

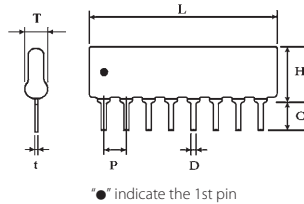
Feature

- Miniature, high density packaging
- High reliability R_{02} paste

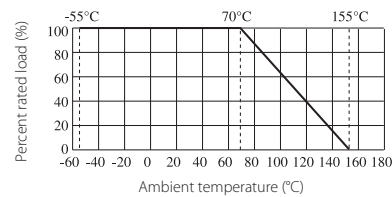
Application

- Control circuit V.C.R.
- Air-conditioner
- Computer, color TV

Dimension (mm)



Derating Curve



Type	Dimension of L(Max.)											H max	C ^{+0.5} -0.3	T max	t±0.05	P±0.2	D±0.1
	4pin	5pin	6pin	7pin	8pin	9pin	10 pin	11 pin	12 pin	13 pin	14 pin						
RNL	10.2	12.7	15.3	17.8	20.4	22.9	25.4	28.0	30.5	33.1	35.6	5.08	3.3	2.5	0.25	2.54	0.5
RPL	10.2	12.7	15.3	17.8	20.4	22.9	25.4	28.0	30.5	33.1	35.6	5.08	3.3	2.5	0.25	2.54	0.5
RNM	10.2	12.7	15.3	17.8	20.4	22.9	25.4	28.0	30.5	33.1	35.6	6.35	3.3	2.5	0.25	2.54	0.5
RPH	10.2	12.7	15.3	17.8	20.4	22.9	25.4	28.0	30.5	33.1	35.6	8.89	3.3	2.5	0.25	2.54	0.5

Circuit Structure

A	B	C	D	E
RNL/RPL/RNM/RPH $R1=R2=...Rn$	RNL/RPL/RNM/RPH $R1=R2=...Rn$	RNL $R1=R2=Rn$	RNL $R1=R2=...Rn$ $R1 \neq R2 \neq ...Rn$	RNL $R1=R2 \text{ or } R1 \neq R2$
G	H	L	P	R
RNL $R1=R2=...Rn$	RNL 	RNL 	RNL 	RNL/RPL/RNM/RPH $R1=R2 \text{ or } R1 \neq R2$

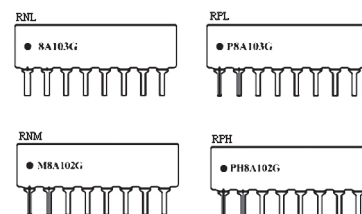
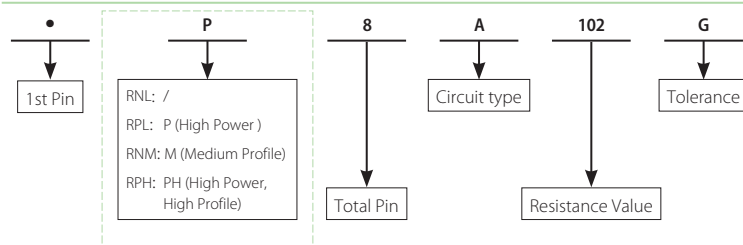
* Special circuit is available case by case.

Package Power Ratings

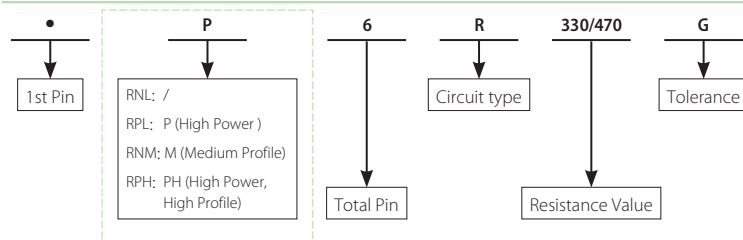
Type	4PIN	5PIN	6PIN	7PIN	8PIN	9PIN	10PIN	11PIN	12PIN	13PIN	14PIN
RPL	0.5W	0.63W	0.75W	0.88W	1.0W	1.13W	1.25W	1.38W	1.5W	1.63W	1.75W
RNM	0.6W	0.75W	0.9W	1.05W	1.20W	1.35W	1.50W	1.65W	1.80W	1.95W	2.10W
RPH	0.8W	1.0W	1.2W	1.4W	1.6W	1.8W	2.0W	2.2W	2.4W	2.6W	2.8W

Type	Power Rating 70°C	Max. Working Voltage	Max. Overload Voltage	Dielectric Withstanding Voltage	Resistance Range	Tolerance	Operating Temperature
RNL	B type: 0.2W Others: 0.125W	100V	150V	200V	R Type: 100Ω~10K Others: 10Ω~1MΩ	±2% ±5%	-55°C~+155°C
RPL	A:0.2W	100V	150V	200V	10Ω~1MΩ	±2% ±5%	-55°C~+155°C
	B:0.3W				10Ω~1MΩ		
RNM	R:0.2W	100V	150V	200V	100Ω~10KΩ	±2% ±5%	-55°C~+155°C
	A:0.25W				10Ω~1MΩ		
RPH	B:0.4W	100V	150V	200V	10Ω~1MΩ	±2% ±5%	-55°C~+155°C
	R:0.25W				100Ω~10KΩ		
RPH	A:0.3W	100V	150V	200V	10Ω~1MΩ	±2% ±5%	-55°C~+155°C
	B:0.5W				10Ω~1MΩ		
	R:0.3W				100Ω~10KΩ		

Marking (Single Value)



Marking(Dual Value):



Dual Value (R1/R2)(Ohm)

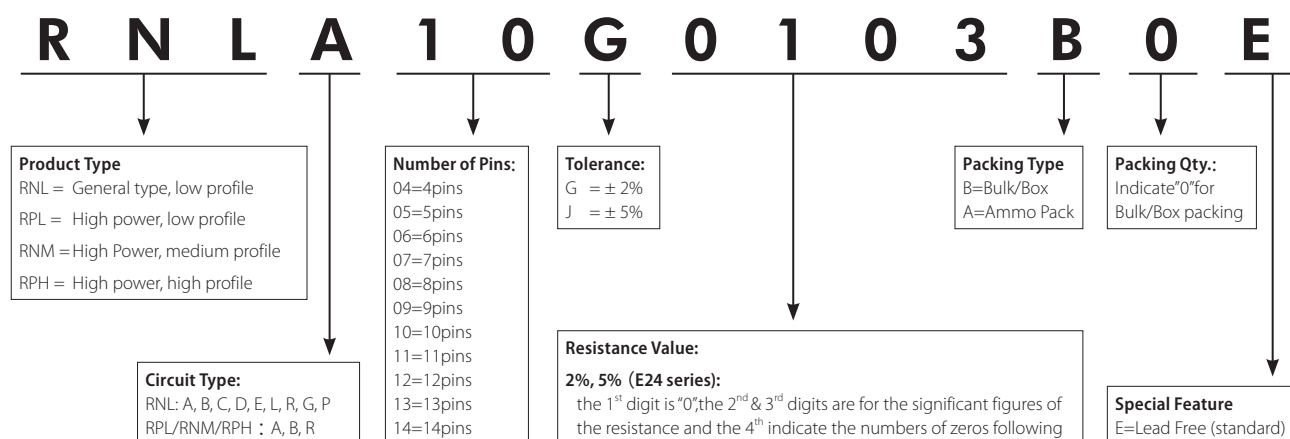
160 / 240	330 / 390
180 / 390	330 / 470
220 / 270	1.5K / 3.5K
220 / 330	3.0K / 6.2K

* Special value is available case by case.

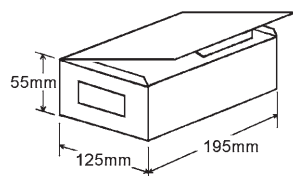
Performance Specification

Test Item	Evaluation Criteria			
Temperature	RNL	RPL	RNM	RPH
	50Ω~1MΩ: ±200PPM/°C <50Ω&>1MΩ: ±250PPM/°C	50Ω~1MΩ: ±100PPM/°C <50Ω&>1MΩ: ±250PPM/°C		
Short-time overload	ΔR/R≤±(0.5%+0.1Ω)	ΔR/R≤±(0.25%+0.1Ω)		
Insulation resistance	≥10,000MΩ			
Dielectric withstanding voltage	No Evidence of flashover,arcing or insulation breakdown			
Terminal strength	ΔR/R≤±(0.5%+0.1Ω)	ΔR/R≤±(0.25%+0.1Ω)		
Soldering heat	ΔR/R≤±(0.5%+0.1Ω)			
Solderability	Coverage must be over 95%.			
Thermal shock	ΔR/R≤±(0.5%+0.1Ω)	ΔR/R≤±(0.25%+0.1Ω)		
Rapid change of temperature	ΔR/R≤±(0.5%+0.1Ω)			
Load life in humidity	ΔR/R≤±(3%+0.1Ω)	ΔR/R≤±(0.5%+0.1Ω)		
Load life	ΔR/R≤±(3%+0.1Ω)	ΔR/R≤±(1%+0.1Ω)		

Ordering Procedure (Example: RNL A type 10 PIN 2% 10KΩ B/B)



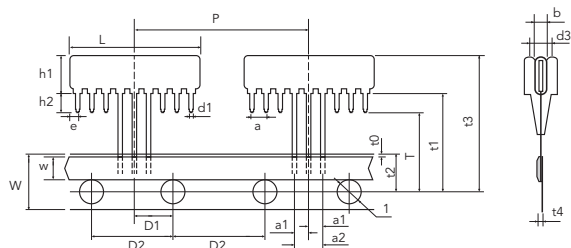
Standard Packing of Resistor Network



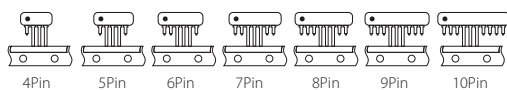
Type	Pins	Weight of 1,000pcs (g)	Qty.per Bag	Qty.per Box	Qty.per Carton
RNL RPL	4	210	200	1,000	30,000
RNM		240	100		
RPH		330			
RNL RPL	5	250	200	1,000	30,000
RNM		300	100		
RPH		410			
RNL RPL	6	320	200	1,000	30,000
RNM		360	100		
RPH		490			
RNL RPL	7	360	200	1,000	30,000
RNM		420	100		
RPH		570			
RNL RPL	8	430	200	1,000	30,000
RNM		480	100		
RPH		660	50		

Type	Pins	Weight of 1,000pcs (g)	Qty.per Bag	Qty.per Box	Qty.per Carton
RNL RPL	9	450	200	1,000	30,000
RNM		540	50	500	15,000
RPH		760			
RNL RPL	10	530	200	1,000	30,000
RNM		610	50	500	15,000
RPH		870			
RNL RPL	11	600	100	500	15,000
RNM		670	50		
RPH		950			
RNL RPL	12	650	100	500	15,000
RNM		730	50		
RPH		1030			
RNL RPL	13	710	100	500	15,000
RNM		790	50		
RPH		1130			
RNL RPL	14	770	100	500	15,000
RNM		850	50		
RPH		1210			

Ammo Pack of Resistor Network

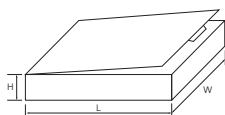


* ... n=Pin Count



Dimension (mm)		Dimension (mm)	
H1	Max 5.08	t0	2.0Max
L	Max 2.54*n	t1	18.99±0.5
a	2.54±0.25	t2	9.0±0.5
d1	0.5±0.1	t3	24.46Max
P	25.4±1.0	t4	1.5max
W	18±0.5	l	φ4.0±0.3
w	5.0min	h2	3.0±0.5
P1	6.35±0.7	a1	2.54±0.25
P2	12.7±0.3	a2	5.08±0.3
B	Max 2.49	d3	2.0Max
T	16±0.5	/	/

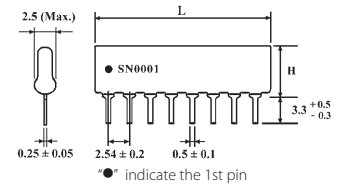
Packing quantity



The inner box sizes:
 4~9pin: 320(L) × 207(W) × 40(H)mm
 10pin: 315(L) × 295(W) × 40(H)mm

Pins	Qty.per Box	Qty.per Carton
4~10	1,000	12,000

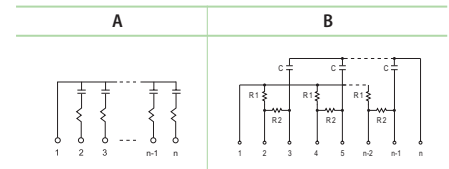
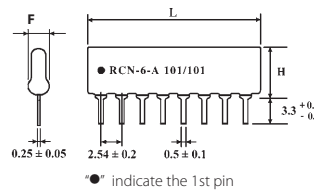
Special Network-SIP Series



Type	SN0001	SN0002	SN0003	SN0004
Circuit Structure	R1=500Ω ±5% R2=40K ±5% (TO: R3: ±1%) R3=10K ±5% R4=100-75K ±5% R6=R7=100K ±5% (R6 TO R7: ±1%)	R1=33KΩ ±5% R2=22KΩ ±5%	R3=9K1 R1=120K R14=24K R4=30K R1=11K R8=14K R15=1K5 R5=R6=7K5 R10=R11=R12=20K R13=2K R7=52K5	R1=520Ω R2=700Ω R3=121Ω R4=249Ω R5=1K33 R6=619K R7=174Ω R8=75Ω
Dimension of L(max)	10PINS:25.4mm	10PINS:25.4mm	10PINS:43.2mm	9PINS:22.9mm
H(max)	5.08mm	5.08mm	6.35mm	5.08mm
Power Rating at 70°C	0.2W	0.2W	0.125W	0.125W
Max Working Voltage	100V	100V	100V	100V
Max Overload Voltage	150V	150V	200V	150V
Operating Temperature	-55~+155 °C	-55~+155°C	-55~+155 °C	-55~+155 °C

* Special circuit is available case by case.

Resistor/Capacitor Network - SIP Series



Electrical Characteristics- Capacitor

Capacitance Dielectric	Capacitance Range	Capacitance Tolerance	Capacitance Voltage
NPO	39pF~270pF	±10%	50V
X7R	>270pF~0.1μF	±20%	

* Special circuit is available case by case.

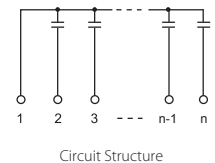
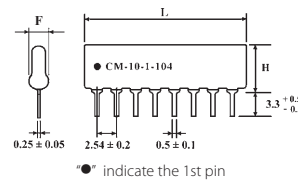
Dimension (mm)

Type	H (mm)	F (mm)
RCH	7.62 Max.	3.81 Max.
RCN	8.89 Max.	3.81 Max.

Dimension (mm)

L	
4 PIN: 10.2mm	10 PIN: 25.4mm
5 PIN: 12.7mm	11 PIN: 28.0mm
6 PIN: 15.3mm	12 PIN: 30.5mm
7 PIN: 17.8mm	13 PIN: 33.1mm
8 PIN: 20.4mm	14 PIN: 35.6mm
9 PIN: 22.9mm	

Capacitor Network-SIP Series



Electrical Characteristics- Capacitor

Capacitance Dielectric	Capacitance Range	Capacitance Tolerance	Capacitance Voltage
NPO	39pF~270pF	±10%	50V
X7R	>270pF~0.1μF	±20%	

* Special circuit is available case by case.

Dimension (mm):

Type	H (mm)	F (mm)
CNM	6.35 Max.	3.81 Max.
CNH	7.62 Max.	3.81 Max.

Dimension (mm):

L	
4 PIN: 10.2mm	10 PIN: 25.4mm
5 PIN: 12.7mm	11 PIN: 28.0mm
6 PIN: 15.3mm	12 PIN: 30.5mm
7 PIN: 17.8mm	13 PIN: 33.1mm
8 PIN: 20.4mm	14 PIN: 35.6mm
9 PIN: 22.9mm	