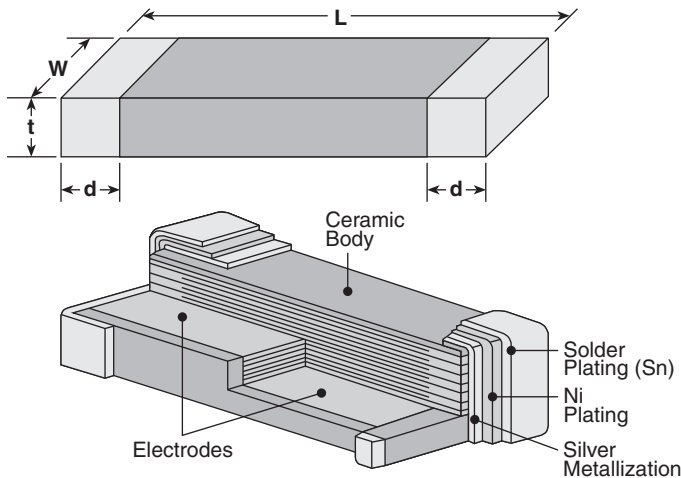


## features

- High Q factor
- Low T.C.C.
- Available in high capacitance values (up to 100  $\mu$ F)
- Products with lead-free terminations meet EU RoHS requirements

## dimensions and construction



| Case Size | Dimensions inches (mm)              |                                      |                |                                      |
|-----------|-------------------------------------|--------------------------------------|----------------|--------------------------------------|
|           | L                                   | W                                    | t (Max.)       | d                                    |
| 0402      | .039 $\pm$ .004<br>(1.0 $\pm$ 0.1)  | .02 $\pm$ .004<br>(0.5 $\pm$ 0.1)    | .021<br>(0.55) | .01 $\pm$ .006<br>(0.25 $\pm$ 0.15)  |
| 0603      | .063 $\pm$ .006<br>(1.6 $\pm$ 0.15) | .032 $\pm$ .006<br>(0.81 $\pm$ 0.15) | .035<br>(0.9)  | .014 $\pm$ .006<br>(0.35 $\pm$ 0.15) |
| 0805      | .079 $\pm$ .008<br>(2.01 $\pm$ 0.2) | .049 $\pm$ .008<br>(1.25 $\pm$ 0.2)  | .051<br>(1.3)  | .02 $\pm$ .01<br>(0.50 $\pm$ 0.25)   |
| 1206      | .126 $\pm$ .008<br>(3.2 $\pm$ 0.2)  | .063 $\pm$ .008<br>(1.6 $\pm$ 0.2)   | .059<br>(1.5)  | .02 $\pm$ .01<br>(0.5 $\pm$ 0.25)    |
| 1210      | .126 $\pm$ .008<br>(3.2 $\pm$ 0.2)  | .098 $\pm$ .008<br>(2.5 $\pm$ 0.2)   | .067<br>(1.7)  | .02 $\pm$ .01<br>(0.5 $\pm$ 0.25)    |

## ordering information

| New Part # | NPO                      | 0805                                 | H  | T                           | TD  | 101   | K  |
|------------|--------------------------|--------------------------------------|--|-----------------------------|---|---|--|
|            | <b>Dielectric</b>        | <b>Size</b>                          | <b>Voltage</b>   | <b>Termination Material</b> | <b>Packaging</b>  | <b>Capacitance</b>  | <b>Tolerance</b>   |
|            | NPO<br>X5R<br>X7R<br>Y5V | 0402<br>0603<br>0805<br>1206<br>1210 | A = 10V<br>C = 16V<br>E = 25V<br>H = 50V<br>I = 100V<br>J = 200V<br>K = 6.3V | T: Sn                       | TP: 7" 2mm pitch<br>(0402 only)<br>TD: 7" paper tape<br>TE: 7" embossed plastic<br>TDB: 13" paper tape<br>TEB: 13" embossed plastic | NPO, X5R,<br>X7R, Y5V:<br>2 significant digits<br>+ no. of zeros.<br>"R" indicates<br>decimal point | B: $\pm$ 0.1pF<br>C: $\pm$ 0.25pF<br>D: $\pm$ 0.5pF<br>F: $\pm$ 1%<br>G: $\pm$ 2%<br>J: $\pm$ 5%<br>K: $\pm$ 10%<br>M: $\pm$ 20%<br>Z: +80, -20% |

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

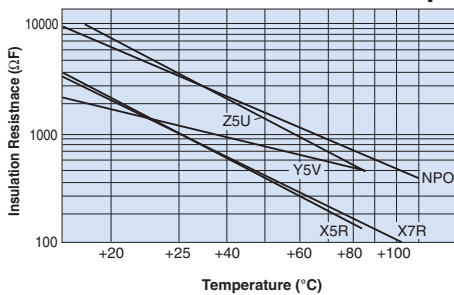
## applications and ratings

| Dielectric | Capacitance Range | Capacitance Tolerance*   | Voltage Ratings                          | Dissipation Factor  | T.C.C.               | Test Voltage   | Operating Temperature | Insulation Resistance   |
|------------|-------------------|--|--|---|----------------------|----------------|-----------------------|---|
| NPO        | 0.47pF - 0.010μF  | .47pF~8.2pF=<br>C:±0.25pF<br>5.6pF~8.2pF=<br>D±0.5pF<br>10pF~<br>10000pF=<br>F:±1%,<br>G:±2%,J:±5% | 16V<br>25V<br>50V<br>100V<br>200V        | For Values<br>>30pF: 0.1%<br>max., ≤30pF:<br>Q = 400 + 20 x C<br>DF = 1/Q<br>C is in pF | 0 ± 30 ppm/°C        | 1.0 ± 0.2 Vrms | -55°C<br>to<br>+125°C | +25°C 100,000MΩ min.<br>or 1000 MΩ - μF min.<br>whichever is less |
| X5R        | 0.068μF - 22μF    | K: ±10%  | 6.3V<br>10V                              | 6.3V =<br>7.5% max.<br>10V =<br>10% max.  | ±15% (0 VDC)         | 1.0 ± 0.2 Vrms | -55°C<br>to<br>+85°C  | +25°C 100,000MΩ min.<br>or 500 MΩ - μF min.<br>whichever is less  |
| X7R        | 100pF - 4.7μF     | K: ±10%  | 10V<br>16V<br>25V<br>50V<br>100V<br>200V | 10V = 10% max.<br>16V = 3.5%<br>max.<br>25V, 50V,<br>100V = 2.5%<br>max.                | ±15% (0 VDC)         | 1.0 ± 0.2 Vrms | -55°C<br>to<br>+125°C | +25°C 100,000MΩ min.<br>or 1000 MΩ - μF min.<br>whichever is less |
| Y5V        | 10000pF - 22μF    | Z: +80, -20%   | 10V<br>16V<br>25V<br>50V                 | 16V & 25V<br>= 7.0%<br>50V = 5.0%   | +22% to -82%<br>max. | 1.0 ± 0.2 Vrms | -30°C<br>to<br>+85°C  | +25°C 10,000MΩ min.<br>or 1000 MΩ - μF min.<br>whichever is less  |

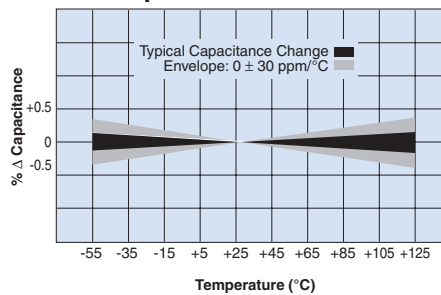
\* Special tolerances available, please consult factory.

## environmental applications

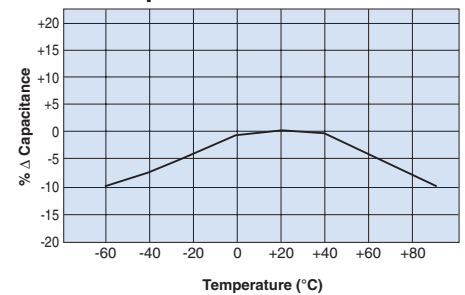
### Insulation Resistance vs Temp.



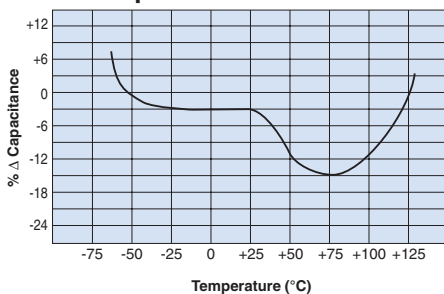
### NPO - Temperature Coefficient



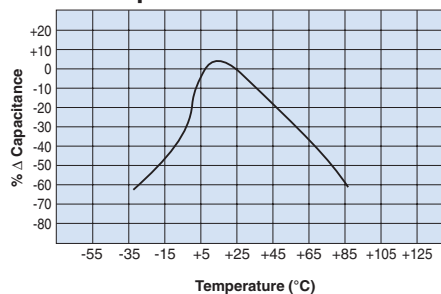
### X5R - Temperature Coefficient



### X7R - Temperature Coefficient



### Y5V - Temperature Coefficient



Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

8/17/07

## NPO capacitance voltage availability

| Size  |                    |           |      | 0402*     |           |           | 0603*     |            | 0805      |            |            | 1206      |            |            | 1210      |            |
|-------|--------------------|-----------|------|-----------|-----------|-----------|-----------|------------|-----------|------------|------------|-----------|------------|------------|-----------|------------|
| pF    | Capacitance values |           | WVDC | 16<br>(C) | 25<br>(E) | 50<br>(H) | 50<br>(H) | 100<br>(I) | 50<br>(H) | 100<br>(I) | 200<br>(J) | 50<br>(H) | 100<br>(I) | 200<br>(J) | 50<br>(H) | 200<br>(J) |
|       | µF                 | Cap. Code |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 0.47  |                    | R47       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 0.56  |                    | R56       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 0.68  |                    | R68       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 0.82  |                    | R82       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 1     |                    | 1R0       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 1.2   |                    | 1R2       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 1.5   |                    | 1R5       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 1.8   |                    | 1R8       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 2.2   |                    | 2R2       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 2.7   |                    | 2R7       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 3.3   |                    | 3R3       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 3.9   |                    | 3R9       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 4.7   |                    | 4R7       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 5.6   |                    | 5R6       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 6.8   |                    | 6R8       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 8.2   |                    | 8R2       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 10    |                    | 100       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 12    |                    | 120       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 15    |                    | 150       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 18    |                    | 180       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 22    |                    | 220       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 27    |                    | 270       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 33    |                    | 330       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 39    |                    | 390       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 47    |                    | 470       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 56    |                    | 560       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 68    |                    | 680       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 82    |                    | 820       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 100   | .0001              | 101       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 120   | .00012             | 121       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 150   | .00015             | 151       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 180   | .00018             | 181       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 220   | .00022             | 221       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 270   | .00027             | 271       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 330   | .00033             | 331       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 390   | .00039             | 391       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 470   | .00047             | 471       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 560   | .00056             | 561       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 680   | .00068             | 681       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 820   | .00082             | 821       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 1000  | .0010              | 102       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 1200  | .0012              | 122       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 1500  | .0015              | 152       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 1800  | .0018              | 182       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 2200  | .0022              | 222       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 2700  | .0027              | 272       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 3300  | .0033              | 332       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 3900  | .0039              | 392       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 4700  | .0047              | 472       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 5600  | .0056              | 562       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 6800  | .0068              | 682       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 8200  | .0082              | 822       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 10000 | .010               | 103       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 12000 | .012               | 123       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 15000 | .015               | 153       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 18000 | .018               | 183       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 22000 | .022               | 223       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 27000 | .027               | 273       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 33000 | .033               | 333       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |
| 39000 | .039               | 393       |      |           |           |           |           |            |           |            |            |           |            |            |           |            |

Capacitance tolerance available:  
 .47pF~8.2pF = C: ±0.25pF  
 5.6pF~8.2pF = D: ±0.5pF  
 10pF~10000pF = F: ±1%, G: ±2%, J: ±5%

## X5R capacitance voltage availability

| Size  | 0402    |        |        | 0603    |        |        |        | 0805    |        |        |        | 1206    |        |        |        | 1210    |        |
|-------|---------|--------|--------|---------|--------|--------|--------|---------|--------|--------|--------|---------|--------|--------|--------|---------|--------|
|       | 6.3 (K) | 10 (A) | 16 (C) | 6.3 (K) | 10 (A) | 16 (C) | 25 (E) | 6.3 (K) | 10 (A) | 16 (C) | 25 (E) | 6.3 (K) | 10 (A) | 16 (C) | 25 (E) | 6.3 (K) | 10 (A) |
| 100   |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 150   |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 220   |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 330   |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 470   |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 680   |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 1000  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 1200  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 1500  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 1800  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 2200  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 2700  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 3300  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 3900  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 4700  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 5600  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 6800  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 8200  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.010 |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.012 |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.015 |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.018 |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.022 |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.027 |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.033 |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.039 |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.047 |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.056 |         | ■      |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.068 |         | ■      |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.082 |         | ■      |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.10  |         | ■      |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.12  |         | ■      |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.15  |         | ■      |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.18  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.22  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.27  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.33  |         |        |        |         | ■      |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.47  |         |        |        |         | ■      |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.56  |         |        |        |         | ■      |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.68  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 0.82  |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 1.0   |         |        |        | ■       | ■      |        |        |         |        |        |        |         |        |        |        |         |        |
| 1.2   |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 1.5   |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 1.8   |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 2.2   |         |        |        |         |        |        |        | ■       | ■      |        |        |         |        |        |        |         |        |
| 3.3   |         |        |        |         |        |        |        | ■       | ■      |        |        |         |        |        |        |         |        |
| 4.7   |         |        |        |         |        |        |        | ■       | ■      |        |        | ■       | ■      |        |        |         |        |
| 6.8   |         |        |        |         |        |        |        |         |        |        |        | ■       | ■      |        |        |         |        |
| 10    |         |        |        |         |        |        |        |         |        |        |        | ■       | ■      |        |        | ■       |        |
| 22    |         |        |        |         |        |        |        |         |        |        |        | ■       | ■      |        |        |         |        |
| 47    |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |
| 100   |         |        |        |         |        |        |        |         |        |        |        |         |        |        |        |         |        |

Capacitance tolerance available: ±10%

capacitors



## Y5V capacitance voltage availability

| Size                     |       |           | 0402 |     | 0603 |     |     |     | 0805 |     |     |     | 1206 |     |     |     |
|--------------------------|-------|-----------|------|-----|------|-----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|
| Capacitance values<br>pF | μF    | Cap. Code | 10   | 16  | 10   | 16  | 25  | 50  | 10   | 16  | 25  | 50  | 10   | 16  | 25  | 50  |
|                          |       |           | (A)  | (C) | (A)  | (C) | (E) | (H) | (A)  | (C) | (E) | (H) | (A)  | (C) | (E) | (H) |
| 2200                     | .0022 | 222       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 2700                     | .0027 | 272       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 3300                     | .0033 | 332       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 3900                     | .0039 | 392       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 4700                     | .0047 | 472       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 5600                     | .0056 | 562       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 6800                     | .0068 | 682       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 8200                     | .0082 | 822       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 10000                    | .010  | 103       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 12000                    | .012  | 123       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 15000                    | .015  | 153       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 18000                    | .018  | 183       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 22000                    | .022  | 223       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 27000                    | .027  | 273       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 33000                    | .033  | 333       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 39000                    | .039  | 393       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 47000                    | .047  | 473       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 56000                    | .056  | 563       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 68000                    | .068  | 683       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 82000                    | .082  | 823       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 100000                   | .100  | 104       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 120000                   | .120  | 124       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 150000                   | .150  | 154       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 180000                   | .180  | 184       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 220000                   | .220  | 224       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 270000                   | .270  | 274       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 330000                   | .330  | 334       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 390000                   | .390  | 394       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 470000                   | .470  | 474       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 560000                   | .560  | 564       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 680000                   | .680  | 684       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 820000                   | .820  | 824       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 1000000                  | 1.0   | 105       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 1200000                  | 1.2   | 125       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 1500000                  | 1.5   | 155       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 1800000                  | 1.8   | 185       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 2200000                  | 2.2   | 225       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 2700000                  | 2.7   | 275       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 3300000                  | 3.3   | 335       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 3900000                  | 3.9   | 395       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 4700000                  | 4.7   | 475       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 5600000                  | 5.6   | 565       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 6800000                  | 6.8   | 685       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 10000000                 | 10    | 106       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |
| 22000000                 | 22    | 226       |      |     |      |     |     |     |      |     |     |     |      |     |     |     |

Capacitance tolerance available: +80, -20%

capacitors