Innovative Service Around the Globe YAGEO

DATA SHEET

THERMAL JUMPER

TJ series

sizes 0603/ 0612/ 1206/ 1225

RoHS compliant & Halogen free



YAGEO

Product specification – April 21, 2025 V.1

SCOPE

This specification describes TJ0603, TJ0612, TJ1206 and TJ1225 thermal jumper with lead-free terminations.

APPLICATIONS

All general purpose application.

FEATURES

- This product with lead free terminations meet RoHS requirements.
- Halogen Free product and production
- Reducing environmentally hazardous wastes
- High component and equipment reliability
- Saving of PCB space

ORDERING INFORMATION - GLOBAL PART NUMBER

Global part numbers are identified by the series, size, tolerance, packing type, temperature coefficient, taping reel and resistance value.

GLOBAL PART NUMBER

TJ	XXXX	X	X	X	XX	X	L
	(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) SIZE

0603/ 0612/ 1206/ 1225

(2) TOLERANCE

-

(3) PACKAGING TYPE

R = Paper taping reel (TJ0603/1206)
K = Embossed taping reel (TJ0612/1225)

(4) TEMPERATURE COEFFICIENT OF RESISTANCE

-

(5) TAPING REEL

07 = 7 inch dia. Reel

(6) RESISTANCE VALUE

-

(7) DEFAULT CODE

Letter L is the system default code for ordering only. (Note)

ORDERING EXAMPLE

The ordering code of a TJ0612 thermal jumper, supplied in 7-inch embossed tape reel is: TJ0612-K-07-L

NOTE

1. All our R-Chip products are RoHS compliant and Halogen free. "LFP" of the internal 2D reel label states "Lead-Free Process".
2. On customized label, "LFP" or specific symbol can be printed.

CONSTRUCTION

The thermal jumpers are constructed out of a high-grade aluminum nitride (AIN) substrate. Internal metal electrodes are added at each end. Finally, the two external terminations (matte tin) are added.

Outlines

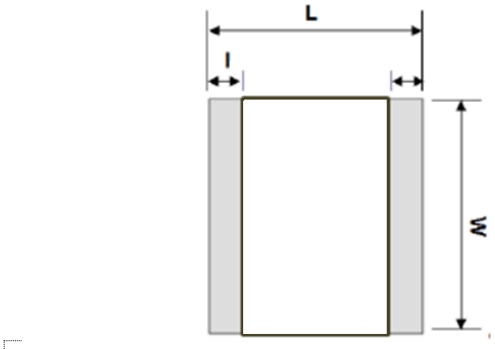


Fig. 1 Chip resistor outlines

DIMENSION

Table 1 For outlines, please refer to Fig. 1

TYPE	L (mm)	W (mm)	H (mm)	I_1 (mm)
TJ0603	1.60±0.10	0.80±0.10	0.55±0.10	0.40±0.15
TJ0612	1.60±0.10	3.20±0.10	0.55±0.10	0.40±0.15
TJ1206	3.10±0.10	1.60±0.10	0.55±0.10	0.45±0.20
TJ1225	3.20±0.15	6.40±0.15	0.55±0.15	0.50±0.15

Note:
1. For relevant physical dimensions, please refer to construction outlines.
2. Please contact with sales offices, distributors and representatives in your region before ordering.

ELECTRICAL CHARACTERISTICS

Table 2

TYPE	CHARACTERISTICS		
	OPERATING TEMPERATURE RANGE	THERMAL RESISTANCE (°C/W)	DIELECTRIC WITHSTANDING VOLTAGE KVAC, RMS (60 HZ)
TJ0603	–55 °C to +155 °C	14 °C/W	> 1
TJ0612	–55 °C to +155 °C	4 °C/W	> 1
TJ1206	–55 °C to +155 °C	18 °C/W	> 1
TJ1225	–55 °C to +155 °C	5 °C/W	> 1

Note: Thermal conductivity of AIN substrate: 170 W/mK

PACKING STYLE AND PACKAGING QUANTITY

Table 3 Packing style and packaging quantity

PACKING STYLE	REEL DIMENSION	TJ0603	TJ0612	TJ1206	TJ1225
Paper taping reel (R)	7" (178 mm)	5,000	---	5,000	---
Embossed Taping Reel (K)	7" (178 mm)	---	5,000	---	4,000

PAPER TAPE

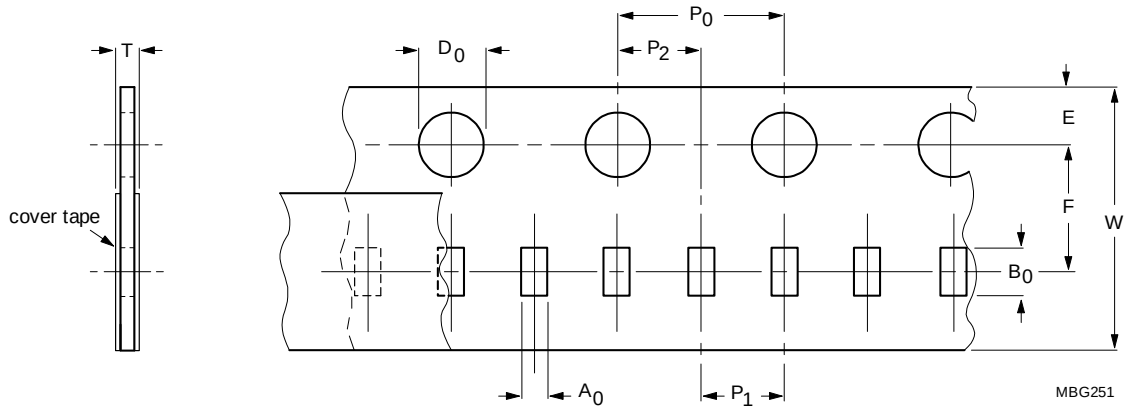


Fig. 3 Paper Tape

Table 4 Dimensions of paper tape for relevant chip resistors size

SIZE	SYMBOL									Unit: mm
	A_0	B_0	W	E	F	P_0	P_1	P_2	$\varnothing D_0$	T
TJ0603	1.20± 0.10	1.90± 0.10	8.00± 0.10	1.75± 0.10	3.50± 0.10	4.00± 0.10	4.00± 0.10	2.00± 0.10	1.55± 0.05	0.60± 0.15
TJ1206	1.90± 0.15	3.50± 0.15	8.00± 0.30	1.75± 0.10	3.50± 0.10	4.00± 0.10	4.00± 0.10	2.00± 0.10	1.55± 0.05	0.85± 0.15

EMBOSSED TAPE

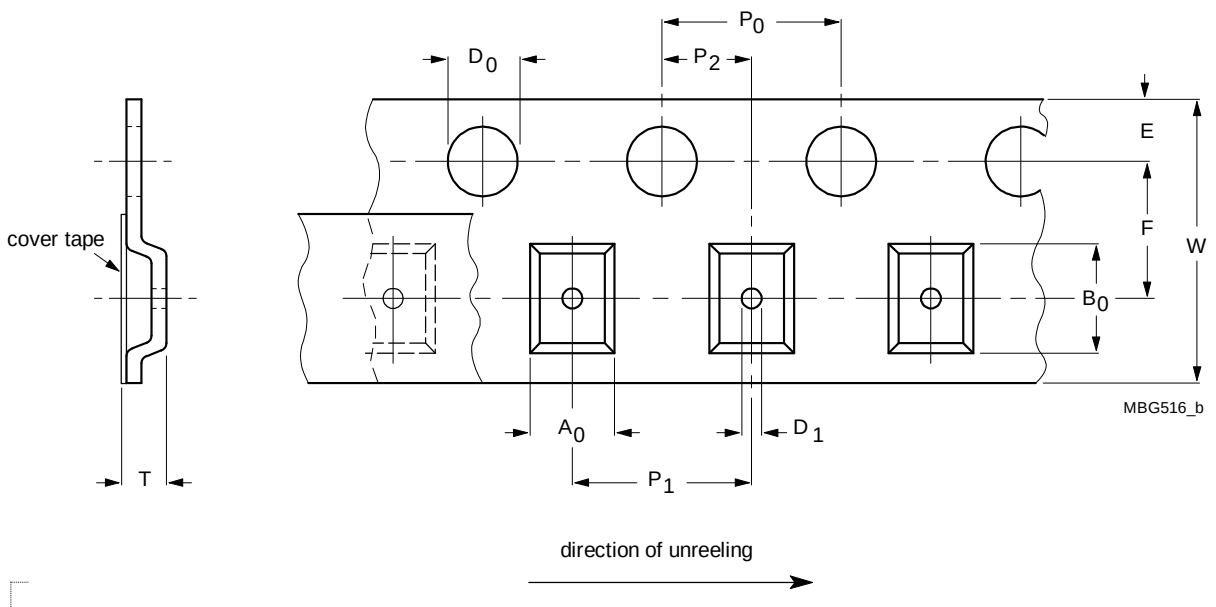


Fig. 4 Embossed Tape

Table 5 Dimensions of embossed tape for relevant chip resistors size

SIZE	SYMBOL										Unit: mm
	A_0	B_0	W	E	F	P_0	P_1	P_2	ΦD_0	ΦD_1	T
TJ0612	1. 80±0.15	3.52±0.15	8.00±0.30	1.75±0.10	3.50±0.10	4.00±0.10	4.00±0.10	2.00±0.10	1.50±0.10	1.50±0.10	0.75±0.15
TJ1225	3.40±0.15	6.70±0.15	12.00±0.30	1.75±0.10	5.50±0.10	4.00±0.10	4.00±0.10	2.00±0.10	1.50±0.10	1.50±0.10	0.80±0.15

REEL SPECIFICATION

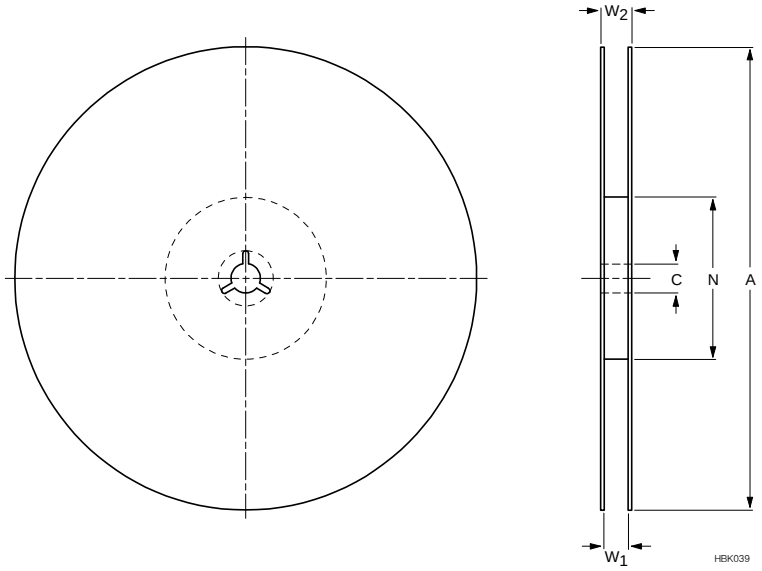


Fig. 5 Reel

Table 6 Dimensions of reel specification for relevant chip resistors size

Unit: mm

SIZE	QUANTITY PER REEL	REEL SIZE 8 mm TAPE WIDE	REEL SIZE 12 mm TAPE WIDE	SYMBOL A	N	C	D	W_1	$W_{2\ MAX.}$
TJ0612	5,000	7" (Ø 178 mm)	---	178.0± 5.0	60.0+1/-0	13.0± 0.5	17.70± 0.5	8.4+1/-0	12.4± 1
TJ1225	5,000	7" (Ø 178 mm)	---	178.0± 5.0	60.0+1/-0	13.0± 0.5	17.70± 0.5	12.3+1/-0	18.4± 1

LEADER/TRAILER TAPE SPECIFICATION

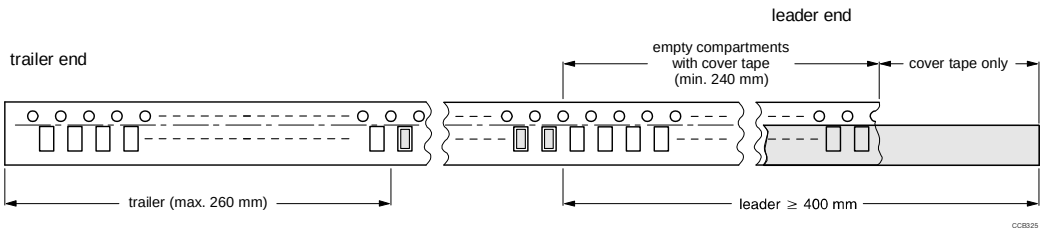


Fig. 6 Leader/Trailer Tape

Table 7 Test condition, procedure and requirements

TESTS AND REQUIREMENTS

TEST	TEST METHOD	PROCEDURE	REQUIREMENT
Board Flex/ Bending	AEC -Q200 Test 21	Device mounted on PCB test board as described, only 1 board bending required Bending for 0603: 3mm 0612/1206/1225: 2mm Bending time: 60+5 seconds	No visible damage
Solderability - Wetting	AEC -Q200 Test 18 J-STD-002	(1) Baking 4 hours at 155°C dry heat, dipping at 245±3°C for 5±0.5 seconds. (2) Baking 4 hours at 155°C dry heat, dipping at 260±3°C for 30±0.5 seconds.	Well tinned (>95% covered) No visible damage
Terminal Strength (SMD)	AEC-Q200 Test 22 AEC-Q200-006	Applied a 9.8N for TJ0603 17.7N for TJ1206 19.8N for TJ0612 29.4N for TJ1225 for 60+1 seconds	No visible damage

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version 1	Apr. 21, 2025	-	- Add TJ1206
Version 0	Oct. 17, 2023	-	- First issue of this specification

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