

predefined threshold, the QPA200 will enter *thermal shutdown mode*. In this mode the amplifier is automatically switched off and the yellow LED indicator is illuminated. The instrument will remain in this condition until the user recycles the AC power supply and the temperature has decreased to a safe level.

Figure 3 indicates the thermal shutdown boundary as a function of frequency and load capacitance for full-scale output (200V sinusoid). It is important to note that this curve applies to steady-state operation only. The QPA200 is capable of operating beyond this curve provided that the duration of operation (or duty-cycle) is low enough to prevent over-heating.

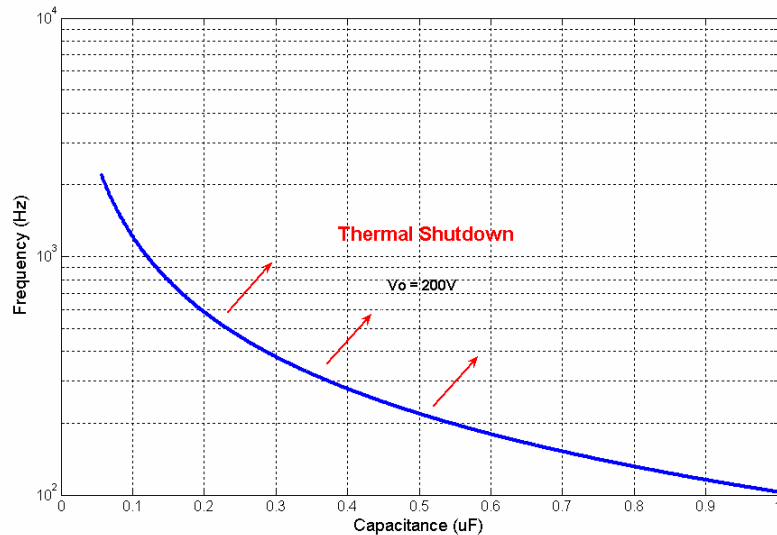


Figure 3: Thermal shutdown boundary as function of frequency and load capacitance for $V_o = 200V$.

Thermal shutdown is also triggered by other fault conditions. If either of the two DC fans on the rear of the instrument are impeded or fail for any reason, shutdown is triggered. Another cause of shutdown is a short-circuit on the amplifier output or any asymmetric load. This latter case means that only one side of the bipolar amplifier supply is supplying current. An example of this case is driving a small resistance at DC. The QPA200 is designed only to drive capacitive piezoelectric loads. *Inductive and resistive loads such as heaters, coils, DC motors, or audio speakers should never be driven by this instrument.*

