

ALN20S Series 85°C

RoHS
Compliant

- 4 Pin Solder tag
- Long Life 18000 hours at 85 °C (Ur, Ir applied)
- Slit Foil technology



APPLICATION

A new generation of audio capacitors is now available from BHC – T-Network Capacitor (TNC). The TNC has been designed specifically for audio applications by DNM design and is being manufactured in the UK by BHC.

BASIC DESIGN

In a normal capacitor unwanted resistance and inductance force the input and output together electrically, making its unwanted characteristics very critical for performance - figure 1.

The new T-Network capacitor (TNC) behaves differently because the input must flow along the capacitor plate to reach the output. The signal is forced into pure capacitance with most of the unwanted resistance and inductance appearing on each side of the bulk capacitance. The residual defects, therefore, tend to assist capacitance filtering in the T-Network design - figure 2.

The TNC is designed for the most demanding filtering situations and it will redefine performance standards in many non-audio applications. For use in audio amplifiers, the TNC incorporates current slit foil technology to produce the ultimate audio capacitor. These capacitors give excellent results against standard components on a direct replacement. However, TNC high frequency performance is so enhanced that the H.F. compensation of test amplifiers may need resetting for best results.

Figure 1: Conventional capacitor

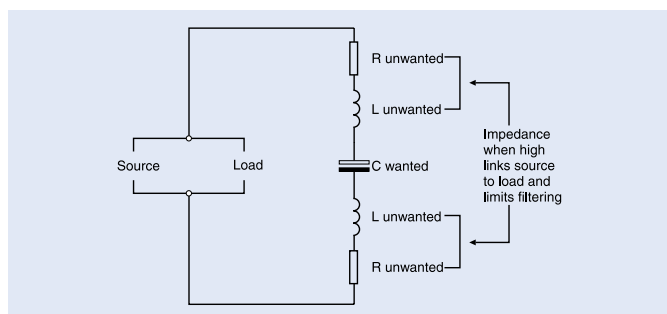
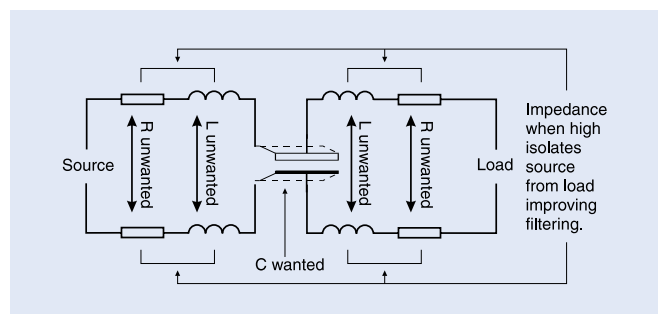


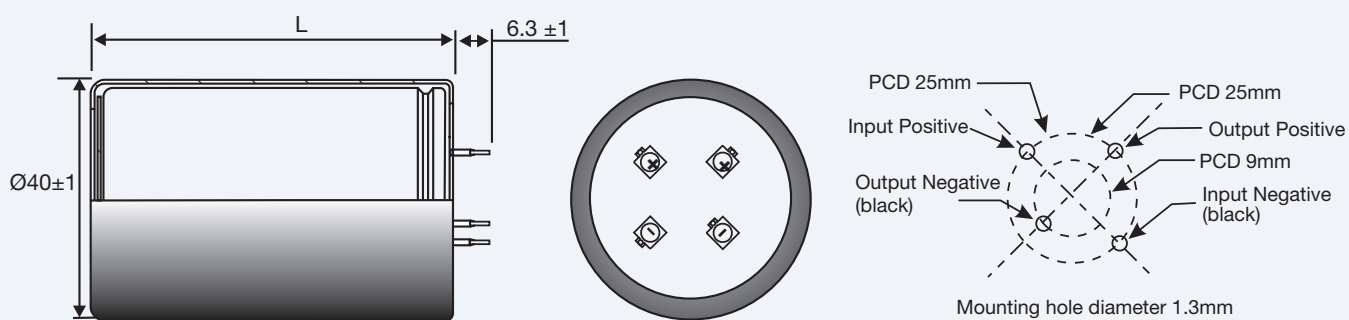
Figure 2: T-Network capacitor



SPECIFICATION

Standards	IEC 60384-4	
Capacitance range	10000 μ F	
Capacitance tolerance	$\pm 20\%$ (-10% +30% where specified)	
Rated voltage U_R	50 - 100 VDC	
Surge voltage U_S	$1.15 \times U_R$	Test Condition: $\leq 30s$ surge, 1000 cycles @ 85°C
Leakage current I_L	$= 0.006 \times C_R \times U_R$ (μ A) or 6mA whichever is the smaller. Note, C_R is in μ F.	Test Condition: U_R , 5mins., 20°C
Operational life time +85°C, U_R, I_R	18000 hours	End of Life requirement: $\Delta C/C \leq \pm 10\%$ ESR $\leq 2 \times$ initial ESR value $I_L \leq$ initial specified limit
+85°C, U_R	29000 hours	
Shelf Life	2000 hrs at 0V +85°C, or 30000 hrs at 0V +40°C	
Temperature range	-40 to +85°C (Operating) -55°C to +85°C (Storage)	

SPECIFICATION



Dimensions (sleeved) mm

Part Number	Capacitance μF	U_R V	Length $L \pm 2$ mm
ALN20S1053DD	10,000 -10% +30%	50V	55
ALN20S1106DD	10,000 $\pm 20\%$	50V	55
ALN20S1067DD	10,000 $\pm 20\%$	63V	55
ALN20S1107DE	10,000 $\pm 20\%$	80V	75
ALN20S1108DF	10,000 $\pm 20\%$	100V	105

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APPLICATION

Modern electrolytic capacitors are designed for use in power supplies so most aspects of their design have been optimised for this application. Some of the advances in design may not be beneficial in audio applications where the requirements of the capacitors are very different.

BHC, in collaboration with an audio research company, DNM Design, have produced the Slit Foil Capacitor specifically for audio applications. This is a patented design which eliminates circulating currents in the aluminium foils. This spurious current flow on the capacitor plates is known to occur, but is not apparent in most applications.

BASIC DESIGN

Slit foil capacitor research has also indicated that improvements in the general construction of the capacitors give better results in audio where the fidelity of the waveshape is very important. Great attention has been paid to the construction details which can affect the performance, i.e. foil type, its connections

and the mechanical construction. BHC manufacture a range of capacitors for this type of application in screw terminal, solder tag or board mounting configurations. Details of capacitance and case sizes available in the Slit Foil Capacitors range are available from our sales office.

SPECIFICATION

Standards	IEC 60384-4	
Capacitance range	10000 µF	
Capacitance tolerance	±20%	
Rated voltage U_R	50 - 100 VDC	
Surge voltage U_S	$1.15 \times U_R$	Test Condition: ≤ 30s surge, 1000 cycles @ 85°C
Leakage current I_L	= $0.006 \times C_R \times U_R$ (µA) or 6mA whichever is the smaller. Note, C_R is in µF.	Test Condition: U_R , 5mins., 20°C
Operational life time +85°C, U_R, I_R	Can Diameter 35 15000 hrs 40 18000 hrs	End of Life requirement: $\Delta C/C$ ≤ ±10% ESR ≤ 2 x initial ESR value I_L ≤ initial specified limit
+85°C, U_R	Can Diameter 35 24000 hrs 40 29000 hrs	
Shelf Life	2000 hrs at 0V +85°C, or 30000 hrs at 0V +40°C	
Temperature range	-40 to +85°C (Operating) -55°C to +85°C (Storage)	