

## Type TYC Series

### Key Features

- Choice of Dielectrics (NP0, X7R, X5R, Y5V)
- 0402 to 1812 sizes as standard
- Other sizes available. 0201 available soon
- 6.3V to 50V in standard range
- Voltage ratings to 3kV on selected products
- Range of tolerances available
- RoHS Compliant
- Excellent thermal stability
- Low dissipation factor

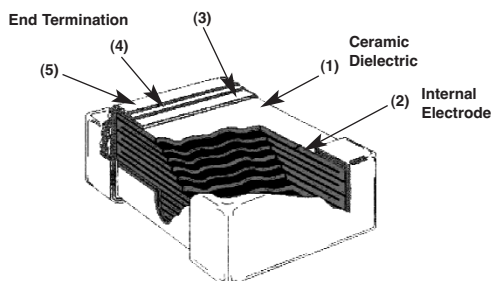


Multilayer ceramic capacitors (MLCC) are manufactured by suspending ceramic powders in liquid and casting into a thin green sheet from 20mm in thickness to 5mm or thinner. Metal electrodes are sieved printed onto green sheets, which are later stacked to form a laminated structure. The metal electrodes are arranged so that the termination alternates from one edge to another of the capacitor.

Upon sintering at high temperature the part becomes a monolithic block, which can provide an extremely high capacitance in small mechanical volumes.

Finally, the termination electrodes are formed by composite of outer metal-glass electrode and followed by a barrier layer and pure-tin plating to permit MLCC to be soldered directly onto printed circuit board.

### Structure



### Class 1

| No |              | Specifications     | Material             |
|----|--------------|--------------------|----------------------|
| 1  |              | Ceramic dielectric | Barium titanate base |
| 2  |              | Internal Electrode | Pb, PdAg             |
| 3  | End Terminal | Inner Layer        | Ag                   |
| 4  |              | Middle Layer       | Ni                   |
| 5  |              | Outer Layer        | Sn                   |

### Class 2

| No |                    | Specifications     | Material             |    |
|----|--------------------|--------------------|----------------------|----|
| 1  |                    | Ceramic dielectric | Barium titanate base |    |
| 2  | Internal Electrode |                    | Pb, PbAg             | Ni |
| 3  | End Terminal       | Inner Layer        | Ag                   | Cu |
| 4  |                    | Middle Layer       | Ni                   |    |
| 5  |                    | Outer Layer        | Sn                   |    |

## Type TYC Series

### Capacitance & Voltage (NPO)

| EIA  | Size   | 0402 |     |     |     | 0603 |     |     |     | 0805 |     |     |     | 1206 |     |     |     | 1210 |     |     |     | 1812 |     |     |     |
|------|--------|------|-----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|
| Code | VDCW   | 10V  | 16V | 25V | 50V | 10V  | 16V | 25V | 50V | 10V  | 16V | 25V | 50V | 10V  | 16V | 25V | 50V | 10V  | 16V | 25V | 50V | 10V  | 16V | 25V | 50V |
| 0R5  | 0.5pF  | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   |      |     |     |     |      |     |     |     |      |     |     |     |
| 1R0  | 1      | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   |      |     |     |     |      |     |     |     |      |     |     |     |
| 1R2  | 1.2    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   |      |     |     |     |      |     |     |     |      |     |     |     |
| 1R5  | 1.5    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   |      |     |     |     |      |     |     |     |
| 1R8  | 1.8    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   |      |     |     |     |      |     |     |     |
| 2R2  | 2.2    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   |      |     |     |     |      |     |     |     |
| 2R7  | 2.7    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   |      |     |     |     |      |     |     |     |
| 3R3  | 3.3    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   |      |     |     |     |      |     |     |     |
| 3R9  | 3.9    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   |      |     |     |     |      |     |     |     |
| 4R7  | 4.7    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   |      |     |     |     |      |     |     |     |
| 5R6  | 5.6    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   |      |     |     |     |      |     |     |     |
| 6R8  | 6.8    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   |      |     |     |     |      |     |     |     |
| 8R2  | 8.2    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   |      |     |     |     |      |     |     |     |
| 100  | 10pF   | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   |      |     |     |     |      |     |     |     |
| 120  | 12     | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   |      |     |     |     |      |     |     |     |
| 150  | 15     | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   |      |     |     |     |      |     |     |     |
| 180  | 18     | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   |      |     |     |     |      |     |     |     |
| 220  | 22     | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 270  | 27     | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 330  | 33     | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 390  | 39     | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 470  | 47     | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 560  | 56     | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 680  | 68     | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 820  | 82     | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 101  | 100pF  | F    | N   | N   | N   | N    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 121  | 120    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 151  | 150    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 181  | 180    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 221  | 220    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 271  | 270    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 331  | 330    | N    | N   | N   | N   | S    | S   | S   | S   | A    | A   | A   | A   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 391  | 390    | N    | N   |     |     | S    | S   | S   | S   | B    | B   | B   | B   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 471  | 470    | N    | N   |     |     | S    | S   | S   | S   | B    | B   | B   | B   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 561  | 560    |      |     |     |     | S    | S   | S   | S   | B    | B   | B   | B   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 681  | 680    |      |     |     |     | S    | S   | S   | S   | B    | B   | B   | B   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 821  | 820    |      |     |     |     | S    | S   | S   | S   | B    | B   | B   | B   | B    | B   | B   | B   | C    | C   | C   | C   |      |     |     |     |
| 102  | 1000pF |      |     |     |     | S    | S   | S   | S   | B    | B   | B   | B   | B    | B   | B   | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 122  | 1200   |      |     |     |     | S    | S   | S   | S   | B    | B   | B   | B   | B    | B   | B   | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 152  | 1500   |      |     |     |     | S    | S   | S   | S   | B    | B   | B   | B   | B    | B   | B   | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 182  | 1800   |      |     |     |     | S    | S   | S   | S   | B    | B   | B   | B   | B    | B   | B   | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 222  | 2200   |      |     |     |     | S    | S   | S   | S   | B    | B   | B   | B   | B    | B   | B   | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 272  | 2700   |      |     |     |     | S    | S   | D   | D   | D    | D   |     |     | B    | B   | B   | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 332  | 3300   |      |     |     |     | S    | S   | D   | D   | D    | D   |     |     | B    | B   | B   | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 392  | 3900   |      |     |     |     |      |     |     |     | D    | D   | D   | D   | B    | B   | B   | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 472  | 4700   |      |     |     |     |      |     |     |     | D    | D   | D   | D   | B    | B   | B   | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 562  | 5600   |      |     |     |     |      |     |     |     | D    | D   |     |     | B    | B   | B   | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 682  | 6800   |      |     |     |     |      |     |     |     | D    | D   |     |     | C    | C   | C   | C   |      |     |     |     | D    | D   | D   | D   |
| 822  | 8200   |      |     |     |     |      |     |     |     | D    | D   |     |     | C    | C   | C   | C   |      |     |     |     | D    | D   | D   | D   |
| 103  | 0.01μF |      |     |     |     |      |     |     |     | D    | D   |     | D'  |      |     |     |     |      |     |     |     | D    | D   | D   | D   |
| 123  | 0.012  |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     | D    | D   | D   | D   |
| 153  | 0.015  |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     | D    | D   | D   | D   |
| 183  | 0.018  |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     | D    | D   | D   | D   |
| 223  | 0.022  |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     | D    | D   | D   | D   |
| 273  | 0.027  |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     | D    | D   | D   | D   |
| 333  | 0.033  |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     | D    | D   | D   | D   |
| 393  | 0.039  |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     | D    | D   | D   | D   |
| 473  | 0.047  |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     | D    | D   | D   | D   |
| 563  | 0.056  |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     | D    | D   | D   | D   |
| 683  | 0.068  |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     | D    | D   | D   | D   |
| 823  | 0.082  |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     |      |     |     |     | D    | D   | D   | D   |
| 104  | 0.1μF  |      |     |     |     |      |     |     |     | D    | D   |     |     |      |     |     |     |      |     |     |     | D    | D   | D   | D   |

(1) [D']: The thickness spec. of said items is special defined on 1.25±0.2mm for 0805 and 1.15±0.15mm for 1206.

| Size Unit: Inch (mm) | 0402 (1005)     | 0603 (1608)    | 0805 (2012)      | 1206 (3216)      | 1210 (3225)      | 1808 (4520)      | 1812 (4532)      |
|----------------------|-----------------|----------------|------------------|------------------|------------------|------------------|------------------|
| A= 0.60±0.10 mm      | —               | —              | Paper 4Kp/reel   | —                | —                | —                | —                |
| B= 0.80±0.10 mm      | —               | —              | Paper 4Kp/reel   | Paper 4Kp/reel   | —                | —                | —                |
| C= 0.95±0.10 mm      | —               | —              | —                | Plastic 3Kp/reel | Plastic 3Kp/reel | —                | —                |
| D= 1.25±0.10 mm      | —               | —              | Plastic 3Kp/reel | Plastic 3Kp/reel | Plastic 3Kp/reel | Plastic 2Kp/reel | Plastic 1Kp/reel |
| G= 1.60±0.20 mm      | —               | —              | —                | Plastic 2Kp/reel | Plastic 2Kp/reel | —                | —                |
| S= 0.80±0.07 mm      | —               | Paper 4Kp/reel | —                | —                | —                | —                | —                |
| N= 0.50±0.05 mm      | Paper 10Kp/reel | —              | —                | —                | —                | —                | —                |
| K= 2.00±0.20 mm      | —               | —              | —                | —                | Plastic 2Kp/reel | Plastic 1Kp/reel | Plastic 1Kp/reel |
| M= 2.50±0.30 mm      | —               | —              | —                | —                | Plastic 1Kp/reel | —                | Plastic 1Kp/reel |

## Type TYC Series

### Capacitance & Voltage (Hi-Voltage NPO)

| EIA  | Size    | 0603 | 0805 |     |     |     | 1206 |     |     |     |      |      | 1210 |     |     |     |      |      | 1808 |      |      | 1812 |     |     |     |      |      |      |
|------|---------|------|------|-----|-----|-----|------|-----|-----|-----|------|------|------|-----|-----|-----|------|------|------|------|------|------|-----|-----|-----|------|------|------|
| Code | VDCW    | 100  | 100  | 200 | 250 | 500 | 100  | 200 | 250 | 500 | 1000 | 2000 | 100  | 200 | 250 | 500 | 1000 | 2000 | 1000 | 2000 | 3000 | 100  | 200 | 250 | 500 | 1000 | 2000 | 3000 |
| 0R5  | 0.5pF   | S    | A    | A   | A   | A   |      |     |     |     |      |      |      |     |     |     |      |      |      |      |      |      |     |     |     |      |      |      |
| 1R0  | 1       | S    | A    | A   | A   | A   |      |     |     |     |      |      |      |     |     |     |      |      |      |      |      |      |     |     |     |      |      |      |
| 1R2  | 1.2     | S    | A    | A   | A   | A   |      |     |     |     |      |      |      |     |     |     |      |      |      |      |      |      |     |     |     |      |      |      |
| 1R5  | 1.5     | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    |      |     |     |     |      |      |      |      |      |      |     |     |     |      |      |      |
| 1R8  | 1.8     | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    |      |     |     |     |      |      |      |      |      |      |     |     |     |      |      |      |
| 2R2  | 2.2     | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    |      |     |     |     |      |      |      |      |      |      |     |     |     |      |      |      |
| 2R7  | 2.7     | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    |      |     |     |     |      |      |      |      |      |      |     |     |     |      |      |      |
| 3R3  | 3.3     | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    |      |     |     |     |      |      |      |      |      |      |     |     |     |      |      |      |
| 3R9  | 3.9     | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    |      |     |     |     |      |      |      |      |      |      |     |     |     |      |      |      |
| 4R7  | 4.7     | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    |      |     |     |     |      |      |      |      |      |      |     |     |     |      |      |      |
| 5R6  | 5.6     | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    |      |     |     |     |      |      |      |      |      |      |     |     |     |      |      |      |
| 6R8  | 6.8     | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    |      |     |     |     |      |      |      |      |      |      |     |     |     |      |      |      |
| 8R2  | 8.2     | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    |      |     |     |     |      |      |      |      |      |      |     |     |     |      |      |      |
| 100  | 10pF    | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    | C    | C   | C   | C   | C    | C    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 120  | 12      | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    | C    | C   | C   | C   | C    | C    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 150  | 15      | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    | C    | C   | C   | C   | C    | C    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 180  | 18      | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    | C    | C   | C   | C   | C    | C    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 220  | 22      | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    | C    | C   | C   | C   | C    | C    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 270  | 27      | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    | C    | C   | C   | C   | C    | C    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 330  | 33      | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    | C    | C   | C   | C   | C    | C    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 390  | 39      | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    | C    | C   | C   | C   | C    | C    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 470  | 47      | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    | C    | C   | C   | C   | C    | C    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 560  | 56      | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    | C    | C   | C   | C   | C    | D    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 680  | 68      | S    | A    | A   | A   | A   | B    | B   | B   | B   | B    | B    | C    | C   | C   | C   | C    | D    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 820  | 82      | S    | A    | A   | A   | B   | B    | B   | B   | B   | B    | B    | C    | C   | C   | C   | C    | D    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 101  | 100pF   | S    | A    | A   | A   | B   | B    | B   | B   | B   | B    | B    | C    | C   | C   | C   | C    | D    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 121  | 120     | S    | A    | A   | A   | D   | B    | B   | B   | B   | B    | B    | D    | C   | C   | C   | C    | C    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 151  | 150     | S    | A    | B   | B   | D   | B    | B   | B   | B   | C    | D    | C    | C   | C   | C   | C    | D    | D    | D    | D    | D    | D   | D   | D   | D    | D    | D    |
| 181  | 180     | S    | A    | B   | B   | D   | B    | B   | B   | B   | C    | G    | C    | C   | C   | C   | C    | D    | D    | D    | K    | D    | D   | D   | D   | D    | D    | D    |
| 221  | 220     | S    | A    | D   | D   | D   | B    | B   | B   | B   | D    | G    | C    | C   | C   | C   | C    | D    | D    | D    | K    | D    | D   | D   | D   | D    | D    | D    |
| 271  | 270     | S    | A    | D   | D   | D   | B    | B   | B   | C   | D    |      | C    | C   | C   | C   | C    | D    | D    | D    | K    | D    | D   | D   | D   | D    | D    | K    |
| 331  | 330     | S    | A    | D   | D   | D   | B    | B   | B   | C   |      |      | C    | C   | C   | C   | D    |      | D    | D    |      | D    | D   | D   | D   | D    | D    | K    |
| 391  | 390     | S    | B    | D   | D   | D   | B    | B   | B   | C   |      |      | C    | C   | C   | C   | D    |      | D    | K    |      | D    | D   | D   | D   | D    | D    | K    |
| 471  | 470     | S    | B    | D   | B   | C   | C    | C   |     |     |      |      | C    | C   | C   | C   | D    |      | D    | K    |      | D    | D   | D   | D   | D    | D    | K    |
| 561  | 560     | S    | B    | D   | B   | C   | C    | C   |     |     |      |      | C    | C   | C   | C   |      |      | K    | K    |      | D    | D   | D   | D   | D    | D    |      |
| 681  | 680     | B    | D    | B   | C   | C   | C    |     |     |     |      |      | C    | C   | C   | C   |      |      | K    | K    |      | D    | D   | D   | D   | D    | K    |      |
| 821  | 820     | B    | D    | B   | C   | D   | D    |     |     |     |      |      | C    | C   | C   | C   |      |      | K    | K    |      | D    | D   | D   | D   | D    | K    |      |
| 102  | 1000pF  | B    | B    |     | C   |     |      |     |     |     |      |      | C    | C   | C   | C   |      |      | K    |      |      | D    | D   | D   | D   | K    | K    |      |
| 122  | 1200    | B    | B    | C   |     |     |      |     |     |     |      |      | C    | D   | D   | D   |      |      |      |      |      | D    | D   | D   | D   | K    |      |      |
| 152  | 1500    | B    | B    | C   |     |     |      |     |     |     |      |      | C    | D   | D   | D   |      |      |      |      |      | D    | D   | D   | D   | K    |      |      |
| 182  | 1800    | B    | B    | C   |     |     |      |     |     |     |      |      | C    | D   | D   | D   |      |      |      |      |      | D    | D   | D   | D   |      |      |      |
| 222  | 2200    | B    | B    | D   |     |     |      |     |     |     |      |      | C    | D   | D   |     |      |      |      |      |      | D    | D   | D   | D   |      |      |      |
| 272  | 2700    | D    | B    |     |     |     |      |     |     |     |      |      | C    | D   | D   |     |      |      |      |      |      | D    | D   | D   | D   |      |      |      |
| 332  | 3300    | D    | B    |     |     |     |      |     |     |     |      |      | C    | D   |     |     |      |      |      |      |      | D    | D   | D   | D   |      |      |      |
| 392  | 3900    | D    | B    |     |     |     |      |     |     |     |      |      | C    | D   |     |     |      |      |      |      |      | D    | D   |     |     |      |      |      |
| 472  | 4700    | B    |      |     |     |     |      |     |     |     |      |      | C    |     |     |     |      |      |      |      |      | D    | D   |     |     |      |      |      |
| 562  | 5600    | B    |      |     |     |     |      |     |     |     |      |      | C    |     |     |     |      |      |      |      |      | D    | D   |     |     |      |      |      |
| 682  | 6800    | C    |      |     |     |     |      |     |     |     |      |      | C    |     |     |     |      |      |      |      |      | D    | D   |     |     |      |      |      |
| 822  | 8200    | C    |      |     |     |     |      |     |     |     |      |      | C    |     |     |     |      |      |      |      |      | D    |     |     |     |      |      |      |
| 103  | 0.01μF  |      |      |     |     |     |      |     |     |     |      |      | C    |     |     |     |      |      |      |      |      | D    |     |     |     |      |      |      |
| 123  | 0.012   |      |      |     |     |     |      |     |     |     |      |      | D    |     |     |     |      |      |      |      |      | D    |     |     |     |      |      |      |
| 153  | 0.015   |      |      |     |     |     |      |     |     |     |      |      | D    |     |     |     |      |      |      |      |      | D    |     |     |     |      |      |      |
| 183  | 0.018   |      |      |     |     |     |      |     |     |     |      |      |      |     |     |     |      |      |      |      |      | D    |     |     |     |      |      |      |
| 223  | 0.022   |      |      |     |     |     |      |     |     |     |      |      |      |     |     |     |      |      |      |      |      | D    |     |     |     |      |      |      |
| 273  | 0.027   |      |      |     |     |     |      |     |     |     |      |      |      |     |     |     |      |      |      |      |      | D    |     |     |     |      |      |      |
| 333  | 0.033μF |      |      |     |     |     |      |     |     |     |      |      |      |     |     |     |      |      |      |      |      | D    |     |     |     |      |      |      |

| Size Unit: Inch (mm) | 0402 (1005)     | 0603 (1608)    | 0805 (2012)      | 1206 (3216)      | 1210 (3225)      | 1808 (4520)      | 1812 (4532)      |
|----------------------|-----------------|----------------|------------------|------------------|------------------|------------------|------------------|
| A= 0.60±0.10 mm      | —               | —              | Paper 4Kp/reel   | —                | —                | —                | —                |
| B= 0.80±0.10 mm      | —               | —              | Paper 4Kp/reel   | Paper 4Kp/reel   | —                | —                | —                |
| C= 0.95±0.10 mm      | —               | —              | —                | Plastic 3Kp/reel | Plastic 3Kp/reel | —                | —                |
| D= 1.25±0.10 mm      | —               | —              | Plastic 3Kp/reel | Plastic 3Kp/reel | Plastic 3Kp/reel | Plastic 2Kp/reel | Plastic 1Kp/reel |
| G= 1.60±0.20 mm      | —               | —              | —                | Plastic 2Kp/reel | Plastic 2Kp/reel | —                | —                |
| S= 0.80±0.07 mm      | —               | Paper 4Kp/reel | —                | —                | —                | —                | —                |
| N= 0.50±0.05 mm      | Paper 10Kp/reel | —              | —                | —                | —                | —                | —                |
| K= 2.00±0.20 mm      | —               | —              | —                | —                | Plastic 2Kp/reel | Plastic 1Kp/reel | Plastic 1Kp/reel |
| M= 2.50±0.30 mm      | —               | —              | —                | —                | Plastic 1Kp/reel | —                | Plastic 1Kp/reel |

## Type TYC Series

### Capacitance & Voltage (X7R/X5R)

| EIA Code | Size   | 0402 |     |     |     | 0603 |     |     |     | 0805 |      |     |     | 1206 |     |      |                | 1210           |                |                |      | 1812           |                |                |                |
|----------|--------|------|-----|-----|-----|------|-----|-----|-----|------|------|-----|-----|------|-----|------|----------------|----------------|----------------|----------------|------|----------------|----------------|----------------|----------------|
|          | VDCW   | 10V  | 16V | 25V | 50V | 6.3V | 10V | 16V | 25V | 50V  | 6.3V | 10V | 16V | 25V  | 50V | 6.3V | 10V            | 16V            | 25V            | 50V            | 6.3V | 10V            | 16V            | 25V            | 50V            |
| 101      | 100pF  | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      |                |                |                |                |      |                |                |                |                |
| 121      | 120    | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      |                |                |                |                |      |                |                |                |                |
| 151      | 150    | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      |                |                |                |                |      |                |                |                |                |
| 181      | 180    | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> |      |                |                |                |                |
| 221      | 220    | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> |      |                |                |                |                |
| 271      | 270    | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> |      |                |                |                |                |
| 331      | 330    | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> |      |                |                |                |                |
| 391      | 390    | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> |      |                |                |                |                |
| 471      | 470    | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> |      |                |                |                |                |
| 561      | 560    | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> |      |                |                |                |                |
| 681      | 680    | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> | B <sup>Δ</sup> |      |                |                |                |                |
| 821      | 820    | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      |                |                |                |                |
| 102      | 1000pF | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> |
| 122      | 1200   | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> |
| 152      | 1500   | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> |
| 182      | 1800   | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> |
| 222      | 2200   | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> |
| 272      | 2700   | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> |
| 332      | 3300   | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> |
| 392      | 3900   | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> |
| 472      | 4700   | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> |
| 562      | 5600   | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> |
| 682      | 6800   | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> | C <sup>Δ</sup> |
| 822      | 8200   | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 103      | 0.01μF | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 123      | 0.012  | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 153      | 0.015  | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 183      | 0.018  | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 223      | 0.022  | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 273      | 0.027  | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 333      | 0.033  | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 393      | 0.039  | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 473      | 0.047  | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 563      | 0.056  | N    | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 683      | 0.068  | *N   | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 823      | 0.082  | *N   | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 104      | 0.1μF  | *N   | N   | N   | N   |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 124      | 0.12   |      |     |     |     |      | S   | S   | S   | S    |      | B   | B   | B    | B   |      | B              | B              | B              | B              |      | C              | C              | C              | C              |
| 154      | 0.15   |      |     |     |     |      | S   | S   | S   | S    |      | D   | D   | D    | D   |      | C              | C              | C              | C              |      | C              | C              | C              | C              |
| 184      | 0.18   |      |     |     |     |      | S   | S   | S   | S    |      | D   | D   | D    | D   |      | C              | C              | C              | C              |      | C              | C              | C              | C              |
| 224      | 0.22   |      |     |     |     |      | S   | S   | S   | S    |      | D   | D   | D    | D   |      | C              | C              | C              | C              |      | C              | C              | C              | C              |
| 274      | 0.27   |      |     |     |     |      |     |     |     |      |      | D   | D   | D    | D   |      | C              | C              | C              | C              |      | C              | C              | C              | C              |
| 334      | 0.33   |      |     |     |     |      | *S  |     |     |      |      | D   | D   | D    | D   |      | C              | C              | C              | C              |      | C              | C              | C              | C              |
| 394      | 0.39   |      |     |     |     |      |     |     |     |      |      | D   | D   | D    | D   |      | C              | C              | C              | C              |      | C              | C              | C              | C              |
| 474      | 0.47   |      |     |     |     |      | *S  |     |     |      |      | D   | D   | D    | D   |      | D              | D              | D              | D              |      | C              | C              | C              | C              |
| 564      | 0.56   |      |     |     |     |      |     |     |     |      |      | D   | D   | D    | D   |      | D              | D              | D              | D              |      |                |                |                |                |
| 684      | 0.68   |      |     |     |     |      |     |     |     |      |      | D   | D   | D    | D   |      | D              | D              | D              | D              |      |                |                |                |                |
| 824      | 0.82   |      |     |     |     |      |     |     |     |      |      | D   | D   | D    | D   |      | D              | D              | D              | D              |      |                |                |                |                |
| 105      | 1μF    |      |     |     |     |      | *S  | *S  |     |      |      | D   | D   | D    | D   |      | D              | D              | D              | D              |      |                |                |                |                |
| 225      | 2.2    |      |     |     |     |      | *S  |     |     |      |      | *D  | *D  |      |     |      | *D             | *D             | G              |                |      | G              | G              | G              |                |
| 335      | 3.3    |      |     |     |     |      |     |     |     |      |      | *D  | *D  |      |     |      | *G             | *G             |                |                |      | K              | K              | K              |                |
| 475      | 4.7    |      |     |     |     |      |     |     |     |      |      | *D  |     |      |     |      | *G             | *G             | *G             |                |      | K              | K              | K              |                |
| 685      | 6.8    |      |     |     |     |      |     |     |     |      |      |     |     |      |     |      |                |                |                |                |      |                |                |                |                |
| 106      | 10μF   |      |     |     |     |      |     |     |     |      |      | *D  |     |      |     |      | *G             | *G             |                |                |      | *K             | *K             | *K             |                |
| 226      | 22μF   |      |     |     |     |      |     |     |     |      |      |     |     |      |     |      | *G             | *G             |                |                |      | *M             | *M             |                |                |
| 107      | 100μF  |      |     |     |     |      |     |     |     |      |      |     |     |      |     |      |                |                |                |                |      |                |                |                |                |

(1) [Δ]: The said items are made by NME (Noble Metal Electrode).

(2) [\*]: The said items are available in X5R.

(3) [S]: The thickness spec. of said items is special defined on 0.80±0.15/-0.1mm.

(4) [D]: The thickness spec. of said items is special defined on 1.25±0.2mm for 0805 and 1.15±0.15mm for 1206.

(5) [G]: The thickness spec. of said items is special defined on 1.60±0.3/-0.1mm.

| Size Unit: Inch (mm) | 0402 (1005)     | 0603 (1608)    | 0805 (2012)      | 1206 (3216)      | 1210 (3225)      | 1808 (4520)      | 1812 (4532)        |
|----------------------|-----------------|----------------|------------------|------------------|------------------|------------------|--------------------|
| A= 0.60±0.10 mm      | —               | —              | Paper 4Kp/reel   | —                | —                | —                | —                  |
| B= 0.80±0.10 mm      | —               | —              | Paper 4Kp/reel   | —                | —                | —                | —                  |
| C= 0.95±0.10 mm      | —               | —              | —                | Plastic 3Kp/reel | Plastic 3Kp/reel | —                | —                  |
| D= 1.25±0.10 mm      | —               | —              | Plastic 3Kp/reel | Plastic 3Kp/reel | Plastic 3Kp/reel | Plastic 2Kp/reel | Plastic 1Kp/reel   |
| G= 1.60±0.20 mm      | —               | —              | —                | Plastic 2Kp/reel | Plastic 2Kp/reel | —                | —                  |
| S= 0.80±0.07 mm      | —               | Paper 4Kp/reel | —                | —                | —                | —                | —                  |
| N= 0.50±0.05 mm      | Paper 10Kp/reel | —              | —                | —                | —                | —                | —                  |
| K= 2.00±0.20 mm      | —               | —              | —                | —                | Plastic 2Kp/reel | Plastic 1Kp/reel | Plastic 1Kp/reel   |
| M= 2.50±0.30 mm      | —               | —              | —                | —                | Plastic 1Kp/reel | —                | Plastic 1Kp/reel   |
| U= 2.80±0.30 mm      | —               | —              | —                | —                | —                | —                | Plastic 0.5Kp/reel |

## Type TYC Series

### Capacitance & Voltage (Hi-Voltage X7R)

| EIA  | Size   | 0603 | 0805 |     |     |     | 1206 |     |     |     |      |      |      | 1210 |     |     |     |      | 1808 |      |      | 1812 |     |     |     |      |      |      |
|------|--------|------|------|-----|-----|-----|------|-----|-----|-----|------|------|------|------|-----|-----|-----|------|------|------|------|------|-----|-----|-----|------|------|------|
| Code | VDCW   | 100  | 100  | 200 | 250 | 500 | 100  | 200 | 250 | 500 | 1000 | 1500 | 2000 | 100  | 200 | 250 | 500 | 1000 | 1000 | 1500 | 2000 | 100  | 200 | 250 | 500 | 1000 | 2000 | 3000 |
| 101  | 100pF  | S    | B    | B^  | B^  | B^  |      |     |     |     |      |      |      |      |     |     |     |      |      |      |      |      |     |     |     |      |      |      |
| 121  | 120    | S    | B    | B^  | B^  | B^  |      |     |     |     |      |      |      |      |     |     |     |      |      |      |      |      |     |     |     |      |      |      |
| 151  | 150    | S    | B    | B^  | B^  | B^  | B^   | B^  | B^  | B^  | B^   | B^   | B^   |      |     |     |     |      | D^   | D^   | D^   |      |     |     |     |      |      |      |
| 181  | 180    | S    | B    | B^  | B^  | B^  | B^   | B^  | B^  | B^  | B^   | B^   | B^   |      |     |     |     |      | D^   | D^   | D^   |      |     |     |     |      |      |      |
| 221  | 220    | S    | B    | B^  | B^  | B^  | B^   | B^  | B^  | B^  | B^   | B^   | B^   |      |     |     |     |      | D^   | D^   | D^   |      |     |     |     |      |      |      |
| 271  | 270    | S    | B    | B^  | B^  | B^  | B^   | B^  | B^  | B^  | B^   | B^   | B^   |      |     |     |     |      | D^   | D^   | D^   |      |     |     |     | D^   | D^   |      |
| 331  | 330    | S    | B    | B^  | B^  | B^  | B^   | B^  | B^  | B^  | B^   | B^   | B^   |      |     |     |     |      | D^   | D^   | D^   |      |     |     |     | D^   | D^   |      |
| 391  | 390    | S    | B    | B^  | B^  | B^  | B^   | B^  | B^  | B^  | B^   | B^   | C^   |      |     |     |     |      | D^   | D^   | D^   |      |     |     |     | D^   | D^   |      |
| 471  | 470    | S    | B    | B^  | B^  | B^  | B^   | B^  | B^  | B^  | B^   | B^   | C^   |      |     |     |     |      | D^   | D^   | D^   |      |     |     |     | D^   | D^   |      |
| 561  | 560    | S    | B    | B^  | B^  | B^  | B^   | B^  | B^  | B^  | B^   | B^   | C^   |      |     |     |     |      | D^   | D^   | D^   |      |     |     |     | D^   | D^   |      |
| 681  | 680    | S    | B    | B^  | B^  | B^  | B^   | B^  | B^  | B^  | B^   | C^   | C^   |      |     |     |     |      | D^   | D^   | D^   |      |     |     |     | D^   | D^   | K^   |
| 821  | 820    | S    | B    | B^  | B^  | B^  | B    | B^  | B^  | B^  | B^   | G^   | G^   |      |     |     |     |      | D^   | D^   | D^   |      |     |     |     | D^   | D^   | K^   |
| 102  | 1000pF | S    | B    | B^  | B^  | B^  | B    | B^  | B^  | B^  | B^   | G^   | G^   | C^   | C^  | C^  | C^  | C^   | D^   | D^   | K^   | D^   | D^  | D^  | D^  | D^   | D^   | K^   |
| 122  | 1200   | S    | B    | B^  | B^  | B^  | B    | B^  | B^  | B^  | B^   | G^   | G^   | C^   | C^  | C^  | C^  | C^   | D^   | D^   | K^   | D^   | D^  | D^  | D^  | D^   | D^   | D^   |
| 152  | 1500   | S    | B    | B^  | B^  | B^  | B    | B^  | B^  | B^  | C^   | G^   |      | C^   | C^  | C^  | C^  | C^   | D^   | D^   | K^   | D^   | D^  | D^  | D^  | D^   | D^   | D^   |
| 182  | 1800   | S    | B    | B^  | B^  | B^  | B    | B^  | B^  | B^  | C^   | G^   |      | C^   | C^  | C^  | C^  | C^   | D^   | D^   | K^   | D^   | D^  | D^  | D^  | D^   | D^   | D^   |
| 222  | 2200   | S    | B    | B^  | B^  | B^  | B    | B^  | B^  | B^  | D^   | G^   |      | C^   | C^  | C^  | C^  | C^   | D^   | D^   | K^   | D^   | D^  | D^  | D^  | D^   | D^   | D^   |
| 272  | 2700   | S    | B    | B^  | B^  | B^  | B    | B^  | B^  | B^  | G^   | G^   |      | C^   | C^  | C^  | C^  | C^   | D^   | D^   |      | D^   | D^  | D^  | D^  | D^   | D^   | D^   |
| 332  | 3300   | S    | B    | B^  | B^  |     | B    | B^  | B^  | B^  | G^   |      |      | C^   | C^  | C^  | C^  | D^   | D^   | K^   |      | D^   | D^  | D^  | D^  | D^   | D^   | K^   |
| 392  | 3900   | S    | B    | B^  | B^  |     | B    | B^  | B^  | B^  | G^   |      |      | C^   | C^  | C^  | C^  |      | D^   |      |      | D^   | D^  | D^  | D^  | D^   | D^   | K^   |
| 472  | 4700   | S    | B    | B^  | B^  |     | B    | B^  | B^  | B^  |      |      |      | C^   | C^  | C^  | C^  |      | D^   |      |      | D^   | D^  | D^  | D^  | D^   | D^   | K^   |
| 562  | 5600   | S    | B    | D^  | D^  |     | B    | B^  | B^  | B^  |      |      |      | C^   | C^  | C^  | C^  |      | K^   |      |      | D^   | D^  | D^  | D^  | D^   | D^   |      |
| 682  | 6800   | S    | B    | D^  | D^  |     | B    | B^  | B^  | B^  |      |      |      | C^   | C^  | C^  | C^  |      | K^   |      |      | D^   | D^  | D^  | D^  | D^   | D^   |      |
| 822  | 8200   | S    | B    | D^  | D^  |     | B    | B^  | B^  | C^  |      |      |      | C    | C^  | C^  | C^  |      | K^   |      |      | D^   | D^  | D^  | D^  | D^   | D^   |      |
| 103  | 0.01μF | S    | B    | D^  | D^  |     | B    | B^  | B^  | C^  |      |      |      | C    | C^  | C^  | C^  |      | K^   |      |      | D^   | D^  | D^  | D^  | D^   | D^   |      |
| 123  | 0.012  |      | B    |     |     |     | B    | B^  | B^  |     |      |      |      | C    | C^  | C^  | C^  |      |      |      |      | D^   | D^  | D^  | D^  | D^   | D^   | K^   |
| 153  | 0.015  |      | B    |     |     |     | B    | C^  | C^  |     |      |      |      | C    | C^  | C^  | C^  |      |      |      |      | D^   | D^  | D^  | D^  | D^   | D^   | K^   |
| 183  | 0.018  |      | B    |     |     |     | B    | C^  | C^  |     |      |      |      | C    | C^  | C^  | C^  |      |      |      |      | D^   | D^  | D^  | D^  | D^   | D^   |      |
| 223  | 0.022  |      | B    |     |     |     | B    | C^  | C^  |     |      |      |      | C    | C^  | C^  | D^  |      |      |      |      | D^   | D^  | D^  | D^  | D^   | D^   |      |
| 273  | 0.027  |      | D    |     |     |     | B    | C^  | C^  |     |      |      |      | C    | C^  | C^  |     |      |      |      |      | D^   | D^  | D^  | D^  | D^   | D^   |      |
| 333  | 0.033  |      | D    |     |     |     | B    | G^  | G^  |     |      |      |      | C    | C^  | C^  |     |      |      |      |      | D^   | D^  | D^  | D^  | D^   | D^   |      |
| 393  | 0.039  |      |      |     |     |     | B    | G^  | G^  |     |      |      |      | C    | C^  | C^  |     |      |      |      |      | D^   | D^  | D^  | D^  | D^   | D^   |      |
| 473  | 0.047  |      |      |     |     |     | B    | G^  | G^  |     |      |      |      | C    | D^  | D^  |     |      |      |      |      | D^   | D^  | D^  | D^  | D^   | D^   |      |
| 563  | 0.056  |      |      |     |     |     | B    |     |     |     |      |      |      | C    | D^  | D^  |     |      |      |      |      | D^   | D^  | D^  | D^  | D^   | D^   |      |
| 683  | 0.068  |      |      |     |     |     | B    |     |     |     |      |      |      | C    |     |     |     |      |      |      |      | D^   | D^  | D^  | D^  | D^   | D^   |      |
| 823  | 0.082  |      |      |     |     |     | D    |     |     |     |      |      |      | C    |     |     |     |      |      |      |      | D    | D^  | D^  | D^  | D^   | D^   | K^   |
| 104  | 0.1μF  |      |      |     |     |     | D    |     |     |     |      |      |      | C    |     |     |     |      |      |      |      | D    | D^  | D^  | D^  | D^   | D^   | K^   |
| 124  | 0.12   |      |      |     |     |     |      |     |     |     |      |      |      | C    |     |     |     |      |      |      |      | D    | D^  | D^  | D^  | D^   | D^   |      |
| 154  | 0.15   |      |      |     |     |     |      |     |     |     |      |      |      | D    |     |     |     |      |      |      |      | D    | K^  | K^  |     |      |      |      |
| 184  | 0.18   |      |      |     |     |     |      |     |     |     |      |      |      | D    |     |     |     |      |      |      |      | D    | K^  | K^  |     |      |      |      |
| 224  | 0.22   |      |      |     |     |     |      |     |     |     |      |      |      | D    |     |     |     |      |      |      |      | D    | K^  | K^  |     |      |      |      |
| 274  | 0.27   |      |      |     |     |     |      |     |     |     |      |      |      |      |     |     |     |      |      |      |      | D    |     |     |     |      |      |      |
| 334  | 0.33   |      |      |     |     |     |      |     |     |     |      |      |      |      |     |     |     |      |      |      |      | D    |     |     |     |      |      |      |
| 394  | 0.39   |      |      |     |     |     |      |     |     |     |      |      |      |      |     |     |     |      |      |      |      | D    |     |     |     |      |      |      |
| 474  | 0.47   |      |      |     |     |     |      |     |     |     |      |      |      |      |     |     |     |      |      |      |      | K    |     |     |     |      |      |      |
| 564  | 0.56   |      |      |     |     |     |      |     |     |     |      |      |      |      |     |     |     |      |      |      |      | K    |     |     |     |      |      |      |
| 684  | 0.68   |      |      |     |     |     |      |     |     |     |      |      |      |      |     |     |     |      |      |      |      | K    |     |     |     |      |      |      |
| 824  | 0.82   |      |      |     |     |     |      |     |     |     |      |      |      |      |     |     |     |      |      |      |      |      |     |     |     |      |      |      |
| 105  | 1μF    |      |      |     |     |     |      |     |     |     |      |      |      |      |     |     |     |      |      |      |      |      |     |     |     |      |      |      |

(1) [A]: The said items are made by NME (Noble Metal Electrode).

| Size Unit: Inch (mm) | 0402 (1005)     | 0603 (1608)    | 0805 (2012)      | 1206 (3216)      | 1210 (3225)      | 1808 (4520)      | 1812 (4532)      |
|----------------------|-----------------|----------------|------------------|------------------|------------------|------------------|------------------|
| A= 0.60±0.10 mm      | —               | —              | Paper 4Kp/reel   | —                | —                | —                | —                |
| B= 0.80±0.10 mm      | —               | —              | Paper 4Kp/reel   | Paper 4Kp/reel   | —                | —                | —                |
| C= 0.95±0.10 mm      | —               | —              | —                | Plastic 3Kp/reel | Plastic 3Kp/reel | —                | —                |
| D= 1.25±0.10 mm      | —               | —              | Plastic 3Kp/reel | Plastic 3Kp/reel | Plastic 3Kp/reel | Plastic 2Kp/reel | Plastic 1Kp/reel |
| G= 1.60±0.20 mm      | —               | —              | —                | Plastic 2Kp/reel | Plastic 2Kp/reel | —                | —                |
| S= 0.80±0.07 mm      | —               | Paper 4Kp/reel | —                | —                | —                | —                | —                |
| N= 0.50±0.05 mm      | Paper 10Kp/reel | —              | —                | —                | —                | —                | —                |
| K= 2.00±0.20 mm      | —               | —              | —                | —                | Plastic 2Kp/reel | Plastic 1Kp/reel | Plastic 1Kp/reel |
| M= 2.50±0.30 mm      | —               | —              | —                | —                | Plastic 1Kp/reel | —                | Plastic 1Kp/reel |

## Type TYC Series

### Capacitance & Voltage (Y5V)

| EIA  | Size   | 0402 |     |     |     |     | 0603 |     |     |     |     | 0805 |     |     |     |     | 1206 |     |     |     |     | 1210 |     |     |     | 1812 |     |     |     |
|------|--------|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|
| Code | VDCW   | 6.3V | 10V | 16V | 25V | 50V | 6.3V | 10V | 16V | 25V | 50V | 6.3V | 10V | 16V | 25V | 50V | 10V  | 16V | 25V | 35V | 50V | 10V  | 16V | 25V | 50V | 10V  | 16V | 25V | 50V |
| 102  | 1000pF |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |      |     |     |     |
| 122  | 1200   |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |      |     |     |     |
| 152  | 1500   |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |      |     |     |     |
| 182  | 1800   |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |      |     |     |     |
| 222  | 2200   |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |      |     |     |     |
| 272  | 2700   |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |      |     |     |     |
| 332  | 3300   |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |      |     |     |     |
| 392  | 3900   |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |      |     |     |     |
| 472  | 4700   |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |      |     |     |     |
| 562  | 5600   |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |      |     |     |     |
| 682  | 6800   |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |      |     |     |     |
| 822  | 8200   |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |      |     |     |     |
| 103  | 0.01μF |      | N   | N   | N   | N   |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   |      |     |     |     |      |     |     |     |
| 123  | 0.012  |      | N   | N   | N   | N   |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   |      |     |     |     |      |     |     |     |
| 153  | 0.015  |      | N   | N   | N   | N   |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   |      |     |     |     |      |     |     |     |
| 183  | 0.018  |      | N   | N   | N   | N   |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   |      |     |     |     |      |     |     |     |
| 223  | 0.022  |      | N   | N   | N   | N   |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   |      |     |     |     |      |     |     |     |
| 273  | 0.027  |      | N   | N   | N   | N   |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   |      |     |     |     |      |     |     |     |
| 333  | 0.033  |      | N   | N   | N   | N   |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   |      |     |     |     |      |     |     |     |
| 393  | 0.039  |      | N   | N   | N   |     |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   |      |     |     |     |      |     |     |     |
| 473  | 0.047  |      | N   | N   | N   |     |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   |      |     |     |     |      |     |     |     |
| 563  | 0.056  |      | N   | N   |     |     |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   |      |     |     |     |      |     |     |     |
| 683  | 0.068  |      | N   | N   |     |     |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   |      |     |     |     |      |     |     |     |
| 823  | 0.082  |      | N   | N   |     |     |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   |      |     |     |     |      |     |     |     |
| 104  | 0.1μF  |      | N   | N   |     |     |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 154  | 0.15   |      | N   |     |     |     |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 224  | 0.22   |      | N   |     |     |     |      | S   | S   | S   | S   |      | A   | A   | A   | A   | B    | B   | B   |     | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 334  | 0.33   | N    | N   |     |     |     |      | S   | S   | S   |     |      | B   | B   | B   | B   | B    | B   | B   |     | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 474  | 0.47   | N    | N   |     |     |     |      | S   | S   | S   |     |      | B   | B   | B   |     | B    | B   | B   |     | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 684  | 0.68   |      |     |     |     |     |      | S   |     |     |     |      | B   | B   | D   |     | B    | B   | B   |     | B   | C    | C   | C   | C   | D    | D   | D   | D   |
| 105  | 1μF    | N    |     |     |     |     |      | S   | S   |     |     |      | B   | B   | D   | D'  | C    | C   | C   |     | C   | C    | C   | C   | C   | D    | D   | D   | D   |
| 155  | 1.5    |      |     |     |     |     |      |     |     |     |     |      | D   | D   |     |     | C    | C   | C   |     |     | C    | C   | C   |     | D    | D   | D   | D   |
| 225  | 2.2    |      |     |     |     |     | S    |     |     |     |     |      | D   | D   |     |     | C    | C   | C   |     | D'  | C    | C   | C   |     | D    | D   | D   | D   |
| 335  | 3.3    |      |     |     |     |     |      |     |     |     |     |      | D   |     |     |     | D    | D   | D   |     |     | C    | C   | C   |     | D    | D   | D   | D   |
| 475  | 4.7    |      |     |     |     |     | S    |     |     |     |     |      | D   | D'  |     |     | D    | D   | D'  | D'  |     | C    | C   | D   | G   | D    | D   | D   | D   |
| 685  | 6.8    |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     | D    | D'  |     |     |     | C    | C   |     |     | D    | D   | D   | D   |
| 106  | 10μF   |      |     |     |     |     |      |     |     |     |     | D'   | D'  |     |     |     | D    | D'  |     |     |     | D    | D   | G   |     | D    | D   | D   |     |
| 226  | 22μF   |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     | G'   |     |     |     |     | K    | K   |     |     |      |     |     |     |
| 476  | 47μF   |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |     |     |     |     | K    |     |     |     |      |     |     |     |

(1) [D']: The thickness spec. of said items is special defined on 1.25±0.2mm for 0805 and 1.15±0.15mm for 1206.

(2) [G']: The thickness spec. of said items is special defined on 1.60±0.3/-0.1mm.

| Size Unit: Inch (mm) | 0402 (1005)     | 0603 (1608)    | 0805 (2012)      | 1206 (3216)      | 1210 (3225)      | 1808 (4520)      | 1812 (4532)      |
|----------------------|-----------------|----------------|------------------|------------------|------------------|------------------|------------------|
| A= 0.60±0.10 mm      | —               | —              | Paper 4Kp/reel   | —                | —                | —                | —                |
| B= 0.80±0.10 mm      | —               | —              | Paper 4Kp/reel   | Paper 4Kp/reel   | —                | —                | —                |
| C= 0.95±0.10 mm      | —               | —              | —                | Plastic 3Kp/reel | Plastic 3Kp/reel | —                | —                |
| D= 1.25±0.10 mm      | —               | —              | Plastic 3Kp/reel | Plastic 3Kp/reel | Plastic 3Kp/reel | Plastic 2Kp/reel | Plastic 1Kp/reel |
| G= 1.60±0.20 mm      | —               | —              | —                | Plastic 2Kp/reel | Plastic 2Kp/reel | —                | —                |
| S= 0.80±0.07 mm      | —               | Paper 4Kp/reel | —                | —                | —                | —                | —                |
| N= 0.50±0.05 mm      | Paper 10Kp/reel | —              | —                | —                | —                | —                | —                |
| K= 2.00±0.20 mm      | —               | —              | —                | —                | Plastic 2Kp/reel | Plastic 1Kp/reel | Plastic 1Kp/reel |

## Type TYC Series

### Capacitance & Voltage (Hi-Voltage Y5V)

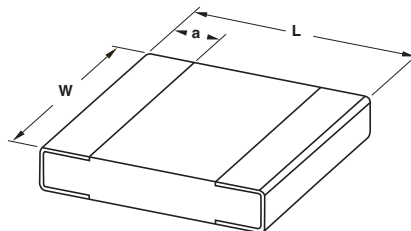
| EIA Code | Size VDCW | 0805 |     |     | 1206 |     |     | 1210 |     |     | 1812 |     |     |
|----------|-----------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
|          |           | 100  | 200 | 250 | 100  | 200 | 250 | 100  | 200 | 250 | 100  | 200 | 250 |
| 103      | 0.01μF    | B    | B   | B   | B    | B   | B   | C    | C   | C   | D    | D   | D   |
| 153      | 0.015     | B    | B   | B   | B    | B   | B   | C    | C   | C   | D    | D   | D   |
| 223      | 0.022     | B    | B   | B   | B    | B   | B   | C    | C   | C   | D    | D   | D   |
| 333      | 0.033     | B    | B   | B   | B    | B   | B   | C    | C   | C   | D    | D   | D   |
| 473      | 0.047     | B    | B   | B   | B    | B   | B   | C    | C   | C   | D    | D   | D   |
| 683      | 0.068     | B    | B   | B   | B    | B   | B   | C    | C   | C   | D    | D   | D   |
| 104      | 0.1μF     | B    |     |     | B    | B   | B   | C    | C   | C   | D    | D   | D   |
| 154      | 0.15      |      |     |     | C    | C   | C   | C    | C   | C   | D    | D   | D   |
| 224      | 0.22      |      |     |     | C    |     |     | C    |     |     | D    | D   | D   |
| 334      | 0.33      |      |     |     |      |     |     | C    |     |     | D    | D   | D   |
| 474      | 0.47      |      |     |     |      |     |     |      |     |     | D    | D   | D   |
| 684      | 0.68      |      |     |     |      |     |     |      |     |     | D    | D   | D   |
| 105      | 1μF       |      |     |     |      |     |     |      |     |     | D    |     |     |

| Size Unit: Inch (mm) | 0805 (2012)      | 1206 (3216)      | 1210 (3225)      | 1812 (4532)      |
|----------------------|------------------|------------------|------------------|------------------|
| A= 0.60±0.10 mm      | Paper 4Kp/reel   | —                | —                | —                |
| B= 0.80±0.10 mm      | Paper 4Kp/reel   | Paper 4Kp/reel   | —                | —                |
| C= 0.95±0.10 mm      | —                | Plastic 3Kp/reel | Plastic 3Kp/reel | —                |
| D= 1.25±0.10 mm      | Plastic 3Kp/reel | Plastic 3Kp/reel | Plastic 3Kp/reel | Plastic 1Kp/reel |
| G= 1.60±0.20 mm      | —                | Plastic 2Kp/reel | —                | —                |
| S= 0.80±0.07 mm      | —                | —                | —                | —                |
| N= 0.50±0.05 mm      | —                | —                | —                | —                |
| K= 2.00±0.20 mm      | —                | —                | —                | Plastic 1Kp/reel |
| M= 2.50±0.30 mm      | —                | —                | —                | —                |

### Packaging

| Chip Size | Paper Tape   |           |           | Plastic Tape |           |           | Chip Thickness    |
|-----------|--------------|-----------|-----------|--------------|-----------|-----------|-------------------|
|           | Width (reel) | Thickness | Unit/Reel | Width (reel) | Thickness | Unit/Reel |                   |
| 0402      | 8mm (7")     | N         | 10Kp/Reel |              |           |           | A=0.50~0.70       |
| 0603      | 8mm (7")     | S         | 4Kp/Reel  |              |           |           | B=0.85±0.05/-0.15 |
|           | 8mm (10")    | S         | 10Kp/Reel |              |           |           | C=1.00±0.05/-0.13 |
| 0805      | 8mm (13")    | S         | 15Kp/Reel |              |           |           | D=1.20±0.15       |
|           | 8mm (7")     | A, B      | 4Kp/Reel  | 8mm (7")     | C, D      | 3Kp/Reel  | S=0.80±0.07       |
|           | 8mm (10")    | A, B      | 10Kp/Reel | 8mm (10")    | C, D      | 3Kp/Reel  | H=0.50~0.60       |
| 1206      | 8mm (13")    | A, B      | 15Kp/Reel | 8mm (13")    | C, D      | 3Kp/Reel  | E=0.65~0.75       |
|           | 8mm (7")     | A, B      | 4Kp/Reel  | 8mm (7")     | C, D      | 3Kp/Reel  | N=0.50±0.05       |
|           | 8mm (10")    | A, B      | 10Kp/Reel | 8mm (10")    | C, D      | 3Kp/Reel  | F=1.40±0.05/-0.15 |
| 1210      | 8mm (13")    | A, B      | 15Kp/Reel | 8mm (13")    | C, D      | 3Kp/Reel  | G=1.60±0.05/-0.15 |
|           |              |           |           | 8mm (7")     | F, G      | 3Kp/Reel  | K=2.00±0.10       |
|           |              |           |           | 8mm (7")     | K         | 3Kp/Reel  |                   |
| 1808      |              |           |           | 8mm (7")     | C, D      | 3Kp/Reel  |                   |
|           |              |           |           | 12mm (7")    | C, G      | 3Kp/Reel  |                   |
| 1812      |              |           |           | 12mm (7")    | K         | 3Kp/Reel  |                   |

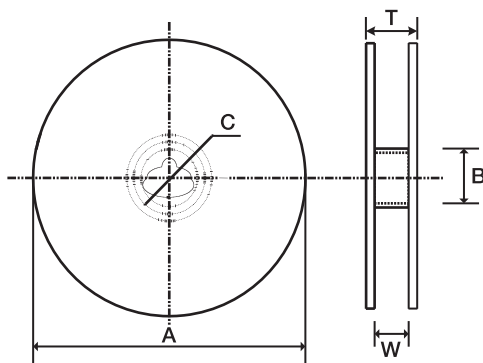
### Dimensions



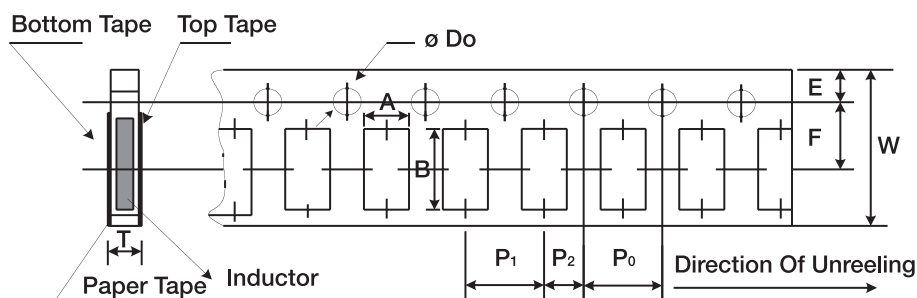
| SIZE CODE | L         | W         | A               |
|-----------|-----------|-----------|-----------------|
| 0402      | 1.00±0.05 | 0.50±0.05 | 0.25±0.05/-0.10 |
| 0603      | 1.60±0.10 | 0.80±0.07 | 0.40±0.15       |
| 0805      | 2.00±0.15 | 1.25±0.10 | 0.50±0.20       |
| 1206      | 3.20±0.15 | 1.60±0.15 | 0.60±0.20       |
| 1210      | 3.20±0.30 | 2.50±0.20 | 0.75±0.25       |
| 1808      | 4.50±0.40 | 2.03±0.25 | 0.75±0.25       |
| 1812      | 4.50±0.40 | 3.20±0.30 | 0.75±0.25       |

## Type TYC Series

### Packaging (continued)



| $\phi A$          | $\phi B$     | $\phi C$     | W            |
|-------------------|--------------|--------------|--------------|
| 178 $\pm$ 1 (7")  | 60.5 $\pm$ 1 | 13.0 $\pm$ 1 | 9.0 $\pm$ 1  |
| 250 $\pm$ 1 (10") | 80 $\pm$ 1   |              | 13.5 $\pm$ 1 |
| 330 $\pm$ 1 (13") | 100 $\pm$ 1  |              | 9.0 $\pm$ 1  |



| Type | A              | B               | W              | $\phi D_0$      | E              | F              | P <sub>0</sub> | P <sub>1</sub> | P <sub>2</sub> | T              |
|------|----------------|-----------------|----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 0402 | 0.7 $\pm$ 0.05 | 1.23 $\pm$ 0.05 |                |                 |                |                |                |                |                | 0.6 $\pm$ 0.05 |
| 0603 | 1.0 $\pm$ 0.1  | 1.84 $\pm$ 0.1  | 8.0 $\pm$ 0.32 | 1.55 $\pm$ 0.05 | 1.70 $\pm$ 0.1 | 3.50 $\pm$ 0.1 | 4.0 $\pm$ 0.1  | 4.0 $\pm$ 0.1  | 2.0 $\pm$ 0.1  | <1.0           |
| 0805 | 1.55 $\pm$ 0.2 | 2.35 $\pm$ 0.2  |                |                 |                |                |                |                |                |                |
| 1206 | 2.0 $\pm$ 0.2  | 3.5 $\pm$ 0.2   |                |                 |                |                |                |                |                |                |

### How to Order

| TYC                                     | 0201 | A          | 101              | B                                                                                                                             | C        | T                                      |
|-----------------------------------------|------|------------|------------------|-------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------------|
| Common Part                             | Size | Dielectric | Capacitance Code | Tolerance                                                                                                                     | Voltage  | Packaging                              |
| TYC - Multilayer Ceramic Chip Capacitor | 0201 | A = NPO    | 101 - 100pF      | B = 0.1pF<br>C = 0.25pF<br>D = 0.5pF<br>F = +/- 1%<br>G = +/- 2%<br>J = +/- 5%<br>K = +/- 10%<br>M = +/- 20%<br>Z = +80%/-20% | C = 6.3V | T = Paper (7")<br><br>P = Plastic (7") |
|                                         | 0402 |            |                  |                                                                                                                               | D = 10V  |                                        |
|                                         | 0603 | B = X7R    | 102 - 1000pF     |                                                                                                                               | E = 16V  |                                        |
|                                         | 0805 | C = X5R    | 103 - 0.01uF     |                                                                                                                               | F = 25V  |                                        |
|                                         | 1206 | D = Y5V    |                  |                                                                                                                               | G = 50V  |                                        |
|                                         |      |            |                  |                                                                                                                               | H = 100V |                                        |
|                                         |      |            |                  | J = 200V                                                                                                                      |          |                                        |
|                                         |      |            |                  | L = 500V                                                                                                                      |          |                                        |
|                                         |      |            |                  | P = 1KV                                                                                                                       |          |                                        |
|                                         |      |            |                  | Q = 2KV                                                                                                                       |          |                                        |
|                                         |      |            |                  | R = 3KV                                                                                                                       |          |                                        |
|                                         |      |            |                  | S = 4KV                                                                                                                       |          |                                        |

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