

SOWTER TYPE 1465

High Performance DAC to Grid I/V Transformer Performance DAC to Grid I/V Transformer. Replaces 9545

Applications

Our most popular transformer for use with most current out Digital-to-Analogue Converters. Works well with any current out DAC. Provides current to voltage conversion with gain to achieve at least a line level signal (0 dBu 0.775V) depending on the I/V resistor used. Presents a low impedance to the DAC output for best frequency response and quantisation noise reduction. Provides significant sound quality improvement when compared to other interface methods. Ensures full isolation of digital noise in ground and supply rails.

We recommend that the I/V resistor is placed across the secondary of the transformer (See below). The transformer has sufficient inductance for good quality operation with higher values to increase the output level. Lower values may improve the sound but will reduce the output level. Can be configured to drive 9335 attenuator without loss of bandwidth. Can be used driven from multiple parallel DAC's to increase output level. Twin primary windings are provided for use with twin DAC's fed with complimentary data. This approach has been used in order to cancel out quantisation noise.

The I/V resistor across the secondary of the transformer instead of the primary has yielded the best result according to some customers. The value of the resistor should be increased by the ratio squared. The table below suggests values for experiment.



Features

Exceptionally large and high-performance transformer. Twin primary windings are provided for use

with two DAC modules fed with complimentary digital signals which provides improved cancellation of quantisation noise. For normal use connect the two primary windings in parallel. Twin secondary windings with geometric balance for driving differential (push-pull) amplifier. These may be used in parallel to improve the bandwidth and reduce the output impedance. Mumetal core for minimal harmonic distortion. Mumetal can for magnetic shielding.

HOW TO CONNECT THE WINDINGS

Referring to the diagram below: To connect the primary windings in parallel (usual configuration) connect Grey to Orange and Brown to Blue.

To connect the secondary windings in parallel, connect Violet to Pink and Yellow to White. To connect in series, connect Yellow to Pink. If you are driving a balanced input it is normally better NOT to ground the mid-point (Yellow-Pink). For feeding an unbalanced load one side can be connected to analogue ground. For feeding 2 grids Yellow-Pink can be grounded to reference the grid bias.

If possible the grounds of the digital part of the circuit should not be joined. The secondary may be loaded balanced or unbalanced (one side grounded).

HOW TO CALCULATE THE I/V RESISTOR (example)

Current out = $\pm 2 \text{ mA} = 4 \text{ mA p-p} = 4 / 2.82 \text{ mA} = 1.43 \text{ mA}$

Configuration: Primary coils in parallel. Secondary coils in series. Ratio = 1:10

Secondary current = 0.143 mA

Secondary load resistor for line level (0.775V) = $0.775 / 0.000143 = 5420 \text{ Ohms}$. Allow 25% for copper loss. Use 6.8K Ohms

Configuration: Primary coils in parallel. Secondary coils in parallel. Ratio = 1:5

For line level out use 3.3K Ohms secondary load. For increased output level increase load in proportion.

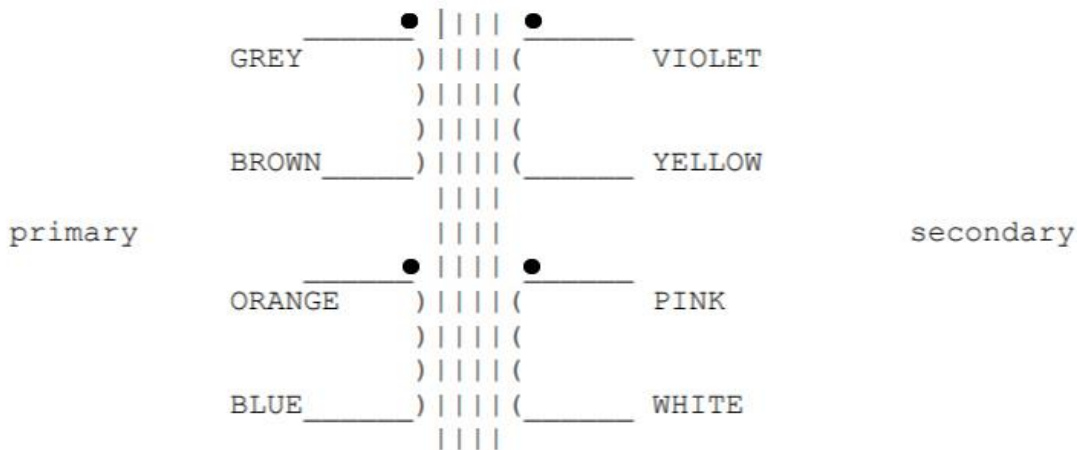
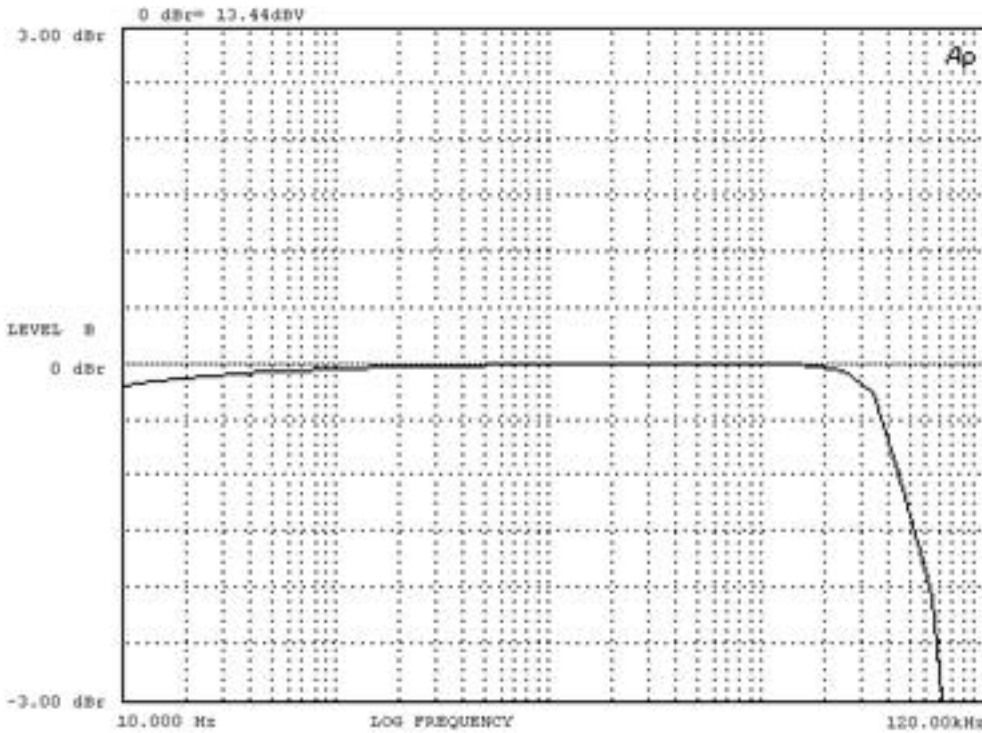
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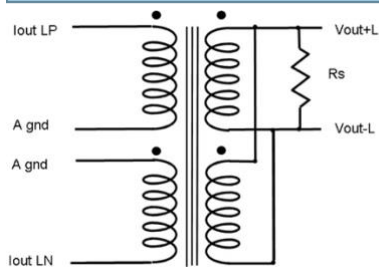
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PCM1795 PCM1796 PCM1798 PCM2702 PCM56 PCM63 TDA1540 TDA1541A TDA1543
TDA1545A TDA1547

Specifications

Item	Value
CAN DIMENSIONS	45 mm Dia. x 52.5 high
PRIMARY INDUCTANCE (each coil)	3.0 H Typical
PRIMARY DC RESISTANCE (each coil)	6.7 Ohms Typical
SECONDARY DC RESISTANCE (2 coils in series)	1.29K Ohms Typical
RATIO	1+1:5+5
FREQUENCY RESPONSE (Typical):	
Parallel secondary windings	+/- 1.5 dB 5 Hz to 100 kHz
Series secondary windings	+/- 1.5 dB 5 Hz to 50 kHz

Mechanicals





Size: J Style: e

