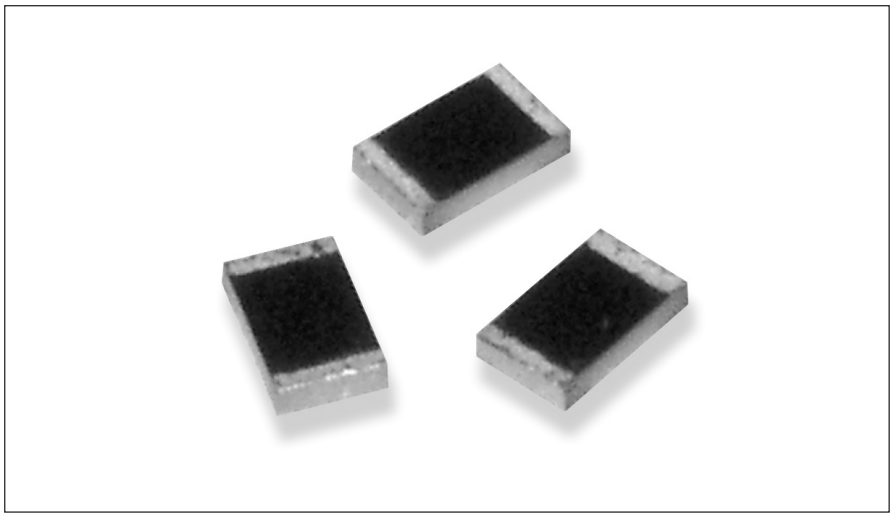
Type RP73 Series

Key Features

- High Precision - Tolerances down to 0.05%
- Low TCR - Down to 5ppm/C
- Stable High Frequency Performance
- Operating Temperature -55C ~ +155C
- Increased Power Rating - Up to 1.0W
- 200V DC Operating Voltage
- Range of Packaging options
- Terminal Finish - Electroplated 100% Matte Sn



The RP73 Resistor series is a stable Thin Film chip resistor range offering increased power dissipation, higher temperature capabilities and increased working voltages compared to the standard RN73 series.

The resistor is produced by sputtering a metal film onto high grade alumina and protecting with 3 complete printed layers.

Values are normally offered in E96 and E24 series. The RP73 Resistor has accurate and uniform physical dimensions to reduce placement problems. Due to special technologies employed to produce tight tolerances, low TCR devices at high values the RP73 series is not individually part marked.

Characteristics - Electrical

	0402 (1E)	0603 (1J)	0805 (2A)	1206 (2B)	2010 (2H)	2512 (3A)
Rated Power	0.063W	0.1W	0.125W	0.25W	0.50W	1.0W
Maximum Working Voltage	25V	50V	150V	200V	200V	200V
Maximum Overload Voltage	50V	100V	300V	400V	400V	400V
Working Temperature Range	-55°C – +155°C					
Rated Ambient Temperature	70°C					

Characteristics - Value Range

Package Size	Package Code	TCR (ppm/°C)	Resistance Range	Tolerance %
0402	1E	5ppm	49R9 - 5K0	0.05%, 0.1%, 0.5%, 1%
		10 / 15ppm	49R9 - 12K	0.05%, 0.1%, 0.5%, 1%
		15ppm	49R9 - 70K	0.1%, 0.5%, 1%
		25 / 50ppm	10R - 205K	0.1%, 0.5% 1%
0603	1J	5ppm	24R9 - 15K	0.05%, 0.1%, 0.5%, 1%
		10/15/25/50ppm	4R7 - 332K	0.05%, 0.1%, 0.5%, 1%
0805	2A	5ppm	24R9 - 30K	0.05%, 0.1%, 0.5%, 1%
		10 / 15ppm	4R7 - 511K	0.05%, 0.1%, 0.5%, 1%
		15/25/50ppm	4R7 - 1M0	0.1%, 0.5%, 1%
1206	2B	5ppm	24R9 - 50K	0.05%, 0.1%, 0.5%, 1%
		10/15/25/50ppm	4R7 - 1M0	0.05%, 0.1%, 0.5%, 1%
2010	2H	5ppm	49R9 - 30K	0.05%, 0.1%, 0.5%, 1%
		10/15ppm	24R9 - 499K	0.05%
		10/15/25/50ppm	4R7 - 1M0	0.1%, 0.5%, 1%
2512	3A	5ppm	49R9 - 50K	0.05%, 0.1%, 0.5%, 1%
		10/15ppm	24R9 - 499K	0.05%
		10/15/25/50ppm	4R7 - 1M0	0.1%, 0.5%, 1%

Literature No. 1773272
Revised 8-10

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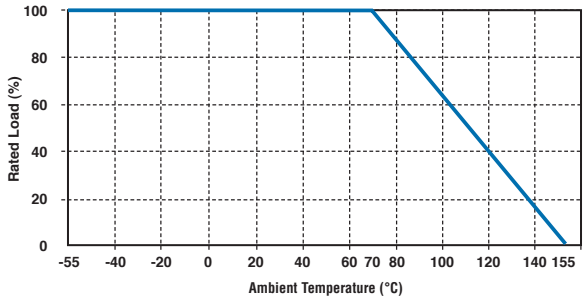
Characteristics - Environmental

Item	Requirement		Test Method
	Tol. ≤ 0.05%	Tol. > 0.05%	
Temperature Coefficient of Resistance (T.C.R.)	As Spec.		+25/-55/+25/+125/+25°C
Short Time Overload	ΔR±0.05%	ΔR±0.2%	RCWV*2.5 or Max. overload voltage for 5 seconds
	ΔR±0.2% for high power rating		
Insulation Resistance	>1000 MΩ		Apply 100VDC for 1 minute
Endurance	ΔR±0.05%	ΔR±0.2%	70±2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
	>7kΩ ΔR±0.5%		
	ΔR±0.5% for high power rating		
Damp Heat with Load	ΔR±0.05%	ΔR±0.3%	40±2°C, 90~95% R.H. Max. working voltage hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
	ΔR±0.5% for high power rating		
Bending Strength	ΔR±0.05%	ΔR±0.2%	Bending amplitude 3 mm for 10 seconds
Solderability	95% min. coverage		245±5°C for 3 seconds
Resistance to Soldering Heat	ΔR±0.05%	ΔR±0.2%	260±5°C for 10 seconds
Dielectric Withstand Voltage	By Type		Max. overload voltage for 1 minute
Thermal Shock	ΔR±0.05%	ΔR±0.25%	-55°C~150°C, 100 cycles
Low Temperature Operation	ΔR±0.05%	ΔR±0.2%	1 hour, -65°C, followed by 45 minutes of RCWV
	ΔR±0.5% for high power rating		

Reference Standards: MIL-STD-202, JIS-C 5201-1

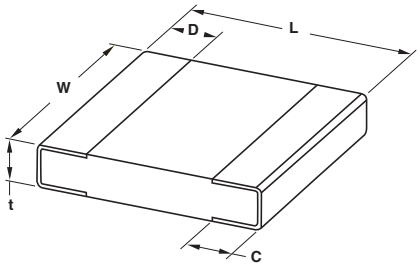
Storage Temperature: 25±3°C; Humidity < 80%RH

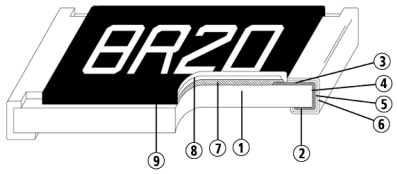
Power Derating Curve



For resistors operated in ambient temperatures above 70°C, power rating must be derated in accordance with this curve.

Dimensions





1. Alumina Substrate	4. Edge Electrode (NiCr)	7. Resistor Layer (NiCr)
2. Bottom Electrode (Ag)	5. Barrier Layer (Ni)	8. Overcoat (Epoxy)
3. Top Electrode (Ag-Pd)	6. External Electrode (Sn)	9. Marking

Part Number	L ±0.2	W ±0.2	C	D+0.2/-0.1	t ±0.1
RP73 1E	1.0	0.5	0.20 +/-0.10	0.2	0.3
RP73 1J	1.6	0.8	0.3 +/- 0.2	0.3	0.4
RP73 2A	2.0	1.25	0.4 +/- 0.2	0.3	0.5
RP73 2B	3.2	1.6	0.5 +/- 0.2	0.4	0.6
RP73 2H	4.9	2.4	0.6 +/- 0.2	0.5	0.6
RP73 3A	6.3	3.1	0.6 +/- 0.2	0.5	0.6

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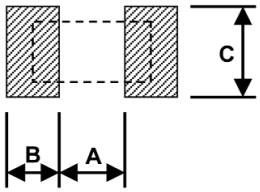
Recommend Land Pattern

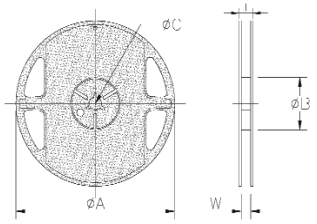


Type	A	B	C
0402	0.50	0.50	0.60±0.2
0603	0.80	1.00	0.90±0.2
0805	1.00	1.00	1.35±0.2
1206	2.00	1.15	1.70±0.2
2010	3.60	1.40	2.50±0.2
2512	4.90	1.60	3.10±0.2

Handling Recommendations

When flow soldering - the land width must be smaller than the chip resistor width to properly control the solder application.
Generally, the land width can be chip resistor width (W) x 0.7 to 0.8. When reflow soldering - solder application amount can be adjusted.
Thus the land width can be set to W x 1.0 to 1.3.

Packaging Quantity & Reel Specifications



Type	øA	øB	øC	W	T	Paper Tape (EA)	Embossed Plastic Tape (EA)
0402	178.0 ± 1.0	60.0 + 1.0	13.5 ± 0.7	9.5 ± 1.0	11.5 ± 1.0	5,000 / 1,000 / 250	-
0603	178.0 ± 1.0	60.0 + 1.0	13.5 ± 0.7	9.5 ± 1.0	11.5 ± 1.0	5,000 / 1,000 / 250	-
0805	178.0 ± 1.0	60.0 + 1.0	13.5 ± 0.7	9.5 ± 1.0	11.5 ± 1.0	5,000 / 1,000 / 250	-
1206	178.0 ± 1.0	60.0 + 1.0	13.5 ± 0.7	9.5 ± 1.0	11.5 ± 1.0	5,000 / 1,000 / 250	-
2010	178.0 ± 1.0	60.0 + 1.0	13.5 ± 0.7	13.5 ± 1.0	15.5 ± 1.0	-	4,000 / 1,000
2512	178.0 ± 1.0	60.0 + 1.0	13.5 ± 0.7	13.5 ± 1.0	15.5 ± 1.0	-	4,000 / 1,000

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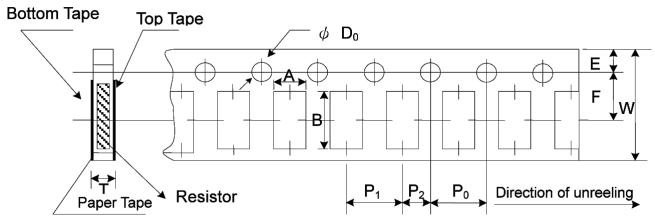
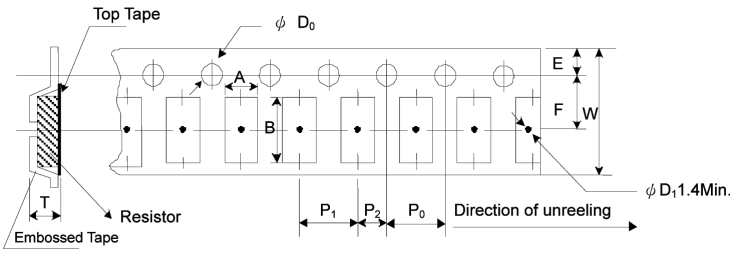
Type RP73 Series

Paper Tape Specification



Type	A	B	W	E	F	P_0	P_1	P_2	øD_0	T
0402	0.70±0.05	1.16±0.05	8.00±0.10	1.75±0.05	3.5±0.05	4.00±0.10	2.00±0.05	2.00±0.05	1.55±0.05	0.40±0.03
0603	1.10±0.05	1.90±0.05	8.00±0.10	1.75±0.05	3.5±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.55±0.05	0.60±0.03
0805	1.60±0.05	2.37±0.05	8.00±0.10	1.75±0.05	3.5±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.55±0.05	0.75±0.05
1206	2.00±0.05	3.55±0.05	8.00±0.10	1.75±0.05	3.5±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.55±0.05	0.75±0.05

Embossed Plastic Tape Specifications



Type	A	B	W	E	F	P_0	P_1	P_2	øD_0	T
2010	2.85±0.10	5.45±0.10	12.0±0.10	1.75±0.10	5.5±0.05	4.00±0.05	4.00±0.10	2.00±0.05	1.50+0.10	1.00±0.20
2512	3.40±0.10	6.65±0.10	12.0±0.10	1.75±0.10	5.5±0.05	4.00±0.05	4.00±0.10	2.00±0.05	1.50+0.10	1.00±0.20

How to Order

RP73	C	2A	1K0	B	TG
Common Part	**Temp. Coefficient**	**Package Size**	**Resistor Value**	**Tolerance**	**Packaging**
RP73 - SMD Precision High Power, High Temperature	A - ±5ppm/°C C - ±10ppm/°C D - ±15ppm/°C F - ±25ppm/°C G - ±50ppm/°C	1E - 0402 1J - 0603 2A - 0805 2B - 1206 2H - 2010 3A - 2512	100R (100 ohms) 1K0 (1000 ohms) 10K (10,000 ohms) 100K (100,000 ohms) 1M0 (1,000,000 ohms)	A - ±0.05% B - ±0.1% D - ±0.5% F - ±1%	TG - Cut Tape (250 pcs) TDF - Reel (1000 pcs) TD - Reel (5000 pcs) TDG - Reel (250 pcs) TE - Reel (4000 pcs) 2H & 3A only

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