Terminology

CAPACITANCE:

$$C = \frac{\varepsilon KA}{t}$$

CAPACITANCE TOLERANCE

is the amount of the actual capacitance allowed to deviate from the nominal value listed . For example , if you order a capacitor with a nominal of 1000pF and a tolerance of plus or minus 10%, you may get an actual value of 900 to 1100pF (at 25℃)

DISSPATION FACTOR(DF OR TAN δ)

The amount of energy loss compared to that originally applied. DF is a measurement of how effective a capacitor is , $DF = \frac{ESR}{Xc}$

IRMS

Within a given temperature rise (10-20℃ , typical), the maximum allowable AC to flow through a capacitor , the higher irms the better heat dissipation of the capacitor. $Irms = \sqrt{\frac{ESR}{P}}$

ESR

is accidentally built to non-ideal capacitor due to the material of inner electrodes and terminations .
$ESR = DF/2\pi fc$

ESL

can also exists in non-ideal capacitor due to the aspect ratio (length vs. width of current path)

IZI

Is a combination of natural resistance and inductance properties . The total of these rasistances is known as impedance. The amount of impedance to the current means determine it will pass or be blocked by the capacitor.

RATED VOLTAGE

All capacitors are rated for the amount of voltage which they can tolerate. By definition , voltage is the amount of pressure or force exerted on the current , to make the current move.

QUALITY FACTOR

Or "Q" , is the reciprocal of DF . if Q is high , the capacitor is considered as more effectively.

I . R.

Insulation Resistance comes from the dielectric and outer coating. If any, it is the only real resistance perceived by direct current , some DC leakage through the capacitor can occur . It depends on the capacitor's rating for IR . Ceramic Capacitors have relatively large IR ratings (1GΩ or higer typically) than other dielectrics capacitor.