

6.1.1.4 *Virtual time to half-value T_2*

The time interval between the virtual origin O_1 and the instant when the voltage has decreased to half the peak value.

6.2 Test voltage

6.2.1 *Standard impulse*

A full impulse having a virtual front time of 1,2 μs and a virtual time to half-value of 50 μs . It is described as a 1,2/50 impulse. Other waveshapes may be specified by the relevant technical committee.

6.2.2 *Tolerances on standard impulse*

If not otherwise decided by the relevant technical committee, the following differences are accepted between specified values for the standard impulse and those actually recorded:

Peak value	$\pm 3 \%$
Front time	$\pm 30 \%$
Time to half-value	$\pm 20 \%$

NOTE - It is emphasized that the tolerances on the peak value, front time and time to half-value constitute the permitted differences between specified values and those actually recorded by measurements. These differences should be distinguished from measuring errors which are the difference between the values actually recorded and the true values.

With some test circuits, oscillations or an overshoot may occur at the crest of the impulse (see figure 2 a-d). If the frequency of such oscillations is not less than 0,5 MHz, or the duration of overshoot not over 1 μs , a mean curve should be drawn as in figures 2 a-d, and for the purpose of measurement, the maximum amplitude of this curve is chosen as the peak value defining the value of the test voltage. Other waveshapes may occur due to load characteristics, guidance for the interpretation of such waveshapes shall be given by the relevant technical committee.

Overshoot or oscillations in the neighbourhood of the crest are acceptable provided their single peak amplitude is not larger than 5 % of the peak value. In commonly used impulse generator circuits, oscillations on that part of the wavefront during which the voltage does not exceed 90 % of the peak value have generally negligible influence on test results. The impulse should be essentially unidirectional, but see note.

NOTE - In specific cases, such as during tests on low impedance objects, e.g. large capacitors, it may be impossible to adjust the shape of the impulse within the tolerances recommended, to keep the oscillations or the overshoot within the specified limits, or to avoid a polarity reversal. Such cases should be dealt with by the relevant technical committee.

6.2.3 *Generation of the test voltage*

The impulse is usually produced by an impulse generator consisting of a capacitor charged from a direct voltage source and then discharged into a circuit which includes the test object.