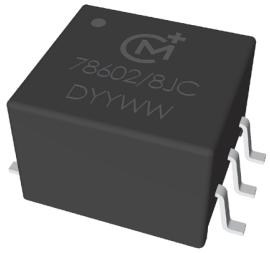
786J Series

Surface Mount General Purpose Pulse Transformers



FEATURES

- J-STD-020 reflow
- RoHS compliant
- 4 Configurations
- Primary inductance to 10mH
- 1kVrms isolation
- Industry standard pinout
- UL 94 V-0 package materials
- Low profile
- Toroidal construction

DESCRIPTION

The 786J series is a comprehensive range of general purpose pulse transformers. Common applications include line coupling, matching or isolating. The devices can also be used in small isolated power supplies and also as common-mode chokes in filtering applications.

For through hole variants please refer to the 786 series datasheet.

SELECTION GUIDE

Order Code	Turns Ratio	Min. Primary Inductance	Primary Min. Volt-time Product, Et	Typ. Leakage Inductance	Typ. Interwinding Capacitance	Max. Primary DC Resistance	Isolation Voltage	Winding Configuration
		µH	Vµs	µH	pF	Ω	Vrms	
		Recommended / In Production						
78601/2JC	1:1	350	10	0.25	22	0.34	1000	1
78601/1JC	1:1	2000	20	0.47	49	0.60		
78601/9JC	1:1	10000	56	0.93	121	1.30		
78602/2JC	1:1:1	380	10	0.27	32	0.34	1000	2
78602/8JC	1:1:1	970	15	0.37	47	0.46		
78602/1JC	1:1:1	1890	20	0.65	72	0.66		
78602/16JC	1:1:1	3350	28	0.71	116	1.20		
78602/9JC	1:1:1	10000	56	0.71	167	1.80		
78604/8JC	2:1	850	15	0.76	20	0.46	1000	1
78604/9JC	2:1	10000	56	2.30	72	1.23		
78613/8JC	1CT:1	980	15	1.13	35	0.48	1000	3
78613/9JC	1CT:1	10000	56	3.83	72	1.33		
78615/8JC	1CT:1CT	1000	15	11.9	10	0.45	1000	4
78615/9JC	1CT:1CT	10000	56	52.5	19	1.45		
		To be discontinued						
78601/4JC	1:1	58	4	0.19	8	0.17	1000	1
78601/3JC	1:1	150	6	0.20	14	0.25		
78601/8JC	1:1	850	15	0.29	35	0.45		
78601/16JC	1:1	3650	28	0.69	78	0.84		
78602/4JC	1:1:1	53	4	0.11	12	0.18	1000	2
78602/3JC	1:1:1	180	6	0.17	19	0.24		
78604/4JC	2:1	65	4	0.41	4	0.18	1000	1
78604/3JC	2:1	160	6	0.49	9	0.25		
78604/2JC	2:1	500	10	0.65	13	0.34		
78604/1JC	2:1	1840	20	0.99	29	0.60		
78604/16JC	2:1	3300	28	1.61	50	0.85		
78613/4JC	1CT:1	50	4	0.30	7	0.20	1000	3
78613/3JC	1CT:1	190	6	0.65	12	0.25		
78613/2JC	1CT:1	490	10	1.07	20	0.36		
78613/1JC	1CT:1	2000	20	1.70	47	0.63		
78613/16JC	1CT:1	3200	28	2.80	64	0.88		
78615/4JC	1CT:1CT	65	4	1.21	3	0.17	1000	4
78615/3JC	1CT:1CT	190	6	3.64	5	0.24		
78615/2JC	1CT:1CT	500	10	6.86	7	0.34		
78615/1JC	1CT:1CT	1700	20	16.0	16	0.60		
78615/16JC	1CT:1CT	3700	28	37.7	20	0.92		

TEMPERATURE CHARACTERISTICS

Operating free air temperature range	-40°C to 85°C
Storage temperature range	-60°C to 125°C

RoHS COMPLIANT

For full details go to
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 786XX/XJC (50 pieces per tube) and 786xx/XjC-R (500 pieces per reel).

All specifications typical at T_A=25°C unless otherwise specified.

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?"

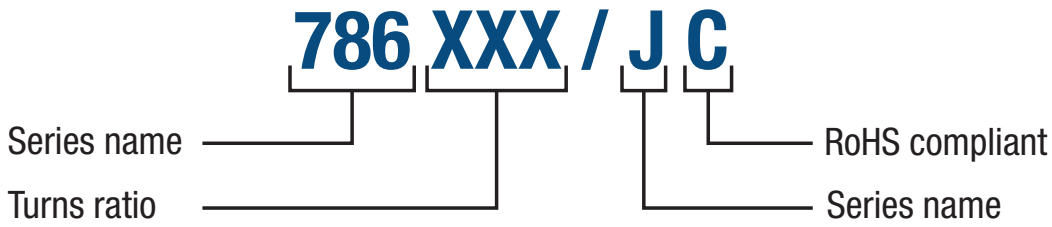
For a part holding no specific agency approvals both input and output should normally be maintained within SELV limits i.e. less than 42.4V peak, or 60VDC. The isolation test voltage represents a measure of immunity to transient voltages and the part should never be used as an element of a safety isolation 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.

PART NUMBER STRUCTURE



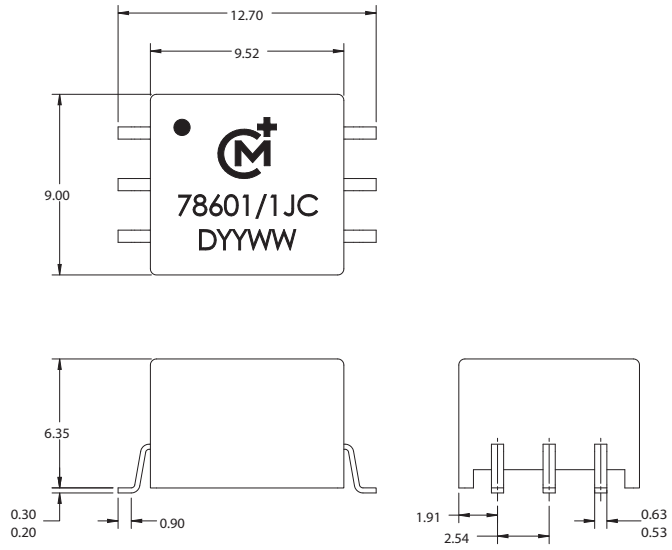
RoHS COMPLIANCE AND WAVE SOLDERING INFORMATION

This series is compatible with Pb-Free soldering systems and is also backward compatible with Sn/Pb soldering systems. The 786J 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

PACKAGE SPECIFICATIONS

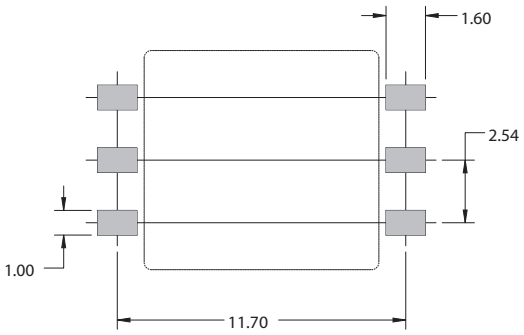
MECHANICAL DIMENSIONS



Unless otherwise stated all dimensions in mm ±0.25. All pins on a 2.54 pitch and within ±0.25 of true position.

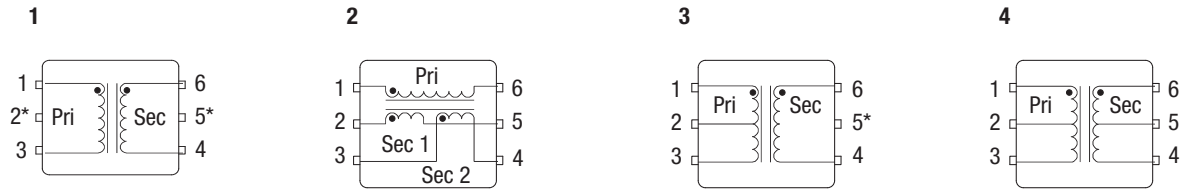
Package Weight: 1.1g Typ.

RECOMMENDED FOOTPRINT DETAILS



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

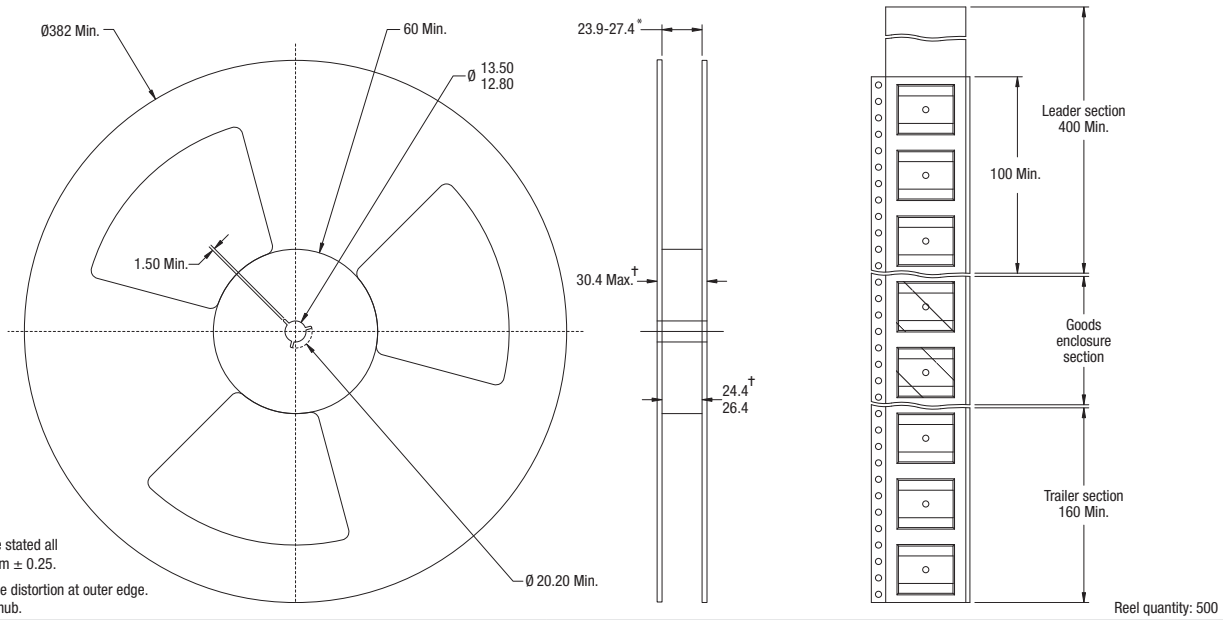
WINDING CONFIGURATION (TOP VIEW)



* Pins only fitted on 786XX/XJC and 786XX/XJC-R variants.

TAPE & REEL SPECIFICATIONS

REEL OUTLINE DIMENSIONS

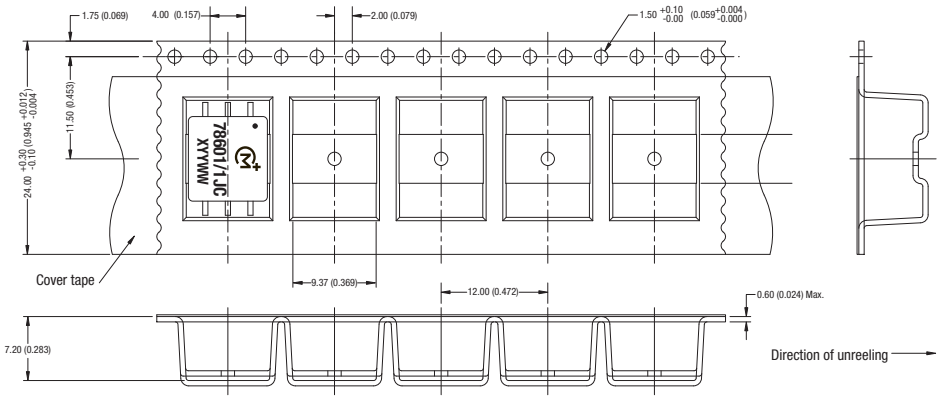


Unless otherwise stated all dimensions in mm ± 0.25.

* Includes flange distortion at outer edge.
† Measured at hub.

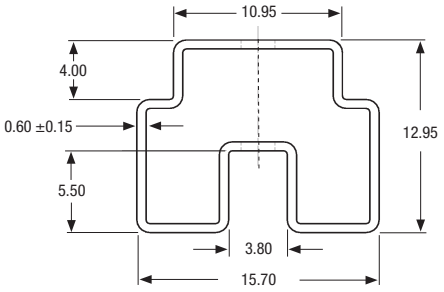
Reel quantity: 500

TAPE OUTLINE DIMENSIONS



Unless otherwise stated all dimensions in mm ± 0.25.

TUBE OUTLINE DIMENSIONS



Tube length: 465mm ±2.
Tube material: Antistatic coated clear pvc.
Unless otherwise stated all dimensions in mm ±0.25.

Tube quantity: 50

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.

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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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