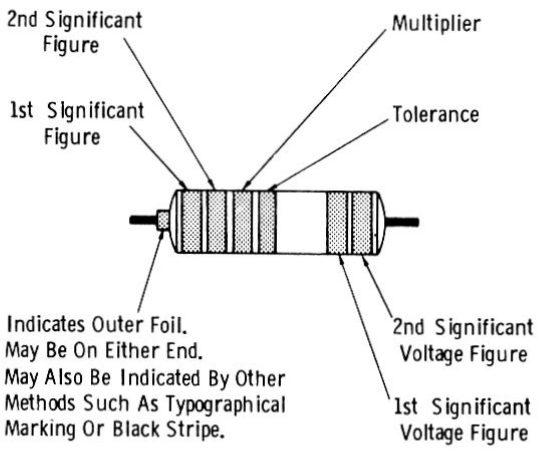
# Capacitor Color Codes

## MOLDED PAPER CAPACITOR COLOR CODE (CAPACITANCE GIVEN IN PF)

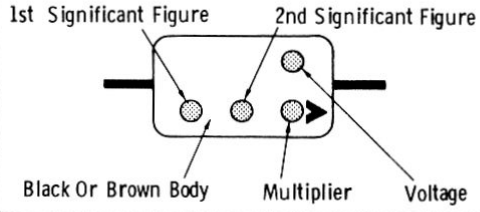
| COLOR | DIGIT | MULTIPLIER | TOLERANCE |
|---|---|---|---|
| BLACK | 0 | 1 | 20% |
| BROWN | 1 | 10 | |
| RED | 2 | 100 | |
| ORANGE | 3 | 1000 | |
| YELLOW | 4 | 10,000 | |
| GREEN | 5 | 100,000 | 5% |
| BLUE | 6 | 1,000,000 | |
| VIOLET | 7 | | |
| GRAY | 8 | | |
| WHITE | 9 | | 10% |
| GOLD | | | 5% |
| SILVER | | | 10% |
| NO COLOR | | | 20% |

## MOLDED PAPER TUBULAR

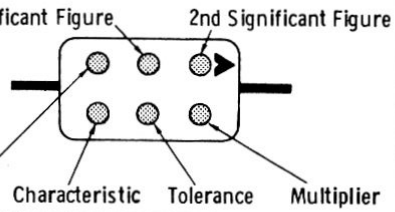



Add Two Zeros To Significant Voltage Figures.
One Band Indicates Voltage Ratings Under 1000 Volts.

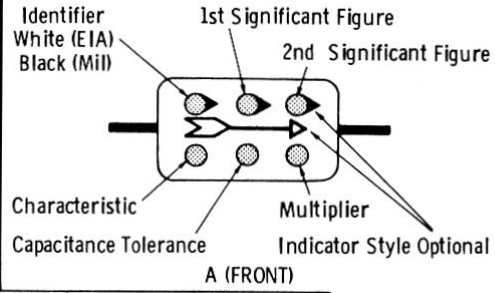
## MOLDED FLAT PAPER CAPACITORS (COMMERCIAL CODE)

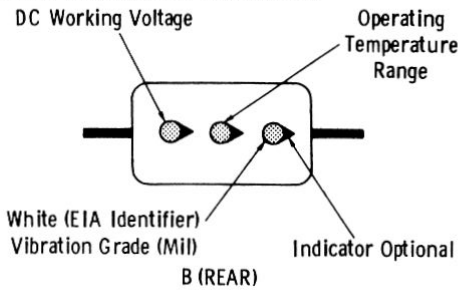



## MOLDED FLAT PAPER CAPACITORS (MILITARY CODE)




## CURRENT EIA AND MILITARY COLOR CODE FOR MOLDED MICA CAPACITORS




## MICA CAPACITOR COLOR CODE

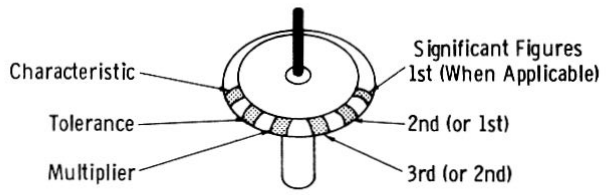
| COLOR | CHARACTERISTIC* | CAPACITANCE 1ST AND 2ND SIGNIFICANT FIGURES | CAPACITANCE MULTIPLIER | CAPACITANCE TOLERANCE | DC WORKING VOLTAGE | OPERATING TEMPERATURE RANGE | VIBRATION GRADE (MIL) |
|---|---|---|---|---|---|---|---|
| Black | A (EIA) | 0 | 1 | ±20% (EIA) | | - 55° to + 70°C (MIL) | 10-55 Hz |
| Brown | B | 1 | 10 | ±1% | 100 (EIA) | | |
| Red | C | 2 | 100 | ±2% | | - 55° to + 85°C | |
| Orange | D | 3 | 1000 | | 300 | | |
| Yellow | E | 4 | 10,000 (EIA) | | | - 55° to + 125°C | 10-2000 Hz |
| Green | F | 5 | | ±5% | 500 | | |
| Blue | | 6 | | | | - 55° to + 150°C (MIL) | |
| Purple (violet) | | 7 | | | | | |
| Gray | | 8 | | | | | |
| White | | 9 | | | | | |
| Gold | | | 0.1 | ± 1/2% (EIA)† | 1000 (EIA) | | |
| Silver | | | 0.01 (EIA) | ±10% | | | |

* Denotes specifications of design involving Q factors, temperature coefficients, and production test requirements.
† Or ±0.5 pf, whichever is greater. All others are specified tolerance or ±1.0 pf, whichever is greater.

NOTES:

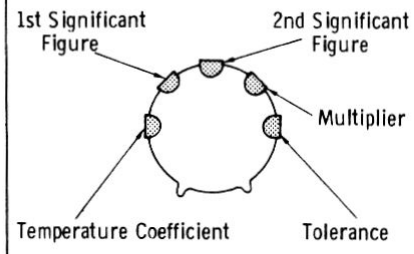
1. The multiplier is the factor by which the two significant figures are multiplied to yield the nominal capacitance.
2. "A" illustrates standard six-dot system used for "N" temperature range capacitors manufactured according to EIA Standard RS-153-A.
3. Drawings "A" and "B" combined illustrate standard nine-dot system used for "O" temperature range capacitors manufactured according to EIA Standard RS-153-A, and for all units manufactured according to Military Specification MIL-C-5C.

## SILVERED MICA BUTTON CAPACITORS

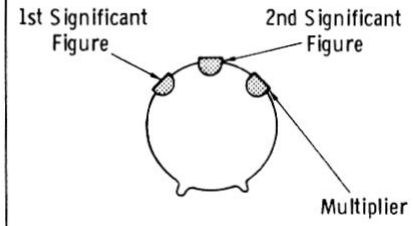


# Capacitor Color Code

## DISC CERAMICS (5-DOT SYSTEM)




## DISC CERAMICS (3-DOT SYSTEM)



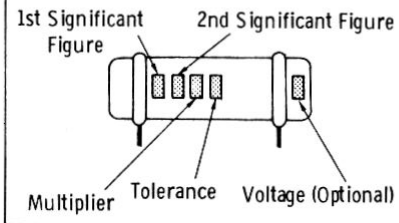

## CERAMIC CAPACITOR CODES (CAPACITANCE GIVEN IN PF)

In reference to RS-198-A of the EIA, ceramic dielectric capacitors have three major classifications:
Class 1, temperature compensating ceramics requiring high Q and capacitance stability.
Class 2, where Q and stability of capacitance are not required.
Class 3, low voltage ceramics, where dielectric losses, high insulation resistance, and capacitance stability are not of major importance.

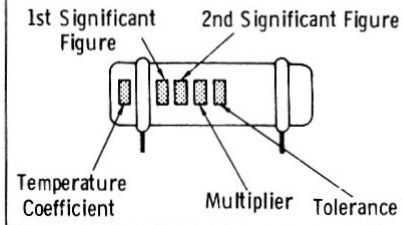
| COLOR | DIGIT | MULTIPLIER | CLASS 1 TOLERANCE* 10 PF OR LESS | CLASS 1 TOLERANCE* OVER 10 PF | CLASS 1 TEMPERATURE COEFFICIENT PPM °C | CLASS 1 TEMP. COEFF. SIGNIFICANT FIGURE | CLASS 1 TEMP. COEFF. MULTIPLIER | CLASS 2 TOLERANCE* |
|---|---|---|---|---|---|---|---|---|
| BLACK | 0 | 1 | ± 2.0 pF | ± 20% | 0 | 0.0 | -1 | ±20% |
| BROWN | 1 | 10 | ± 0.1 pF | ±1% | -33 | | -10 | |
| RED | 2 | 100 | | ±2% | -75 | 1.0 | -100 | |
| ORANGE | 3 | 1000 | | ± 3% | -150 | 1.5 | -1000 | |
| YELLOW | 4 | 10,000 | | | -220 | 2.2 | -10,000 | +100%,-0% |
| GREEN | 5 | | ± 0.5 pF | ± 5% | -330 | 3.3 | +1 | ±5% |
| BLUE | 6 | | | | -470 | 4.7 | +10 | |
| VIOLET | 7 | | | | -750 | 7.5 | +100 | |
| GRAY | 8 | .01 | ± 0.25 pF | | +150 To -1500 | | +1000 | +80%, -20% |
| WHITE | 9 | .1 | ± 1.0 pF | ± 10% | +100 To -750 | | +10,000 | ±10% |
| SILVER | | | | | | | | |
| GOLD | | | | | | | | |

*Tolerance on Class 3 Ceramic Capacitors is indicated by its code, either ± 20% (Code M) or +80, -20% (Code Z).

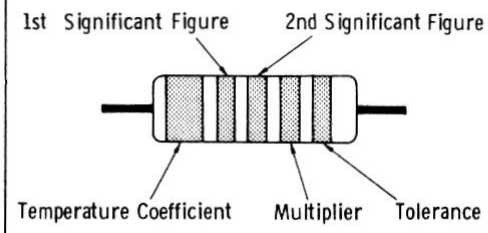
## HIGH-CAPACITANCE TUBULAR CERAMICS INSULATED OR NONINSULATED



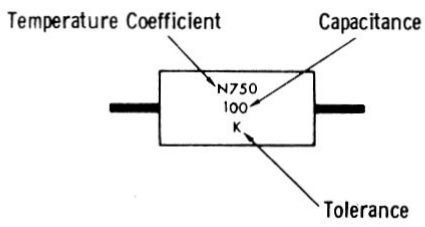

## TEMPERATURE COMPENSATING TUBULAR CERAMICS




## MOLDED-INSULATED AXIAL LEAD CERAMICS

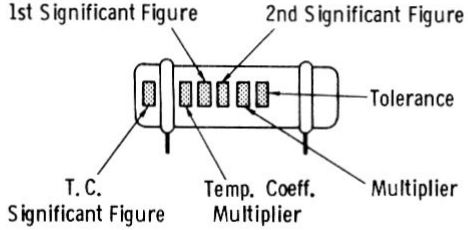



## TYPOGRAPHICALLY MARKED CERAMICS



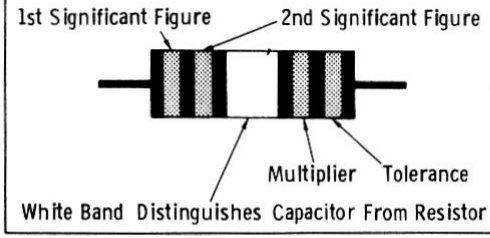

| LETTER | TOLERANCE 10PF OR LESS | TOLERANCE OVER 10PF |
|---|---|---|
| B | ± 0.1 pF | |
| C | ± 0.25 pF | |
| D | ± 0.5 pF | |
| F | ± 1.0 pF | ± 1% |
| G | ± 2.0 pF | ± 2% |
| J | | ± 5% |
| K | | ±10% |
| M | | ±20% |

## EXTENDED RANGE T.C. TUBULAR CERAMICS



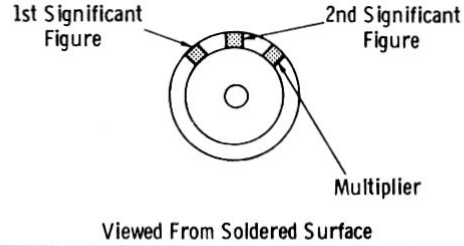

## MOLDED CERAMICS

Using Standard Resistor Color Code



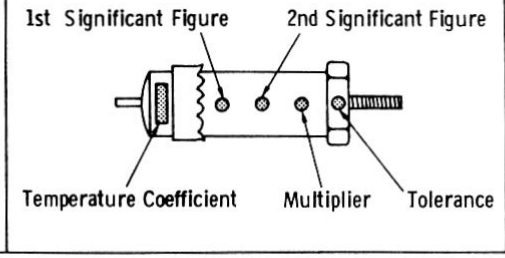

White Band Distinguishes Capacitor From Resistor

## BUTTON CERAMICS




Viewed From Soldered Surface

## STANDOFF CERAMICS




## FEEDTHROUGH CERAMICS