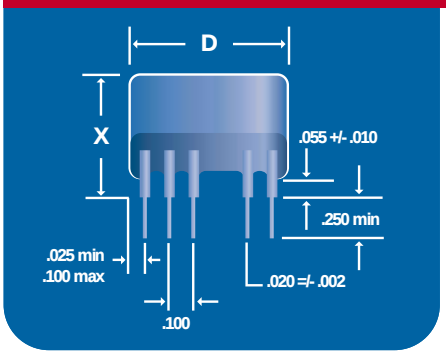
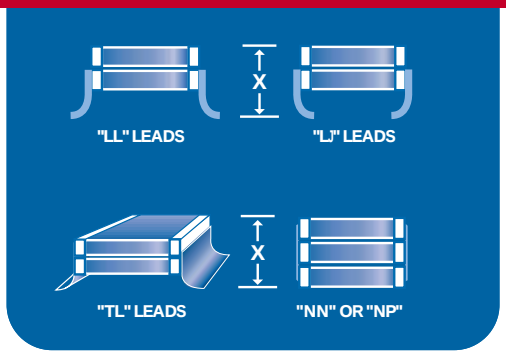
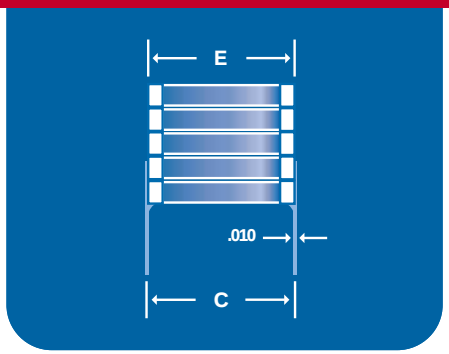
# ST CAPACITOR ASSEMBLIES

**NOVACAP capacitor assemblies with low equivalent series resistance (ESR)** and low equivalent series inductance (ESL) are available in dielectric characteristics COG, X7R and Y5V. These assemblies provide the highest capacitance available, based on chip designs for general purpose use. The leaded configurations safeguard the device against thermal and mechanical stresses, and include thru-hole and surface mount J and L style leads, bonded with high temperature solder. High reliability versions for Switch Mode use are described separately, (refer to the Switch M Capacitor Assemblies data sheet). Other sizes and voltage ratings than indicated in the tables are available, consult NOVACAP.

## LEAD CONFIGURATION AND ASSEMBLY OPTIONS



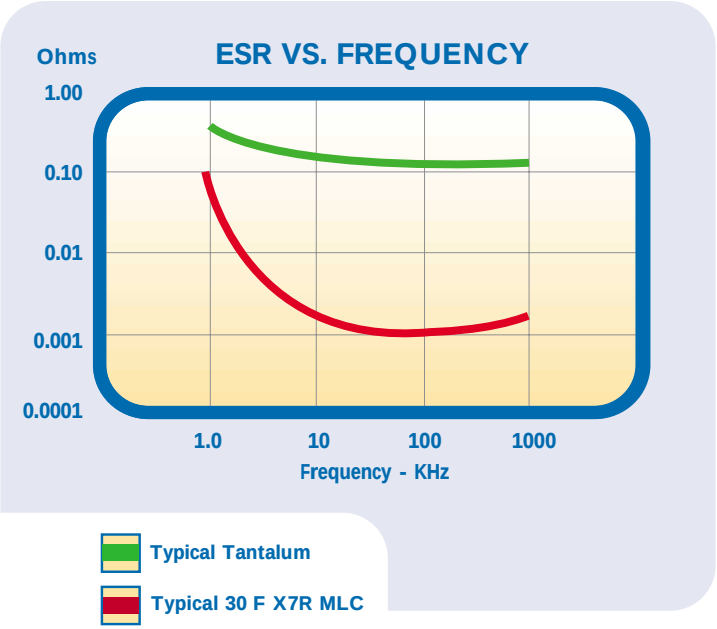



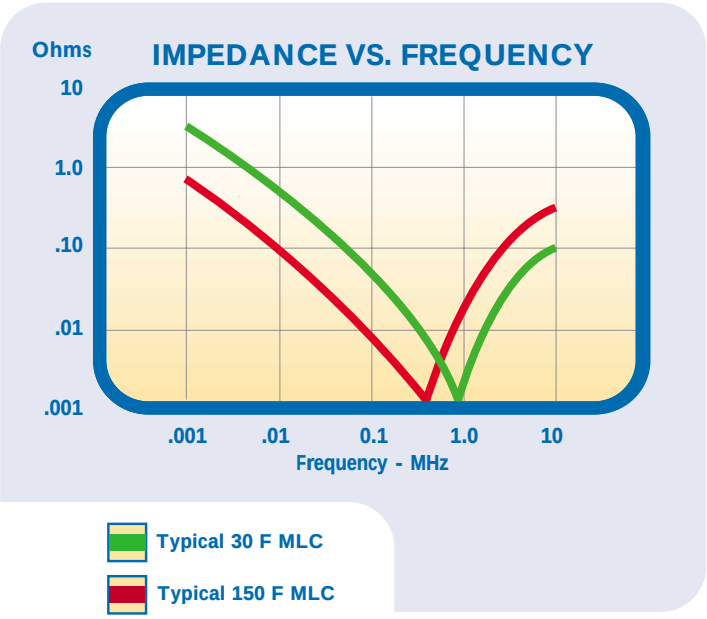

## GENERAL PURPOSE ST SERIES CAPACITANCE & VOLTAGE SELECTION

| DIMENSIONS - INCH (MM) | | | | | |
|---|---|---|---|---|---|
| SIZE | C +/- .025 | D +/- .025 | E Max | X Max | Leads /Side |
| ST 1812 | .210 (5.33) | .125 (3.18) | .260 (6.60) | .600 (15.2) | 2 |
| ST 1825 | .210 (5.33) | .250 (6.35) | .260 (6.60) | .600 (15.2) | 3 |
| ST 2225 | .250 (6.35) | .250 (6.35) | .300 (7.62) | .715 (18.2) | 3 |
| ST 3640 | .400 (10.2) | .400 (10.2) | .430 (10.9) | .715 (18.2) | 4 |
| ST 4540 | .480 (12.2) | .400 (10.2) | .530 (13.5) | .715 (18.2) | 4 |
| ST 5550 | .580 (14.7) | .500 (12.7) | .630 (16.0) | .715 (18.2) | 5 |
| ST 7565 | .780 (19.8) | .650 (16.5) | .830 (21.1) | .715 (18.2) | 6 |

| MAXIMUM CAPACITANCE (FULL STACK OF 6 CHIPS) 3 Digit Code: See How to Order | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| COG | | | | X7R | | | | Y5V | |
| 50v | 100v | 200v | 500v | 50v | 100v | 200v | 500v | 50v | 100v |
| 184 | 154 | 124 | 393 | 475 | 395 | 225 | 684 | 226 | 106 |
| 474 | 334 | 274 | 823 | 106 | 825 | 565 | 155 | 476 | 186 |
| 564 | 474 | 334 | 104 | 106 | 106 | 685 | 225 | 566 | 226 |
| 125 | 125 | 564 | 224 | 276 | 226 | 186 | 335 | | |
| 155 | 125 | 684 | 224 | 336 | 276 | 226 | 335 | | |
| 155 | 125 | 824 | 274 | 396 | 336 | 226 | 565 | | |
| 335 | 225 | 155 | 564 | 826 | 566 | 476 | 106 | | |

Dimensions in inches; bracketed dimensions in millimeters.




## COG DIELECTRIC CHARACTERISTICS

| | |
|---|---|
| OPERATING TEMPERATURE RANGE: | -55 C to 125 C |
| TEMPERATURE COEFFICIENT: | 0 +/- 30 ppm/ C |
| DISSIPATION FACTOR @ 25 C: | .001(0.1%) max |
| INSULATION RESISTANCE, 25 C<br>125 C | >100G or >1000 F<br>>10G or >100 F |
| DIELECTRIC WITHSTANDING VOLTAGE:<br>* WHICHEVER IS GREATER | < 200V or >100 F<br>201-500V, 150% or 500V* |
| AGING RATE: | 0% per decade |
| TEST PARAMETERS 25 C: | 1KHz, 1.0 +/- 0.2 VRMS<br>1MHZ for Capacitance <100pF |

## X7R DIELECTRIC CHARACTERISTICS

| | |
|---|---|
| OPERATING TEMPERATURE RANGE: | -55 C to 125 C |
| TEMPERATURE COEFFICIENT: | +/-15% ‡C Max. |
| DISSIPATION FACTOR @ 25 C: | 2.5% max @ >25V<br>3.5% max @ 25V |
| INSULATION RESISTANCE, 25 C<br>125 C | >100G or >1000 F<br>>10G or >100 F |
| DIELECTRIC WITHSTANDING VOLTAGE:<br>* WHICHEVER IS GREATER | <200V,250%<br>201-500V,150% or 500V* |
| AGING RATE: | < 2.0% per decade |
| TEST PARAMETERS 25 C: | 1KHz, 1.0 +/- 0.2 VRMS |

## Y5V DIELECTRIC CHARACTERISTICS

| | |
|---|---|
| OPERATING TEMPERATURE RANGE: | -30 C to 85 C |
| TEMPERATURE COEFFICIENT: | +22% -82% ‡C Max. |
| DISSIPATION FACTOR @ 25 C: | 5.0% max @ >25V<br>7.0% max @ 25V |
| INSULATION RESISTANCE, 25 C<br>125 C | >10G or >100 F<br>N/A |
| DIELECTRIC WITHSTANDING VOLTAGE:<br>* WHICHEVER IS GREATER | <200V, 250%<br>201-500V,150% or 500V* |
| AGING RATE: | <2.0% per decade |
| TEST PARAMETERS 25 C: | 1KHz, 0.5 +/- 0.2 VRMS |

## HOW TO ORDER

| ST | 3640 | B | 825 | K | 101 | L J | X | W | M |
|---|---|---|---|---|---|---|---|---|---|
| **STYLE**<br>ST = General Purpose | **SIZE**<br>See Chart | **DIELECTRIC**<br>N = COG<br>B = X7R<br>Y = Y5V | **CAPACITANCE**<br>Value in Picofarads<br>Two significant figures, followed by number of zeros:<br>825=8,200,000 pF (8.2m F) | **TOLERANCE**<br>B = 0.10 pF<br>C = 0.25 pF<br>D = 0.50 pF<br>F = +/- 1.0 %<br>G = +/- 2.0 %<br>H = +/- 3.0 %<br>J = +/- 5.0 %<br>K = +/- 10 %<br>M = +/- 20 %<br>Z = +80% -20%<br>P = +100% -0%<br>COG | **VOLTAGE-VDCW**<br>Two significant figures, followed by number of zeros:<br>101 = 100V | **LEAD STYLE**<br>LN = Straight<br>LL = L Lead<br>LJ = J Lead<br>TL = L Tab<br>TJ = J Tab<br>NN = Nickel<br>NP = Pd/Ag | **OPTION**<br>Specify Standoff dimension (X) if less than max. | **PACKING OPTION**<br>W=Waffle<br>T=Reeled | **OPTION**<br>M=Marked |