ACOUSTIC CONTROL SYSTEMS

Ultrasonic transducer S1801

DATA SHEET

Intended use

Main technical specifications

Type of generated wave mode:	Shear horizontal
Nominal frequency:	50 kHz
Double conversion ratio:	> -100 dB
Electric capacity of the piezoelectric element:	(600 ± 650) pF
Maximum excitation pulse voltage:	< 200 V
Connector type:	LEMO 00.250
Weight:	24×Ø11 mm
Weight:	< 8 g
Operating temperature range:	-20 °C to +50 °C

Measurement conditions and equipment used

The transducer test is performed by its direct contacting with the reference transducer with the pressing force of 4 Newtons. The transducer under test is fed by a transmitter pulse, while the signal acquired by the reference transducer is evaluated. The double-conversion ratio is calculated as a ratio of the first halfwave amplitude received by the reference transducer to the transmitter pulse amplitude. The operating frequency corresponds to the frequency spectrum maximum of the first signal cycle.

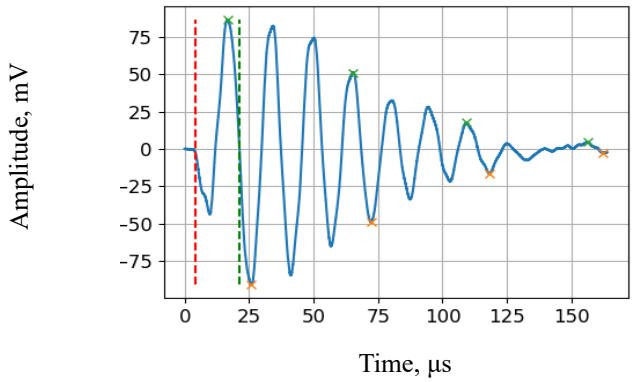
Excitation signal: square pulse with the amplitude 200 V, duration 10 µs, equal to half period of the nominal.

Receiver parameters: integrating amplifier with the bandwidth 0.01 Hz – 400 kHz, input resistance 4 kΩ, equivalent input noise voltage 10 µV.

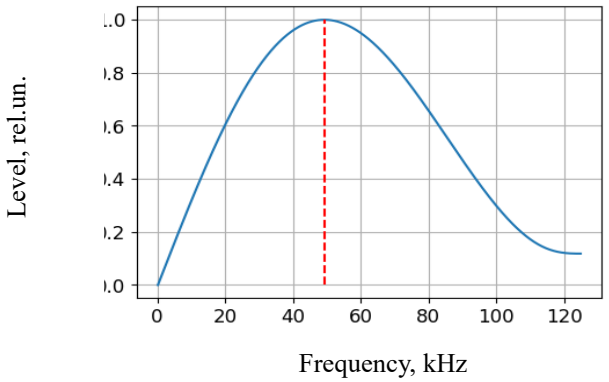
Environmental conditions: temperature 26 °C, rel. 35 %.

Measured characteristics

Shape of the measured pulse



Amplitude-frequency response



AFC frequency maximum first wave f_p:	**49.4** kHz	Double conversion ratio AFCmaximum S_{rel}:	**-89.4** dB
First half wave duration τ:	**7.9** µs	Leading front duration t_d:	**5.8** µs