M5a

M5a Bass-Midrange

Overview

In 1999, Swans manufactured M5N woofer with original and beautiful appearance, which is suitable for digital audio and sound signal linear loudspeaker system, which is dynamic and with low distortion. This design has laid another landmark of Swans loudspeaker.
-Advanced alloy (magnesium and aluminum) cone, coated with special damping material
-Optimum recovery CONEX supporting system, having very good stiffness and dynamic stability, improving the acoustic features of the speakers.
-High power handling, heat-resistant Kapton?voice coil former and heat-resistant SV voice coil wire
-Finite Element Analysis for shielded magnetic system with long-throw linear excursion design
-Hi-Vi Symmetric Motor Drive (SMD) technology makes the voice coil into a symmetrical driving magnetic field, thus acquiring symmetrical driving force, reducing the mutual modulation of voice coil inductance and back electromotive force, improving the controllability of the speakers, achieving low distortion degree.
-Finite Element Analysis for high density aluminum frame, prevents the parasitic structural resonances
-Using leading technology of Small/Thiele parameters
The design of the M5a has been optimized for an extended and dynamic bass reproduction in small vented systems. Midrange clarity and accuracy is remarkable. The M5a utilizes our unique one-piece Aluminum/Magnesium composite cone.
The cone?s superior rigidity provides for dynamic and accurate reproduction of transient attacks. This contributes to a more naturally dynamic sound. The back of the cone is hand coated with a special dampening compound to further maximize performance stability and control of structural resonances.
The high temperature voice coil former and SV wire, air transparent spider and venting of the coil allow for good power handling. Using Finite Element Analysis simulation, we optimized the complete magnet structure and specifically shaped the pole piece to achieve symmetric flux distribution along the travel path of the voice coil.
This design approach provides better driving force linearity. It considerably reduces voice coil inductance modulation and DC offset of the moving system at high power levels. The result is much less distortion and more effective voice coil cooling. The massive aluminum die-cast basket has been developed to minimize parasitic structural resonances. A shielded magnet structure allows the M5a to be easily incorporated into audio/video applications.
The driver may be used in a small closed box as a midrange unit in a three-way system and the good extension (50 Hz) in a vented enclosure allows for use in a two-way two-driver or MTM configured system. Incorporated into the Diva line of loudspeakers manufactured by Swans the M5a earned the Exceptional Value Award at The Home Entertainment Show 2000. Recommended crossover frequency region for a two-way system design is 2-5 kHz.

Specifications

General Data	
Nominal Power Handling (Pnom)(W)	35
Max Power Handling (Pmax)(W)	70
Sensitivity (2.83v/1m)(dB)	87
Weight (M)(Kg)	1.6
Electrical Data	
Nominal Impedance (Z)(Ω)	8
DC (Re)(Ω)	6.5
Voice Coil and Magnet Parameters	
VC Diameter (mm)	25
VC Length (H)(mm)	10.4
VC Former	SV
VC Frame	Kapton
Magnet System	Shielded
Magnet Former	Ferrite
Force Factor (BL)(N/A)	7.6
Gap Height (He)(mm)	5
Linear Excursion (Xmax)(mm)	2.7
T-S Parameters	
Suspension Compliance (Cms)(uM/N)	1038
Mechanical Q (Qms)	6.71
Electrical Q (Qes)	0.36
Total Q (Qts)	0.34
Moving Mass (Mms)(g)	10.8
Effective Piston Area (Sd)(m2)	0.0087
Equivalent Air Volume (Vas)(L)	11.2
Resonance Frequency (Fs)(Hz)	50

Pictures of M5a