

Units

All About Units

	Entity	Basic unit	Oft-used units		Some useful combinations
			Commonly used	also used	
1	Q charge	C	C		
2	I current	$\frac{C}{s}$	A		
3	V potential difference	$\frac{kgm^2}{Cs^2}$	V	$\frac{J}{C}$	
4	E electric field	$\frac{kgm}{Cs^2}$	$\frac{N}{C}$	$\frac{V}{m}$	
5	ϵ permittivity	$\frac{C^2s^2}{kgm^3}$	$\frac{C^2}{Nm^2}$	$\frac{F}{m}$	$\frac{\epsilon}{\sigma} = s$
6	C capacitance	$\frac{C^2s^2}{kgm^2}$	F	$\frac{C^2}{J}$	
7	σ conductivity	$\frac{C^2s}{kgm^3}$	$(\Omega m)^{-1}$	$\frac{\epsilon}{s} = \frac{C^2}{Jsm}$	
8	G conductance	$\frac{C^2s}{kgm^2}$	Ω^{-1}	$\frac{C^2}{Js}$	$\frac{C}{G} = s$ $LG = s$
9	ρ resistivity	$\frac{kgm^3}{C^2s}$	Ωm	$(\frac{Js}{C^2})m$	
10	R resistance	$\frac{kgm^2}{C^2s}$	Ω	$\frac{Js}{C^2}$	$\frac{L}{R} = s$ $RC = s$
11	flux Φ_B	$(kgm^2)/(Cs)$	Tm^2	J/A	
12	B magnetic field	$\frac{kg}{Cs}$	T	$\frac{Ns}{Cm}$ $\frac{N}{Am}$	$\frac{E}{B} = \frac{m}{s} = v$
13	μ_o permeability	$\frac{kgm}{C^2}$	$\frac{Tm}{A}$	$\frac{H}{m}$	$\frac{1}{\sqrt{\epsilon_o\mu_o}} = \frac{m}{s} = c$
14	$\eta = \mu_o N^2$ inductivity	$\frac{kgm}{C^2}$	$\frac{Tm}{A}$	$\frac{H}{m}$	
15	L inductance	$\frac{kgm^2}{C^2}$	H	$\frac{J}{A^2}$, or $\frac{Js^2}{C^2}$	$\sqrt{LC} = s$

