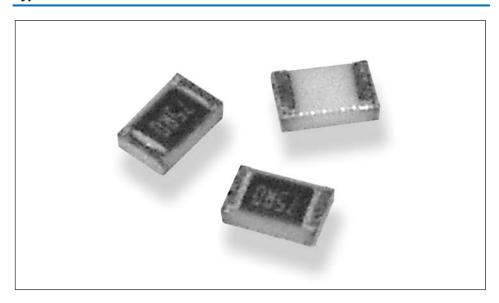


### **Key Features**

- High precision -TCR 5ppm/°C and 10ppm/°C
- Tolerance down to 0.01%
- Thin film (nichrome)
- Choice of packages
- Stable high frequency performance
- Temperature range -55°C to +155°C

### **Applications**

- **■** Communications
- Instrumentation
- Industrial controls
- Medical



The RN73 series is a high stability precision chip resistor range offering various power dissipations relating to chip size, TCR's down to 5ppm/°C and resistance tolerances to 0.01%. The resistor is produced with three sputtered layers giving optimum performance. Values are restricted to the E96 and E24 value grids. The RN73 has accurate and uniform physical dimensions to facilitate placement.

#### **Characteristics - Electrical**

				040	02					06	03					080	05		
Rated Power @ 70°C:				0.06	3W			0.063W						0.1	W				
Resistance Range (Ohms) N	Vin:	49R9	49R9	49R9	49R9	49R9	49R9	24R9	24R9	24R9	4R7	24R9	4R7	24R9	24R9	24R9	4R3	24R9	4R3
N	/lax:	5K0	15K	5K0	15K	5K0	15K	15K	100K	15K	332K	15K	332K	30K	200K	30K	511K	30K	511K
Tolerance (%):		0.	01	0.0	05	0	.1	0.	01	0.	05	0.	.1	0.	.01	0.0	05	0.	.1
Code Letter:			L	P	4	Е	3	L	-	A	Ą	Е	3		L	,	Ą	Е	3
Selection Series:				E24 8	& E96					E24 8	ß E96					E24 8	& E96		
Temp. Coefficient (ppm/°C):		5	10	5	10	5	10	5	10	5	10	5	10	5	10	5	10	5	10
Code Letter:		Α	С	Α	С	Α	С	Α	С	Α	С	Α	С	Α	С	Α	С	Α	С
Limiting Element Voltage:				25	δV					50	V					10	0V		
Max. Overload Voltage:				50	V					100	VC					20	0V		
Operating Temp. Range:				-55 to	+155°(	0				-55 to	+155°(	)				-55 to	+155°	С	
Climatic Category (°C):				55/1	25/55					55/1	25/55					55/1	25/55		
Insulation Resistance Dry Mi	n:			1000ΜΩ		1000ΜΩ			1000ΜΩ										
Stability:			0.5%			0.5%				0.5%									

				120	06					12	10					201	0		
Rated Power @ 70°C:				0.12	25W					0.2	W					0.25	W		
Resistance Range (Ohms) Mi	in: 2	24R9	24R9	24R9	4R7	24R9	4R7	24R9	24R9	24R9	4R7	24R9	4R7	24R9	24R9	24R9	4R7	24R9	4R7
Ma	ax:	50K	562K	50K	1M0	50K	1M0	50K	500K	50K	1M0	50K	1M0	100K	500K	100K	1M0	100K	1M0
Tolerance (%):		0.	01	0.0	05	0.	.1	0.	01	0.0	05	0.	.1	0.	01	0.0	)5	0.	.1
Code Letter:			L	P	١	Е	3	I	-	A	١	Е	3		L	A	Ą	E	3
Selection Series:				E24 8	& E96					E24 8	k E96				E24 & E96				
Temp. Coefficient (ppm/°C):		5	10	5	10	5	10	5	10	5	10	5	10	5	10	5	10	5	10
Code Letter:		Α	С	Α	С	Α	С	Α	С	Α	С	Α	С	Α	С	Α	С	Α	С
Limiting Element Voltage:				150	V					15	0V					150	V		
Max. Overload Voltage:				300	V					30	0V					30	0V		
Operating Temp. Range:			-!	55 to +	-155°C	;			-	-55 to -	+155°(	)				-55 to	+155°	С	
Climatic Category (°C):				55/12	5/55					55/12	25/55			55/125/55					
Insulation Resistance Dry Min	:			1000	ΜΩ					1000	ΩΜΩ			1000ΜΩ					
Stability:				0.5	5%					0.8	5%		0.5%						



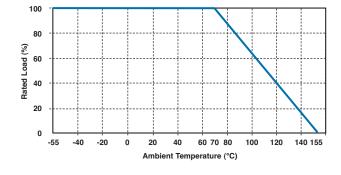
				25	12		
Rated Power @ 70°C:				0.5	5W		
Resistance Range (Ohms)	Min:	24R9	24R9	24R9	4R7	24R9	4R7
1	Max:	100K	500K	100K	1M0	100K	1M0
Tolerance (%):		0.	01	0.0	05	0	.1
Code Letter:			L	P	4	E	3
Selection Series:				E24 8	& E96		
Temp. Coefficient (ppm/°C):		5	10	5	10	5	10
Code Letter:		Α	С	Α	С	Α	С
Limiting Element Voltage:				15	0V		
Max. Overload Voltage:				30	0V		
Operating Temp. Range:				-55 to	+155°	С	
Climatic Category (°C):				55/1	25/55		
Insulation Resistance Dry M	in:			100	0Μ0		
Stability:				0.5	5%		

# **Characteristics - Environmental**

	R	equirement	Test Method
	Tol. ≤ 0.05%	Tol. > 0.05%	
Temperature Coefficient of Resistance (TCR):	As per TCRs specifi	ed in value range table on pag	ge 1 +25/-55/+25/+125/+25°C
Short Time Overload:	ΔR ±0.05%	ΔR ±0.2%	RCWV* 2.5 or max. overload
Short Time Overload.	ΔR ±0.2	2% for high power rating	voltage for 5 seconds
Insulation Resistance:		>1000MΩ	Apply 100VDC for 1 minute
	ΔR ±0.05%	ΔR ±0.2%	70 ±2°C, max. working voltage
Endurance:		kΩ ΔR ±0.5%	for 1000hrs with 1.5hrs
	ΔR ±0.5%	for high power rating	"ON" and 0.5hrs "OFF"
Damp Heat with Leads	ΔR ±0.05%	ΔR ±0.3%	40 ±2°C, 90 - 95% R.H. max. working voltage
Damp Heat with Load:	ΔR ±0.5%	for high power rating	hrs with 1.5hrs "ON" and 0.5hrs "OFF"
Bending Strength:	ΔR ±0.05%	ΔR ±0.2%	Bending amplitude 3mm 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 to +150°C, 100 cycles
T	ΔR ±0.05%	ΔR ±0.2%	4 have 0500 fallowed by 45 minutes of DOWN
Low Temperature Operation:	ΔR ±0.5%	for high power rating	1 hour, -65°C, followed by 45 minutes of RCWV

Reference Standards: MIL-STD-202, JIS-C 5201-1 Storage Temperature: 25±3°C; Humidity < 80%RH

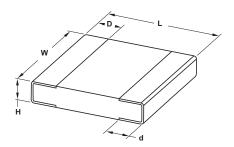
### **Power Derating Curve**



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



#### **Dimensions**



Part Number	L	W	Н	D	d	Weight (g) 1000 pieces
RN73 1E (0402)	1.00+/-0.05	0.50+/-0.05	0.30+/-0.05	0.20+/-0.10	0.20+/-0.10	0.54
RN73 1J (0603)	1.55+/-0.10	0.80+/-0.10	0.45+/-0.10	0.30+/-0.20	0.30+/-0.20	1.83
RN73 2A (0805)	2.00+/-0.15	1.25+/-0.15	0.55+/-0.10	0.30+/-0.20	0.40+/-0.25	4.71
RN73 2B (1206)	3.05+/-0.15	1.55+/-0.15	0.55+/-0.10	0.42+/-0.20	0.35+/-0.25	9.02
RN73 2E (1210)	3.10+/-0.15	2.40+/-0.15	0.55+/-0.10	0.40+/-0.20	0.55+/-0.25	10
RN73 2H (2010)	4.90+/-0.15	2.40+/-0.15	0.55+/-0.10	0.60+/-0.30	0.50+/-0.25	23.61
RN73 3A (2512)	6.30+/-0.15	3.10+/-0.15	0.55+/-0.10	0.60+/-0.30	0.50+/-0.25	38.08

# Marking Codes - Case Sizes 0805 to 2512

# **IEC 4 Digit Marking**

Resistance:	100Ω	2.2ΚΩ	10ΚΩ	49.9ΚΩ	100ΚΩ
Marking Code:	1000	2201	1002	4992	1003

# Case Sizes 0603

#### E24 3 Digit Marking - Example: $101=100\Omega$ $102=1K\Omega$

			•										
	E24	10	11	12	13	15	16	18	20	22	24	27	30
_		33	36	39	43	47	51	56	62	68	75	82	91

E96 3 Digit Marking - Examples: 14C=13K7 $\Omega$ , 13C=13K3 $\Omega$ , 68B=4K99 $\Omega$ , 68X=49.9 $\Omega$ 

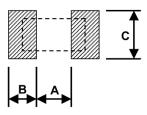


#### 0603 E96 Marking Code Table

Code	E:	96	Code	E	96	Code	E:	96	Code	Е	96		
01	10	00	25	1	78	49	3.	16	73	5	62		
02	10	02	26	18	32	50	32	24	74	5	76		
03	10	05	27	18	87	51	33	32	75	5	90		
04	10	07	28	19	91	52	34	10	76	6	04		
05	1	10	29	19	96	53	34	18	77	6	19		
06	1	13	30	20	00	54	3	57	78	6	34		
07	1	15	31	20	05	55	36	35	79	6-	49		
08	1	18	32	2	10	56	37	74	80	6	65		
09	12	21	33	2	15	57	38	33	81	6	81		
10	12	24	34	2:	21	58	39	92	82	6	98		
11	12	27	35	2:	26	59	40	)2	83	7	15		
12	10	30	36	23	32	60	4	12	84	7:	32		
13	10	33	37	23	37	61	42	22	85	7:	50		
14	10	37	38	24	43	62	43	32	86	7	68		
15	14	40	39	24	49	63	44	12	87	78	87		
16	14	43	40	2	55	64	4!	53	88	8	06		
17	14	47	41	20	61	65	46	64	89	8:	25		
18	15	50	42	20	67	66	47	75	90	8-	45		
19	15	54	43	2	74	67	48	37	91	8	66		
20	15	58	44	28	30	68	49	99	92	8	87		
21	16	62	45	28	37	69	5	11	93	9	09		
22	16	35	46	29	94	70	52	23	94	9:	31		
23	16	69	47	301		71	536		536 95		95	953	
24	17	74	48	309		72	549		96	976			
Code	Α	В	С	D	Е	F	G	Н	Х	Υ	Z		
Multiplier	10°	10¹	10 <sup>2</sup>	10³	10⁴	10⁵	10 <sup>6</sup>	10 <sup>7</sup>	10-1	10-2	10 <sup>-3</sup>		

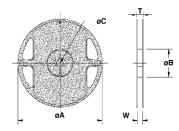


# **Recommend Land Pattern**



Туре	Α	В	С
RN73 1E (0402)	0.5	0.5	0.60 ±0.2
RN73 1J (0603)	0.8	1.0	0.90 ±0.2
RN73 2A (0805)	1.0	1.0	1.35 ±0.2
RN73 2B (1206)	2.0	1.15	1.70 ±0.2
RN73 2E (1210)	2.0	1.15	2.50 ±0.2
RN73 2H (2010)	3.6	1.4	2.50 ±0.2
RN73 3A (2512)	4.9	1.6	3.10 ±0.2

# **Packaging Quantity & Reel Specifications**

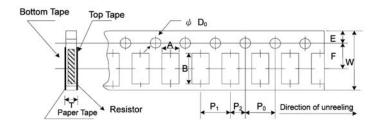


Туре	øΑ	øB	øC	W	Т	Paper Tape (EA)	Embossed Plastic Tape (EA)
RN73 1E (0402)	178.0 ±1.0	60.0 +1.0	13.5 ± 0.7	9.5 ±1.0	11.5 ±1.0	*250 / 1000 / 5000	-
RN73 1J (0603)	178.0 ±1.0	60.0 +1.0	13.5 ± 0.7	9.5 ±1.0	11.5 ±1.0	*250 / 1000 / 5000	-
RN73 2A (0805)	178.0 ±1.0	60.0 +1.0	13.5 ± 0.7	9.5 ±1.0	11.5 ±1.0	*250 / 1000 / 5000	-
RN73 2B (1206)	178.0 ±1.0	60.0 +1.0	13.5 ± 0.7	9.5 ±1.0	11.5 ±1.0	*250 / 1000 / 5000	-
RN73 2E (1210)	178.0 ±1.0	60.0 +1.0	13.5 ± 0.7	9.5 ±1.0	11.5 ±1.0	*250 / 1000 / 5000	-
RN73 2H (2010)	178.0 ±1.0	60.0 +1.0	13.5 ± 0.7	13.5 ±1.0	15.5 ±1.0	-	4000
RN73 3A (2512)	178.0 ±1.0	60.0 +1.0	13.5 ± 0.7	13.5 ±1.0	15.5 ±1.0	-	4000

<sup>\* 250</sup> piece packs supplied in sealed bags of cut tape length



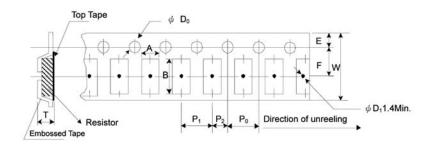
## **Paper Tape Specification**



Туре	Α	В	W	E	F	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	øD₀	Т
RN73 1E (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
RN73 1J (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
RN73 2A (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
RN73 2B (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
RN73 2E (1210)	2.75 ±0.05	3.40 ±0.05	8.00 ±0.10	1.75 ±0.05	3.5 ±0.05	4.00 ±0.05	4.00 ±0.10	2.00 ±0.05	1.60 ±0.10	0.75 ±0.05

#### **Embossed Plastic Tape Specifications**

**How to Order** 



Туре	Α	В	W	E	F	Po	P <sub>1</sub>	P <sub>2</sub>	øD₀	T
RN73 2H (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
RN73 3A (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

#### **RN73** C 100K В **TDF** 2A **Tolerance Packaging Common Part** Temp. Coefficient **Resistor Value** Package Size TG - 250 Cut tape length (1E, 1J, 2A, 2B) 1E - 0402 \* 1J - 0603 100R TDF -1000 REEL A - ±0.05% \*2A - 0805 (100 ohms) (1E, 1J, 2A, 2B) RN73 - High A - ±5ppm/°C 2B - 1206 1K0 \*B - ±0.1% TD - 5000 REEL precision resistors (1000 ohms) (1E, 1J, 2A, 2B, 2E) \*C - ±10ppm/°C (RoHS compliant) 2E - 1210 L - ±0.01% TDG - 250 REEL (1E, 1J, 2A only) 100K 2H - 2010 (100,000 ohms) 3A - 2512 TE - 4000 REEL \* Preferred stock item \* Preferred stock item \* Preferred stock item

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