

Peak To RMS Voltage Calculator

Estimate RMS and peak-to-peak voltage for a sinusoidal waveform, with explicit limits for non-sinusoidal signals.

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<https://www.elecatrrix.com/voltage-current-resistance/peak-to-rms-voltage-calculator/>

Inputs

Input	Value	Unit
Peak voltage	169.7056	V

Results

Result	Value	Unit
Peak voltage used	169.7056	V
RMS voltage	120	V
Peak-to-peak voltage	339.4113	V
Peak-to-RMS factor	0.7071	x

Calculation details

Detail	Value	Unit
Calculation basis	For a sinusoidal waveform, RMS voltage equals peak voltage divided by square root of 2.	
Boundary	Sine-wave arithmetic only. Confirm waveform shape, measurement bandwidth, crest factor, instrument category, insulation stress, and equipment ratings separately.	

Formulas

$$V_{RMS} = \frac{V_{Peak}}{\sqrt{2}}$$

$$V_{P-P} = 2 \times V_{Peak}$$

$$\text{Peak-to-RMS factor} = (1/\sqrt{2}) \text{ approx } 0.70710678$$

Warnings and limitations

This conversion assumes a sinusoidal waveform. It does not replace a suitable true-RMS measurement, evaluate waveform distortion, determine insulation stress, or approve an energized-work condition.