LT 1160 Switch Driver
LT1160 High (& Low) Side Driver

- N channel high side
- $V_{\text{gate}} \sim V_{\text{source}} + 10\text{V}$
- $< 75\text{V}$
- Drives 3000 pF
  - 140 ns to 600 ns
- $f_{\text{max}} > 100\text{kHz}$
LT1160 Bootstrap High-side Drive
LT1160 Bootstrap High-side Drive

Purdue University EET 257 Power & RF Electronics
LT1160 Bootstrap Low-side Drive
LT1160 Performance – Truth Table

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Output Capacitor

Waveform at MOSFETS S-D

High-side on => charge

Low-side on => discharge

Waveform across load
Output Capacitor

High-pass filter

\[ f_{-3dB} = \frac{1}{(2 \pi R_{load} C)} \]

\[ C_{coupling} = ? \]

Voltage rating
Layout

[Diagram of a circuit with components labeled and connections indicated.]
Filter Design

LCR second order filter (resonant tank)

\[ \alpha = \frac{1}{Q} = 0.7 \quad (\text{ECET 307} \Rightarrow \text{Butterworth}) \]

\[ Q = \frac{X}{R} \quad R = 8 \ \Omega \quad X = ? \quad f = 10 \ \text{kHz} \quad L = ? \quad C = ? \]
Class D - Full Bridge
110 W, $\text{eff} = 91\%$, THD = 7.8\%