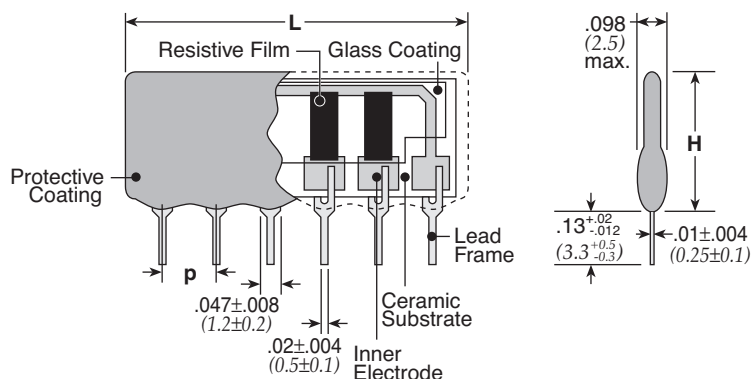


## features

- Available in various types of standard circuits in different sizes and power
- Higher temperature soldering of the leads prevents terminals from loosening during board assembly
- For automatic insertion machines, stick magazines and taping packages are available
- Marking: Black body color with white marking
- Products with lead-free terminations meet EU RoHS requirements. Pb located in glass material, electrode and resistor element is exempt per Annex 1, exemption 5 of EU directive 2005/95/EC

## dimensions and construction



| Size Code           |   | Number of Pins |       |       |       |       |       |       |       |       |       |      |      |      |      | Dimen. in. (mm) |            |
|---------------------|---|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|-----------------|------------|
|                     |   | 3              | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13   | 14   | 15   | 16   | H max.          | p          |
| RKL                 | L | 8.20           | 10.16 | 12.70 | 15.24 | 17.78 | 20.32 | 22.86 | 25.40 | 27.94 | 30.48 | —    | —    | —    | —    | .200            | .100±.008  |
|                     | W | 250            | 375   | 500   | 625   | 750   | 875   | 1000  | 1050  | 1150  | 1250  | —    | —    | —    | —    | (5.08)          | (2.54±0.2) |
| RKC<br>(2.54 pitch) | L | 8.20           | 10.8  | 13.2  | 15.8  | 18.3  | 20.9  | 23.4  | 25.9  | 28.5  | 31.0  | 33.6 | 36.1 | 38.7 | 41.3 | .256            | .100±.008  |
|                     | W | 250            | 375   | 500   | 625   | 750   | 875   | 1000  | 1050  | 1150  | 1250  | 1350 | 1450 | 1500 | 1550 | (6.5)           | (2.54±0.2) |
| RKH                 | L | —              | 10.8  | 13.3  | 15.8  | 18.3  | 20.9  | 23.4  | 25.9  | 28.5  | 31.0  | 33.6 | —    | —    | —    | .421            | .100±.008  |
|                     | W | —              | 525   | 700   | 875   | 1050  | 1250  | 1400  | 1500  | 1600  | 1700  | 1800 | —    | —    | —    | (10.7)          | (2.54±0.2) |
| RKC<br>(1.8 pitch)  | L | —              | 10.2  | 10.8  | 12.7  | 15.5  | 15.8  | 17.8  | 20.4  | 20.9  | 23.5  | 25.4 | 28.5 | —    | —    | .256            | .071±.006  |
|                     | W | —              | 300   | 400   | 500   | 580   | 650   | 720   | 760   | 820   | 850   | 880  | 900  | —    | —    | (6.5)           | (1.8±0.15) |
| RKS<br>(2.54 pitch) | L | —              | 10.1  | 12.7  | 12.7  | 15.3  | 17.8  | 20.3  | 22.8  | 22.8  | 25.4  | —    | —    | —    | —    | .200            | .079±.008  |
|                     | W | —              | 195   | 260   | 325   | 390   | 455   | 520   | 585   | 650   | 715   | —    | —    | —    | —    | (5.08)          | (2.0±0.2)  |

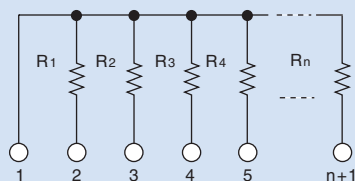
## ordering information

| New Part # | RKC               | 8                             | B                                                    | D                                                                                                      | STP                                        | 103                                                                                                                      | F                                       |
|------------|-------------------|-------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Type       | RKC<br>RKH<br>RKL | Number of Resistors<br>3 - 16 | Circuit Symbol<br>B, S, C, D,<br>A, T, E,<br>R, L, K | Termination Material<br>D: SnAgCu<br>(Other termination styles available, contact factory for options) | Packaging<br>STP, STB,<br>TBA, TPA,<br>TUA | Nominal Resistance<br>2 significant figures + 1 multiplier for ±2% & ±5%<br>3 significant figures + 1 multiplier for ±1% | Tolerance<br>F: ±1%<br>G: ±2%<br>J: ±5% |

For further information on packaging, please refer to Appendix C.

## circuit schematics

**B circuit**

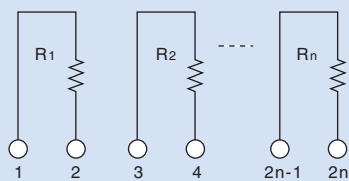


$$R1=R2=R3=R4=\dots=Rn$$

n: number of elements

Example: RKC8B 103 J  
RKL8B 472 J  
RKH8B 332 J

**S circuit**

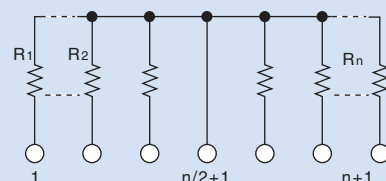


$$R1=R2=\dots=Rn$$

n: number of elements

Example: RKC4S 103 J  
RKL4S 472 J  
RKH4S 332 J

**C circuit**

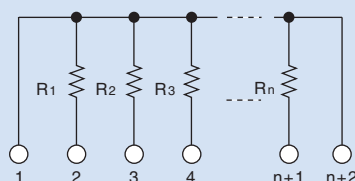


$$R1=R2=R3=R4=\dots=Rn$$

n: number of elements

Example: RKC8C 103 J  
RKL8C 472 J  
RKH8C 332 J

**D circuit**

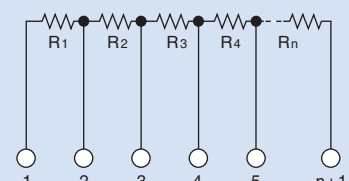


$$R1=R2=R3=\dots=Rn$$

n: number of elements

Example: RKC8D 103 J  
RKL8D 472 J  
RKH8D 332 J

**A circuit**

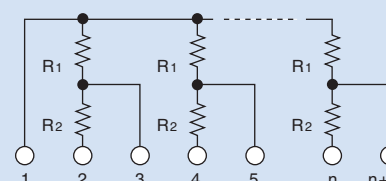


$$R1=R2=R3=R4=\dots=Rn$$

n: number of elements

Example: RKC8A 103 J  
RKL8A 472 J  
RKH8A 332 J

**T circuit**

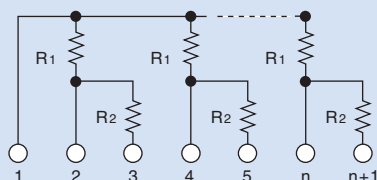


$$R1=R2 \text{ or } R1 \neq R2$$

n: number of elements

Example: RKC8T 103/103 J  
RKL8T 103/103 J  
RKH8T 103/103 J

**E circuit**

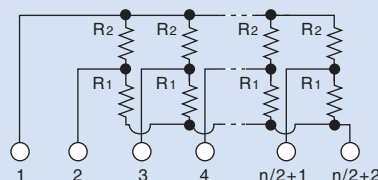


$$R1=R2 \text{ or } R1 \neq R2$$

n: number of elements

Example: RKC8E 103/103 J  
RKL8E 103/103 J  
RKH8E 103/103 J

**R circuit**

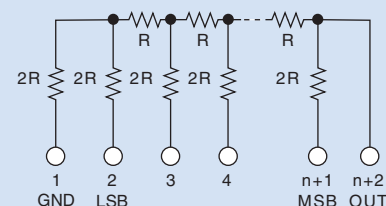


$$R1=R2 \text{ or } R1 \neq R2$$

n: number of elements

Example: RKC16R 331/471 J  
RKL16R 331/471 J  
RKH16R 331/471 J

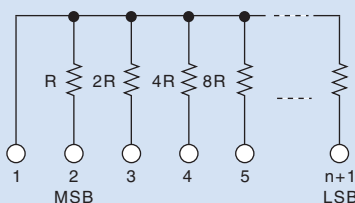
**L circuit**



n: number of elements

Example: RKC5L 253

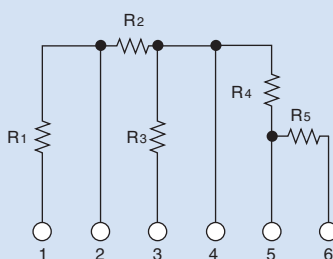
**K circuit**



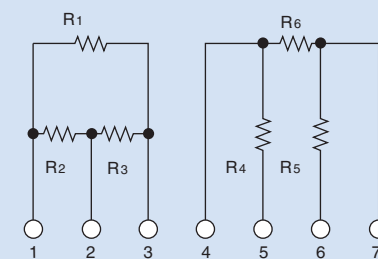
n: number of elements

Example: RKC4K 102

**Example of custom circuit**



**Example of custom circuit**



### applications and ratings

| Part Designation | Circuit Symbol   | Number of Pins | Power Rating/Element                  | T.C.R. (ppm/°C) Max. | Resistance Range (Ω)                | Resistance Tolerance       | Maximum Working Voltage | Rated Ambient Temperature | Operating Temperature Range |
|------------------|------------------|----------------|---------------------------------------|----------------------|-------------------------------------|----------------------------|-------------------------|---------------------------|-----------------------------|
| RKC              | B                | 3-16           | 125mW                                 | ±200                 | 22-2.2M (E24)                       | F: ±1%<br>G: ±2%<br>J: ±5% | 200V                    | +70°C                     | -55°C to +155°C             |
|                  | C                | 5-13           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | D                | 5-14           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | A                | 4-14           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | T                | 5-13           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | E                | 5-13           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | S                | 4-16           | 250mW                                 |                      |                                     |                            |                         |                           |                             |
|                  | R                | 4-16           | 125mW                                 |                      | 100-100k (E24)                      | G: ±2%<br>J: ±5%           |                         |                           |                             |
|                  | L                | 6-11           | 20mW                                  | ±200                 | R=2.5k, 5k<br>10k, 25k<br>50k, 100k | ±1/2LSB (Bit Error)        | 200V                    | +70°C                     | -55°C to +125°C             |
|                  | K                | 5-9            | 40mW                                  |                      | R1(MSB):100 Min<br>Rn(LSB):1M Max   | ±1/2LSB (Bit Error)        |                         |                           |                             |
| RKL              | B                | 3-12           | 125mW                                 | ±200                 | 22-1M (E24)                         | F: ±1%<br>G: ±2%<br>J: ±5% | 100V                    | +70°C                     | -55°C to +125°C             |
|                  | C                | 5-11           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | D                | 5-12           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | A                | 3-12           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | T                | 5-11           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | E                | 5-11           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | S                | 4-12           | 200mW                                 |                      |                                     |                            |                         |                           |                             |
|                  | R                | 4-11           | 125mW                                 |                      | 100-100k (E24)                      | G: ±2%<br>J: ±5%           |                         |                           |                             |
| RKH              | B                | 4-13           | 125mW                                 | ±200                 | 56-2.2M (E24)                       | F: ±1%<br>G: ±2%<br>J: ±5% | 250V                    | +70°C                     | -55°C to +155°C             |
|                  | C                | 5-13           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | D                | 5-12           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | A                | 4-12           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | T                | 5-13           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | E                | 5-13           |                                       |                      |                                     |                            |                         |                           |                             |
|                  | S                | 4-12           | 500mW                                 |                      |                                     |                            |                         |                           |                             |
|                  | R                | 5-11           | 250mW                                 |                      | 100-100k (E24)                      | G: ±2%<br>J: ±5%           |                         |                           |                             |
| Custom           | RKL              | 3-12           | 0.1W<br>0.125W<br>0.25W<br>0.5W<br>1W | ±100<br>±150<br>±200 | 10-1M                               | ±0.5%<br>±1%<br>±2%<br>±5% | 100V                    | +70°C                     | -55°C to +125°C             |
|                  | RKC (1.8 pitch)  | 4-14           |                                       |                      |                                     |                            | 50V                     |                           |                             |
|                  | RKC (2.54 pitch) | 3-16           |                                       |                      |                                     |                            | 200V                    |                           |                             |
|                  | RKH              | 4-13           |                                       |                      |                                     |                            | 250V                    |                           |                             |
|                  | RKS (2.0 pitch)  | 4-12           |                                       |                      |                                     |                            | 100V                    |                           |                             |
|                  |                  |                |                                       |                      |                                     |                            |                         |                           |                             |

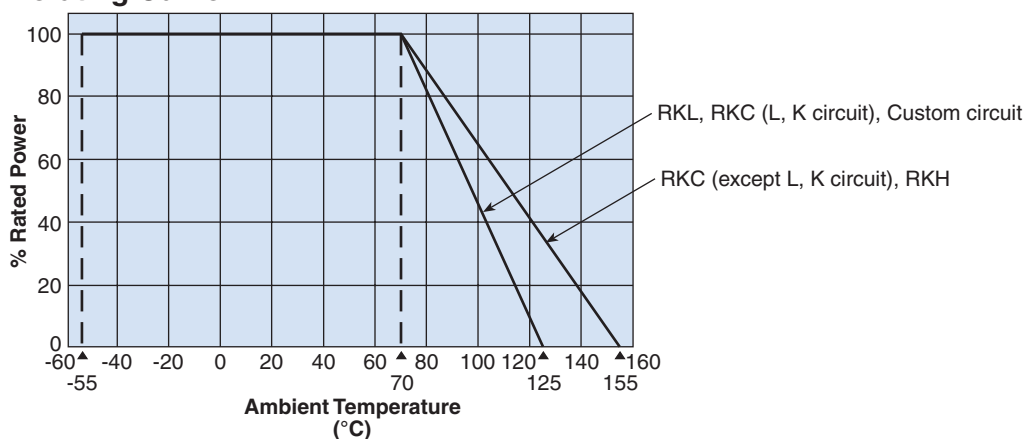
## wattage/package

|     | Number of Pins |     |     |     |     |     |     |
|-----|----------------|-----|-----|-----|-----|-----|-----|
|     | 3              | 4   | 5   | 6   | 7   | 8   | 9   |
| RKL | 147            | 185 | 228 | 271 | 314 | 357 | 400 |
| RKC | 160            | 217 | 273 | 330 | 387 | 444 | 501 |
| RKH | —              | 416 | 511 | 606 | 701 | 796 | 891 |

|     | Number of Pins |      |      |      |     |     |     |
|-----|----------------|------|------|------|-----|-----|-----|
|     | 10             | 11   | 12   | 13   | 14  | 15  | 16  |
| RKL | 443            | 486  | 529  | —    | —   | —   | —   |
| RKC | 558            | 615  | 672  | 728  | 785 | 842 | 893 |
| RKH | 986            | 1081 | 1176 | 1271 | —   | —   | —   |

## environmental applications

### Derating Curve



## Performance Characteristics

| Parameter                 | Requirement $\Delta R$     |         | Test Method                                                             |
|---------------------------|----------------------------|---------|-------------------------------------------------------------------------|
|                           | Limit                      | Typical |                                                                         |
| Resistance                | Within specified tolerance | —       | 25°C                                                                    |
| T.C.R.                    | Within specified T.C.R.    | —       | +25°C/-55°C, +25°C/+125°C (RKL)<br>+25°C/-55°C, +25°C/+155°C (RKC, RKH) |
| Overload (Short time)     | ±0.5%                      | ±0.25%  | Rated voltage x 2.5 for 5 seconds                                       |
| Resistance to Solder Heat | ±0.5%                      | ±0.25%  | 260°C ± 5°C, 10 seconds ± 1 second                                      |
| Temperature Cycling       | ±0.5%                      | ±0.25%  | -40°C (30 minutes), +85°C (30 minutes), 5 cycles                        |
| Moisture Resistance       | ±2.0%                      | ±1.0%   | 40°C ± 2°C, 90 - 95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle        |
| Endurance at 70°C         | ±2.0%                      | ±1.0%   | 70°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle                     |