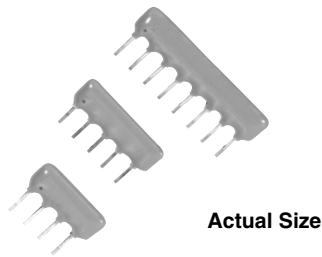


Conformal, Single-In-Line Resistor Networks



These networks are designed to be used in analog circuits in conjunction with operational amplifiers. In addition to the standard models, Vishay also offers semi-custom or custom networks.

FEATURES

- Standard design - No NRE
- Low TCR (10 ppm/°C)
- Excellent TCR tracking (< 2 ppm/°C)
- Low noise (< - 35 dB)
- High stability (0.005 % on ratio, after 2000 h at Pn at + 70 °C)
- Through hole SIL resistors networks
- Compliant to RoHS directive 2002/95/EC



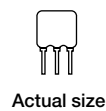
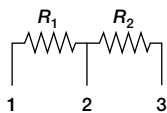
RoHS
COMPLIANT

TYPICAL PERFORMANCE

	ABS	TRACKING
TCR	10 ppm/°C	< 2 ppm/°C
	ABS	RATIO
TOL.	0.1 %	0.02 %

SCHEMATIC

$R_1 = R_2$

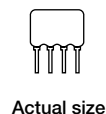
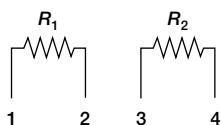


TWO EQUAL RESISTORS

ORDERING INFORMATION

$R_1 = 1 \text{ k}\Omega$	TAS 209	50 k Ω	TAS 214
$R_1 = 2 \text{ k}\Omega$	TAS 210	100 k Ω	TAS 215
$R_1 = 5 \text{ k}\Omega$	TAS 211	200 k Ω	TAS 216
$R_1 = 10 \text{ k}\Omega$	TAS 212	500 k Ω	TAS 217
$R_1 = 20 \text{ k}\Omega$	TAS 213	1 M Ω	TAS 218

$R_1 = R_2$

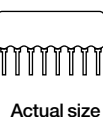
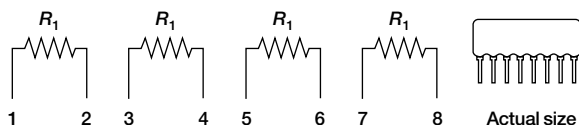


TWO EQUAL RESISTORS

ORDERING INFORMATION

$R_1 = 1 \text{ k}\Omega$	TAS 365
$R_1 = 10 \text{ k}\Omega$	TAS 363
$R_1 = 100 \text{ k}\Omega$	TAS 348

R_1

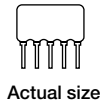
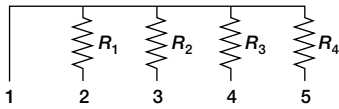


FOUR EQUAL RESISTORS

ORDERING INFORMATION

$R_1 = 1 \text{ k}\Omega$	TAS 329
$R_1 = 5 \text{ k}\Omega$	TAS 1002
$R_1 = 10 \text{ k}\Omega$	TAS 158
$R_1 = 100 \text{ k}\Omega$	TAS 288

$$R_1 = R_2 = R_3 = R_4$$

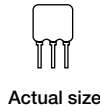
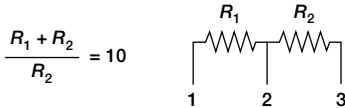


FOUR EQUAL RESISTORS, ONE COMMON

ORDERING INFORMATION

$R_1 = 10\text{ k}\Omega$	TAS 366
$R_1 = 100\text{ k}\Omega$	TAS 367

$$R_1 + R_2 = 10\text{ k}\Omega, 100\text{ k}\Omega, 1\text{ M}\Omega$$

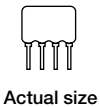
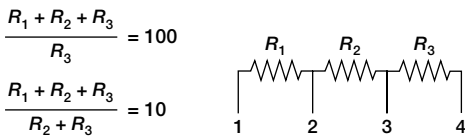


RATIO DIVIDER 10:1

ORDERING INFORMATION

$R_1 + R_2 = 9\text{ k}\Omega + 1\text{ k}\Omega = 10\text{ k}\Omega$	TAS 280
$R_1 + R_2 = 90\text{ k}\Omega + 10\text{ k}\Omega = 100\text{ k}\Omega$	TAS 193
$R_1 + R_2 = 900\text{ k}\Omega + 100\text{ k}\Omega = 1\text{ M}\Omega$	TAS 281

$$R_1 + R_2 + R_3 = 100\text{ k}\Omega \text{ and } R_2 + R_3 = 10\text{ k}\Omega$$

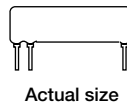
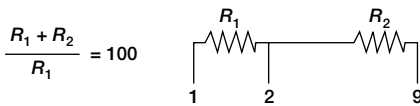


RATIO DIVIDER 10:1, 100:1

ORDERING INFORMATION

$R_1 + R_2 + R_3 = 100\text{ k}\Omega$	TAS 330
with $R_1 = 90\text{ k}\Omega$	
$R_2 = 9\text{ k}\Omega$	
$R_3 = 1\text{ k}\Omega$	

$$R_1 + R_2 = 10\text{ M}\Omega$$

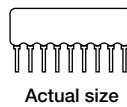
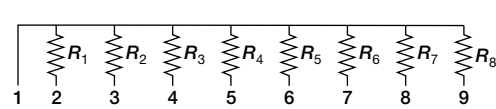


RATIO DIVIDER 100:1

ORDERING INFORMATION

$R_1 + R_2 = 10\text{ M}\Omega$	TAS 112
with $R_1 = 100\text{ k}\Omega$	
$R_2 = 9.9\text{ M}\Omega$	

$$R_1 = R_2 = R_3 = R_4 = R_5 = R_6 = R_7 = R_8$$

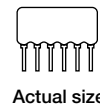
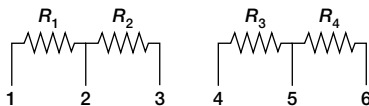


EIGHT EQUAL RESISTORS, ONE COMMON

ORDERING INFORMATION

$R_1 = 10\text{ k}\Omega$	TAS 368
$R_1 = 100\text{ k}\Omega$	TAS 369

$$\frac{R_2}{R_1} = \frac{R_4}{R_3} = 10$$

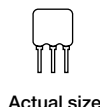
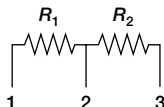


DIVIDER NETWORK 10:1

ORDERING INFORMATION

	TAS 220
with $R_1 = R_3 = 10\text{ k}\Omega$	
$R_2 = R_4 = 100\text{ k}\Omega$	

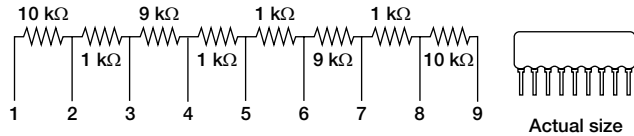
$$\frac{R_1}{R_2} = 10$$



DIVIDER NETWORK 10:1

ORDERING INFORMATION

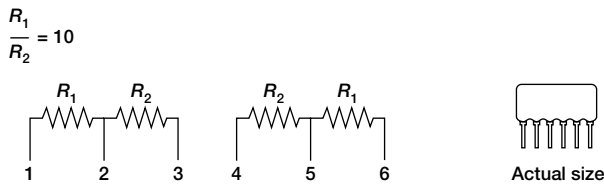
$R_1 = 100\text{ k}\Omega, R_2 = 10\text{ k}\Omega$	TAS 282
$R_1 = 1\text{ M}\Omega, R_2 = 100\text{ k}\Omega$	TAS 283



EIGHT RESISTOR NETWORKS

ORDERING INFORMATION

TAS 272



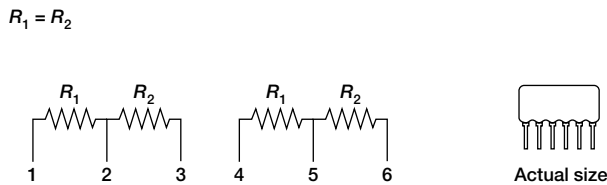
DIVIDER NETWORK 10:1

ORDERING INFORMATION

$R_1 = 10 \text{ k}\Omega, R_2 = 1 \text{ k}\Omega$ TAS 328

$R_1 = 100 \text{ k}\Omega, R_2 = 10 \text{ k}\Omega$ TAS 284

$R_1 = 1 \text{ M}\Omega, R_2 = 100 \text{ k}\Omega$ TAS 285



DIVIDER NETWORK 1:1

ORDERING INFORMATION

$R_1 = 5 \text{ k}\Omega$ TAS 225

$R_1 = 10 \text{ k}\Omega$ TAS 286

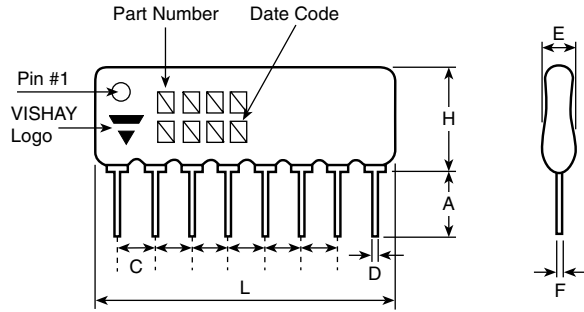
$R_1 = 100 \text{ k}\Omega$ TAS 219

$R_1 = 1 \text{ M}\Omega$ TAS 287

STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
MATERIAL	PASSIVATED NICHROME	
TCR:	Tracking	< 2 ppm/°C
	Absolute	± 15 ppm/°C ± 10 ppm/°C
Tolerance:	Ratio	± 0.05 % (± 0.02 % or ± 0.01 % on request)
	Absolute	± 0.1 %
Power rating:	Resistor	100 mW
	Package	Varies with size
Stability (ΔR ratio)	0.005 %	2000 h at + 70 °C at Pn
Voltage coefficient	< 0.002 ppm/V	
Working voltage	100 V	
Operating temperature range	- 40 °C to + 125 °C	
Storage temperature range	- 55 °C to + 125 °C	
Noise	- 35 dB typical	
Thermal EMF	0.1 $\mu\text{V}/^\circ\text{C}$	
Shelf life stability	50 ppm maximum	1 year

DIMENSIONS



Marking: The pin 1, series and model, Vishay trademark, manufacturing date (year, week)

DIMENSION	INCHES	MILLIMETERS
A	0.124	3.17 minimum
C	0.100	2.54
D	0.020	0.51
H	0.260	6.62 maximum
E	0.100	2.54 maximum
F	0.010	0.25

PIN COUNT	3	4	5	6	7	8	9	10
L max. Inches	0.320	0.420	0.520	0.620	0.720	0.820	0.920	1.020
Millimeters	8.14	10.68	13.23	15.78	18.32	20.87	23.40	25.95

MECHANICAL SPECIFICATIONS	
Resistive element	Passivated nichrome
Substrate material	Alumina
Body	Epoxy-conformal coating
Terminals	Tin/silver on Cu alloy
Marking resistance to solvents	Laser marking

For custom specification a specific part number will be issued by Vishay Sfernice. E.g. CNS1128.

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: TAS214BW (preferred part number format)

T	A	S	2	1	4	B	W
GLOBAL MODEL	REFERENCE	ABS. TOLERANCE	RATIO TOLERANCE				
TAS	(see list)	B = 0.1 %	W = 0.05 % P = 0.02 %				

Custom Network: CNS 1128

CNS	1128
GLOBAL MODEL	REFERENCE

Historical Part Number example: TAS 214 50K 0.1 % 0.05 % e2 (will continue to be accepted)

TAS	214	50K	0.1 %	0.05 %	e2
HISTORICAL MODEL	REFERENCE	OHMIC VALUE	ABS. TOLERANCE	RATIO TOLERANCE	RoHS



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