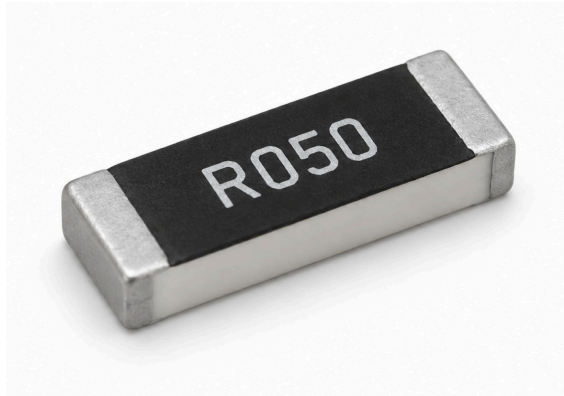


TRL Chip Resistors

Low-resistance metal film chip resistors for current sensing ·
Standard Type and Wide Terminal Type

Features

- Low resistance, low TCR and low inductance ($\leq 5\text{nH}$)
- Excellent long-term stability
- High-precision current sensing
- High power capability
- Halogen-free and lead-free
- RoHS compliant
- AEC-Q200 compliant



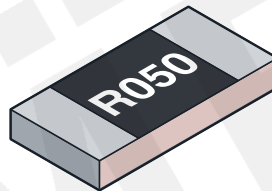
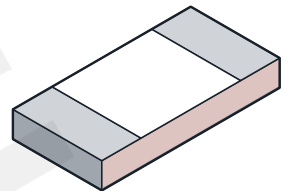
Illustration; not a photograph of a specific part.

STANDARD TYPE 0201 – 2512	WIDE TERMINAL TYPE 0508 – 1225	RATED POWER AT 70 °C 1/20W – 3W	RESISTANCE RANGE 10 mΩ – 10 Ω
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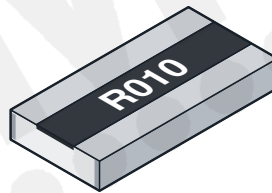
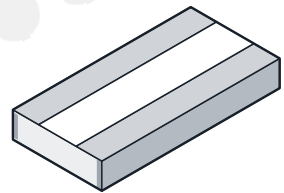
Applications

- Consumer electronics
- Computers and related products
- Communication devices
- Measuring instruments
- Industrial / power supplies
- Battery management systems

Standard Type



Wide Terminal Type



Top view

Bottom view

How to order

TRL Product type TRL series	06 Size (inch) 1206	F Tolerance ±1%	R560 Resistance 0.56Ω	P Packaging Paper taping	05 Rated power 0.5W
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Ordering example as given on the original sheet; the codes for each position are listed below.

Product type			
TRL	TRL series low-resistance metal film chip resistors		
Size (inch) ①			
01	0201	06	1206
02	0402	10	1210
03	0603	20	2010
05	0805	25	2512

Tolerance	
C	±0.25%
D	±0.5%
F	±1%
G	±2%
J	±5%
Resistance, e.g.	
R056	0.056Ω
R560	0.56Ω
1R00	1Ω

Packaging ①	
P	Paper taping (0603~1210)
Q	Paper taping (0201, 0402)
E	Embossed taping

Rated power			
Y5	0.05W	05	0.5W
Y6	0.063W	07	0.75W
01	0.10W	10	1.0W
X1	0.125W	15	1.5W
02	0.20W	20	2.0W
X2	0.25W	30	3.0W
04	0.4W		

Standard electrical specifications

Standard Type

Type	Rated power at 70 °C	Max. rated current	Max. overload current	TCR (ppm/°C)	Resistance range	
					C (0.25%)	D (0.5%), F (1.0%), G (2.0%), J (5.0%)
TRL0201	1/20W	1.00A	2.50A	±100	—	50 mΩ ≤ R < 100 mΩ
				±50	—	100 mΩ ≤ R ≤ 10 Ω
	1/10W	1.41A	3.16A	±100	—	50 mΩ ≤ R < 100 mΩ
				±50	—	100 mΩ ≤ R ≤ 10 Ω
	1/5W	2.00A	4.47A	±100	—	50 mΩ ≤ R < 100 mΩ
				±50	—	100 mΩ ≤ R ≤ 10 Ω
TRL0402	1/16W	1.12A	2.80A	±100	—	50 mΩ ≤ R < 100 mΩ
				±50	—	100 mΩ ≤ R ≤ 10 Ω
	1/8W	1.58A	3.54A	±100	—	50 mΩ ≤ R < 100 mΩ
				±50	—	100 mΩ ≤ R ≤ 10 Ω
	1/4W	2.24A	5.00A	±100	—	50 mΩ ≤ R < 100 mΩ
				±50	—	100 mΩ ≤ R ≤ 10 Ω
TRL0603	1/10W	1.41A	3.54A	±100	—	50 mΩ ≤ R < 100 mΩ
				±50	—	100 mΩ ≤ R ≤ 10 Ω
	1/5W	2.00A	4.47A	±100	—	50 mΩ ≤ R < 100 mΩ
				±50	—	100 mΩ ≤ R ≤ 10 Ω
	2/5W	2.83A	6.32A	±100	—	50 mΩ ≤ R < 100 mΩ
				±50	—	100 mΩ ≤ R ≤ 10 Ω
TRL0805	1/8W	1.79A	4.48A	±150	—	39 mΩ ≤ R < 50 mΩ
				±100	—	50 mΩ ≤ R < 100 mΩ
				±50	—	100 mΩ ≤ R ≤ 10 Ω
	1/4W	2.53A	5.66A	±150	—	39 mΩ ≤ R < 50 mΩ
				±100	—	50 mΩ ≤ R < 100 mΩ
				±50	—	100 mΩ ≤ R ≤ 10 Ω
	1/2W	3.58A	8.00A	±150	—	39 mΩ ≤ R < 50 mΩ
				±100	—	50 mΩ ≤ R < 100 mΩ
				±50	—	100 mΩ ≤ R ≤ 10 Ω
				±50	—	100 mΩ ≤ R ≤ 10 Ω

TRL0805: the C (0.25%) cells of the ±100 and ±50 ppm/°C lines are blank on the original sheet ②.

Type	Rated power at 70 °C	Max. rated current	Max. overload current	TCR (ppm/°C)	Resistance range	
					C (0.25%)	D (0.5%), F (1.0%), G (2.0%), J (5.0%)
TRL1206	1/4W	2.53A	6.33A	±150	—	39 mΩ ≤ R < 50 mΩ
				±100	—	50 mΩ ≤ R < 100 mΩ
				±50	470 mΩ ≤ R ≤ 10 Ω	100 mΩ ≤ R ≤ 10 Ω
	1/2W	3.58A	8.00A	±150	—	39 mΩ ≤ R < 50 mΩ
				±100	—	50 mΩ ≤ R < 100 mΩ
				±50	470 mΩ ≤ R ≤ 10 Ω	100 mΩ ≤ R ≤ 10 Ω
	3/4W	4.39A	9.81A	±150	—	39 mΩ ≤ R < 50 mΩ
				±100	—	50 mΩ ≤ R < 100 mΩ
				±50	470 mΩ ≤ R ≤ 10 Ω	100 mΩ ≤ R ≤ 10 Ω
	1W	5.06A	11.32A	±150	—	39 mΩ ≤ R < 50 mΩ
				±100	—	50 mΩ ≤ R < 100 mΩ
				±50	470 mΩ ≤ R ≤ 10 Ω	100 mΩ ≤ R ≤ 10 Ω
TRL1210	1/2W	3.58A	8.95A	±150	—	39 mΩ ≤ R < 50 mΩ
				±100	—	50 mΩ ≤ R < 100 mΩ
				±50	470 mΩ ≤ R ≤ 10 Ω	100 mΩ ≤ R ≤ 10 Ω
	1W	5.06A	11.32A	±150	—	39 mΩ ≤ R < 50 mΩ
				±100	—	50 mΩ ≤ R < 100 mΩ
TRL2010	3/4W	2.74A	6.85A	±50	470 mΩ ≤ R ≤ 10 Ω	100 mΩ ≤ R ≤ 10 Ω
	1.5W	3.87A	8.66A	±50	470 mΩ ≤ R ≤ 10 Ω	100 mΩ ≤ R ≤ 10 Ω
TRL2512	1W	3.16A	7.91A	±50	470 mΩ ≤ R ≤ 10 Ω	100 mΩ ≤ R ≤ 10 Ω
	2W	4.47A	10.00A	±50	470 mΩ ≤ R ≤ 10 Ω	100 mΩ ≤ R ≤ 10 Ω
	3W	5.48A	12.25A	±50	470 mΩ ≤ R ≤ 10 Ω	100 mΩ ≤ R ≤ 10 Ω

TRL1206, 10 mΩ ≤ R < 39 mΩ

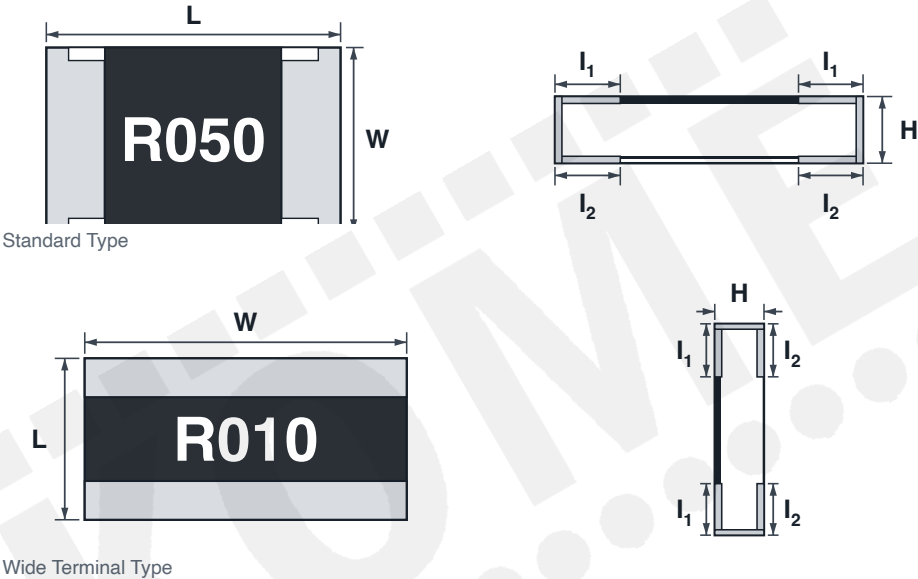
Type	Rated power at 70 °C	Max. rated current	Max. overload current	TCR (ppm/°C)	Resistance range
					F (1.0%), G (2.0%), J (5.0%)
TRL1206	1/4W	5.00A	12.50A	±200	10 mΩ ≤ R < 39 mΩ
	1/2W	7.07A	15.81A	±200	10 mΩ ≤ R < 39 mΩ

Wide Terminal Type

Type	Rated power at 70 °C	Max. rated current	Max. overload current	TCR (ppm/°C)	Resistance range			
					D (0.5%)	F (1.0%)	G (2.0%)	J (5.0%)
TRL0508	1W	10.00A	22.36A	±100	100 mΩ ≤ R ≤ 2 Ω	10 mΩ ≤ R ≤ 2 Ω		
TRL0612	1W	10.00A	22.36A	±100	100 mΩ ≤ R ≤ 2 Ω	10 mΩ ≤ R ≤ 2 Ω		
TRL1020	2W	14.14A	31.62A	±100	100 mΩ ≤ R ≤ 2 Ω	10 mΩ ≤ R ≤ 2 Ω		
TRL1225	3W	17.32A	38.73A	±100	100 mΩ ≤ R ≤ 2 Ω	10 mΩ ≤ R ≤ 2 Ω		

For non-standard parts, please contact our sales department.
Operating temperature range: -55 °C ~ +155 °C.

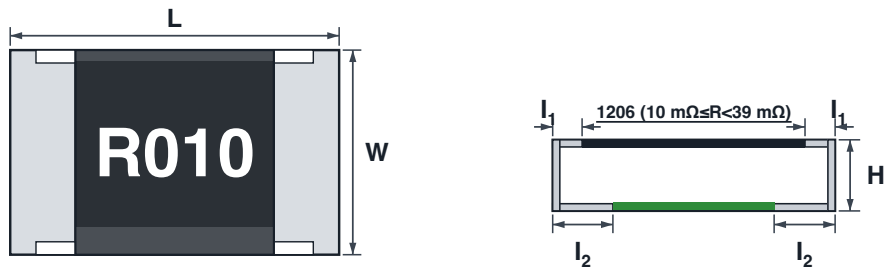
Dimensions



Type	L	W	H	I ₁	I ₂
TRL0201	0.60±0.03	0.30±0.03	0.26±0.05	0.15±0.05	0.15±0.05
TRL0402	1.00±0.10	0.50±0.05	0.35±0.05	0.20±0.10	0.25±0.10
TRL0603	1.60±0.10	0.80±0.10	0.45±0.10	0.25±0.15	0.30±0.15
TRL0805	2.00±0.10	1.25±0.10	0.55±0.10	0.35±0.20	0.40±0.20
TRL1206	3.10±0.10	1.60±0.10	0.55±0.10	0.40±0.20	0.45±0.20
TRL1210	3.10±0.10	2.50±0.15	0.55±0.10	0.50±0.20	0.50±0.20
TRL2010	5.00±0.20	2.50±0.15	0.55±0.10	0.60±0.25	0.60±0.25
TRL2512	6.30±0.20	3.20±0.20	0.55±0.10	0.65±0.25	0.65±0.25
TRL2512 (3W)	6.30±0.20	3.20±0.20	0.70±0.15	0.65±0.25	0.65±0.25
TRL0508	1.25±0.10	2.00±0.10	0.55±0.15	0.25±0.15	0.35±0.15
TRL0612	1.60±0.15	3.20±0.20	0.55±0.15	0.30±0.20	0.50±0.20
TRL1020	2.50±0.15	5.00±0.15	0.55±0.15	0.40±0.20	0.50±0.20
TRL1225	3.20±0.20	6.30±0.20	0.55±0.15	0.60±0.25	0.80±0.25

Unit: mm

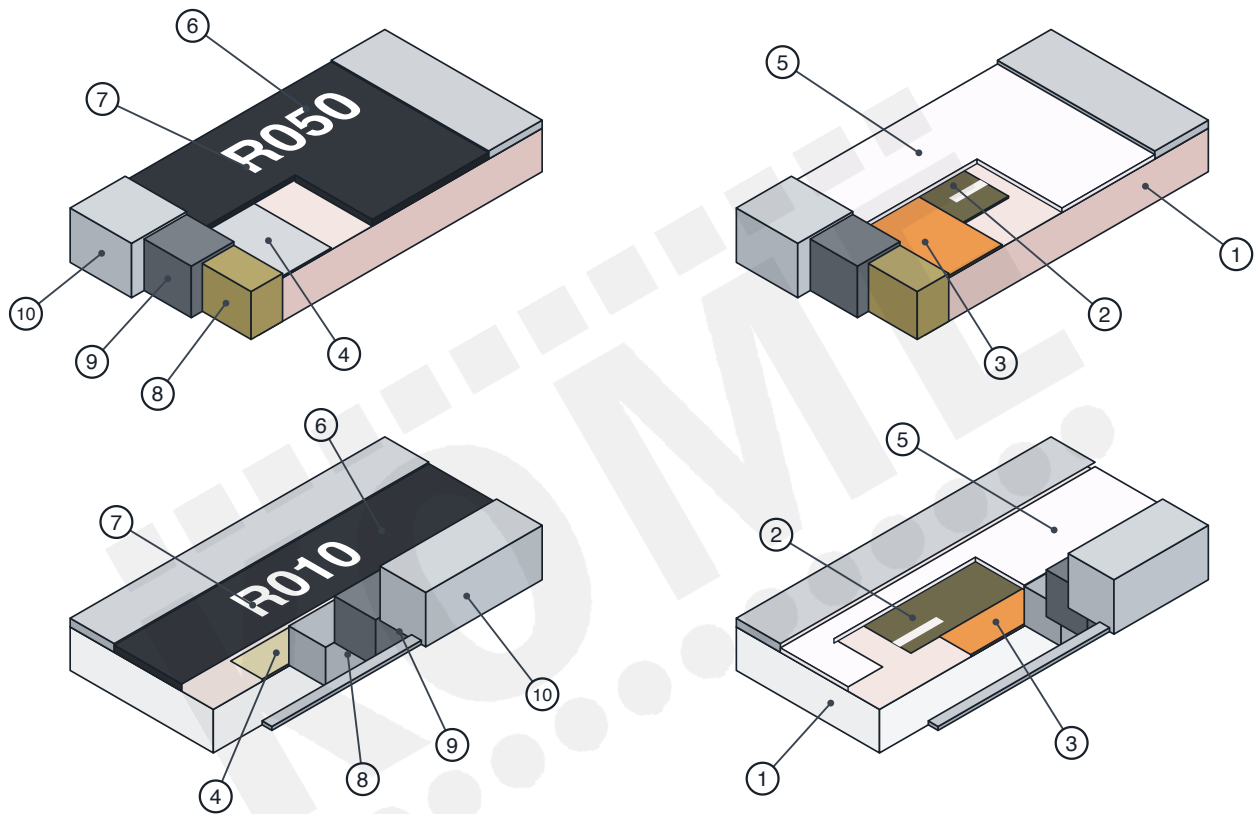
TRL1206, 10 mΩ ≤ R < 39 mΩ



Type	L	W	H	l ₁	l ₂
TRL1206 (10 mΩ ≤ R < 39 mΩ)	3.30±0.20	1.70±0.20	0.65±0.2	0.20±0.15	0.68±0.20

Unit: mm

Construction



No.	Part
1	Alumina substrate
2	Resistive layer
3	Bottom inner electrode (Cu)
4	Top inner electrode
5	Bottom protective overcoat: white (≥39 mΩ), green (<39 mΩ) ③

No.	Part
6	Top protective overcoat
7	Marking
8	Side inner electrode
9	Barrier layer (Ni)
10	Solder coating (Sn)

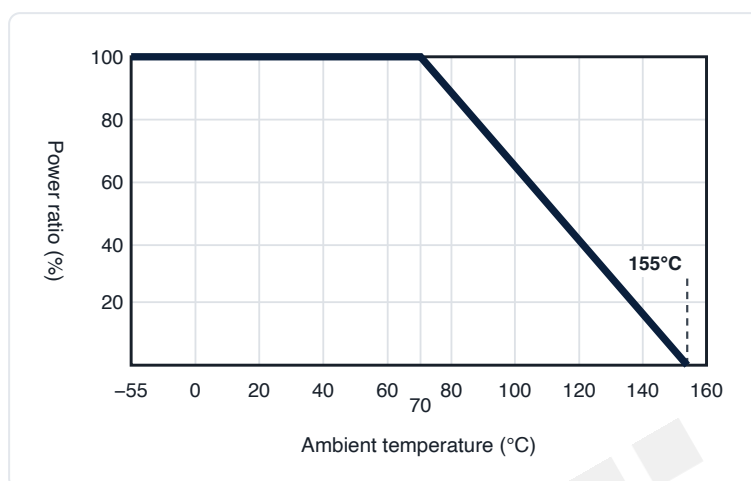
Top row: Standard Type, top and bottom side; bottom row: Wide Terminal Type, top and bottom side.

Performance characteristics

Power derating curve

Operating temperature range: -55 °C ~ +155 °C.

The power rating or current rating is based on continuous full-load operation at an ambient temperature of 70 °C. For operation at ambient temperatures above 70 °C, the load should be derated in accordance with the derating curve.



Derating curve

Rated current

Resistance range: <1 Ω ④

Rated current: the resistor shall have a DC continuous working current or an AC (rms) continuous working current, at commercial-line frequency and waveform, corresponding to the power rating, as determined by the following formula:

$I = \sqrt{P / R}$	I = Rated current (A)
	P = Rated power (W)
	R = Resistance (Ω)

Rated voltage

Resistance range: ≥1 Ω ④

Rated voltage: the resistor shall have a DC continuous working voltage or an RMS AC continuous working voltage, at commercial-line frequency and waveform, corresponding to the power rating, as determined by the following formula:

$V = \sqrt{P \times R}$	V = Rated voltage (V)
	P = Rated power (W)
	R = Nominal resistance (Ω)

Reliability tests and requirements

Test item	Test method	Procedure	Requirements
Temperature coefficient of resistance (TCR)	JIS C 5201-1 4.8 IEC 60115-1 4.8	At 25 / +125 °C; 25 °C is the reference temperature	See Standard electrical specifications
Short-time overload	JIS C 5201-1 4.13 IEC 60115-1 4.13	Standard power: 6.25 times rated power, whichever is less ⑤, for 5 seconds High power (2X/4X) ⑤ and Wide Terminal Type: 5 times rated power, whichever is less, for 5 seconds	±(1.0%+0.001Ω)
Insulation resistance	JIS C 5201-1 4.6 IEC 60115-1 4.6	Apply 100 V DC for 1 minute	≥10GΩ
Dielectric withstanding voltage	JIS C 5201-1 4.7	0805 / 0508 and above: 500 V AC for 1 minute 0201 / 0402 / 0603: 300 V AC for 1 minute	No short circuit and no visible burning
Solderability	JIS C 5201-1 4.17 IEC 60115-1 4.17	245±5 °C for 3 seconds	>95% coverage No visible damage
Resistance to soldering heat	JIS C 5201-1 4.18 IEC 60115-1 4.18	260±5 °C for 10 seconds	±(1.0%+0.001Ω) No visible damage
Leaching	JIS C 5201-1 4.18 ⑥ IEC 60068-2-58 8.2.1	260±5 °C for 30 seconds	>95% coverage No visible damage
Rapid change of temperature	JIS C 5201-1 4.19 IEC 60115-1 4.19	-55 °C to +155 °C, 300 cycles	±(1.0%+0.001Ω) No visible damage

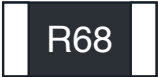
Test item	Test method	Procedure	Requirements
Damp heat with load	JIS C 5201-1 4.24 IEC 60115-1 4.24	40±2 °C, 90~95% RH; RCWV ⑦ or max. working current, whichever is less, for 1000 hours, cycled 1.5 hours ON / 0.5 hour OFF	±(1.0%+0.001Ω)
Biased humidity	MIL-STD-202 Method 103	1,000 hours; 85 °C / 85% RH, 10% of operating power. Measurement 24±4 hours after the end of the test	±(0.5%+0.05Ω) ⑧
Load life (endurance)	JIS C 5201-1 4.25 IEC 60115-1 4.25.1	70±2 °C; rated power or max. working current, whichever is less, for 1000 hours, cycled 1.5 hours ON / 0.5 hour OFF	±(1.0%+0.001Ω)
High temperature exposure	JIS C 5201-1 4.25 ⑥ IEC 60068-2-2	At 155±5 °C for 1000 hours	±(1.0%+0.001Ω)
Resistance to solvent	JIS C 5201-1 4.29	Immerse the resistor in isopropyl alcohol at 20~25 °C for 60 seconds, then leave it at room conditions for 48 hours	±(1.0%+0.001Ω) No visible damage
Terminal strength	JIS C 5201-1 4.32 AEC-Q200-006	Apply a pressing force for 10 seconds: 0201 / 0402 / 0603: 8N; 0805 / 0508 and above: 17.7N	No breakage
Bending strength	JIS C 5201-1 4.33 IEC 60115-1 4.33	Bend once for 5 seconds; D ⑨: 0201 / 0402 / 0603 / 0805 = 5mm 1206 / 1210 / 0508 / 0612 = 3mm 2010 / 2512 / 1020 / 1225 = 2mm	±(1.0%+0.001Ω) No visible damage

A temperature coefficient of resistance test down to -55 °C is available on request.

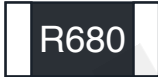
Marking



0201, 0402: no marking



0603: 3-digit marking



0805 ~ 2512: 4-digit marking



0508: no marking



0612 ~ 1225: 4-digit marking

TRL0201, TRL0402, TRL0508: no marking

TRL0603: 3-digit marking

1. E-24 values:

Resistance value	Code	Example
50mΩ ~ 99mΩ	0XX	068 = 68mΩ
100mΩ ~ 990mΩ	RXX	R68 = 680mΩ
1Ω ~ 9.9Ω	XXR	6R8 = 6.8Ω
10Ω	10R	10R = 10Ω

E-24	10	11	12	13	15	16	18	20	22	24	27	30	33	36	39	43	47	51	56	62	68	75	82	91
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2. E-96 values, excluding the values 10/11/13/15/20/75 of the E-24 series ⑩:

Standard E-96 values and 0603 resistance codes

R-value	100	102	105	107	110	113	115	118	121	124	127	130	133	137	140	143	147	150	154	158	162	165	169	174
Code	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
R-value	178	182	187	191	196	200	205	210	215	221	226	232	237	243	249	255	261	267	274	280	287	294	301	309
Code	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
R-value	316	324	332	340	348	357	365	374	383	392	402	412	422	432	442	453	464	475	487	499	511	523	536	549
Code	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
R-value	562	576	590	604	619	634	649	665	681	698	715	732	750	768	787	806	825	845	866	887	909	931	953	976
Code	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

E-96 multiplier code

Code	A	B	C	D	E	F	G	H	X	Y	Z
Multiplier	10 ⁰	10 ¹	10 ²	10 ³	10 ⁴	10 ⁵	10 ⁶	10 ⁷	10 ⁻¹	10 ⁻²	10 ⁻³

0603 coding formula for E-96 values: code = resistance code XX (from the E-96 table) followed by multiplier code X.

XX

X

Resistance code

Multiplier code

Resistance	Significant figures × multiplier	XX	X	Code
499 mΩ	499 × 10 ⁻³ Ω	68	Z	68Z

Example as printed on the original sheet.

TRL0805 ~ TRL2512: 4-digit marking

The first 3 digits are the significant figures and the 4th digit is the multiplier ⑪; “R” = decimal point. Examples ⑩:

Resistance value	Code	Example
50mΩ ~ 99mΩ (only for 0805, 1206, 1210)	R0XX	R068 = 68mΩ
100mΩ ~ 990mΩ	RXXX	R680 = 680mΩ
1Ω ~ 9.9Ω	XRXX	6R80 = 6.8Ω
10Ω	10R0	10R0 = 10Ω

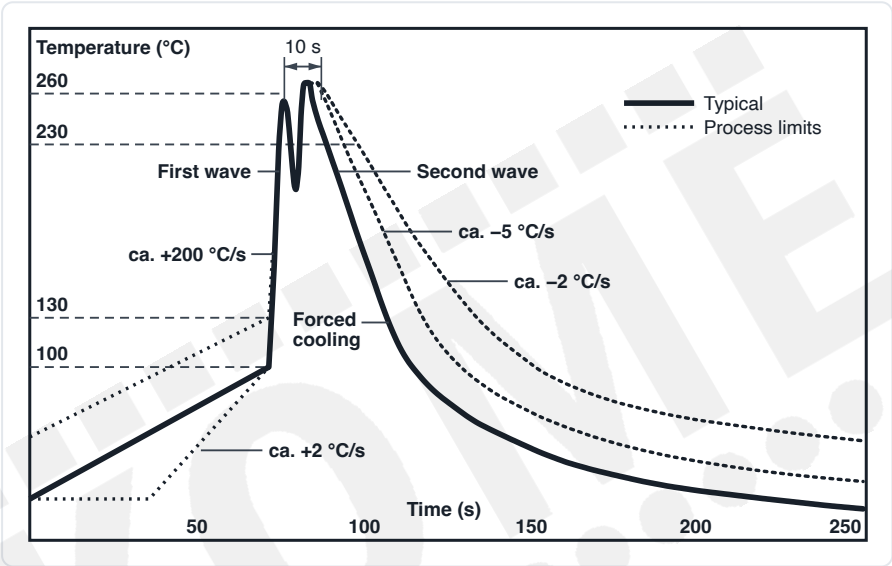
TRL0612 ~ TRL1225: 4-digit marking

The first 3 digits are the significant figures and the 4th digit is the multiplier ⑪; “R” = decimal point. Examples ⑩:

Resistance value	Code	Example
10 mΩ ~ 99 mΩ	R0XX	R010 = 10 mΩ
100 mΩ ~ 500 mΩ	RXXX	R100 = 100 mΩ

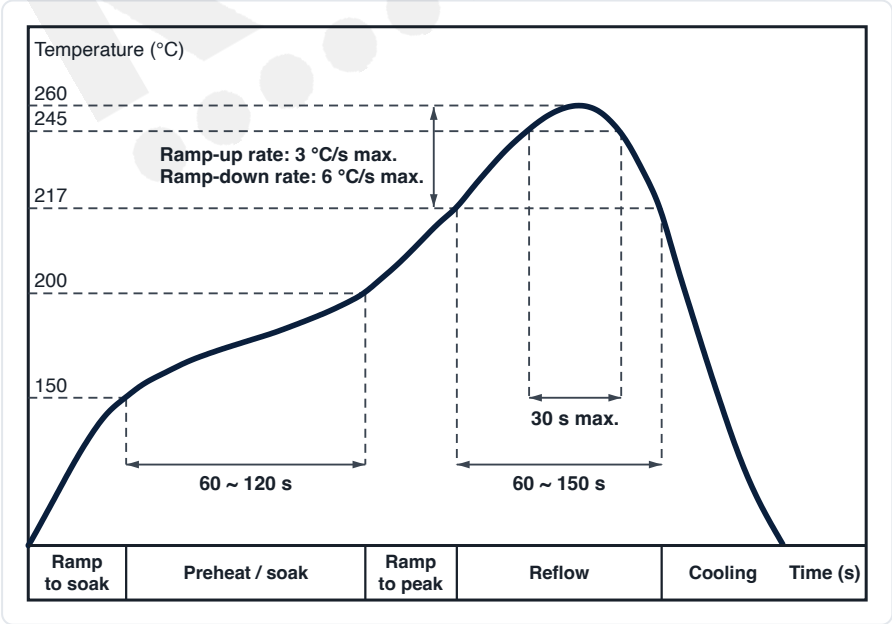
Recommended soldering parameters

Wave soldering temperature profile



Wave soldering profile

Reflow soldering temperature profile



Reflow soldering profile

Rework

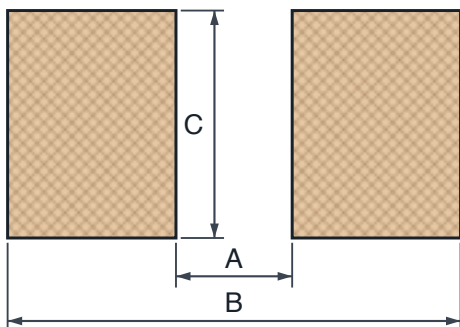
Rework temperature (hot-air equipment): 350 °C, 3~5 seconds.

Recommended reflow methods

IR, vapor-phase oven, hot-air oven.

If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Recommended land pattern



Type	A	B	C
TRL0201	0.25	0.85	0.35
TRL0402	0.50	1.60	0.70
TRL0603	0.80	2.40	1.00
TRL0805	1.30	2.90	1.45
TRL1206	2.20	4.20	1.80
TRL1206 (10 mΩ ≤ R < 39 mΩ)	1.20	4.80	1.84
TRL1210	2.00	4.40	2.70
TRL2010	3.80	6.60	2.70
TRL2512	4.90	8.10	3.40
TRL0508	0.40	1.80	2.00
TRL0612	0.50	2.60	3.20
TRL1020	1.00	4.05	5.50
TRL1225	1.20	5.20	7.00

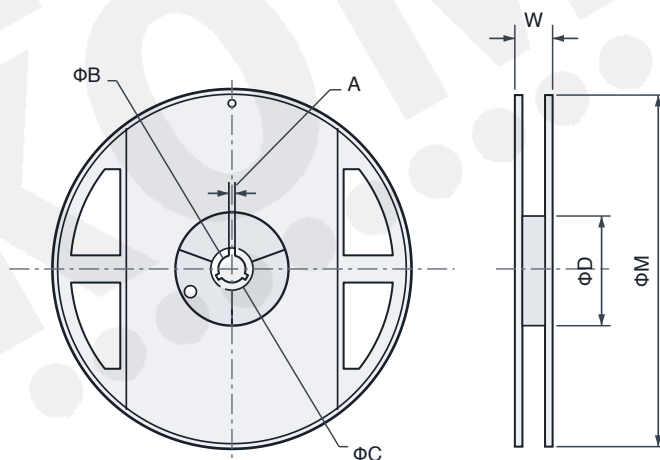
Unit: mm

Plating thickness

- Ni: ≥3 μm
- Sn (tin): ≥3 μm

Packaging

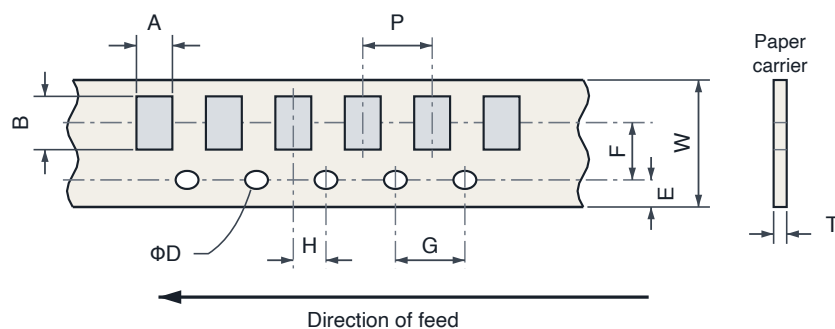
Reel dimensions



Type	Reel	Quantity per reel	A	ΦB	ΦC	ΦD	W	ΦM
TRL0201	7"	10K	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
TRL0402	7"	10K	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
TRL0603	7"	5K	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
TRL0805	7"	5K	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
TRL1206	7"	5K	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
TRL1210	7"	5K	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
TRL2010	7"	4K	2.0±0.5	13.5±1.0	21±1.0	60±1.0	16.0±2.0	178±2.0
TRL2512	7"	4K	2.0±0.5	13.5±1.0	21±1.0	60±1.0	16.0±2.0	178±2.0
TRL0508	7"	5K	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
TRL0612	7"	5K	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
TRL1020	7"	4K	2.0±0.5	13.5±1.0	21±1.0	60±1.0	16.0±2.0	178±2.0
TRL1225	7"	4K	2.0±0.5	13.5±1.0	21±1.0	60±1.0	16.0±2.0	178±2.0

Unit: mm

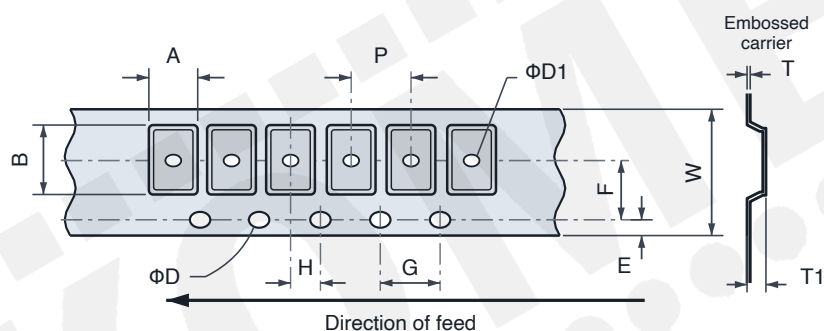
Taping specifications ⑫



Packaging	Type	A	B	W	E	F	G	H	T	ΦD	P
Paper tape	0201	0.45±0.1	0.75±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.35±0.1	1.50 +0.1/-0	2.0±0.1
	0402	0.7±0.1	1.20±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.45±0.1		2.0±0.1
	0603	1.05±0.2	1.80±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.60±0.1		4.0±0.1
	0805	1.55±0.2	2.30±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.1		4.0±0.1
	1206	1.90±0.2	3.05±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.1		4.0±0.1
	1210	2.85±0.2	3.05±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.1		4.0±0.1
	0508	1.50±0.15	2.25±0.15	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.1		4.0±0.1
	0612	2.85±0.2	3.05±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.1		4.0±0.1

Unit: mm

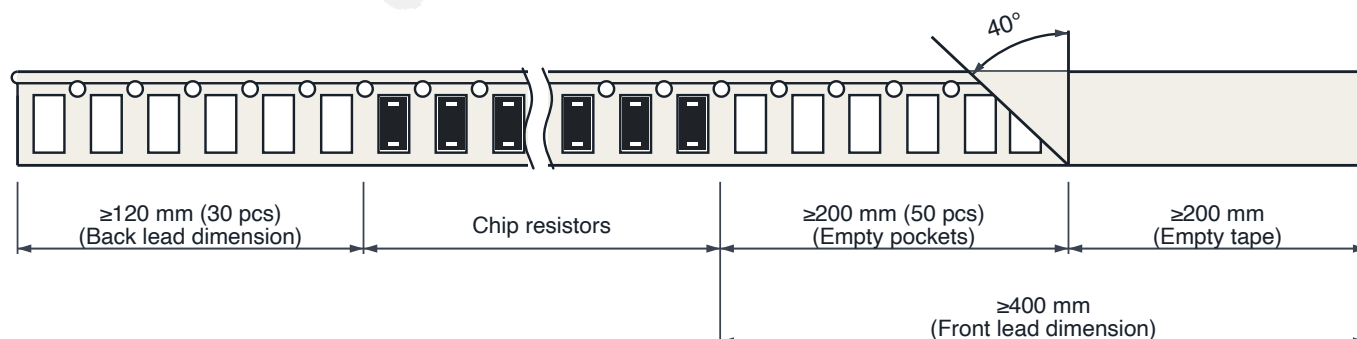
Embossed tape dimensions



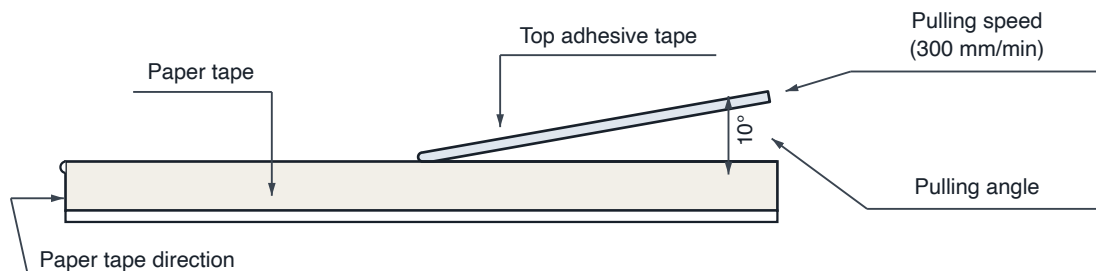
Packaging	Type	A	B	W	E	F	G	H	T	ΦD	$\Phi D1$	T1	P
Embossed tape	2010	2.80±0.2	5.60±0.2	12±0.1	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.23±0.1	1.50 +0.1/-0	1.50±0.1	0.85±0.15	4.0±0.1
	2512	3.40±0.2	6.70±0.2	12±0.1	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.23±0.1		1.50±0.1	0.85±0.15	4.0±0.1
	1020	2.80±0.2	5.60±0.2	12±0.1	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.23±0.1		1.50±0.1	0.85±0.15	4.0±0.1
	1225	3.40±0.2	6.70±0.2	12±0.1	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.23±0.1		1.50±0.1	0.85±0.15	4.0±0.1

Unit: mm

Front and back lead dimensions (leader and trailer)

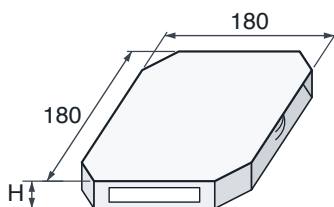


Top adhesive tape peel-off strength: 10~70 g

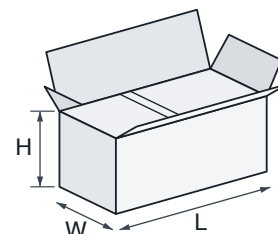


Boxes

Inner box	
Reels	H (mm)
1	13
2	24
3	36
5	60
10	113



External box ⑬			
Quantity	Length (mm)	Width (mm)	Height (mm)
25K	180	180	60
50K	180	180	110
150K	430	200	200
300K	400	400	200



Storage

Storage life: one year from the date of delivery, when stored at an ambient temperature of 25 ± 5 °C and a humidity of $60 \pm 20\%$.

Notes

① How to order: size codes are given only for the eight Standard Type sizes (01 = 0201 ... 25 = 2512); no codes are given for the Wide Terminal Type sizes 0508, 0612, 1020 and 1225. Packaging code P covers 0603~1210, while the paper-taping table also lists 0508 and 0612 — subject to manufacturer confirmation.

② Standard electrical specifications, TRL0805: the C (0.25%) cells of the ± 100 and ± 50 ppm/°C lines are printed blank, while all other lines without a C range show “-” (shown here as —) — subject to manufacturer confirmation.

③ Construction: the legend gives the bottom protective overcoat as white for ≥ 39 mΩ and green for < 39 mΩ (printed “39mR”), but the Wide Terminal Type renders, marked R010, show a white bottom overcoat — subject to manufacturer confirmation.

④ Rated current is stated for resistance < 1 Ω and rated voltage for ≥ 1 Ω, but the tables give a max. rated current for ranges up to 10 Ω and no voltage values — subject to manufacturer confirmation.

⑤ Short-time overload: “whichever is less” names only one quantity (6.25 or 5 times rated power), and “High power (2X/4X)” is not defined elsewhere on the original sheet — subject to manufacturer confirmation.

⑥ Test methods: Leaching cites JIS C 5201-1 clause 4.18, the same clause as Resistance to soldering heat, and High temperature exposure cites clause 4.25, the same clause as Load life — subject to manufacturer confirmation.

⑦ “RCWV” (Damp heat with load) is not defined on the original sheet — subject to manufacturer confirmation.

⑧ Biased humidity: the limit is printed $\pm(0.5\%+0.05\Omega)$; its absolute term is 50 times the 0.001Ω of the other tests, and the limit exceeds the nominal value of parts up to 50 mΩ — subject to manufacturer confirmation.

⑨ Bending strength: the symbol D (5mm, 3mm or 2mm depending on size) is not defined on the original sheet — subject to manufacturer confirmation.

⑩ Marking: no rule is given for 0603 E-96 values below 100 mΩ (lowest multiplier $Z = 10^3$), for 0805, 1206 and 1210 values from 39 mΩ to < 50 mΩ, for TRL1206 values from 10 mΩ to < 39 mΩ, or for Wide Terminal Type values above 500 mΩ (range up to 2 Ω) — subject to manufacturer confirmation.

⑪ Marking: the 4-digit rule says that the 4th digit is the multiplier, but every 4-digit code shown uses R as the decimal point (R0XX, RXXX, XRX, 10R0) — subject to manufacturer confirmation.

⑫ Taping: cavity B is printed 3.05 ± 0.2 for 1206, 1210 and 0612, which is less than the nominal body length of 1206 and 1210 (3.10; 3.30 for TRL1206, 10 mΩ $\leq R < 39$ mΩ) and the body width of 0612 (3.20) under Dimensions; the 0612 cavity A and B equal those of 1210 — subject to manufacturer confirmation.

⑬ Boxes: at 5K per 7-inch reel (0603~1210, 0508, 0612), 50K is 10 reels; the inner box for 10 reels is 113 mm high, but the 50K external box is 110 mm high — subject to manufacturer confirmation.