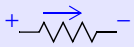
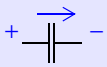
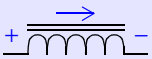
Quantity	Variable	Unit	Unit Symbol	Typical Values	Defining Relations	Important Equation	Schematic Symbol
Charge	Q	coulomb	C	1aC to 1C	$6.3\text{x}10^{18}$ electron charges	$i = dq/dt$	
Current	I	ampere	A	1µA to 1kA	1A = 1C/s	$\sum_{n=1}^{N_{node}} I_n = 0$	
Voltage	V	volt	V	1µV to 500kV	1V = 1N-m/C	$\sum_{n=1}^{N_{loop}} V_n = 0$	
Power	P	watt	W	1µW to 100MW	1W = 1J/s	$P = IV$	
Energy	U	joule	J	1fJ to 1TJ	1J = 1N-m	$U = QV$	
Force	F	newton	N		$1\text{N} = 1\text{kg-m/s}^2$		
Resistance	R	ohm	Ω	1Ω to 10MΩ		$V = IR$	
Capacitance	C	farad	F	1fF to 5F		$Q = CV$	
Inductance	L	henry	H	1µH to 1H		$V = L\,di/dt$	

Table 0.1 Summary of Electrical Quantities

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