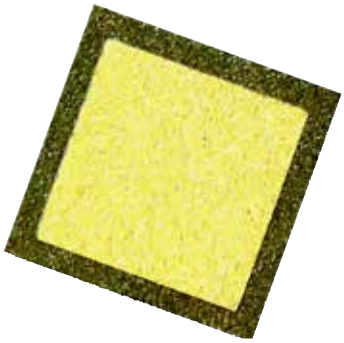
# CSM Series — Margin Capacitors

Margin caps have the topside electrode withdrawn from the edges in order to increase the distance between electrodes and dramatically decrease the possibilities of shorting when epoxy die-mounting. This style is also widely used for optical recognition-based assembly.

Increased margin sizes and special terminations are available for high power LC filter applications.



## DESCRIPTION

• Margin capacitors can be customized to any sized square or rectangle

## CSM STANDARD CAPACITANCE TOLERANCE CODES

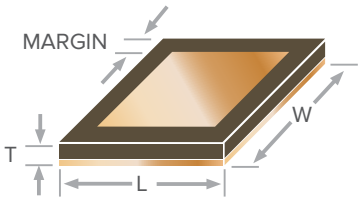
| Class I Dielectrics: C-20 thru C-NR | | Class II Dielectrics: C-80 thru C-400 | |
|---|---|---|---|
| Tolerance | Code | Tolerance | Code |
| ±.50pF | D | -20% thru +80% | Z |
| ±.25pF | C | Guaranteed Min. Value | GMV |
| ±.10pF | B | ± 20% | M |
| ±.05pF | A | ± 15% | L |
| ±.01pF | P | ± 10% | K |
| ± 20% | M | ± 5% | J |
| ± 15% | L | | |
| ± 10% | K | | |
| ± 5% | J | | |
| ± 3% | H | | |
| ± 2% | G | | |

For H and G tolerances, part thickness has to be >10mils. Consult factory for H and G tolerance parts

## CSM STANDARD DIMENSIONAL TOLERANCES

| Length & Width | L or W Tolerance | Margin Nominal | Thickness |
|---|---|---|---|
| ≤.010 | ± .002 | .001 | ± .0015 |
| .011 thru .029 | ± .002 | .002 | |
| ≥.030 | ± .003 | .002 | |
| All dimensions given are inches | | | |

## CSM CHIP DIMENSIONS




## CSM ELECTRODE CONFIGURATION

Two electrodes

## ORDERING INFORMATION — CSM SERIES — MARGIN CAPACITORS

| CSM | - | BE | - | 10 x 10 | - | x 5 | - | G | - | 2R9 | - | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Style | | Dielectric Type | | Length x Width (mils) | | Thickness (mils) | | Metallization | | Capacitance (pF) | | Capacitance Tolerance |

| CSM | See Class I and Class II tables (page 29) | See CSM Chip Dimensions (at right) | See CSM Selection Chart (at right) | G = Gold | First two digits represent significant figures and the last, the number of zeros to follow. When required, the letter "R" is used as a decimal point and the succeeding digits represent significant figures only. e.g.: 101 = 100pF, 1R6 = 1.6pF | See CSM Standard Capacitance Tolerance Codes (above) |
|---|---|---|---|---|---|---|

Example shown: Compex Series CSM, dielectric type C-BE, .010" x .010" x .005", gold, 2.9pF, ±20% tolerance

Please contact factory to request free samples.

# CSM Series – Margin Capacitors

## CSM SELECTION CHART

Note: Selection Chart is for guidance only. All Compex parts are built to specific customer requirements.

**Capacitor Size in Mils**

| MATERIAL | 10x10 | | | 12x12 | | | 15x15 | | | 20x20 | | | 25x25 | | | 30x30 | | | 35x35 | | | 40x40 | | | 50x50 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MIN. | MAX. | Tolerance | MIN. | MAX. | Tolerance | MIN. | MAX. | Tolerance | MIN. | MAX. | Tolerance | MIN. | MAX. | Tolerance | MIN. | MAX. | Tolerance | MIN. | MAX. | Tolerance | MIN. | MAX. | Tolerance | MIN. | MAX. | Tolerance |
| C-20 | 0.01 | 0.02 | | 0.02 | 0.03 | | 0.03 | 0.04 | | 0.05 | 0.07 | | 0.07 | 0.11 | | 0.11 | 0.17 | | 0.15 | 0.23 | | 0.20 | 0.22 | | 0.30 | 0.35 | |
| C-28 | 0.03 | 0.04 | P | 0.04 | 0.06 | | 0.06 | 0.09 | | 0.11 | 0.16 | | 0.17 | 0.26 | | 0.24 | 0.38 | | 0.33 | 0.54 | | 0.44 | 0.5 | | 0.69 | 0.8 | |
| C-30 | 0.03 | 0.05 | P | 0.04 | 0.07 | P | 0.06 | 0.09 | P | 0.12 | 0.18 | A | 0.18 | 0.29 | A | 0.26 | 0.43 | A | 0.37 | 0.59 | B | 0.48 | 0.55 | B | 0.76 | 0.9 | B |
| C-35 | 0.03 | 0.05 | P | 0.04 | 0.07 | P | 0.07 | 0.09 | P | 0.12 | 0.18 | A | 0.18 | 0.3 | A | 0.28 | 0.43 | A | 0.38 | 0.6 | B | 0.49 | 0.57 | B | 0.77 | 0.9 | B |
| C-37 | 0.04 | 0.06 | A | 0.06 | 0.09 | P | 0.08 | 0.12 | A | 0.15 | 0.23 | A | 0.24 | 0.38 | A | 0.36 | 0.56 | B | 0.48 | 0.77 | B | 0.63 | 0.73 | B | 0.99 | 1.2 | B |
| C-40 | 0.06 | 0.1 | A | 0.09 | 0.14 | A | 0.14 | 0.2 | A | 0.24 | 0.37 | A | 0.38 | 0.6 | B | 0.56 | 0.9 | B | 0.76 | 1.2 | C | 1 | 1.2 | C | 1.6 | 1.9 | C |
| C-50 | 0.13 | 0.2 | A | 0.18 | 0.29 | A | 0.26 | 0.39 | A | 0.48 | 0.74 | B | 0.77 | 1.2 | B | 1.12 | 1.8 | C | 1.5 | 2.5 | C | 2 | 2.3 | C | 3.1 | 3.7 | D |
| C-55 | 0.16 | 0.25 | A | 0.23 | 0.37 | A | 0.33 | 0.48 | A | 0.61 | 0.9 | B | 0.95 | 1.5 | C | 1.4 | 2.2 | C | 2 | 3.1 | C | 2.5 | 2.9 | C | 3.9 | 4.6 | D |
| C-58 | 0.29 | 0.46 | A | 0.43 | 0.68 | B | 0.62 | 0.9 | B | 1.13 | 1.7 | C | 1.8 | 2.8 | C | 2.6 | 4.1 | D | 3.6 | 5.7 | D | 4.7 | 5.4 | D | 7.4 | 9 | K |
| C-NR | 0.47 | 0.74 | B | 0.68 | 1.1 | B | 1 | 1.4 | C | 1.8 | 2.8 | C | 2.9 | 4.5 | D | 4.1 | 6.6 | K | 5.8 | 9 | K | 7.5 | 9 | K | 12 | 14 | K |
| C-80 | 0.94 | 1.4 | K | 1.4 | 2.2 | K | 2 | 2.9 | K | 3.7 | 5.5 | K | 5.8 | 9 | K | 8.4 | 14 | K | 12 | 19 | K | 15 | 17 | K | 24 | 27 | K |
| C-BD | 2.5 | 4 | K | 3.7 | 5.8 | K | 5.3 | 7.8 | K | 9.7 | 14 | K | 15 | 24 | K | 22 | 36 | K | 31 | 49 | K | 40 | 47 | K | 63 | 73 | K |
| C-BE | 3.9 | 6.2 | K | 5.6 | 9 | K | 8.3 | 12 | K | 15 | 23 | K | 24 | 37 | K | 35 | 55 | K | 48 | 77 | K | 63 | 72 | K | 99 | 110 | K |
| C-100 | 6.9 | 11 | K | 10 | 16 | K | 15 | 21 | K | 26 | 41 | K | 43 | 66 | K | 61 | 90 | K | 84 | 140 | K | 110 | 130 | K | 170 | 200 | K |
| C-120 | 10.9 | 17 | K | 16 | 26 | K | 23 | 34 | K | 43 | 65 | K | 67 | 100 | K | 98 | 150 | K | 140 | 210 | K | 170 | 200 | K | 280 | 320 | K |
| C-BN | 14 | 22 | K | 20 | 32 | K | 29 | 43 | K | 53 | 82 | K | 84 | 140 | K | 130 | 200 | K | 170 | 270 | K | 220 | 260 | K | 350 | 400 | K |
| C-140 | 35 | 54 | M | 49 | 80 | M | 72 | 110 | M | 140 | 200 | M | 210 | 330 | M | 310 | 480 | M | 430 | 670 | M | 550 | 640 | M | 860 | 1000 | M |
| C-200 | 78 | 130 | M | 114 | 180 | M | 160 | 250 | M | 300 | 460 | M | 480 | 750 | M | 700 | 1100 | M | 950 | 1500 | M | 1300 | 1400 | M | 2000 | 2300 | M |
| C-400 | 109 | 170 | M | 160 | 260 | M | 230 | 340 | M | 430 | 650 | M | 670 | 1000 | M | 980 | 1500 | M | 1400 | 2100 | M | 1700 | 2000 | M | 2800 | 3200 | M |