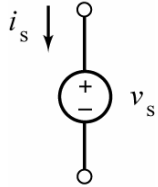
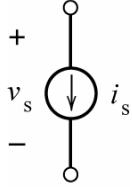
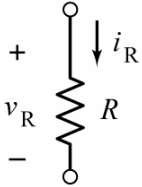
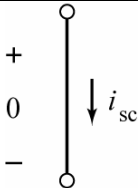
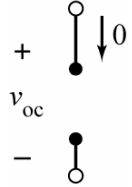
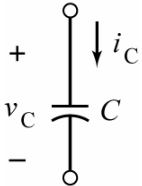
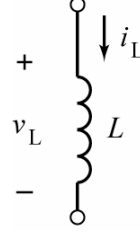
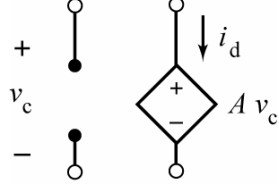
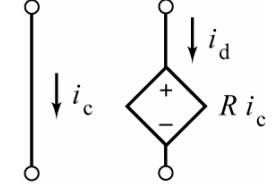
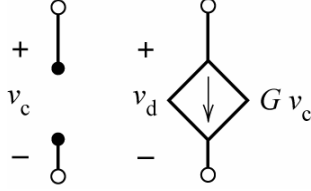
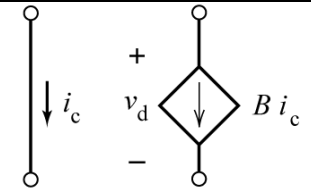
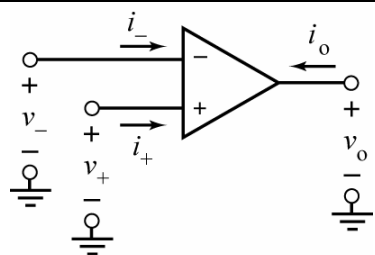


Linear Circuit Elements

Name	Symbol	Equation	Remarks
Voltage Source		$v_s = v(t)$ $i_s = ?$	
Current Source		$i_s = i(t)$ $v_s = ?$	
Resistor		$v_R = R i_R$ $i_R = \frac{v_R}{R} = G v_R$	
Short Circuit		$v_{sc} = 0$ $i_{sc} = ?$	
Open Circuit		$i_{oc} = 0$ $v_{os} = ?$	
Capacitor		$v_C(t) = \frac{1}{C} \int_{-\infty}^t i_C d\tau$ $i_C = C \frac{dv_C}{dt}$	

Inductor	 <p>A vertical inductor symbol with a wavy line. The top terminal is marked with a '+' sign and the bottom with a '-' sign. The voltage across it is labeled v_L. A downward-pointing arrow next to it is labeled i_L. The inductance value L is written to the right of the symbol.</p>	$i_L(t) = \frac{1}{L} \int_{-\infty}^t v_L d\tau$ $v_L = L \frac{di_L}{dt}$	
VCVS	 <p>A diamond-shaped dependent voltage source. To its left is an independent voltage source v_c with '+' at the top and '-' at the bottom. The dependent source has '+' at the top and '-' at the bottom, with a voltage v_d across it. A downward arrow indicates current i_d. The gain is labeled $A v_c$ to the right.</p>	$v_d = A v_c$ $i_d = ?$	
CCVS	 <p>A diamond-shaped dependent voltage source. To its left is an independent current source i_c pointing downwards. The dependent source has '+' at the top and '-' at the bottom, with a voltage v_d across it. A downward arrow indicates current i_d. The gain is labeled $R i_c$ to the right.</p>	$v_d = R i_c$ $i_d = ?$	
VCCS	 <p>A diamond-shaped dependent current source. To its left is an independent voltage source v_c with '+' at the top and '-' at the bottom. The dependent source has '+' at the top and '-' at the bottom, with a voltage v_d across it. A downward arrow indicates current i_d. The gain is labeled $G v_c$ to the right.</p>	$i_d = G v_c$ $v_d = ?$	
CCCS	 <p>A diamond-shaped dependent current source. To its left is an independent current source i_c pointing downwards. The dependent source has '+' at the top and '-' at the bottom, with a voltage v_d across it. A downward arrow indicates current i_d. The gain is labeled $B i_c$ to the right.</p>	$i_d = B i_c$ $v_d = ?$	
Op Amp	 <p>A triangular operational amplifier symbol. The non-inverting input is marked with a '+' and the inverting input with a '-'. The output is marked with a '+'. The input voltages are v_+ and v_-, and the output voltage is v_o. The input currents are i_+ and i_-, and the output current is i_o. Ground symbols are shown at the bottom of the input and output terminals.</p>	$i_+ = 0$ $i_- = 0$ $v_- = v_+$ $v_o = ?$ $i_o = ?$	