

FEATURES

- Temperature range (-40°C ~ +105°C).
- Load life 1,000 hours @ 105°C)
- RoHs COMPLIANT

PART NUMBERING

| Part Number Example: 712E-016/100M4X5F | | | | | | | |
|--|---|------------------|---|------------------------|----------------|------|----------------|
| 712E | - | 016 | / | 100 | M | 4X5 | F |
| Type | | Rated DC Voltage | | Capacitance Code (μF)* | Tolerance Code | Size | RoHs Compliant |

* Capacitance Code: First two digits represent significant figures, third digit represents multiplier (number of zeros).

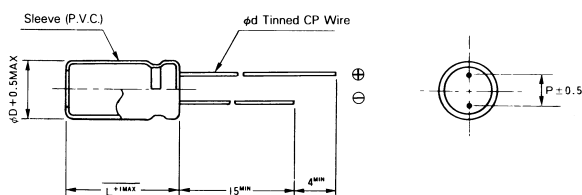
SPECIFICATIONS

| | | | | | | | | |
|---|---|----------------------------------|-----|----|----|----|----|----|
| Operating Temperature Range | -40°C ~ +105°C | | | | | | | |
| Rated Voltage Range | 4 ~ 50vdc | | | | | | | |
| Capacitance Range | 0.1 ~ 220μF | | | | | | | |
| Capacitance Tolerance | ±20% (120Hz 20°C) | | | | | | | |
| Leakage Current Max | I = 0.1 CV or 3 μA whichever is greater after 2 minutes @ rated voltage | | | | | | | |
| DF (%) @ +20°C 120Hz max | Working Voltage dc | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 |
| | DF (%) | 35 | 24 | 20 | 16 | 14 | 12 | 10 |
| Low Temperature Characteristics Impedance Ratio Max @ 120Hz | Working Voltage dc | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 |
| | Z-25°C / Z+20°C | 6 | 3 | 3 | 2 | 2 | 2 | 2 |
| | Z-40°C / Z+20°C | 12 | 8 | 5 | 4 | 3 | 3 | 3 |
| Load Life 1,000Hrs @ 105°C and rated voltage | Cap change | ≤ ±20% of Initial measured value | | | | | | |
| | DF | ≤200% of Initial measured value | | | | | | |
| | Leakage current | ≤ Initial measured value | | | | | | |
| Shelf Life 1,000Hrs @ 105°C | Cap change | ≤ ±20% of Initial measured value | | | | | | |
| | DF | ≤200% of Initial measured value | | | | | | |
| | Leakage curren | ≤ Initial measured value | | | | | | |

MULTIPLIER FOR RIPPLE CURRENT VS FREQ.

| FREQUENCY (Hz) | 50(60) | 120 | 1K | 10K> |
|----------------|--------|-----|------|------|
| 0.1~68μF | 0.8 | 1 | 1.3 | 1.5 |
| 100~220μF | 0.8 | 1 | 1.15 | 1.2 |

DIMENSIONS



DIMENSIONS (UNIT: mm)

| Diam | 3 | 4 | 5 | 6.3 | 8 |
|------|------|--------|------|--------|--------|
| F | 1±.3 | 1.5±.5 | 2±.5 | 2.5±.5 | 3.5±.5 |
| Φ | 0.4 | 0.45 | | | 0.5 |

| CAP. (μ F) | 4 vdc Surge 5v | | 6.3 vdc Surge 8v | | 10 vdc Surge 13v | | 16 vdc Surge 20v | | 25 vdc Surge 32v | | 35 vdc Surge 44v | | 50 vdc Surge 63v | |
|--------------------|-------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|
| | SIZE | I/AC | SIZE | I/AC | SIZE | I/AC | SIZE | I/AC | SIZE | I/AC | SIZE | I/AC | SIZE | I/AC |
| 0.1 | | | | | | | | | | | | | 3X5 | 1 |
| | | | | | | | | | | | | | 4X5 | 1.5 |
| 0.15 | | | | | | | | | | | | | 3X5 | 1.8 |
| | | | | | | | | | | | | | 4X5 | 2 |
| 0.22 | | | | | | | | | | | | | 3X5 | 2.3 |
| | | | | | | | | | | | | | 4X5 | 2.6 |
| 0.33 | | | | | | | | | | | | | 3X5 | 3 |
| | | | | | | | | | | | | | 4X5 | 3.2 |
| 0.47 | | | | | | | | | | | | | 3X5 | 3.5 |
| | | | | | | | | | | | | | 4X5 | 3.8 |
| 0.68 | | | | | | | | | | | | | 3X5 | 4.6 |
| | | | | | | | | | | | | | 4X5 | 5 |
| 1 | | | | | | | | | | | | | 3X5 | 5.6 |
| | | | | | | | | | | | | | 4X5 | 6.2 |
| 1.5 | | | | | | | | | | | | | 3X5 | 6.5 |
| | | | | | | | | | | | | | 4X5 | 7 |
| 2.2 | | | | | | | | | | | 3X5 | 7.5 | 3X5 | 8 |
| | | | | | | | | | | | 4X5 | 7.5 | 4X5 | 11 |
| 3.3 | | | | | | | | | 3X5 | 8.5 | 3X5 | 9 | 4X5 | 14 |
| | | | | | | | | | 4X5 | 8.5 | 4X5 | 11 | | |
| 4.7 | | | | | | | 3X5 | 9 | 3X5 | 10 | 4X5 | 15 | 5X5 | 19 |
| | | | | | | | 4X5 | 9 | 4X5 | 13 | | | | |
| 6.8 | | | | | 3X5 | 11 | 4X5 | 13 | 4X5 | 15 | 5X5 | 19 | 5X5 | 22 |
| | | | | | 4X5 | 11 | | | | | | | 6.3X5 | 25 |
| 10 | 3X5 | 10 | 3X5 | 12 | 4X5 | 15 | 4X5 | 18 | 5X5 | 23 | 5X5 | 25 | 6.3X5 | 30 |
| | 4X5 | 10 | 4X5 | 12 | | | | | | | | | | |
| 15 | 4X5 | 13 | 4X5 | 15 | 4X5 | 18 | 5X5 | 23 | 6.3X5 | 32 | 6.3X5 | 32 | 8X5 | 35 |
| 22 | 4X5 | 22 | 4X5 | 22 | 5X5 | 27 | 5X5 | 30 | 6.3X5 | 39 | 6.3X5 | 48 | 8X5 | 50 |
| 33 | 5X5 | 30 | 5X5 | 30 | 5X5 | 35 | 6.3X5 | 45 | 6.3X5 | 48 | 8X5 | 50 | | |
| 47 | 5X5 | 36 | 5X5 | 36 | 6.3X5 | 48 | 6.3X5 | 50 | 6.3X5 | 50 | | | | |
| | | | | | | | | | 8X5 | 55 | | | | |
| 68 | 6.3X5 | 52 | 6.3X5 | 52 | 6.3X5 | 53 | 8X5 | 55 | | | | | | |
| 100 | 6.3X5 | 60 | 6.3X5 | 60 | 8X5 | 65 | 8X5 | 68 | | | | | | |
| 220 | 6.3X5 | 80 | 6.3X5 | 80 | 8X5 | 83 | | | | | | | | |

I/AC (RIPPLE CURRENT) mA @ 120Hz 105°C