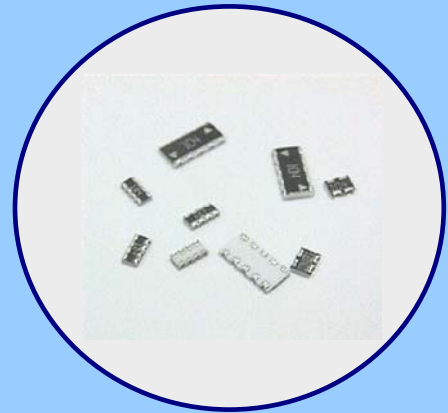


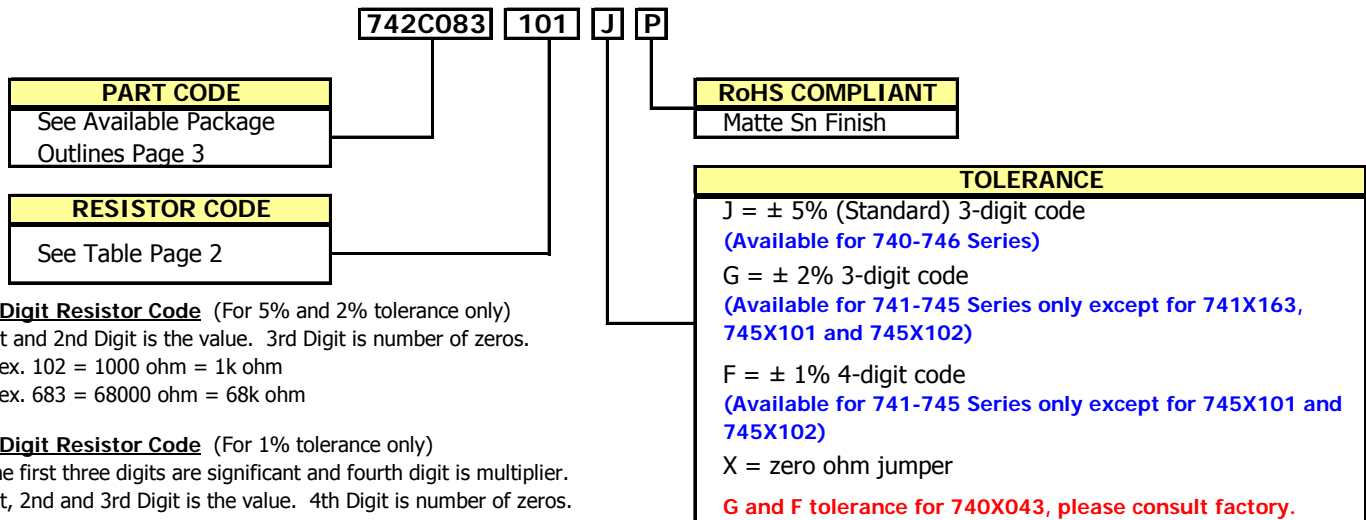


FEATURES

- **Low Cost**
- **Thick Film Technology**
- **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
- **Low Profile; can be used in PCMCIA cards**
- **Leadless Surface Mount Construction**
- **Concave or Convex Terminations**
- **Solder Coated Nickel Barrier Pads**
- **Isolated and Bussed Circuits**
- **Resistor Arrays Require Fewer Placements Than Discrete Components**
- **Tape and Reel Packaging**
- **RoHS Compliant in Accordance with EU Directive 2005/95/EC**
 - Lead-Free Termination Finish
 - Exemption 5 for Pb in glass material and resistor elements



ORDERING INFORMATION



3 Digit Resistor Code (For 5% and 2% tolerance only)
1st and 2nd Digit is the value. 3rd Digit is number of zeros.
ex. 102 = 1000 ohm = 1k ohm
ex. 683 = 68000 ohm = 68k ohm

4 Digit Resistor Code (For 1% tolerance only)
The first three digits are significant and fourth digit is multiplier.
1st, 2nd and 3rd Digit is the value. 4th Digit is number of zeros.
ex. 1001 = 1000 ohm = 1k ohm
ex. 6802 = 68000 ohm = 68k ohm

For Resistance Value <100 ohm
"R" indicates decimal on values less than 100 ohms.
ex. 49R9 = 49.9 ohm

Part Number Examples

| Value\Tolerance | 3-Digit Code | | 4-Digit Code |
|-----------------|---------------|---------------|---------------|
| | J (±5%) | G (±2%) | F (±1%) |
| 10 Ohm | 742C083100JP | 742C083100GP | 742C08310R0FP |
| 49.9 Ohm | Not Available | Not Available | 742C08349R9FP |
| 120 Ohm | 742C083121JP | 742C083121GP | 742C0831200FP |
| 1K Ohm | 742C083102JP | 742C083102GP | 742C0831001FP |
| 68 Kohm | 742C083683JP | 742C083683GP | 742C0836802FP |

**Not all performance combinations and resistor values may be available.
Contact your local CTS Representative or CTS Customer Service for availability.**

ORDERING INFORMATION

AVAILABLE RESISTOR VALUES & EIA CODES

| Ohms | Code | Ohms | Code | Ohms | Code | Ohms | Code | Ohms | Code | Ohms | Code |
|------|------|------|------|------|------|-------|------|-------|------|------|------|
| 0 | 000X | 68 | 680 | 510 | 511 | 3.9K | 392 | 30.0K | 303 | 220K | 224 |
| 10 | 100 | 75 | 750 | 560 | 561 | 4.3K | 432 | 33.0K | 333 | 240K | 244 |
| 11 | 110 | 82 | 820 | 620 | 621 | 4.7K | 472 | 36.0K | 363 | 270K | 274 |
| 12 | 120 | 91 | 910 | 680 | 681 | 5.1K | 512 | 39.0K | 393 | 300K | 304 |
| 13 | 130 | 100 | 101 | 750 | 751 | 5.6K | 562 | 43.0K | 433 | 330K | 334 |
| 15 | 150 | 110 | 111 | 820 | 821 | 6.2K | 622 | 47.0K | 473 | 360K | 364 |
| 16 | 160 | 120 | 121 | 910 | 911 | 6.8K | 682 | 51.0K | 513 | 390K | 394 |
| 18 | 180 | 130 | 131 | 1.0K | 102 | 7.5K | 752 | 56.0K | 563 | 430K | 434 |
| 20 | 200 | 150 | 151 | 1.1K | 112 | 8.2K | 822 | 62.0K | 623 | 470K | 474 |
| 22 | 220 | 160 | 161 | 1.2K | 122 | 9.1K | 912 | 68.0K | 683 | 510K | 514 |
| 24 | 240 | 180 | 181 | 1.3K | 132 | 10.0K | 103 | 75.0K | 753 | 560K | 564 |
| 27 | 270 | 200 | 201 | 1.5K | 152 | 11.0K | 113 | 82.0K | 823 | 620K | 624 |
| 30 | 300 | 220 | 221 | 1.6K | 162 | 12.0K | 123 | 91.0K | 913 | 680K | 684 |
| 33 | 330 | 240 | 241 | 1.8K | 182 | 13.0K | 133 | 100K | 104 | 750K | 754 |
| 36 | 360 | 270 | 271 | 2.0K | 202 | 15.0K | 153 | 110K | 114 | 820K | 824 |
| 39 | 390 | 300 | 301 | 2.2K | 222 | 16.0K | 163 | 120K | 124 | 910K | 914 |
| 43 | 430 | 330 | 331 | 2.4K | 242 | 18.0K | 183 | 130K | 134 | 1M | 105 |
| 47 | 470 | 360 | 361 | 2.7K | 272 | 20.0K | 203 | 150K | 154 | | |
| 51 | 510 | 390 | 391 | 3.0K | 302 | 22.0K | 223 | 160K | 164 | | |
| 56 | 560 | 430 | 431 | 3.3K | 332 | 24.0K | 243 | 180K | 184 | | |
| 62 | 620 | 470 | 471 | 3.6K | 362 | 27.0K | 273 | 200K | 204 | | |

TAPE & REEL INFORMATION

| Reel Diameter | 740X043 | 741X043 741C083 741X083 | 742C043 742C083 742X083 | 741X163 | 742C163 | 743C043 744C043 | 743C083 744C083 | 745C101 745C102 | 745X101 745X102 | 746X101 |
|----------------|---------|-------------------------------|-------------------------------|--------------------------------------|---------|--------------------|--------------------|--------------------|--------------------|---------|
| Parts Per Reel | 10,000 | 10,000 | 5,000 | 5,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 5,000 |
| Pitch | 2mm | 2mm | 4mm | 4mm | 4mm | 4mm | 4mm | 4mm | 4mm | 4mm |
| Carrier Width | 8mm | 8mm | 8mm | 8mm (preferred) 12mm (acceptable) | 12mm | 8mm | 12mm | 12mm | 12mm | 8mm |
| Material | Paper | Paper | Paper | Paper | Plastic | Plastic | Plastic | Plastic | Plastic | Paper |

ELECTRICAL & ENVIRONMENTAL CHARACTERISTICS

| Series | PCB Area (in ²) Per Resistor | Circuit Type | Resistance Range, Ohms | 70°C Power Per Resistor * | Maximum Operating Voltage |
|--------|--|--------------|------------------------|---------------------------|---------------------------|
| 740 | 0.0008 | Isolated | 10 - 1M | .031W | 12.5V |
| 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 |

Resistance Tolerance: Std. ±5% or 0.5Ω (whichever is greater).

See Ordering Information for other options available.

Operating Temperature Range: -55°C to +125°C.

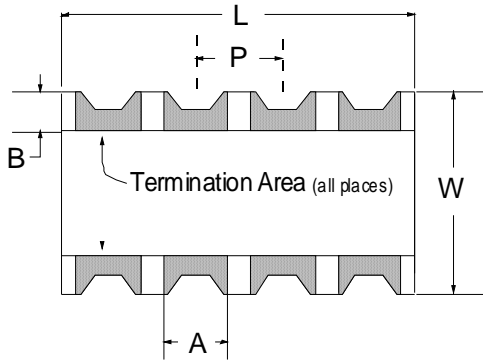
Temperature Coefficient: ±200 ppm/°C.

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

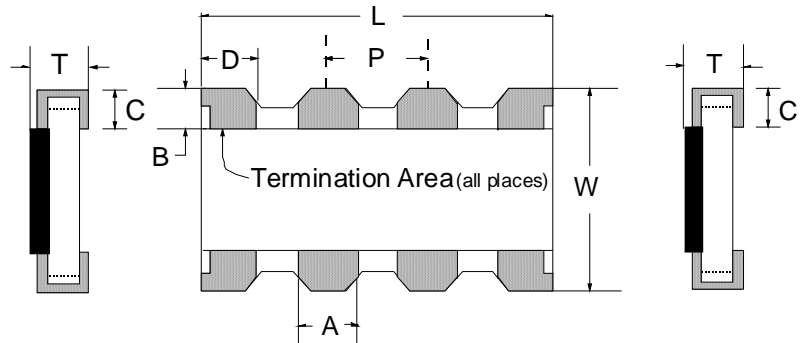
| Test | Maximum Delta R | | | Test Description |
|---------------------------|-----------------|-------|---------|--|
| | 740 | 741 | 742-746 | |
| Thermal Cycle | 1.00% | 1.00% | 1.00% | 5 Cycles -55°C to +125°C |
| Short Time Overload | 2.00% | 2.50% | 1.00% | 2½ Times Rated Working Voltage for 5 Seconds |
| Moisture Resistance | 2.00% | 5.00% | 2.00% | 240 Hours 10% rated load, -10°C to +65°C, 90% R.H. |
| High Temperature Exposure | 3.00% | 1.00% | 1.00% | 1000 Hours, no load, +125°C |
| Load Life | 3.00% | 5.00% | 2.00% | 1000 Hours @ +70°C, rated load |
| Resistance to Solder Heat | 1.00% | 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 |

PACKAGE OUTLINES

CONCAVE TERMINATION – TYPE C



CONVEX TERMINATION – TYPE X

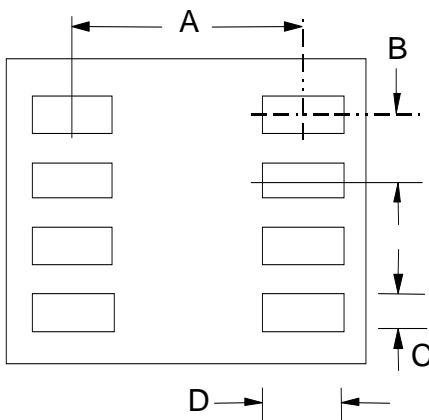


NOTES

1. Termination pads (e3). Barrier plating is nickel (Ni) with Matte tin (Sn) finish.
2. Reflow conditions per JEDEC-J-STD-020, +260°C maximum.

| Part Code | Configuration | # Pads | # Res. | Circuit | Dimensions [mm/inch] | | | | | | | | |
|-----------|---------------|--------|--------|----------|----------------------------|----------------------------|----------------------------|---|----------------------------|----------------------------|----------------------------|----------------------------|-----|
| | | | | | L | W | P | T | A | B | C | D | |
| 740X043 | 0201 x 2 | 4 | 2 | Isolated | 0.80 ±0.10 0.031 ±0.004 | 0.60 ±0.10 0.024 ±0.004 | 0.50 ±0.05 0.020 ±0.002 | 0.35 ±0.10 0.014 ±0.004 | 0.35 ±0.10 0.014 ±0.004 | 0.20 ±0.10 0.008 ±0.004 | 0.15 ±0.10 0.006 ±0.004 | N/A | |
| 741X043 | 0402 X 2 | 4 | 2 | Isolated | 1.00 ±0.10 0.039 ±0.004 | 1.00 ±0.10 0.039 ±0.004 | 0.65 ±0.10 0.026 ±0.004 | 0.375 ±0.125 0.0147 ±0.005 | 0.33 ±0.10 0.013 ±0.004 | 0.20 ±0.10 0.008 ±0.004 | 0.38 Max. 0.015 Max. | N/A | |
| 741X083 | 0402 X 4 | 8 | 4 | Isolated | 2.00 ±0.10 0.079 ±0.004 | | 0.50 ±0.10 0.020 ±0.004 | | 0.30 ±0.15 0.012 ±0.006 | | | | |
| 741C083 | 0402 X 4 | 8 | 4 | Isolated | 3.80 ±0.10 0.150 ±0.004 | 1.60 ±0.10 0.063 ±0.004 | 0.50 ±0.10 0.020 ±0.004 | 0.45 ±0.10 0.018 ±0.004 | 0.29 ±0.12 0.011 ±0.005 | 0.30 ±0.10 0.012 ±0.004 | 0.30 ±0.10 0.012 ±0.004 | 0.30 ±0.10 0.012 ±0.004 | |
| 741X163 | 0402 X 8 | 16 | 8 | Isolated | | | | | 0.40 ±0.15 0.016 ±0.006 | | | | |
| 742C043 | 0603 X 2 | 4 | 2 | Isolated | 1.60 ±0.20 0.063 ±0.008 | 1.60 ±0.20 0.063 ±0.008 | 0.80 ±0.05 0.032 ±0.002 | 0.60 ±0.10 -0.25 0.024 +0.004 -0.010 | 0.50 ±0.15 0.020 ±0.006 | 0.30 ±0.20 0.012 ±0.008 | 0.30 ±0.15 0.012 ±0.006 | N/A | |
| 742X083 | 0603 X 4 | 8 | 4 | Isolated | 3.20 ±0.20 0.126 ±0.008 | | | | | | 0.40 ±0.15 0.016 ±0.006 | | |
| 742C083 | 0603 X 4 | 8 | 4 | Isolated | 6.40 ±0.20 0.252 ±0.008 | 2.00 ±0.20 0.079 ±0.008 | 1.27 ±0.05 0.050 ±0.002 | 0.60 ±0.10 0.024 ±0.004 | 0.80 ±0.10 0.031 ±0.006 | 0.40 ±0.20 0.016 ±0.008 | 0.40 ±0.15 0.016 ±0.006 | N/A | |
| 742C163 | 0603 X 8 | 16 | 8 | Isolated | 2.54 ±0.20 0.100 ±0.008 | | | | | | | | |
| 743C043 | 0805 X 2 | 4 | 2 | Isolated | 5.08 ±0.30 0.200 ±0.012 | 3.20 ±0.20 0.126 ±0.008 | 1.27 ±0.05 0.050 ±0.002 | 0.60 ±0.10 0.024 ±0.004 | 0.80 ±0.10 0.031 ±0.006 | 0.50 ±0.20 0.020 ±0.008 | 0.50 ±0.15 0.020 ±0.006 | N/A | |
| 743C083 | 0805 X 4 | 8 | 4 | Isolated | 2.54 ±0.20 0.100 ±0.008 | | | | | | | | |
| 744C043 | 1206 X 2 | 4 | 2 | Isolated | 5.08 ±0.30 0.200 ±0.012 | 3.20 ±0.20 0.126 ±0.008 | 1.27 ±0.05 0.050 ±0.002 | 0.60 ±0.10 0.024 ±0.004 | 0.80 ±0.10 0.031 ±0.006 | 0.50 ±0.20 0.020 ±0.008 | 0.50 ±0.15 0.020 ±0.006 | N/A | |
| 744C083 | 1206 X 4 | 8 | 4 | Isolated | 6.40 ±0.20 0.252 ±0.008 | | | | | | | | |
| 745C101 | - | 10 | 8 | Bussed | 6.40 ±0.20 0.252 ±0.008 | 3.20 ±0.20 | 1.27 ±0.05 | 0.60 ±0.10 | 0.90 ±0.15 | 0.50 ±0.20 | 0.50 ±0.15 | 1.10 ±0.15 | N/A |
| 745C102 | - | 10 | 8 | Bussed | 0.252 ±0.008 | 0.126 ±0.008 | 0.050 ±0.002 | 0.024 ±0.004 | 0.035 ±0.006 | 0.020 ±0.008 | 0.020 ±0.006 | 0.043 ±0.006 | |
| 745X101 | - | 10 | 8 | Bussed | 3.30 ±0.10 0.130 ±0.004 | 1.65 ±0.15 0.065 ±0.006 | 0.64 ±0.05 0.025 ±0.002 | 0.60 ±0.10 0.024 ±0.004 | 0.35 ±0.05 0.014 ±0.002 | 0.40 ±0.10 0.016 ±0.004 | 0.45 ±0.10 0.018 ±0.004 | 0.50 ±0.05 0.020 ±0.002 | |

RECOMMENDED LAND PATTERNS

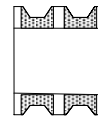


| SERIES | DIMENSIONS [mm/in] | | | |
|---------|--------------------|-------|-------|-------|
| | A | B | C | D |
| 740 | 0.600 | 0.500 | 0.300 | 0.300 |
| | 0.023 | 0.019 | 0.012 | 0.012 |
| 741X043 | 1.000 | 0.650 | 0.330 | 0.500 |
| | 0.039 | 0.026 | 0.013 | 0.020 |
| 741X083 | 1.000 | 0.500 | 0.300 | 0.500 |
| | 0.039 | 0.020 | 0.012 | 0.020 |
| 741C083 | 1.000 | 0.500 | 0.280 | 0.500 |
| | 0.039 | 0.020 | 0.011 | 0.020 |
| 741X163 | 1.600 | 0.500 | 0.300 | 0.800 |
| | 0.063 | 0.020 | 0.012 | 0.031 |
| 742 | 1.600 | 0.800 | 0.500 | 0.900 |
| | 0.063 | 0.032 | 0.020 | 0.035 |
| 743 | 2.000 | 1.270 | 0.800 | 1.000 |
| | 0.079 | 0.050 | 0.031 | 0.039 |
| 744 | 3.200 | 1.270 | 0.800 | 1.300 |
| | 0.126 | 0.050 | 0.031 | 0.051 |
| 745 | 3.200 | 1.270 | 0.900 | 1.300 |
| | 0.126 | 0.050 | 0.035 | 0.051 |
| 746 | 1.650 | 0.640 | 0.350 | 0.800 |
| | 0.065 | 0.025 | 0.014 | 0.032 |

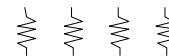
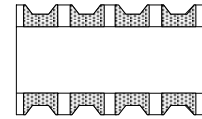
CIRCUIT TYPES



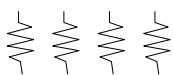
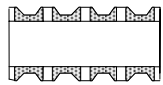
740X043
2 Resistors
4 Terminations



744C043
2 Resistors
4 Terminations



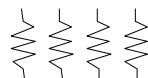
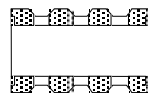
744C083
4 Resistors
8 Terminations



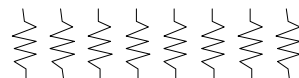
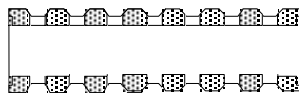
741C083
4 Resistors
8 Terminations



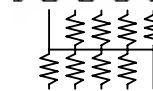
741X043
2 Resistors
4 Terminations



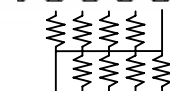
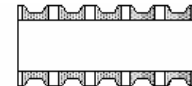
741X083
4 Resistors
8 Terminations



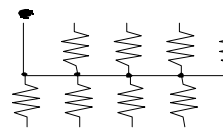
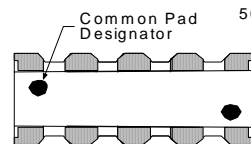
741X163
8 Resistors
16 Terminations



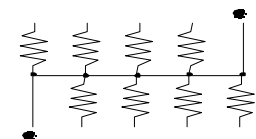
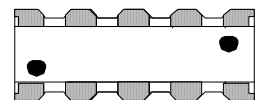
745C101
8 Resistors
10 Terminations



745C102
8 Resistors
10 Terminations



745X101
8 Resistors
10 Terminations

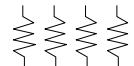
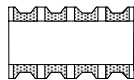


745X102
8 Resistors
10 Terminations

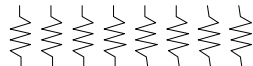
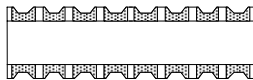
Note: The Marking Concept for Convex and Concave Series 745 is Different.



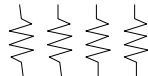
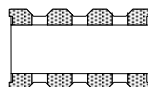
742C043
2 Resistors
4 Terminations



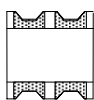
742C083
4 Resistors
8 Terminations



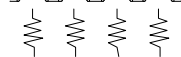
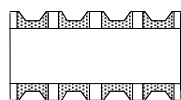
742C163
8 Resistors
16 Terminations



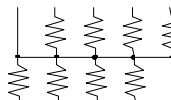
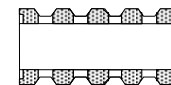
742X083
4 Resistors
8 Terminations



743C043
2 Resistors
4 Terminations



743C083
4 Resistors
8 Terminations



746X101
8 Resistors
10 Terminations