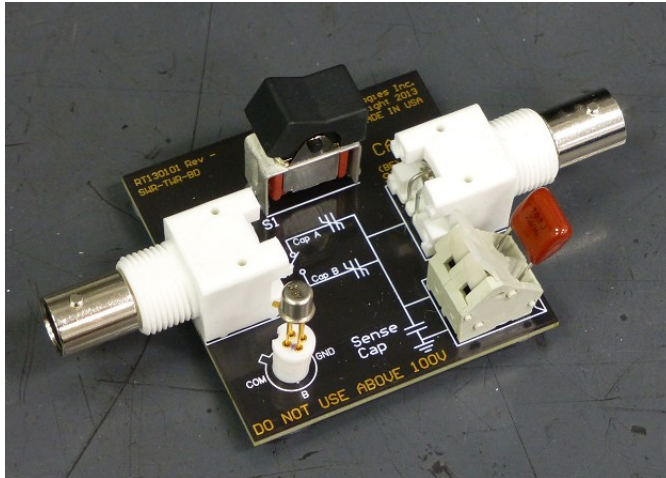
The Radiant TO-18 Sawyer-Tower Board

Joe T. Evans, Jr.

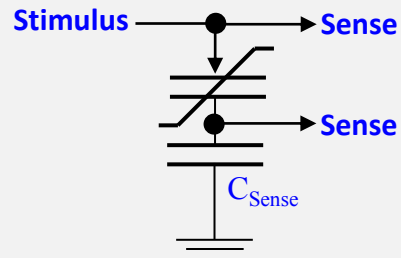
Radiant Technologies, Inc.

March 17, 2016

Sawyer-Tower Board

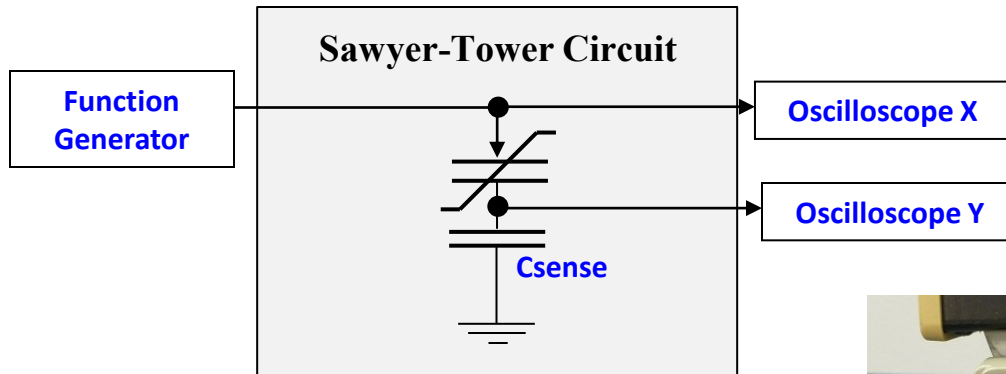
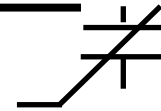


Sawyer-Tower Circuit



The TO-18 Sawyer-Tower Board has a socket for the Radiant Type AD dual ferroelectric capacitor package, a switch to select Cap A or Cap B, plus a socket for the sense capacitor.

Hysteresis Loop



Best C_{sense} values for WHITE-area capacitors: 5nF to 10nF

Maximum Voltages:

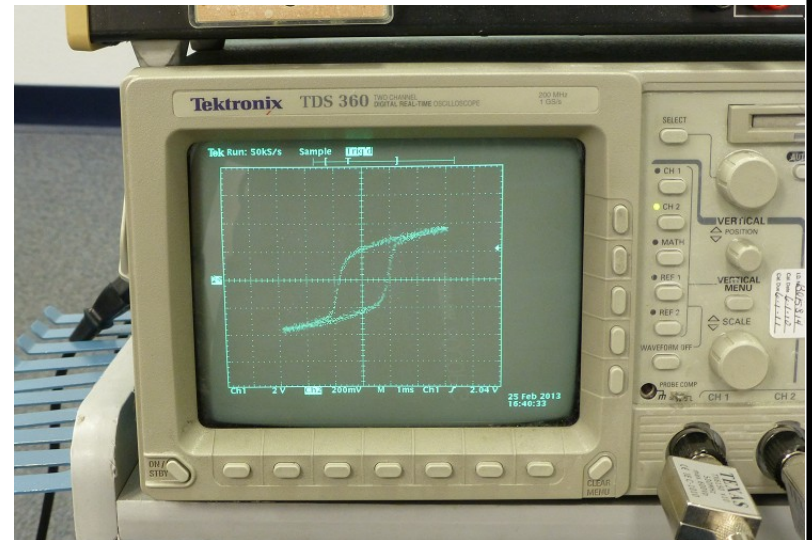
Type AD: 4.2V + C_{sense} maximum voltage

Type AB: 9.0V + C_{sense} maximum voltage

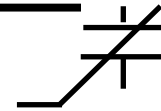
Optimal Frequency:

$(C_{sense} * R_{osc} / 100)^{-1} \sim 1 \text{ kHz}$

Waveform: sine or triangle.



Connecting a function generator to the input of the STB and an oscilloscope set to X/Y on the output allows the hysteresis loop of the ferroelectric capacitor to be measured.



Conclusion

- The TO-18 Sawyer-Tower Board provides an inexpensive method for measuring the hysteresis loop of Radiant packaged ferroelectric capacitors.
- The response of the capacitor to frequency, fatigue cycles, and retention time can be easily measured. (*See Sawyer-Tower Board documentation.*)
- Capacitors of different areas may be measured by changing the sense capacitor.