

Features

- Low Cost
- Thick Film Technology
- High Density Packaging
- Leadless Surface Mount Construction
- Tape and Reel Packaging
- Solder Coated Nickel Barrier Pads
- Isolated and Bussed Circuits
- Concave and Convex Terminations
- RoHS Compliant Version Available



Product Benefits

- High Density Packaging
 - Up to 30% less space per resistor than 0603 chip resistors
 - Up to 75% less space per resistor than 0805 chip resistors
- Placement Efficiency
 - Networks require fewer placements than discrete components
 - Larger overall size eases handling compared to discrete components
- Low Profile; Can be used in PCMCIA cards

Electrical and Mechanical Specifications

| Series | PCB Area (in ²) Per Resistor | Circuit Type | Resistance | 70°C Power | Maximum Operating Voltage |
|--------|---------------------------------------------|--------------|-------------|---------------|---------------------------------|
| | | | Range, Ohms | Per Resistor* | |
| 741 | 0.0015 | Isolated | 10 - 1M | .063W | 25V |
| 742 | 0.0037 | Isolated | 10 - 1M | .063W | 50V |
| 743 | 0.0071 | Isolated | 10 - 1M | .100W | 100V |
| 744 | 0.0094 | Isolated | 10 - 1M | .125W | 200V |
| 745 | 0.0058 | Bussed | 33 - 470K | .063W | 50V |
| 746 | 0.0013 | Bussed | 33 - 100K | .031W | 25V |

*Total Rated Package Power equals total number of resistors times rated Power Per Resistor

Resistance Tolerance

Standard: $\pm 5\%$ or $.5\Omega$ (whichever is greater)

Operating Temperature Range

-55°C to +125°C

Temperature Coefficient

Standard: 200PPM/°C

Package Outlines

Concave Termination – Type C



Convex Termination – Type X



| Dimensions: mm/inch | | | | | | | | | | | | |
|---------------------|---------------|--------|--------|----------|--------------------------|--------------------------|--------------------------|--------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Part Code | Configuration | # Pads | # Res. | Circuit | L | W | P | T | A | B | C | D |
| 741X043 | 0402 X 2 | 4 | 2 | Isolated | 1.00 ±0.10 .039 ±.004 | 1.00 ±0.10 .039 ±.004 | 0.65 ±0.10 .026 ±.004 | 0.35 ±0.10 .014 ±.004 | 0.33 ±0.10 .013 ±.004 | 0.15 ±0.10 .006 ±.004 | 0.38 Max. .015 Max. | N/A |
| 741X083 | 0402 X 4 | 8 | 4 | Isolated | 2.00 ±0.10 .079 ±.004 | | 0.50 ±0.10 .020 ±.004 | | 0.30 ±0.15 .012 ±.006 | | | |
| 741C083 | 0402 X 4 | 8 | 4 | Isolated | | | 0.28 ±0.10 .011 ±.004 | | | | | |
| 741X163 | 0402 X 8 | 16 | 8 | Isolated | 3.80 ±0.10 .150 ±.004 | 1.60 ±0.10 .063 ±.004 | | 0.45 ±0.10 .018 ±.004 | 0.30 ±0.10 .012 ±.004 | 0.30 ±0.10 .012 ±.004 | 0.30 ±0.10 .012 ±.004 | |
| 742C043 | 0603 X 2 | 4 | 2 | Isolated | 1.60 ±0.20 .063 ±.008 | 1.60 ±0.20 .063 ±.008 | 0.80 ±0.05 .032 ±.002 | 0.60 ±0.10 -0.25 .024 ±.004 -0.10 | 0.50 ±0.15 .020 ±.006 | 0.30 ±0.20 .012 ±.008 | 0.40 ±0.15 .016 ±.006 | N/A |
| 742X083 | 0603 X 4 | 8 | 4 | Isolated | 3.20 ±0.20 .126 ±.008 | | | | | | | |
| 742C083 | 0603 X 4 | 8 | 4 | Isolated | | | | | | | | |
| 742C163 | 0603 X 8 | 16 | 8 | Isolated | 6.40 ±0.20 .252 ±.008 | | | | | 0.40 ±0.15 .016 ±.006 | | |
| 743C043 | 0805 X 2 | 4 | 2 | Isolated | 2.54 ±0.20 .100 ±.008 | 2.00 ±0.20 .079 ±.008 | 1.27 ±0.05 .050 ±.002 | 0.60 ±0.10 .024 ±.004 | 0.80 ±0.10 .031 ±.006 | 0.40 ±0.20 .016 ±.008 | 0.40 ±0.15 .016 ±.006 | N/A |
| 743C083 | 0805 X 4 | 8 | 4 | Isolated | 5.08 ±0.30 .200 ±.012 | | | | | | | |
| 744C043 | 1206 X 2 | 4 | 2 | Isolated | 2.54 ±0.20 .100 ±.008 | 3.20 ±0.20 .126 ±.008 | 1.27 ±0.05 .050 ±.002 | 0.60 ±0.10 .024 ±.004 | 0.80 ±0.10 .031 ±.006 | 0.50 ±0.20 .020 ±.008 | 0.50 ±0.15 .020 ±.006 | N/A |
| 744C083 | 1206 X 4 | 8 | 4 | Isolated | 5.08 ±0.30 .200 ±.012 | | | | | | | |
| 745C101 | | 10 | 8 | Bussed | 6.40 ±0.20 .252 ±.008 | 3.20 ±0.20 .126 ±.008 | 1.27 ±0.05 .050 ±.002 | 0.60 ±0.10 .024 ±.004 | 0.60 ±0.15 .024 ±.006 | 0.35 ±0.15 .013 ±.006 | 0.55 ±0.15 .022 ±.006 | N/A |
| 745C102 | | | | | | | | | | | | |
| 745X101 | | 10 | 8 | Bussed | 6.40 ±0.20 .252 ±.008 | 3.20 ±0.20 .126 ±.008 | 1.27 ±0.05 .050 ±.002 | 0.60 ±0.10 .024 ±.004 | 0.90 ±0.15 .035 ±.006 | 0.50 ±0.20 .020 ±.008 | 0.50 ±0.15 .020 ±.006 | 1.10 ±0.15 .043 ±.006 |
| 745X102 | | | | | | | | | | | | |
| 746X101 | | 10 | 8 | Bussed | 3.30 ±0.10 .130 ±.004 | 1.65 ±0.15 .065 ±.006 | 0.64 ±0.05 .025 ±.002 | 0.60 ±0.10 .024 ±.004 | 0.35 ±0.05 .014 ±.002 | 0.40 ±0.10 .016 ±.004 | 0.45 ±0.10 .018 ±.004 | 0.50 ±0.05 .020 ±.002 |

Types of Circuits



741C083
4 Resistors
8 Terminations



741X043
2 Resistors
4 Terminations

741X083
4 Resistors
8 Terminations

741X163
8 Resistors
16 Terminations



742C043
2 Resistors
4 Terminations

742C083
4 Resistors
8 Terminations

742C163
8 Resistors
16 Terminations



742X083
4 Resistors
8 Terminations



743C043
2 Resistors
4 Terminations



743C083
4 Resistors
8 Terminations



744C043
2 Resistors
4 Terminations



744C083
4 Resistors
8 Terminations



745C101
8 Resistors
10 Terminations



745C102
8 Resistors
10 Terminations



745X101
8 Resistors
10 Terminations

745X102
8 Resistors
10 Terminations

Note: The Marking Concept for Convex and Concave Series 745 is Different.



746X101
8 Resistors
10 Terminations

Recommended Land Patterns



| SERIES | DIMENSIONS mm/in | | | |
|---------|------------------|-------|-------|-------|
| | A | B | C | D |
| 741X043 | 1.00 | 0.65 | 0.33 | 0.50 |
| | 0.039 | 0.026 | 0.013 | 0.020 |
| 741X083 | 1.00 | 0.50 | 0.30 | 0.50 |
| | 0.039 | 0.020 | 0.012 | 0.020 |
| 741C083 | 1.00 | 0.50 | 0.28 | 0.50 |
| | 0.039 | 0.020 | 0.011 | 0.020 |
| 741X163 | 1.60 | 0.50 | 0.30 | 0.80 |
| | 0.063 | 0.020 | 0.012 | 0.031 |
| 742 | 1.60 | 0.80 | 0.50 | 0.90 |
| | 0.063 | 0.032 | 0.020 | 0.035 |
| 743 | 2.00 | 1.27 | 0.80 | 1.00 |
| | 0.079 | 0.050 | 0.031 | 0.051 |
| 744 | 3.20 | 1.27 | 0.80 | 1.00 |
| | 0.126 | 0.050 | 0.031 | 0.039 |
| 745 | 3.20 | 1.27 | 0.90 | 1.30 |
| | 0.126 | 0.050 | 0.035 | 0.039 |
| 746 | 1.65 | 0.64 | 0.35 | 0.80 |
| | 0.065 | 0.025 | 0.014 | 0.032 |

Environmental Performance Specifications

| Test | Max. Delta R | | Test Description |
|---------------------------|--------------|---------|----------------------------------------------------|
| | 741 | 742-746 | |
| Thermal Cycle | 1.00% | 1.00% | 5 Cycles -55°C to +125°C |
| Short Time Overload | 2.50% | 1.00% | 2½ X Rated Working Voltage for 5 Seconds |
| Moisture Resistance | 5.00% | 2.00% | 240 Hours 10% rated load, -10°C to +65°C, 90% R.H. |
| High Temperature Exposure | 1.00% | 1.00% | 1000 Hours, no load, +125°C |
| Load Life | 5.00% | 2.00% | 1000 Hours @ 70°C, rated load |
| Resistance to Solder Heat | 2.50% | 1.00% | 10 Seconds @ 260°C solder |
| Resistance to Solvents | | | Isopropyl alcohol, Freon TMC |
| Solderability | | | RMA Flux, 230°C, 5 Seconds dip, 95% coverage |

Standard Resistor Values & EIA Code

| Ohms | Code | Ohms | Code | Ohms | Code | Ohms | Code | Ohms | Code | Ohms | Code |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 0 | 000X | 68 | 680 | 470 | 471 | 3.9K | 392 | 33K | 333 | 270K | 274 |
| 10 | 100 | 75 | 750 | 510 | 511 | 4.7K | 472 | 39K | 393 | 330K | 334 |
| 12 | 120 | 82 | 820 | 560 | 561 | 5.1K | 512 | 47K | 473 | 390K | 394 |
| 15 | 150 | 100 | 101 | 680 | 681 | 5.6K | 562 | 51K | 513 | 470K | 474 |
| 18 | 180 | 110 | 111 | 820 | 821 | 6.8K | 682 | 56K | 563 | 510K | 514 |
| 22 | 220 | 120 | 121 | 1K | 102 | 8.2K | 822 | 68K | 683 | 560K | 564 |
| 27 | 270 | 150 | 151 | 1.2K | 122 | 10K | 103 | 82K | 823 | 680K | 684 |
| 33 | 330 | 180 | 181 | 1.5K | 152 | 12K | 123 | 100K | 104 | 820K | 824 |
| 39 | 390 | 220 | 221 | 1.8K | 182 | 15K | 153 | 120K | 124 | 1M | 105 |
| 47 | 470 | 270 | 271 | 2.2K | 222 | 18K | 183 | 150K | 154 | | |
| 51 | 510 | 330 | 331 | 2.7K | 272 | 22K | 223 | 180K | 184 | | |
| 56 | 560 | 390 | 391 | 3.3K | 332 | 27K | 273 | 220K | 224 | | |

How to Order

Part Code

See Standard Package Outlines (Page 2)

742C083 101 J P

RoHS Compliant (matte Sn finish)
Insert "P" for RoHS; Otherwise blank

Resistor Code

3 Digit Resistor Code – Refer to the EIA Code noted above

Tolerance

J = ±5% (Standard) 3-digit code
G = ±2% 3-digit code (741-745 only)
F = ±1% 4-digit code (741-745 only)
X for zero ohm jumper

4 Digit Resistor Code (used only for 1% tolerance) – The first three digits are significant and fourth digit is multiplier; "R" indicates decimal on values less than 100 ohms.

Examples: 10R0 = 10 ohms
49R9 = 49.9 ohms
1000 = 100 ohms
1001 = 1,000 ohms
1002 = 10,000 ohms

Example: 742C08310R0F

| Part Marking | J & G tol. | F tol. | |
|--------------|------------|------------|------------|
| | E-24 Value | E-24 Value | E-96 Value |
| 741 | 3 Digit | 3 Digit | 4 Digit |
| 742 | 3 Digit | 3 Digit | 4 Digit |
| 743 | 3 Digit | 4 Digit | 4 Digit |
| 744 | 3 Digit | 4 Digit | 4 Digit |
| 745 | 3 Digit | 4 Digit | 4 Digit |
| 746 | 3 Digit | 4 Digit | 4 Digit |

Tape & Reel Information

| Reel Diameter 7" | 741X043 741C083 741X083 | 742C043 741X163 | 742C083 742X083 | 742C163 | 743C043 | 743C083 | 744C043 | 744C083 | 745C101 745C102 | 745X101 745X102 | 746X101 |
|------------------|-------------------------------|--------------------|--------------------|---------|---------|---------|---------|---------|--------------------|--------------------|---------|
| Parts/Reel | 10000 | 5000 | 5000 | 4000 | 4000 | 4000 | 4000 | 2000 | 4000 | 4000 | 5000 |
| Pitch | 2mm | 4mm | 4mm | 4mm | 4mm | 4mm | 4mm | 8mm | 4mm | 4mm | 4mm |
| Carrier Width | 8mm | 8mm | 8mm | 12mm | 8mm | 12mm | 8mm | 12mm | 12mm | 12mm | 8mm |
| Material | Paper | Paper | Paper | Plastic | Plastic | Plastic | Plastic | Plastic | Plastic | Plastic | Paper |