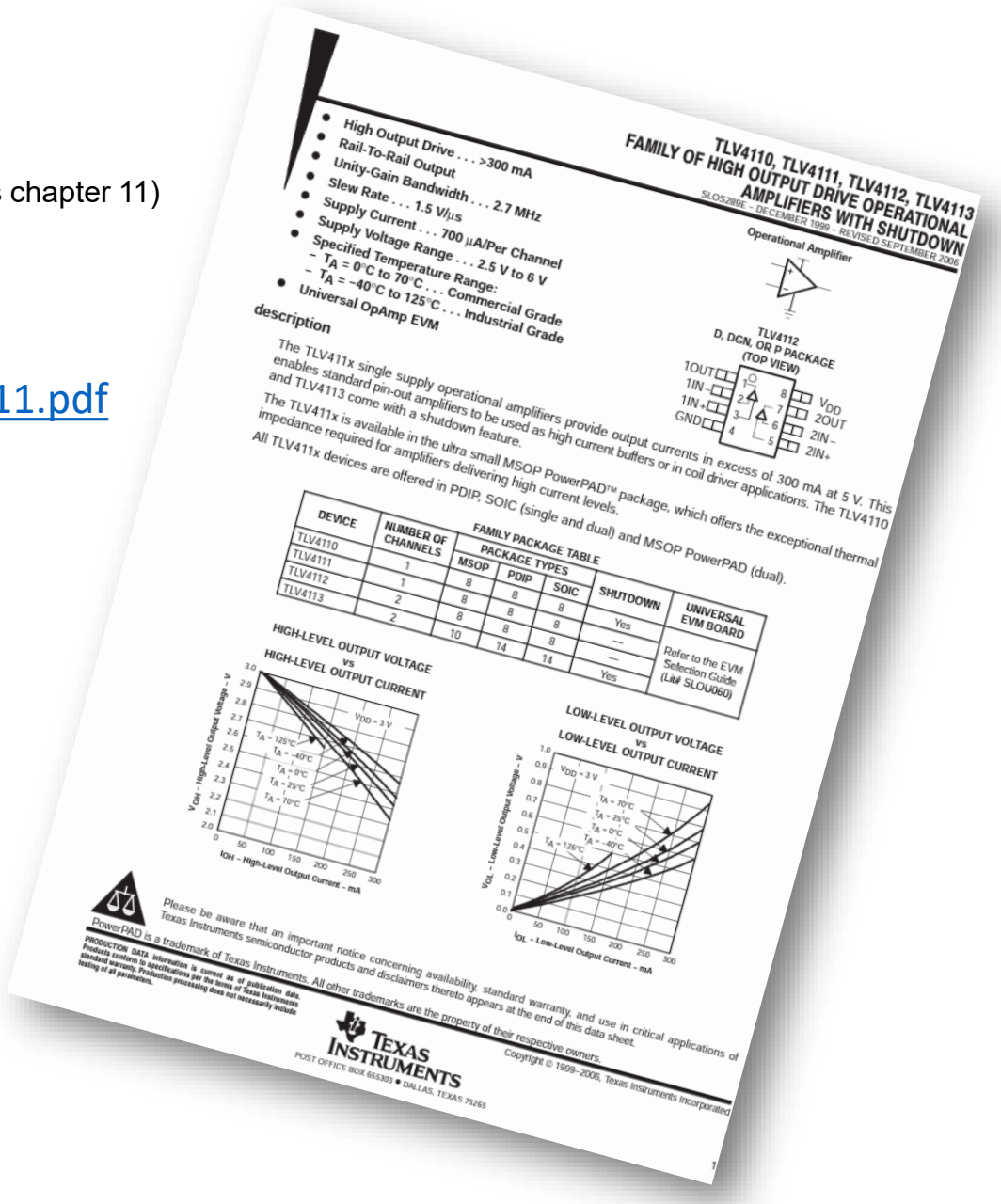
EE3C11 Team exercise 7

Create a small-signal model for the TLV4111

This model must include:

1. Frequency behavior of the voltage gain
2. Frequency behavior of the input impedance
3. Frequency behavior of the output impedance (needs chapter 11)
4. Input voltage noise spectral density
5. Input current noise spectral density

https://www.ti.com/lit/ds/symlink/tlv4111.pdf



TLV4110, TLV4111, TLV4112, TLV4113
FAMILY OF HIGH OUTPUT DRIVE OPERATIONAL AMPLIFIERS WITH SHUTDOWN

SLOS289E – DECEMBER 1999 – REVISED SEPTEMBER 2006

- High Output Drive . . . >300 mA
- Rail-To-Rail Output
- Unity-Gain Bandwidth . . . 2.7 MHz
- Slew Rate . . . 1.5 V/μs
- Supply Current . . . 700 μA/Per Channel
- Supply Voltage Range . . . 2.5 V to 6 V
- Specified Temperature Range:
  - T_A = 0°C to 70°C . . . Commercial Grade
  - T_A = –40°C to 125°C . . . Industrial Grade
- Universal OpAmp EVM

Operational Amplifier

TLV4112
D, DGN, OR P PACKAGE
(TOP VIEW)

description

The TLV411x single supply operational amplifiers provide output currents in excess of 300 mA at 5 V. This enables standard pin-out amplifiers to be used as high current buffers or in coil driver applications. The TLV4110 and TLV4113 come with a shutdown feature.

The TLV411x is available in the ultra small MSOP PowerPAD™ package, which offers the exceptional thermal impedance required for amplifiers delivering high current levels.

All TLV411x devices are offered in PDIP, SOIC (single and dual) and MSOP PowerPAD (dual).

FAMILY PACKAGE TABLE

DEVICE	NUMBER OF CHANNELS	PACKAGE TYPES			SHUTDOWN	UNIVERSAL EVM BOARD
		MSOP	PDIP	SOIC		
TLV4110	1	8	8	8	Yes	Refer to the EVM Selection Guide (Lit# SLOU060)
TLV4111	1	8	8	8	—	
TLV4112	2	8	8	8	—	
TLV4113	2	8	8	8	Yes	
	2	10	14	14		

HIGH-LEVEL OUTPUT VOLTAGE vs HIGH-LEVEL OUTPUT CURRENT

LOW-LEVEL OUTPUT VOLTAGE vs LOW-LEVEL OUTPUT CURRENT

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