

SIP RESISTOR NETWORKS

SINGLE IN-LINE PACKAGE

RA•RB
Series



INTRODUCTION

Thick film resistor network have Metal Glaze Element on the ceramic substrates with strong clip construction terminal, and are coat with special epoxy resin. They are the most suitable to meet the density of circuit assembling.

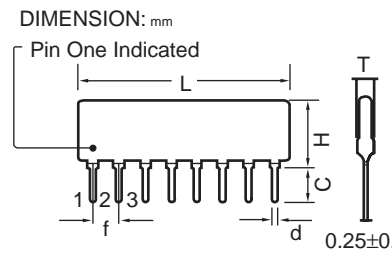
APPLICATION

- Control Circuits of V.T.R. Computer, Fasimile, Car & Air-Conditioner.
- Color T.V. & Other Electronic equipments for Consumer use.

FEATURES

- Miniature, High Density Packaging.
- Combinations of Different Ohmic value are available.
- High Reliability with RuO_2 Paste.

DIMENSION: mm

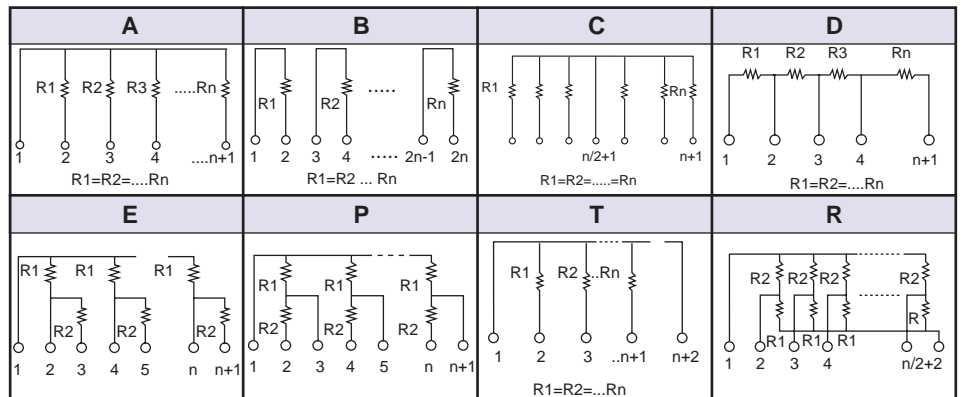


TYPE	L (MAX)	H(MAX)		T (MAX)	C ^{+0.3} _{-0.2}	d ±0.05	f ±0.2
		RA	RB				
4 pin	10.2						
5 pin	12.7						
6 pin	15.3						
7 pin	17.8						
8 pin	20.4						
9 pin	22.9	5.08	7.5	2.5	2.8	0.5	2.54
10 pin	25.4						
11 pin	28.0						
12 pin	30.5						
13 pin	33.1						
14 pin	35.6						

RATING

Operating Temp. Range	-55°C~+125°C		RA		RB
T.C.R.	± 100PPM 50 ohm ~ 2.2M ohm		Wattage/Element		B Style
	± 250PPM <50 ohm or ≥ 2.2M ohm				Others
Rating Ambient Temp.	+70°C		Max. Working Voltage		200V
Resistance Range (E-12 Series)	R style	Others	Resistance Tolerance		
	100Ω-10K	10Ω-4.7MΩ	F = ±1%, G = ±2%, J=±5%		

CIRCUITS CONSTRUCTION



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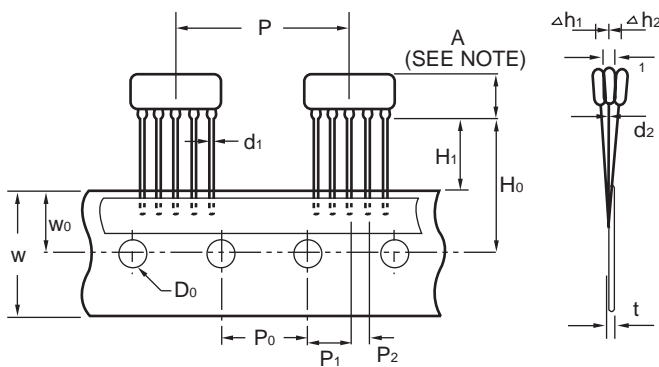


PACKING INFORMATION

AMMO TYPE FOR AUTOMATIC INSERTION

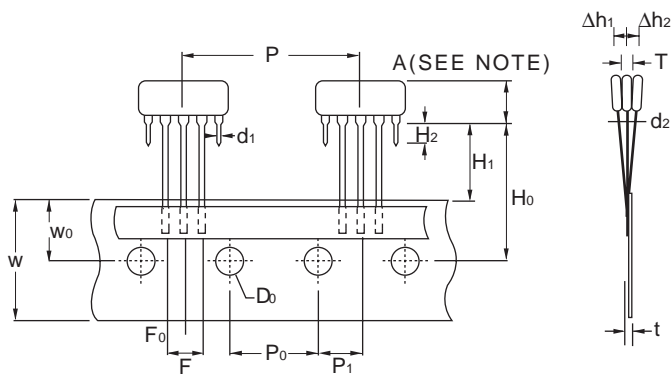
a. Dimension of Taping

1. TBA series



Dimensions	inch	mm	dimensions	inch	mm
P : 4 to 8 pins	1	25.4	W	0.708	18
P : 9 to 12 pins	1.5	38.1	W0	0.354	9
P ₀	0.5	12.7	D0	0.157	4
P ₁	0.25	6.35	d1	0.02	0.5
P ₂	0.1	2.54	d2	0.01	0.25
H ₀	0.629	16	T	0.1	2.54
				max.	max.
H ₁	0.275	7	t	0.06	1.5
				max.	max.
Δh ₁ , Δh ₂	0.08	2			
	max.	max.			

2. TPA series



Dimensions	inch	mm	dimensions	inch	mm
P : 4 to 9 pins	1	25.4	W	0.708	18
P : 10 to 12 pins	1.5	38.1	W0	0.354	9
P ₀	0.5	12.7	D0	0.157	4
P ₁	0.25	6.35	d1	0.02	0.5
P ₂	0.748	19	d2	0.01	0.25
H ₀	0.393	10	T	0.1	2.54
				max.	max.
H ₁	0.118	3	t	0.06	1.5
				max.	max.
H ₂	0.08	2	F	0.2	5.08
Δh ₁ , Δh ₂	max.				
			F ₀	0.1	2.54

	Low Profile	Medium Profile	High Profile
A(mm)	5.08 max.	6.35 max.	8.90 max.
A(inch)	0.20max.	0.25 max.	0.35 max.

BULK TYPE

Standard Package Quantity (for Low Profile)

Pins	Quantity per PE bag	No. of bags per box	Quantity per small box
4-6	200 pcs	10	2000 pcs
7-10	100 pcs	10	1000 pcs
11-15	100 pcs	8	800 pcs

b. Standard Package Quantity: 1000pcs/Case

SPECIAL PACKAGE ALSO AVAILABLE

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CHARACTERISTIC

ITEM	TEST METHODS	SPECIFICATIONS
Resistance Temperature Characteristic	-55°C ~ +125°C	± 100ppm/°C for 50 ohm ~ 2.2M ± 250ppm/°C for < 50ohm ≥ 2.2M
Temperature Cycling	-55°C ~ +125°C, for 5 Cycle	Δ R ≤ ± (0.5% + 0.05Ω)
Short-Time Overload	Rated Voltage x 2.5 for 5 sec.	Δ R ≤ ± (0.5% + 0.05Ω)
Resistance to Soldering Heat	350°C for 3 sec.	Δ R ≤ ± (0.5% + 0.05Ω)
Insulation Resistance	100V for 1 minute	Δ 10,000 Megohm Min.
Terminal Strength	Tensile: 1Kg, 30 sec. Bending: 500g, 2 Times	Δ R ≤ ± (0.25% + 0.05Ω)
Thermal Shock	Load V, Room Temp. 30 minute Unload, -55°C, 15 minute Over 2 hrs in Room Temp. before measuring	Δ R ≤ ± (0.5% + 0.05Ω)
Solderability	230°C ± 5°C, 3sec.	Covering 95%
Moisture Load Life	40°C, 90-95% RH rated Voltage for 1000 hours	Δ R ≤ ± (2% + 0.05Ω)
Load Life	70°C at Rated Voltage for 1000 hours	Δ R ≤ ± (2% + 0.05Ω)

STANDARD RESISTANCE (OHM) E - 12 SERIES

10	12	15	18	22	27	33	39	47	56	68	82
100	120	150	180	220	270	330	390	470	560	680	820
1K	1.2K	1.5K	1.8K	2.2K	2.7K	3.3K	3.9K	4.7K	5.6K	6.8K	8.2K
10K	12K	15K	18K	22K	27K	33K	39K	47K	56K	68K	82K
100K	120K	150K	180K	220K	270K	330K	390K	470K	560K	680K	820K
1M	1.2M	1.5M	1.8M	2.2M							

DUAL TERMINATORS (R1/R2) (OHM)

160/240	330/390
180/390	330/470
220/270	1.5K/3.3K
220/330	3.0K/6.2K

HOW TO ORDER

RA	A	08	472	J
SERIES RA=Low Profile RB=High Power	CIRCUITS A STYLE B C D E P R T	NUMBER OF PIN 04 = 4 PIN 05 = 5 PIN 06 = 6 PIN 07 = 7 PIN 08 = 8 PIN 09 = 9 PIN 10 = 10 PIN 11 = 11 PIN 12 = 12 PIN 13 = 13 PIN 14 = 14 PIN	RESISTANCE 220Ω = 220 100Ω = 101 1000Ω = 102 10KΩ = 103 1MΩ = 105	TOLERANCE F = ±1% G = ±2% J = ±5%

DERATING CURVE

