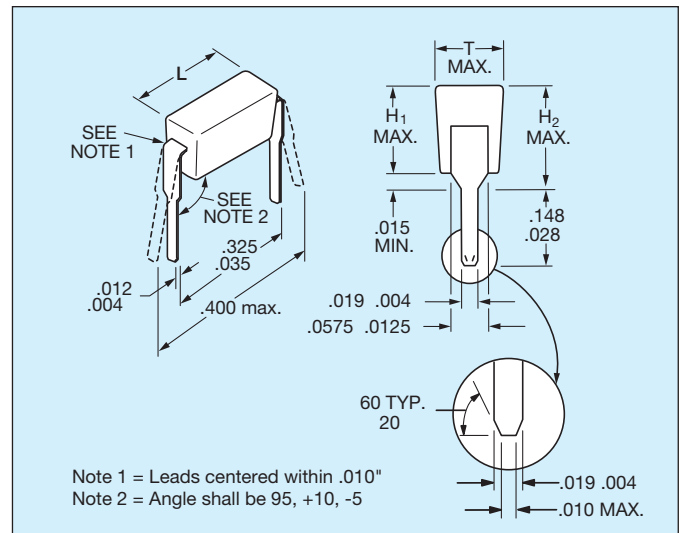


## GENERAL INFORMATION

### AVX MD Series

**Temperature Coefficients:** C0G (NP0), X7R, Z5U, 50, 100 Volts

**For established reliability DIPGuards see MIL-PRF-39014 section on pages 61 to 66.**

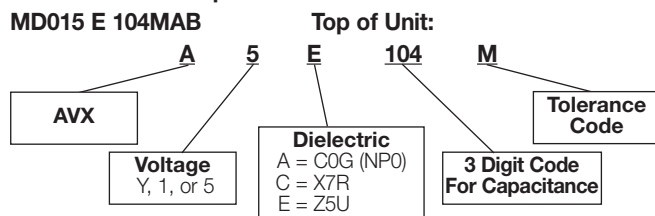


## HOW TO ORDER

| MD01                                                                               | 5                   | E                                   | 104                                                                                                                                                      | M                                                                                                                   | A                   | B                                            |
|------------------------------------------------------------------------------------|---------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------|
| <b>AVX Style</b>                                                                   | <b>Voltage</b>      | <b>Temperature Coefficient</b>      | <b>Capacitance</b>                                                                                                                                       | <b>Capacitance Tolerance</b>                                                                                        | <b>Failure Rate</b> | <b>Assembly Method</b>                       |
| MD01<br>CKR22*<br>CKS22**<br>MD02<br>CKR23*<br>CKS23*<br>MD03<br>CKR24*<br>CKS24** | 5 = 50V<br>1 = 100V | A = C0G (NP0)<br>C = X7R<br>E = Z5U | First two digits are the significant figures of capacitance. Third digit indicates the additional number of zeros. For example, order 100,000 pF as 104. | C0G (NP0):<br>F = ±1%<br>J = ±5%<br>K = ±10%<br>X7R:<br>J = ±5%<br>K = ±10%<br>Z5U:<br>M = ±20%<br>Z = +80%<br>-20% | A = Not Applicable  | A = Hand Assembled<br>B = Automated Assembly |
| * Reference pages 59 to 64.<br>** Reference page 80.                               |                     |                                     |                                                                                                                                                          |                                                                                                                     |                     | <b>Not RoHS Compliant</b>                    |

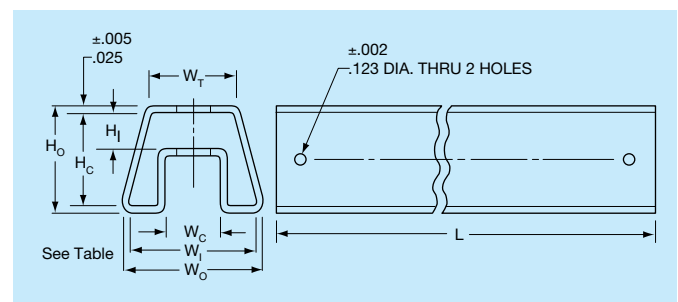
## MARKING

### Part Number Example



## PACKAGING REQUIREMENTS

**Standard Packaging:** MD01/MD02: 200 pieces per slide pack.  
MD03: 200 pieces per vial.



### Slide Package Dimensions

|                                  | MD01         | MD02         | MD03*        |
|----------------------------------|--------------|--------------|--------------|
| (H <sub>0</sub> ) Overall Height | .400 ref.    | .430 ref.    | .545 ref.    |
| (H <sub>1</sub> ) Channel Height | .141 ± .006  | .171 ± .006  | .295 ± .010  |
| (H <sub>2</sub> ) Inside Height  | .350         | .380         | .495         |
| (W <sub>0</sub> ) Overall Width  | .540 ref.    | .540 ref.    | .600 ref.    |
| (W <sub>1</sub> ) Inside Width   | .490         | .490         | .550         |
| (W <sub>2</sub> ) Channel Width  | .210         | .210         | .170         |
| (W <sub>3</sub> ) Top Width      | .350         | .310         | .300         |
| (L) Length                       | 20.073 ± .06 | 20.073 ± .06 | 20.073 ± .06 |

\*Optional

## SIZE SPECIFICATIONS

Dimensions: Millimeters (Inches)

| AVX Style | Length (L)            | Height (H <sub>1</sub> ) | Height (H <sub>2</sub> ) | Thickness           |
|-----------|-----------------------|--------------------------|--------------------------|---------------------|
| MD01      | 6.60<br>(.260 ± .020) | 3.43<br>(.135 max.)      | 4.45<br>(.175 max.)      | 2.54<br>(.098 max.) |
| MD02      | 6.60<br>(.260 ± .020) | 4.19<br>(.162 max.)      | 5.08<br>(.195 max.)      | 2.54<br>(.098 max.) |
| MD03      | 6.60<br>(.260 ± .020) | 7.37<br>(.290 max.)      | 8.13<br>(.320 max.)      | 2.54<br>(.098 max.) |

## MILITARY CROSS REFERENCE GUIDE

Note: For CKR22/23/24, see MIL-PRF-39014 section in the Military Section pages 59 thru 64.  
For CKS22/23/24 see MIL-PRF-123 section in the Military Section page 80.

Dimensions: Millimeters (Inches)

| AVX Style | MIL-PRF-39014 | MIL-PRF-123 | Length (L)            | Height (H <sub>1</sub> ) | Height (H <sub>2</sub> ) | Thickness             |
|-----------|---------------|-------------|-----------------------|--------------------------|--------------------------|-----------------------|
| MD01      | CKR22         | CKS22       | 6.60<br>(.260 ± .020) | 3.43<br>(.135 max.)      | 4.45<br>(.175 max.)      | 2.54<br>(.092 ± .006) |
| MD02      | CKR23         | CKS23       | 6.60<br>(.260 ± .020) | 4.19<br>(.162 max.)      | 5.08<br>(.195 max.)      | 2.54<br>(.092 ± .006) |
| MD03      | CKR24         | CKS24       | 6.60<br>(.260 ± .020) | 7.37<br>(.290 max.)      | 8.13<br>(.320 max.)      | 2.54<br>(.092 ± .006) |

## CAPACITANCE SPECIFICATIONS

### C0G (NP0)

| EIA Characteristic |              | C0G (NP0)      |  |
|--------------------|--------------|----------------|--|
| AVX Style          |              | MD01           |  |
| Cap. in pF*        |              | WVDC<br>100 50 |  |
| 10                 | MD015A100KAB |                |  |
| 15                 | MD015A150KAB |                |  |
| 22                 | MD015A220KAB |                |  |
| 33                 | MD015A330KAB |                |  |
| 47                 | MD015A470KAB |                |  |
| 68                 | MD015A680KAB |                |  |
| 100                | MD015A101KAB |                |  |
| 150                | MD015A151KAB |                |  |
| 220                | MD015A221KAB |                |  |
| 330                | MD015A331KAB |                |  |
| 470                | MD015A471KAB |                |  |
| 680                | MD015A681KAB |                |  |
| 1000               | MD015A102KAB |                |  |
| 1500               | MD015A152KAB |                |  |
| 2200               | MD015A222KAB |                |  |
| 3300               | MD015A332KAB |                |  |
| AVX Style          |              | MD02           |  |
| Cap. in pF*        |              | WVDC<br>100 50 |  |
| 4700               | MD025A472KAB |                |  |
| 6800               | MD025A682KAB |                |  |
| 10000              | MD025A103KAB |                |  |

For other voltages and tolerances see Part No. Codes.

### X7R

| EIA Characteristic |              | X7R            |  |
|--------------------|--------------|----------------|--|
| AVX Style          |              | MD01           |  |
| Cap. in pF*        |              | WVDC<br>100 50 |  |
| 220                | MD015C221KAB |                |  |
| 330                | MD015C331KAB |                |  |
| 470                | MD015C471KAB |                |  |
| 680                | MD015C681KAB |                |  |
| 1000               | MD015C102KAB |                |  |
| 1500               | MD015C152KAB |                |  |
| 2200               | MD015C222KAB |                |  |
| 3300               | MD015C332KAB |                |  |
| 4700               | MD015C472KAB |                |  |
| 6800               | MD015C682KAB |                |  |
| 10,000             | MD011C103KAB |                |  |
| 15,000             | MD015C153KAB |                |  |
| 22,000             | MD015C223KAB |                |  |
| 33,000             | MD015C333KAB |                |  |
| 47,000             | MD015C473KAB |                |  |
| 68,000             | MD015C683KAB |                |  |
| 100,000            | MD015C104KAB |                |  |
| AVX Style          |              | MD02           |  |
| Cap. in pF*        |              | WVDC<br>100 50 |  |
| 150,000            | MD025C154KAB |                |  |
| 220,000            | MD025C224KAB |                |  |
| AVX Style          |              | MD03           |  |
| Cap. in pF*        |              | WVDC<br>100 50 |  |
| 330,000            | MD035C334KAA |                |  |
| 470,000            | MD035C474KAA |                |  |
| 680,000            | MD035C684KAA |                |  |
| 1,000,000          | MD035C105KAA |                |  |
| 1,500,000          | MD035C155KAA |                |  |
| 2,000,000          | MD035C205KAA |                |  |

For other voltages and tolerances see Part No. Codes.

### Z5U

| EIA Characteristic |              | Z5U            |  |
|--------------------|--------------|----------------|--|
| AVX Style          |              | MD01           |  |
| Cap. in pF*        |              | WVDC<br>100 50 |  |
| 10,000             | MD015E103ZAB |                |  |
| 15,000             | MD015E153ZAB |                |  |
| 22,000             | MD015E223ZAB |                |  |
| 33,000             | MD015E333ZAB |                |  |
| 47,000             | MD015E473ZAB |                |  |
| 68,000             | MD015E683ZAB |                |  |
| 100,000            | MD015E104ZAB |                |  |
| 150,000            | MD015E154ZAB |                |  |
| 220,000            | MD015E224ZAB |                |  |
| 330,000            | MD015E334ZAB |                |  |
| AVX Style          |              | MD02           |  |
| Cap. in pF*        |              | WVDC<br>100 50 |  |
| 470,000            | MD025E474ZAB |                |  |
| AVX Style          |              | MD03           |  |
| Cap. in pF*        |              | WVDC<br>100 50 |  |
| 680,000            | MD035E684ZAA |                |  |
| 1,000,000          | MD035E105ZAA |                |  |

For other voltages and tolerances see Part No. Codes.

\*Other capacitance values available upon special request.

  = Industry preferred values