

## FEATURES

- Stacked, unencapsulated, metallized polyester, polyethylene naphthalate (PEN) film construction, non-inductive.
- Small sizes in EIA 1206, 1210, 1812, 2220, & 2824.
- Wide temperature range (-55°C ~ +125°C).
- IR or vapor phase reflow soldering compatible.
- Tape/reel package available in all sizes.
- High heat and moisture resistance.
- Stable temperature, frequency and bias characteristics.
- Excellent thermal shock resistance.

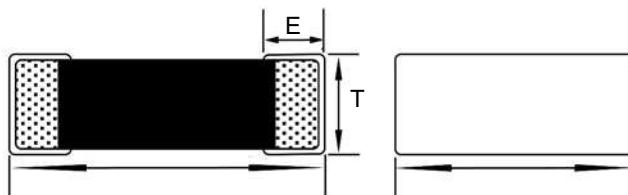
## PART NUMBERING

| Part Number Example: 932AF-100/105JTR2220F   |   |                  |   |                        |                |                |           |                |
|--|---|------------------|---|------------------------|----------------|----------------|-----------|----------------|
| 932AF  | - | 100              | / | 104                    | J              | TR             | 1812      | F              |
| Type   |   | Rated DC Voltage |   | Capacitance Code (pF)* | Tolerance Code | Package Code** | Case Size | RoHS Compliant |
| * Capacitance Code: First two digits represent significant figures, third digit represents multiplier (number of zeros). |   |                  |   |                        |                |                |           |                |
| ** Package Code: TR = Tape & Reel.   |   |                  |   |                        |                |                |           |                |

## SPECIFICATIONS

| Performance Characteristics                                   |  |
|---|--|
| Operating Temperature Range                                   | -55°C ~ +125°C with voltage derating of 1.25%/°C between 105°C & 125°C.  |
| Voltage Range   | 25VDC to 630VDC.   |
| Withstanding Voltage (between leads) (20°C)                   | 1.4 times rated voltage for 2 seconds.   |
| Capacitance Range (20°C, 1KHz)                                | 0.001µF ~ 4.7µF.   |
| Capacitance Tolerance   | ±5% & ±10%.  |
| Maximum Dissipation Factor % (20°C, 1KHz)                     | <1.0.  |
| Minimum Insulation Resistance (20°C) (after 1 minute minimum) | >1000MΩ measured @ 10VDC for WVDC < 100VDC & measured @ 100VDC for WVDC ≥ 100VDC (C ≤ 0.33µF).<br>400 seconds measured @ 10VDC for WVDC < 100VDC & measured @ 100VDC for WVDC ≥ 100VDC (C > 0.33µF). |

## SIZE (mm)



| Case Code | Dimensions  |           |             |
|-----------|-------------|-----------|-------------|
|           | L           | E ± 0.012 | W           |
| 1206      | 3.2 ± 0.50  | 0.5       | 1.6 ± 0.50  |
| 1210      | 3.2 ± 0.50  | 0.5       | 2.5 ± 0.50  |
| 1812      | 4.5 ± 0.50  | 0.6       | 3.2 ± 0.50  |
| 2220      | 5.7 ± 0.50  | 0.8       | 5.0 ± 0.50  |
| 2824      | 7.1 ± 0.50  | 0.8       | 6.1 ± 0.50  |
| 4130      | 10.5 ± 0.50 | 0.8       | 7.6 ± 0.50  |
| 5040      | 12.8 ± 0.50 | 0.8       | 10.2 ± 0.50 |
| 6054      | 15.3 ± 0.50 | 0.8       | 13.7 ± 0.50 |

STANDARD PRODUCTS TABLE BY EIA SIZE

| Cap.<br>( $\mu$ F) | Cap.<br>Code | 25VDC / 16VAC     | 50VDC / 40VAC     | 63VDC / 63VAC     |
|--------------------|--------------|-------------------|-------------------|-------------------|
|                    |              | EIA Size / T Max. | EIA Size / T Max. | EIA Size / T Max. |
| 0.001              | 102          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 1.9        |
| 0.0012             | 122          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 1.9        |
| 0.0015             | 152          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 1.9        |
| 0.0018             | 182          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 1.9        |
| 0.0022             | 222          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 1.9        |
| 0.0027             | 272          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 1.9        |
| 0.0033             | 332          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 1.9        |
| 0.0047             | 472          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 2.0        |
| 0.0056             | 562          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 1.9        |
| 0.0068             | 682          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 2.0        |
| 0.0082             | 822          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 1.9        |
| 0.01               | 103          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 2.0        |
| 0.012              | 123          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 2.0        |
| 0.015              | 153          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 2.4        |
| 0.018              | 183          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 2.5        |
| 0.022              | 223          | 1206 / 1.15       | 1206 / 1.15       | 1812 / 2.0        |
| 0.027              | 273          | 1210 / 1.8        | 1210 / 1.8        | 1812 / 1.9        |
| 0.033              | 333          | 1210 / 1.8        | 1210 / 1.8        | 1812 / 2.0        |
| 0.047              | 473          | 1210 / 1.8        | 1210 / 1.8        | 1812 / 2.7        |
| 0.056              | 563          | 1210 / 1.8        | 1210 / 1.8        | 1812 / 2.3        |
| 0.068              | 683          | 1210 / 1.8        | 1210 / 1.8        | 1812 / 2.0        |
| 0.082              | 823          | 1210 / 2.2        | 1210 / 2.2        | 1812 / 2.5        |
| 0.10               | 104          | 1210 / 2.3        | 1210 / 2.3        | 1812 / 2.8        |
| 0.12               | 124          |                   |                   | 1812 / 2.3        |
| 0.15               | 154          |                   |                   | 1812 / 2.0        |
| 0.18               | 184          |                   |                   | 1812 / 2.4        |
| 0.22               | 224          |                   |                   | 1812 / 3.0        |
| 0.33               | 334          |                   |                   | 2220 / 4.0        |
| 0.47               | 474          |                   |                   | 2220 / 4.0        |
| 0.56               | 564          |                   |                   | 2220 / 3.3        |
| 0.68               | 684          |                   |                   | 2220 / 3.9        |
| 0.82               | 824          |                   |                   | 2824 / 4.4        |
| 1.0                | 105          |                   |                   | 2824 / 5.0        |
| 1.5                | 155          |                   |                   | 2824 / 5.2        |
| 2.2                | 225          |                   |                   | 4130 / 6.1        |
| 2.7                | 275          |                   |                   | 5040 / 6.7        |
| 3.3                | 335          |                   |                   | 6054 / 5.3        |
| 4.7                | 475          |                   |                   | 6054 / 7.2        |

**STANDARD PRODUCTS TABLE BY EIA SIZE**

| Cap.<br>( $\mu$ F) | Cap.<br>Code | 100VDC / 63VAC    | 250VDC / 160VAC   | 400VDC / 200VAC   | 630VDC / 250VAC   |
|--------------------|--------------|-------------------|-------------------|-------------------|-------------------|
|                    |              | EIA Size / T Max. | EIA Size / T Max. | EIA Size / T Max. | EIA Size / T Max. |
| 0.001              | 102          | 1206 / 1.15       | 1812 / 2.0        | 1812 / 2.0        | 1812 / 2.0        |
| 0.0012             | 122          | 1206 / 1.15       | 1812 / 2.0        | 1812 / 2.0        | 1812 / 2.0        |
| 0.0015             | 152          | 1206 / 1.15       | 1812 / 2.0        | 1812 / 2.0        | 1812 / 2.0        |
| 0.0018             | 182          | 1206 / 1.15       | 1812 / 2.0        | 1812 / 2.0        | 1812 / 2.0        |
| 0.0022             | 222          | 1206 / 1.15       | 1812 / 2.0        | 1812 / 2.0        | 1812 / 2.0        |
| 0.0027             | 272          | 1206 / 1.15       | 1812 / 2.0        | 1812 / 2.0        | 1812 / 2.0        |
| 0.0033             | 332          | 1206 / 1.15       | 1812 / 2.0        | 1812 / 2.0        | 1812 / 2.0        |
| 0.0047             | 472          | 1206 / 1.15       | 1812 / 2.0        | 1812 / 2.0        | 1812 / 2.5        |
| 0.0056             | 562          | 1206 / 1.15       | 1812 / 2.0        | 1812 / 2.0        | 2220 / 2.0        |
| 0.0068             | 682          | 1206 / 1.15       | 1812 / 2.0        | 1812 / 2.0        | 2220 / 2.0        |
| 0.0082             | 822          | 1206 / 1.15       | 1812 / 2.0        | 1812 / 2.0        | 2220 / 2.2        |
| 0.01               | 103          | 1206 / 1.15       | 1812 / 2.0        | 2220 / 1.9        | 2220 / 2.4        |
| 0.012              | 123          | 1206 / 1.80       | 1812 / 2.0        | 2220 / 2.2        | 2220 / 3.0        |
| 0.015              | 153          | 1206 / 1.80       | 1812 / 2.4        | 2220 / 2.2        | 2220 / 3.4        |
| 0.018              | 183          | 1206 / 1.80       | 1812 / 2.5        | 2220 / 2.3        | 2220 / 4.0        |
| 0.022              | 223          | 1206 / 1.80       | 1812 / 2.9        | 2220 / 2.8        | 2824 / 3.4        |
| 0.027              | 273          | 1812 / 2.2        | 2220 / 2.6        | 2220 / 3.3        | 2824 / 4.0        |
| 0.033              | 333          | 1812 / 2.0        | 2220 / 2.2        | 2220 / 3.9        | 2824 / 4.8        |
| 0.047              | 473          | 1812 / 2.6        | 2220 / 2.9        | 2824 / 3.2        | 4130 / 4.0        |
| 0.056              | 563          | 1812 / 2.5        | 2220 / 3.7        | 2824 / 3.7        | 4130 / 4.6        |
| 0.068              | 683          | 1812 / 2.0        | 2220 / 4.0        | 2824 / 4.4        | 4130 / 5.5        |
| 0.082              | 823          | 1812 / 2.5        | 2220 / 4.5        | 4130 / 4.5        | 5040 / 4.5        |
| 0.10               | 104          | 1812 / 3.0        | 2220 / 4.5        | 4130 / 5.3        | 5040 / 5.2        |
| 0.12               | 124          | 2220 / 4.0        | 2824 / 3.9        | 4130 / 5.0        | 5040 / 6.0        |
| 0.15               | 154          | 2220 / 3.3        | 2824 / 4.7        | 4130 / 6.0        | 5040 / 6.9        |
| 0.18               | 184          | 2220 / 3.3        | 2824 / 5.0        | 5040 / 5.1        | 6054 / 5.6        |
| 0.22               | 224          | 2220 / 4.0        | 2824 / 5.7        | 5040 / 5.0        | 6054 / 6.0        |
| 0.27               | 227          |                   |                   | 5040 / 6.5        |                   |
| 0.33               | 334          | 2220 / 4.0        | 4130 / 6.1        | 6040 / 5.9        |                   |
| 0.39               |              |                   |                   | 6040 / 5.8        |                   |
| 0.47               | 474          | 2824 / 4.5        | 5040 / 5.5        | 6040 / 6.5        |                   |
| 0.56               | 564          | 2824 / 4.0        | 5040 / 6.0        |                   |                   |
| 0.68               | 684          | 2824 / 4.5        | 6054 / 4.6        |                   |                   |
| 0.82               | 824          | 4130 / 5.8        |                   |                   |                   |
| 1.0                | 105          | 4130 / 6.0        | 6054 / 6.4        |                   |                   |
| 1.5                | 155          | 5040 / 5.5        |                   |                   |                   |
| 2.2                | 225          | 5040 / 6.9        |                   |                   |                   |
| 3.3                | 335          | 6054 / 7.1        |                   |                   |                   |