

FEATURES

- J-STD-020D reflow
- RoHS compliant
- Compatible with leading chip sets
- 2kVrms isolation
- Industry-standard pinout
- Surface mount option
- UL 94 V-0 package materials
- Low profile
- Suitable for both 75 & 110Ω circuits
- Toroidal construction
- Compliant with AES/EBU standards

DESCRIPTION

The Digital Audio Range of transformers is designed to improve the balance of transmitter and receiver circuitry in hi-fi equipment, video games and other applications requiring high-performance digital audio transmission. Compliant with AES/EBU recommendations for the digital audio interface, offering optimised shunt capacitance between primary and secondary windings. Capable of operating over the audio data rate frequency range, providing isolation from 50-60Hz noise.

For through hole versions please refer to the DA100 series datasheet.

DA100J Series

SM Transformers for Digital Audio Data Transmission

SELECTION GUIDE

Order Code ¹	Turns Ratio	Primary	Max.	Min. Volt-time	Min. Return Loss	Typ. Common	Isolation
		Inductance (10kHz, 50mV)	Leakage Inductance (100kHz, 10mV)				
		mH	μH	Vμs	dB	dB	Vrms
DA101JC	1:1	1.00 - 2.20	0.36	15	34.6	55.9	
DA102JC	1:1	2.00 - 4.40	0.65	20	38.8	52.4	
DA103JC	1:1	3.20 - 8.50	0.91	28	34.9	48.5	2000

TEMPERATURE CHARACTERISTICS

Operating free air temperature range	-40°C to +85°C
Storage temperature range	-40°C to +125°C

TECHNICAL NOTES

ISOLATION VOLTAGE

'Hi Pot Test', 'Flash Tested', 'Withstand Voltage', 'Proof Voltage', 'Dielectric Withstand Voltage' & 'Isolation Test Voltage' are all terms that relate to the same thing, a test voltage, applied for a specified time, across a component designed to provide electrical isolation, to verify the integrity of that isolation.

All products in this series are 100% production tested at their stated isolation voltage.

A question commonly asked is, "What is the continuous voltage that can be applied across the part in normal operation?"

For a part holding no specific agency approvals both input and output should normally be maintained within SELV limits i.e. less than 42.4V peak, or 60VDC. The isolation test voltage represents a measure of immunity to transient voltages and the part should never be used as an element of a safety isolation system. The part could be expected to function correctly with several hundred volts offset applied continuously across the isolation barrier; but then the circuitry on both sides of the barrier must be regarded as operating at an unsafe voltage and further isolation/insulation systems must form a barrier between these circuits and any user-accessible circuitry according to safety standard requirements.

REPEATED HIGH-VOLTAGE ISOLATION TESTING

It is well known that repeated high-voltage isolation testing of a barrier component can actually degrade isolation capability, to a lesser or greater degree depending on materials, construction and environment. This series has toroidal isolation transformers, with no additional insulation between primary and secondary windings of enamelled wire. While parts can be expected to withstand several times the stated test voltage, the isolation capability does depend on the wire insulation. Any material, including this enamel (typically polyurethane) is susceptible to eventual chemical degradation when subject to very high applied voltages thus implying that the number of tests should be strictly limited. We therefore strongly advise against repeated high voltage isolation testing, but if it is absolutely required, that the voltage be reduced by 20% from specified test voltage.

This consideration equally applies to agency recognised parts rated for better than functional isolation where the wire enamel insulation is always supplemented by a further insulation system of physical spacing or barriers.



For full details go to
<https://www.murata.com/en-global/products/power/rohs>

1. Components are supplied in both tube and tape and reel packaging, please refer to package specification section. Orderable part numbers are DAXXXJC (50 pieces per tube) and DAXXXJC-R (500 pieces per reel).

All specifications typical at $T_A = 25^\circ\text{C}$ unless otherwise specified.

RoHS COMPLIANCE AND WAVE SOLDERING INFORMATION



This series is compatible with Pb-Free soldering systems and is also backward compatible with Sn/Pb soldering systems. The DA100J series has a process, moisture, and reflow sensitivity classification of MSL1 PSL R7F as defined in J-STD-020 and J-STD-075. This translates to: MSL1 = unlimited floor life, PSL R7F = Peak reflow temperature 245°C with a limitation on the time above liquidus (217°C) which for this series is 100 sec max. The pin termination finish on this product series is Matte Tin. For further information, please visit www.murata.com/en-global/products/power/rohs

PART NUMBER STRUCTURE

DA1 XX J C

Series name

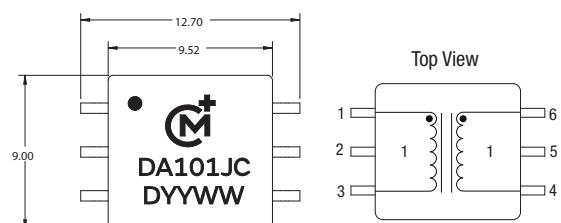
Inductance rating

RoHS compliant

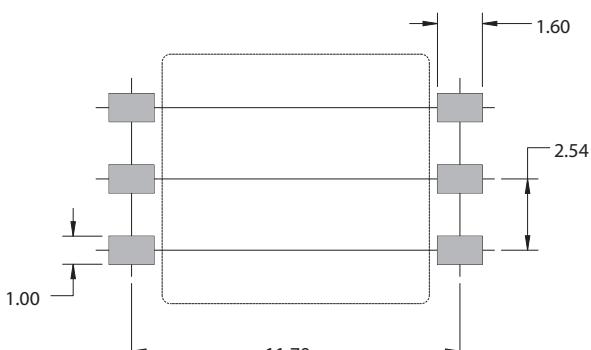
Series name

PACKAGE SPECIFICATIONS

MECHANICAL DIMENSIONS



RECOMMENDED FOOTPRINT DETAILS

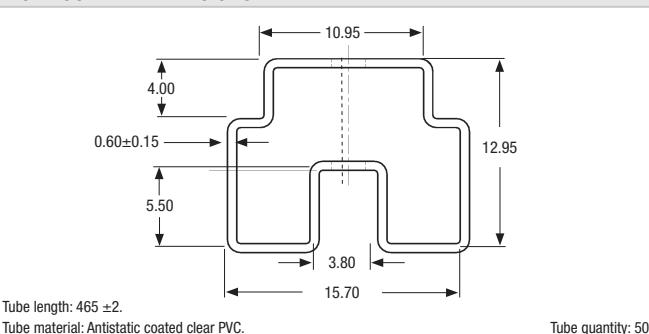


Unless otherwise stated all dimensions in mm ± 0.25 .

All pins on a 2.54 pitch and within ± 0.25 of true position

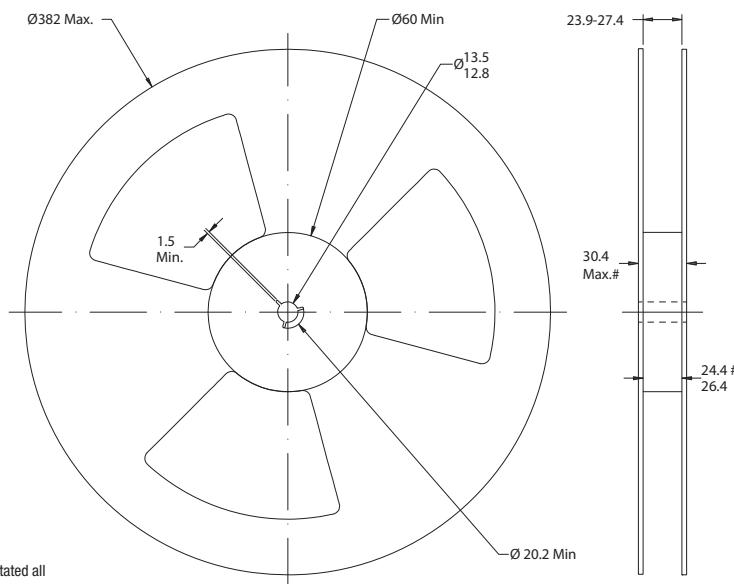
Package Weight 0.93g Typ.

TUBE OUTLINE DIMENSIONS



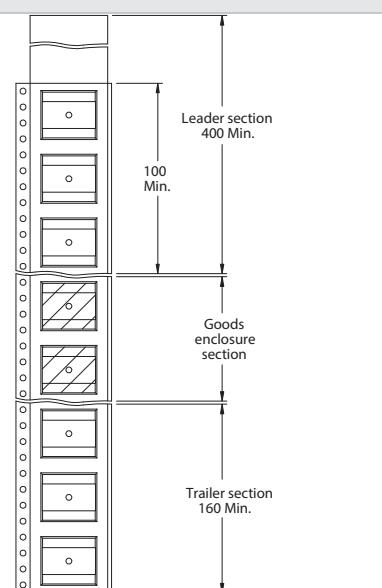
TAPE & REEL SPECIFICATIONS

REEL OUTLINE DIMENSIONS



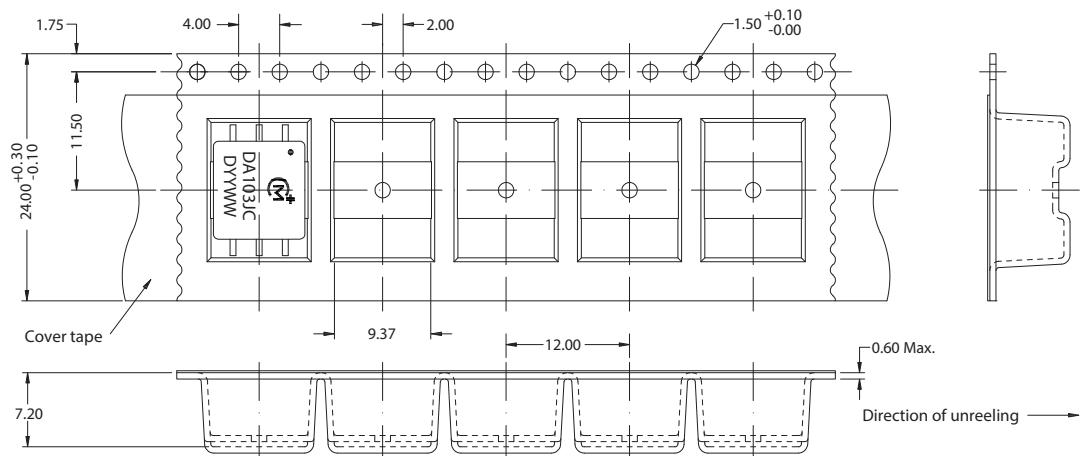
Unless otherwise stated all dimensions in mm ± 0.25 .

Measured at hub.



Reel quantity: 500

TAPE OUTLINE DIMENSIONS



Unless otherwise stated all dimensions in mm ± 0.25 .

DISCLAIMER

Unless otherwise stated in the datasheet, all products are designed for standard commercial and industrial applications and NOT for safety-critical and/or life-critical applications.

Particularly for safety-critical and/or life-critical applications, i.e. applications that may directly endanger or cause the loss of life, inflict bodily harm and/or loss or severe damage to equipment/property, and severely harm the environment, a prior explicit written approval from Murata is strictly required. Any use of Murata standard products for any safety-critical, life-critical or any related applications without any prior explicit written approval from Murata shall be deemed unauthorised use.

These applications include but are not limited to:

- Aircraft equipment
- Aerospace equipment
- Undersea equipment
- Power plant control equipment
- Medical equipment
- Transportation equipment (automobiles, trains, ships, etc.)
- Traffic signal equipment
- Disaster prevention / crime prevention equipment
- Data Processing equipment

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Refer to: <https://www.murata.com/en-eu/products/power/requirements>

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