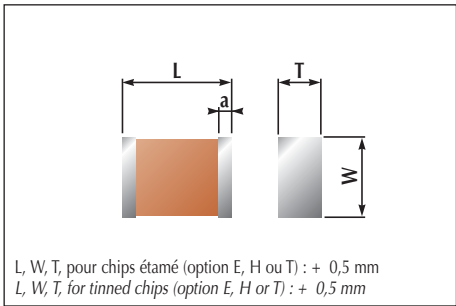


**BASSE TENSION  
LOW VOLTAGE**



**CARACTERISTIQUES GENERALES**

|                                  |   |
|----------------------------------|---|
| Diélectrique                     | Céramique classe 2                        |
| Technologie                      | Chips multicouches terminaisons soudables |
| Caract. capacité temp.           | 2B1 - 2C1 - 2R1                           |
| Température d'utilisation        | - 55°C + 125°C                            |
| Tension nominale U <sub>RC</sub> | 16 V - 100 V                              |
| Tension de tenue                 | 2,5 U <sub>RC</sub>                       |
| Tangente δ à 1 MHz               |   |
| C <sub>R</sub> ≤ 100 pF          | ≤ 250.10 <sup>-4</sup>                    |
| Tangente δ à 1 kHz               |   |
| C <sub>R</sub> > 100 pF          | ≤ 250.10 <sup>-4</sup>                    |
| Résistance d'isolement           |   |
| C <sub>R</sub> ≤ 10 000 pF       | ≥ 100 000 MΩ                              |
| C <sub>R</sub> > 10 000 pF       | ≥ 1 000 MΩ.μF                             |
| <b>MARQUAGE Sur demande</b>      |   |
| Valeur de capacité               | En clair ou en code                       |

**MAIN CHARACTERISTICS**

|                               |  |
|-------------------------------|--|
| Dielectric                    | Ceramic class 2                        |
| Technology                    | Multilayer chips weldable terminations |
| Capacit. temp. Charact.       | 2B1 - 2C1 - 2R1                        |
| Operating temperature         | - 55°C + 125°C                         |
| Rated voltage U <sub>RC</sub> | 16 V - 100 V                           |
| Test voltage                  | 2,5 U <sub>RC</sub>                    |
| Tangent δ at 1 MHz            |  |
| C <sub>R</sub> ≤ 100 pF       | ≤ 250.10 <sup>-4</sup>                 |
| Tangent δ at 1 kHz            |  |
| C <sub>R</sub> > 100 pF       | ≤ 250.10 <sup>-4</sup>                 |
| Insulation resistance         |  |
| C <sub>R</sub> ≤ 10 000 pF    | ≥ 100 000 MΩ                           |
| C <sub>R</sub> > 10 000 pF    | ≥ 1 000 MΩ.μF                          |
| <b>MARKING On request</b>     |  |
| Capacitance value             | Clear or coded                         |

**CONDENSATEURS CHIPS CERAMIQUE CLASSE 2**

**CERAMIC CHIP CAPACITORS CLASS 2**

|                     | Format / Format                   |                  |                  |                  |                 |                 | Code des valeurs de C <sub>k</sub><br>Capacitance value coded | Tolérances sur capacité<br>Tolerance on capacitance |    |       |     |    |       |     |     |     |     |
|---------------------|-----------------------------------|------------------|------------------|------------------|-----------------|-----------------|---|---|----|-------|-----|----|-------|-----|-----|-----|-----|
|                     | 1005                              | 1806             | 1605             | 2210             | 2528            | 3030            |   |   |    |       |     |    |       |     |     |     |     |
|                     | Modèle normalisé / Standard model |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     |     |     |     |
|                     | CNC 8<br>CNC 8 A                  | CNC 3<br>CNC 3 A | CNC 9<br>CNC 9 A | CNC 5<br>CNC 5 A | CNC W<br>CNC WA | CNC X<br>CNC XA |   |   |    |       |     |    |       |     |     |     |     |
|                     | Dimensions / Dimensions (mm)      |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     |     |     |     |
| L                   | 2,5 ± 0,3                         | 4,5 ± 0,5        | 4 ± 0,5          | 5,7 ± 0,5        | 6,35 ± 0,5      | 7,6 ± 0,5       |   |   |    |       |     |    |       |     |     |     |     |
| W                   | 1,25 ± 0,2                        | 1,6 ± 0,2        | 1,25 ± 0,2       | 2,5 ± 0,3        | 7 ± 0,5         | 7,6 ± 0,5       |   |   |    |       |     |    |       |     |     |     |     |
| T max.              | 1,25                              | 1,6              | 1,25             | 1,7              | 2               | 2               |   |   |    |       |     |    |       |     |     |     |     |
| a                   | 0,2 / 1                           | 0,2 / 1          | 0,2 / 1          | 0,2 / 1          | 0,2 / 1         | 0,2 / 1         |   |   |    |       |     |    |       |     |     |     |     |
|                     | Tension nominale / Rated voltage  |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     |     |     |     |
| U <sub>RC</sub> (V) | 16                                | 25               | 50/63            | 100              | 16              | 25              | 50/63   | 100   | 25 | 50/63 | 100 | 25 | 50/63 | 100 | E6  | E12 | E24 |
| 100 pF              |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 101 |     |     |
| 120                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 121 |     |     |
| 150                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 151 |     |     |
| 180                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 181 |     |     |
| 220                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 221 |     |     |
| 270                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 271 |     |     |
| 330                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 331 |     |     |
| 390                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 391 |     |     |
| 470                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 471 |     |     |
| 560                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 561 |     |     |
| 680                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 681 |     |     |
| 820                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 821 |     |     |
| 1000                |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 102 |     |     |
| 1200                |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 122 |     |     |
| 1500                |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 152 |     |     |
| 1800                |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 182 |     |     |
| 2200                |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 222 |     |     |
| 2700                |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 272 |     |     |
| 3300                |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 332 |     |     |
| 3900                |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 392 |     |     |
| 4700                |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 472 |     |     |
| 5600                |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 562 |     |     |
| 6800                |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 682 |     |     |
| 8200                |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 822 |     |     |
| 10 nF               |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 103 |     |     |
| 12                  |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 123 |     |     |
| 15                  |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 153 |     |     |
| 18                  |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 183 |     |     |
| 22                  |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 223 |     |     |
| 27                  |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 273 |     |     |
| 33                  |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 333 |     |     |
| 39                  |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 393 |     |     |
| 47                  |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 473 |     |     |
| 56                  |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 563 |     |     |
| 68                  |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 683 |     |     |
| 82                  |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 823 |     |     |
| 100                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 104 |     |     |
| 120                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 124 |     |     |
| 150                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 154 |     |     |
| 180                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 184 |     |     |
| 220                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 224 |     |     |
| 270                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 274 |     |     |
| 330                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 334 |     |     |
| 390                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 394 |     |     |
| 470                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 474 |     |     |
| 560                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 564 |     |     |
| 680                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 684 |     |     |
| 820                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 824 |     |     |
| 1 μF                |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 105 |     |     |
| 1,2                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 125 |     |     |
| 1,5                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 155 |     |     |
| 1,8                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 185 |     |     |
| 2,2                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 225 |     |     |
| 2,7                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 275 |     |     |
| 3,3                 |                                   |                  |                  |                  |                 |                 |   |   |    |       |     |    |       |     | 335 |     |     |

■ 2B1 ■ 2C1 ou / or BX ■ 2R1 ou / or X7R

A : Diélectrique exempt de bismuth : tangente δ à - 55°C ≤ 350.10<sup>-4</sup> conformément aux normes CECC 32101 et NF C 93133.  
A : Bismuth free dielectric : tangent δ at - 55°C ≤ 350.10<sup>-4</sup> in accordance with CECC 32101 and NF C 93133 standards.

**Exemple de codification à la commande / How to order**

|   |                      |  |                             |    |   |        |                                   |      |    |   |  |
|---|----------------------|--|-----------------------------|----|---|--------|-----------------------------------|------|----|---|--|
| A : Diélectrique exempt de bismuth / bismuth free dielectric            |                      |  |                             |    |   |        |                                   |      |    | Niveau de fiabilité (voir p. 6)<br>Reliability level (see p. 6) |  |
| -- : Caract. capa./temp. (voir p. 18) / Capa./temp. caract. (see p. 18) |                      |  |                             |    |   |        |                                   |      |    |   |  |
| Terminaisons (voir p. 9)<br>Terminations (see p. 9)                     |                      |  | M : Marquage<br>M : Marking |    | Tolérance<br>Tolerance                                    |        | Tension nominale<br>Rated voltage |      |    |   |  |
| CNC 8   | --                   | --   | --                          | -- | --  | 100 pF | 10 %                              | 63 V | -- | --  |  |
| Appel. commerciale<br>Commercial type                                   | W : RoHS<br>W : RoHS | F, S, X8 : Niveau de qualité<br>F, S, X8 : Quality level | Capacité<br>Capacitance     |    | Conditionnement (voir p. 9-10)<br>Packaging (see p. 9-10) |        |                                   |      |    |   |  |

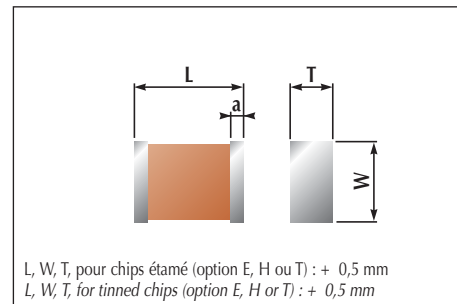
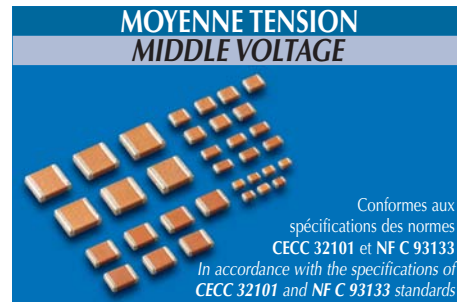
# CONDENSATEURS CHIPS CERAMIQUE CLASSE 2

## CERAMIC CHIP CAPACITORS CLASS 2

**RoHS = W**  
Voir / See Page 9

**CNC**

| Format / Format                   |            |     |          |            |     |         |           |     |         |           |     |         |           |     | Code des valeurs de C <sub>0</sub><br>Capacitance value coded | Tolérances sur capacité<br>Tolerance on capacitance |
|-----------------------------------|------------|-----|----------|------------|-----|---------|-----------|-----|---------|-----------|-----|---------|-----------|-----|---|---|
| 0805                              |            |     | 1206     |            |     | 1210    |           |     | 1812    |           |     | 2220    |           |     |   |   |
| Modèle normalisé / Standard model |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   |   |
| CNC 2                             |            |     | CNC 12   |            |     | CNC 4   |           |     | CNC 6   |           |     | CNC 7   |           |     |   |   |
| CNC 2 A                           |            |     | CNC 12 A |            |     | CNC 4 A |           |     | CNC 6 A |           |     | CNC 7 A |           |     |   |   |
| Dimensions / Dimensions (mm)      |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   |   |
| L                                 | 2 ± 0,3    |     |          | 3,2 ± 0,25 |     |         | 3,2 ± 0,4 |     |         | 4,5 ± 0,5 |     |         | 5,7 ± 0,5 |     |   |   |
| W                                 | 1,25 ± 0,2 |     |          | 1,6 ± 0,15 |     |         | 2,5 ± 0,3 |     |         | 3,2 ± 0,4 |     |         | 5 ± 0,5   |     |   |   |
| T max.                            | 1,3        |     |          | 1,6        |     |         | 1,8       |     |         | 1,8       |     |         | 1,8       |     |   |   |
| a                                 | 0,2 / 0,75 |     |          | 0,2 / 1    |     |         | 0,2 / 0,1 |     |         | 0,2 / 1   |     |         | 0,2 / 1   |     |   |   |
| Tension nominale / Rated voltage  |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   |   |
| U <sub>RC</sub> (V)               | 200        | 500 | 1000     | 200        | 500 | 1000    | 200       | 500 | 1000    | 200       | 500 | 1000    | 200       | 500 | 1000  |   |
| 100 pF                            |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 101   |
| 120                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 121   |
| 150                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 151   |
| 180                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 181   |
| 220                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 221   |
| 270                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 271   |
| 330                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 331   |
| 390                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 391   |
| 470                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 471   |
| 560                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 561   |
| 680                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 681   |
| 820                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 821   |
| 1000                              |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 102   |
| 1200                              |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 122   |
| 1500                              |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 152   |
| 1800                              |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 182   |
| 2200                              |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 222   |
| 2700                              |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 272   |
| 3300                              |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 332   |
| 3900                              |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 392   |
| 4700                              |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 472   |
| 5600                              |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 562   |
| 6800                              |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 682   |
| 8200                              |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 822   |
| 10 nF                             |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 103   |
| 12                                |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 123   |
| 15                                |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 153   |
| 18                                |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 183   |
| 22                                |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 223   |
| 27                                |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 273   |
| 33                                |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 333   |
| 39                                |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 393   |
| 47                                |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 473   |
| 56                                |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 563   |
| 68                                |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 683   |
| 82                                |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 823   |
| 100                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 104   |
| 120                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 124   |
| 150                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 154   |
| 180                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 184   |
| 220                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 224   |
| 270                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 274   |
| 330                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 334   |
| 390                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 394   |
| 470                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 474   |
| 560                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 564   |
| 680                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 684   |
| 820                               |            |     |          |            |     |         |           |     |         |           |     |         |           |     |   | 824   |



### CARACTERISTIQUES GENERALES

|   |   |
|---|---|
| Diélectrique  | Céramique classe 2                        |
| Technologie   | Chips multicouches terminaisons soudables |
| Caract. capacité temp.  | 2R1                                       |
| Température d'utilisation   | - 55°C + 125°C                            |
| Tension nominale U <sub>RC</sub>                                    | 200 V - 500 V - 1 000 V                   |
| Tension de tenue  |   |
| pour 200 V <sub>CC</sub>  | 2,5 U <sub>RC</sub>                       |
| pour > 200 V <sub>CC</sub>  | 1,5 U <sub>RC</sub>                       |
| Tangente δ à 1 kHz sous 1 V eff.                                    | ≤ 250.10 <sup>-4</sup>                    |
| Résistance d'isolement  |   |
| sous U <sub>RC</sub> pour U <sub>RC</sub> ≤ 500 V <sub>CC</sub>     |   |
| sous 500 V <sub>CC</sub> pour U <sub>RC</sub> > 500 V <sub>CC</sub> |   |
| pour C <sub>R</sub> ≤ 10 000 pF                                     | ≥ 100 000 MΩ                              |
| pour C <sub>R</sub> > 10 000 pF                                     | ≥ 1 000 MΩ.μF                             |
| MARQUAGE  | Sur demande                               |
| Valeur de capacité  | En clair ou en code                       |

### MAIN CHARACTERISTICS

|   |  |
|---|--|
| Dielectric  | Ceramic class 2                        |
| Technology  | Multilayer chips weldable terminations |
| Capacit. temp. Charact.   | 2R1                                    |
| Operating temperature   | - 55°C + 125°C                         |
| Rated voltage U <sub>RC</sub>                                       | 200 V - 500 V - 1 000 V                |
| Test voltage  |  |
| for 200 V <sub>DC</sub>   | 2,5 U <sub>RC</sub>                    |
| for > 200 V <sub>DC</sub>   | 1,5 U <sub>RC</sub>                    |
| Tangent δ at 1 kHz under 1 V rms                                    | ≤ 250.10 <sup>-4</sup>                 |
| Insulation resistance   |  |
| under U <sub>RC</sub> for U <sub>RC</sub> ≤ 500 V <sub>DC</sub>     |  |
| under 500 V <sub>DC</sub> for U <sub>RC</sub> > 500 V <sub>DC</sub> |  |
| for C <sub>R</sub> ≤ 10 000 pF                                      | ≥ 100 000 MΩ                           |
| for C <sub>R</sub> > 10 000 pF                                      | ≥ 1 000 MΩ.μF                          |
| MARKING   | On request                             |
| Capacitance value   | Clear or coded                         |

A : Diélectrique exempt de bismuth : tangente δ à - 55°C ≤ 350.10<sup>-4</sup> conformément aux normes CECC 32101 et NF C 93133.  
A : Bismuth free dielectric : tangente δ at - 55°C ≤ 350.10<sup>-4</sup> in accordance with CECC 32101 and NF C 93133 standards.

### Exemple de codification à la commande / How to order

A : Diélectrique exempt de bismuth / bismuth free dielectric  
-- : Caract. capa./temp. (voir p. 18) / Capa./temp. caract. (see p. 18)

Niveau de fiabilité (voir p. 6)  
Reliability level (see p. 6)

Terminaisons (voir p. 9) M : Marquage Tolérance Tension nominale  
Terminations (see p. 9) M : Marking Tolerance Rated voltage

CNC 4 -- -- -- -- 2200 pF 10% 500 V -- --

Appel commerciale  
Commercial type

W : RoHS  
W : RoHS

F, S, X8 : Niveau de qualité  
F, S, X8 : Quality level

Capacité  
Capacitance

Conditionnement (voir p. 9-10)  
Packaging (see p. 9-10)