

# SPECIFICATIONS

## SW182BD01/02 7" die cast, alu-cone subwoofers, 4/8 ohm



The 7" transducers SW182BD01 (4 ohm) and SW182BD02 (8 ohm) were designed specifically for high performance compact subwoofer applications where sound quality and low distortion are the priorities.

### FEATURES

- Balanced Drive motor structure for optimal drive force symmetry resulting in largely reduced even order harmonic distortion
- Extremely large linear stroke,  $X_{max} = \pm 8$  mm, ensuring low distortion at high output levels
- Very rigid black aluminium cone to ensure piston motion at high levels and for better heat transfer at high continuous power levels
- Rigid die cast alu chassis with extensive venting for lower air flow speed reducing audible distortion
- Vented voice coil former for reduced distortion and compression
- Vented center pole with dual flares for reduced noise level at large cone excursions
- Heavy-duty black fiber glass voice coil former to reduce mechanical losses resulting in better dynamic performance and low-level details
- Large motor with 1½" voice coil diameter for better control and power handling
- Built-in alu field-stabilizing ring for reduced distortion at high levels
- Low-loss suspension (high  $Q_m$ ) for better reproduction of details and dynamics
- Black plated cone and motor parts for better heat transfer to the surrounding air
- Conex spider for better durability under extreme conditions
- Gold plated terminals to ensure long-term trouble free connection



### NOMINAL SPECIFICATIONS

Notes	Parameter	SW182BD01		SW182BD02		Unit
		Before burn-in	After burn-in	Before burn-in	After burn-in	
	Nominal size	7		7		[inch.]
	Nominal impedance	4		8		[ohm]
	Recommended max. upper frequency limit	500		500		[Hz]
1, 3	Sensitivity, 2.83V/1m (calculated from T/S parameters)	85.5		83.5		[dB]
2	Power handling, short term, IEC 268-5, no additional filtering					[W]
2	Power handling, long term, IEC 268-5, no additional filtering					[W]
2	Power handling, continuous, IEC 268-5, no additional filtering	125		125		[W]
	Effective radiating area, $S_d$	131		131		[cm <sup>2</sup> ]
3, 6	Resonance frequency (free air, no baffle), $F_s$	31	26.5	33	30	[Hz]
	Moving mass, incl. air (free air, no baffle), $M_{ms}$	49		43		[g]
3	Force factor, $B_{xl}$	8.5		11.5		[N/A]
3, 6	Suspension compliance, $C_{ms}$	0.54	0.74	0.54	0.74	[mm/N]
3, 6	Equivalent air volume, $V_{as}$	13	18	13	18	[lit.]
3, 6	Mechanical resistance, $R_{ms}$	0.53	1.1	0.53	1.1	[Ns/m]
3, 6	Mechanical Q, $Q_{ms}$	17.5	8.5	16.5	8	[-]
3, 6	Electrical Q, $Q_{es}$	0.42	0.36	0.43	0.37	[-]
3, 6	Total Q, $Q_{ts}$	0.41	0.35	0.42	0.36	[-]
4	Voice coil resistance, $R_{DC}$	3.2		6.4		[ohm]
5	Voice coil inductance, $L_e$ (measured at 1 kHz)	1.5		2.5		[mH]
	Voice coil inside diameter	39		39		[mm]
	Voice coil winding height	21		21		[mm]
	Air gap height	5		5		[mm]
	Magnet weight	640		640		[g]
	Total unit net weight excl. packaging	1.85		1.85		[kg]
3, 5	$K_{rm}$	6.4		5.4		[mohm]
3, 5	$E_{rm}$	0.74		0.80		[-]
3, 5	$K_{xm}$	13.6		20		[mH]
3, 5	$E_{xm}$	0.72		0.73		[-]

Note 1 Measured in infinite baffle.

Note 2 Tested in free air (no cabinet).

Note 3 Measured using a semi-constant current source, nominal level 2 mA.

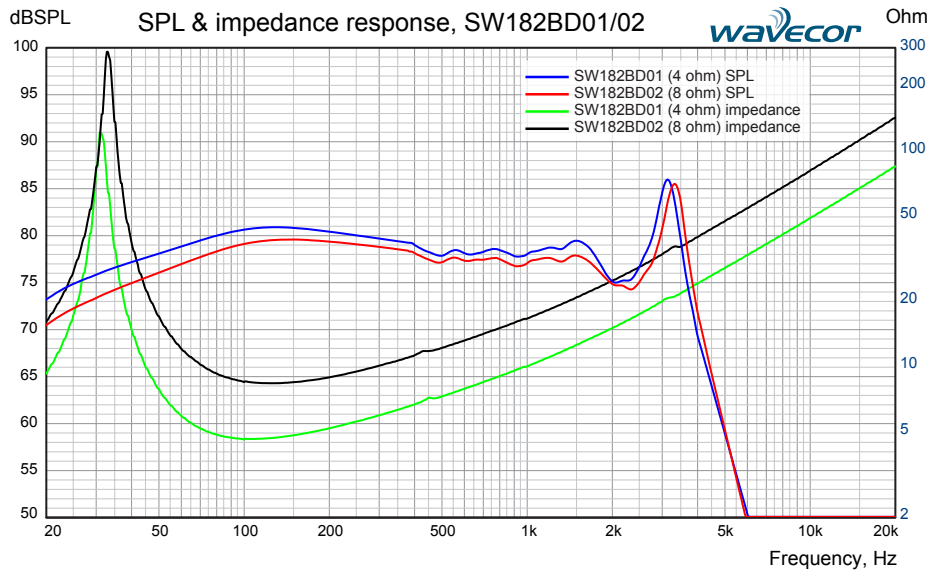
Note 4 Measured at 20 deg. C

Note 5 It is generally a rough simplification to assume that loudspeaker transducer voice coils exhibit the characteristics of an inductor. Instead it is a far more accurate approach to use the more advanced model often referred to as the "Wright empirical model", also used in LEAP-4 as the TSL model ([www.linearx.com](http://www.linearx.com)), involving parameters  $K_{rm}$ ,  $E_{rm}$ ,  $K_{xm}$ , and  $E_{xm}$ . This more accurate transducer model is described in a technical paper [here at our web site](#).

Note 6 After burn-in specifications are measured 12 hours after exiting the transducer by a 20 Hz sine wave for 2 hours at level 10/14.1 VRMS (4/8 ohm version). The unit is not burned in before shipping.

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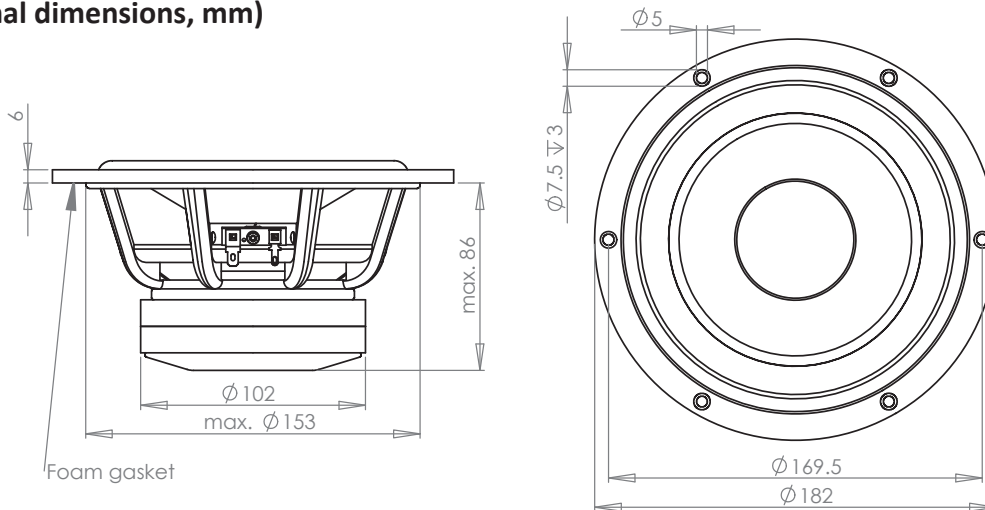
**Measuring conditions, SPL**

Driver mounting: Flush in infinite baffle, back side open (no cabinet)  
 Microphone distance: 1.0 m  
 Input signal: 2.83 VRMS stepped sine wave  
 Smoothing: 1/6 oct.

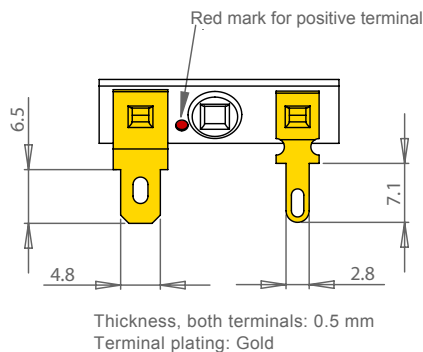
**Measuring conditions, impedance**

Driver mounting: Free air, no baffle, back side open (no cabinet)  
 Input signal: Stepped sine wave, semi-current-drive, nominal current 2 mA  
 Smoothing: None

### OUTLINE DRAWING (nominal dimensions, mm)



### CONNECTIONS



### PACKAGING AND ORDERING INFORMATION

Part no. SW182BD01-01	4 ohm version, individual packaging (one piece per box)
Part no. SW182BD01-02	4 ohm version, bulk packaging
Part no. SW182BD02-01	8 ohm version, individual packaging (one piece per box)
Part no. SW182BD02-02	8 ohm version, bulk packaging

Latest update: September 8, 2010