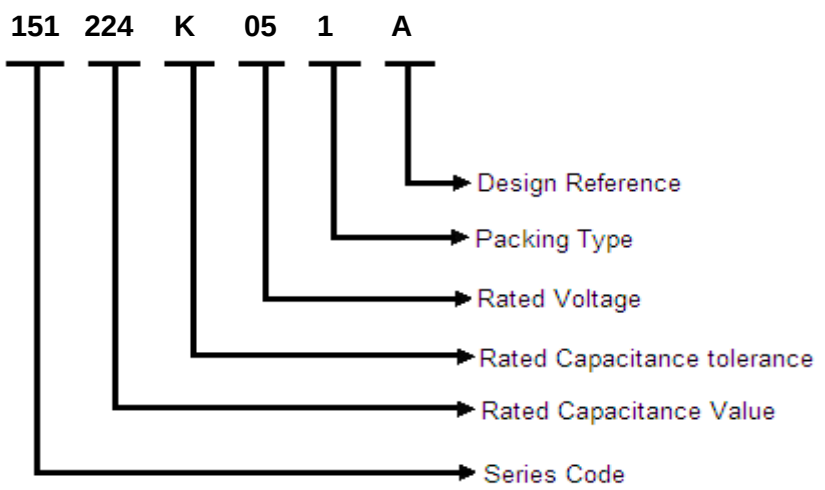
# Film Capacitors

**Series/Type**: Interference Suppression Capacitors Class X2- THB Grade (UL and ENEC Approved)
**Series code:** 151

# 151 Interference Suppression Capacitors
# Class X2 – THB Grade (UL and ENEC Approved)

## Part Number Description




## Rated Capacitance

Three-digit (224) indicate rated capacitance in Pico Farad (First two digits indicate value & third digit indicates number of zeroes to be suffixed to first two digits).
For example:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 103 | = 10 × | 103 | = | 10000 pF | = | 10 nF | =0.01 µF |
| 104 | = 10 × | 104 | = | 100000 pF | = | 100 nF | =0.1 µF |
| 105 | = 10 × | 105 | = | 1000000 pF | = | 1000 nF | =1 µF |
| 106 | = 10 × | 106 | = | 10000000 pF | = | 10000 nF | =10 µF |

## Capacitance Tolerance

In 3rd group of the part number-
F = ±1%, G = ±2%, H =±2.5%, I = ±3.5%, J = ±5%, K = ±10%, L = ±15%, M = ±20%, N=±40%

## Rated Voltage

In 4th group of the part number, one numeric digit and one letter (Ex.-2A) indicate DC voltage rating while two Numeric digits (Ex.03) indicate AC voltage rating.

## Rated Voltage Codification

| For AC Rated Voltage | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 |
| 190 VAC | 250 VAC | 275 VAC | 305 VAC | 310 VAC | 440 VAC | 500 VAC | 600 VAC | 700 VAC | 63 VAC | 230 VAC | 330 VAC | 400 VAC | 450 VAC |



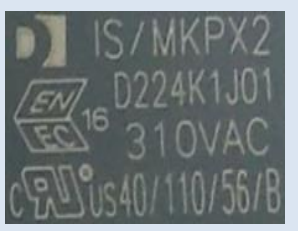
B-19 & 20, Sector-58, Noida-201301, India • +91-120 2585458/57 • www.dekielectronics.com

# 151 Interference Suppression Capacitors
# Class X2 – THB Grade (UL and ENEC Approved)

## *Packing Type details:

1: Bulk packing (original pitch)
2: Bulk packing (after forming & cutting)
3: Ammo packing (after forming & taping)
4: Bulk packing (after forming in original pitch without cut)
5: Bulk packing (after formed & without cut)
6: Ammo packing (Straight lead)
7: Bulk packing (Straight lead cut)
8: Reel packing (Straight lead)

## Reference Data

| | |
|---|---|
| Capacitance | 0.01µF to 10µF |
| Capacitance tolerance | ±10%, ±20% |
| Rated AC voltage at 50/60 Hz | 310Vac |
| Climatic testing class according to IEC 60068-1 | 40/110/56 |
| Passive flammability category | B |
| Application temperature range | -40°C to +110°C |
| Reference standards | IEC 60384-14 |
| Dielectric | Polypropylene |
| Electrodes | Metallized |
| Construction | Mono |
| Encapsulation | Encased in flame retardant box(UL 94 V-0) filled with resin(UL 94 V-0) |
| Leads | Tinned wire |
| Marking on capacitor body | Example →   Trademark,Sub-class (X2), rated cap. (224), cap. tolerance(K), traceability code (1J01) rated voltage(310VAC), climatic category (40/110/56),passive flammability category(B) & approvals |
| Compatibility to RoHS |   |

* Traceability code (4 alphanumeric digits) contains the following information- 1(Year-2021), J (Month-October) 01 (Serial number of the lot for that particular month- First lot).
*This series is designed to use in “Across the line” applications.

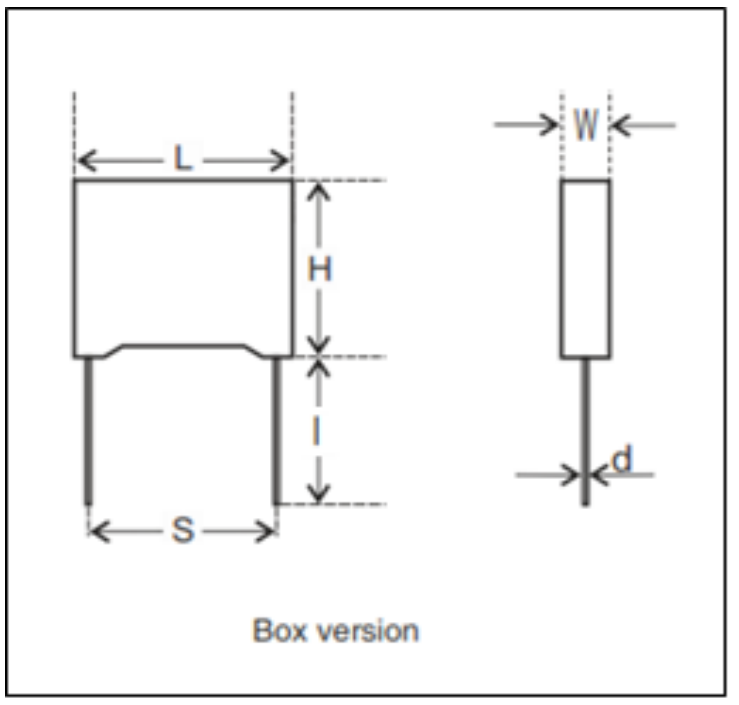
| Approval | Symbol | Capacitor Class | Rated Voltage | Capacitance | Certificate Number |
|---|---|---|---|---|---|
| UL 60384-14 | | X2 | 310 Vac | 0.01 µF ~ 10 µF | E519274 |
| EN 60384-14 | | X2 | 310 Vac | 0.01 µF ~ 10 µF | ENEC16/23/02004 |

only better


B-19 & 20, Sector-58, Noida-201301, India • +91-120 2585458/57 • www.dekielectronics.com

# 151 Interference Suppression Capacitors
# Class X2 – THB Grade (UL and ENEC Approved)

## Dimensions Description



Box version

| Rated Capacitance (µF) | Dimensions (mm) | | | | | I | Item Code |
|---|---|---|---|---|---|---|---|
| | L (±0.5) | H (±0.5) | W (±0.5) | S (±0.75) | d (±0.05) | | |
| 0.047 | 13 | 13 | 7 | 10 | 0.6 | 15 Min. | 151 473 K 05 1 A |
| 0.068 | 18 | 12 | 6 | 15 | 0.8 | 15 Min. | 151 683 K 05 1 A |
| 0.1 | 18 | 12 | 6 | 15 | 0.8 | 15 Min. | 151 104 K 05 1 A |
| 0.15 | 18 | 13.5 | 7.5 | 15 | 0.8 | 15 Min. | 151 154 K 05 1 A |
| 0.2 | 18.0 | 14.5 | 8.5 | 15.0 | 0.8 | 15 Min. | 151 204 K 05 1 A |
| 0.22 | 18 | 14.5 | 8.5 | 15 | 0.8 | 15 Min. | 151 224 K 05 1 A |
| 0.27 | 18 | 16 | 10 | 15 | 0.8 | 15 Min. | 151 274 K 05 1 A |
| 0.33 | 18 | 16 | 10 | 15 | 0.8 | 15 Min. | 151 334 K 05 1 B |
| 0.39 | 18 | 18 | 10 | 15 | 0.8 | 15 Min. | 151 394 K 05 1 B |
| 0.41 | 18 | 19 | 11 | 15 | 0.8 | 15 Min. | 151 414 K 05 1 B |
| 0.47 | 18 | 19 | 11 | 15 | 0.8 | 15 Min. | 151 474 K 05 1 B |
| 0.22 | 26.5 | 15 | 6 | 22.5 | 0.8 | 15 Min. | 151 224 K 05 1 C |
| 0.22 | 26.5 | 16.5 | 7 | 22.5 | 0.8 | 15 Min. | 151 224 K 05 1 B |
| 0.22 | 18.0 | 13.5 | 7.5 | 15.0 | 0.8 | 15 Min. | 151 224 K 05 1 D |
| 0.22 | 18.0 | 13.5 | 7.0 | 15.0 | 0.8 | 5±0.5 | 151 224 K 05 7 D |
| 0.33 | 26.5 | 16.5 | 7 | 22.5 | 0.8 | 15 Min. | 151 334 K 05 1 A |
| 0.39 | 26.5 | 17 | 8.5 | 22.5 | 0.8 | 15 Min. | 151 394 K 05 1 A |
| 0.41 | 26.5 | 17 | 8.5 | 22.5 | 0.8 | 15 Min. | 151 414 K 05 1 A |
| 0.47 | 26.5 | 17 | 8.5 | 22.5 | 0.8 | 15 Min. | 151 474 K 05 1 A |
| 0.47 | 26.5 | 18.5 | 10 | 22.5 | 0.8 | 15 Min. | 151 474 K 05 1 B |
| 0.47 | 32 | 18 | 9 | 27.5 | 0.8 | 15 Min. | 151 474 K 05 1 C |
| 0.56 | 26.5 | 18.5 | 10.0 | 22.5 | 0.8 | 15 Min. | 151 564 K 05 1 A |
| 0.68 | 26.5 | 19.0 | 10.0 | 22.5 | 0.8 | 15 Min. | 151 684 K 05 1 A |
| 0.82 | 26.5 | 20.0 | 11.0 | 22.5 | 0.8 | 15 Min. | 151 824 K 05 1 A |
| 1.0 | 26.5 | 20.0 | 11.0 | 22.5 | 0.8 | 15 Min. | 151 105 K 05 1 D |
| 1.0 | 26.5 | 20 | 11 | 22.5 | 0.8 | 15 Min. | 151 105 K 05 1 V |
| 1.0 | 26.5 | 22 | 12 | 22.5 | 0.8 | 15 Min. | 151 105 K 05 1 B |
| 1.0 | 26.5 | 22 | 12 | 22.5 | 0.8 | 15 Min. | 151 105 M 05 1 D |
| 1.0 | 26.5 | 19 | 10 | 22.5 | 0.8 | 15 Min. | 151 105 M 05 1 F |
| 1.0 | 32 | 20 | 11 | 27.5 | 0.8 | 15 Min. | 151 105 K 05 1 A |
| 1.0 | 32 | 22 | 13 | 27.5 | 0.8 | 15Min. | 151 105 K 05 1 C |
| 1.2 | 32 | 22.5 | 13 | 27.5 | 0.8 | 15 Min. | 151 125 K 05 1 A |
| 1.5 | 32 | 22.5 | 13 | 27.5 | 0.8 | 15 Min. | 151 155 K 05 1 A |
| 1.8 | 32 | 25 | 14 | 27.5 | 0.8 | 15 Min. | 151 185 K 05 1 A |
| 2.2 | 32 | 28 | 14 | 27.5 | 0.8 | 15 Min. | 151 225 K 05 1 A |
| 2.2 | 32 | 28 | 14 | 27.5 | 0.8 | 15 Min. | 151 225 M 05 1 A |
| 3.3 | 32 | 30 | 18 | 27.5 | 0.8 | 15 Min. | 151 335 K 05 1 B |
| 4.7 | 32 | 33 | 18 | 27.5 | 0.8 | 15Min. | 151 475 M 05 1 V |
| 4.7 | 32 | 33 | 18 | 27.5 | 0.8 | 15Min. | 151 475 M 05 1 C |
| 6.8 | 32 | 37 | 22 | 27.5 | 0.8 | 15 Min. | 151 685 K 05 1 C |




B-19 & 20, Sector-58, Noida-201301, India • +91-120 2585458/57 • www.dekielectronics.com

# 151 Interference Suppression Capacitors
# Class X2 – THB Grade (UL and ENEC Approved)

## Specific Data

| Description | Value | |
|---|---|---|
| Maximum tangent of loss angle(Tan δ) | ≤0.001 at 1 kHz | |
| Voltage proof test between leads | 2200VDC for 2 second | |
| Voltage proof test between leads and case | 2 times of rated voltage+1500VAC with a minimum 2000 VAC for 2 second | |
| Insulation Resistance ($R_{IS}$) (or) time constant T= $C_R$ × $R_{IS}$ at 25° C, relative humidity ≤70% @100V 1min. | $C_R$≤0.33 µF ≥100000 MΩ | $C_R$>0.33 µF ≥30000 s |

## Endurance Test

Loaded at 1.25 times of rated voltage at 110˚C for 1000 hours with once per hour voltage increased to 1000 Vrms for 0.1 second. These voltages shall be applied to each capacitor individually through a resistor of 47Ω ± 5%.

**After The Test**

ΔC/C : ≤ 10% of initial value.
Increase of Tan δ : ≤ 0.008 at 10 kHz for $C_R$ ≤1.0µF; ≤ 0.005 at 1 kHz for $C_R$ >1.0µF;
Insulation resistance : ≥ 50% of the value mentioned in specific data.

## THB Test

**Condition 1**

- **Voltage : Rated Voltage**
- **Temperature : 85°C**
- **Humidity : 85%RH**
- **Duration : 1000Hours**

**Condition 2**

- **Voltage : Rated Voltage**
- **Temperature : 40°C**
- **Humidity : 93%RH**
- **Duration : 1000Hours**

**After The Test**

ΔC/C : ≤ 10% of initial value.
Increase of Tan δ : ≤ 0.024 for CN ≤ 1µF, 0.015 for CN > 1µF @ 1KHz
Insulation resistance : ≥ 50% of the value mentioned in specific data




B-19 & 20, Sector-58, Noida-201301, India • +91-120 2585458/57 • www.dekielectronics.com

## Storage Conditions

Avoid storing the capacitors in places where the environmental conditions differ from the following:

- Storage time: ≤ 24 months from the date marked on the label glued to the package.
- Temperature: -40 to 80°C
- Humidity:

| | |
|---|---|
| - Average per year: | ≤70% |
| - For 30 full days randomly distributed throughout the year: | ≤85% |
| - Dew: | absent |

After a longer period of storage or use, the tolerance can increase; but, according to standard specification, it may never exceed twice the value measured at the time of delivery.

## Disclaimer

All our capacitors are designed, manufactured and tested to specifications. We strictly adhere to standards in procurement of materials, in the laid down manufacturing processes and consistently apply stringent process controls and testing parameters. This ensures that our capacitors always perform to the offered specifications.

Appropriateness of use in a specific circuit and fitness to a particular application however needs to be verified and its reliability through expected lifetime is required to be validated by the customer. Deki's responsibility is limited to ensuring that the capacitor performs as claimed in the specification/ data sheets provided by Deki. Deki specifically disclaims any implied warranties of fitness for any particular purpose. Liability, in any case is limited to the price paid for the capacitors.




B-19 & 20, Sector-58, Noida-201301, India • +91-120 2585458/57 • www.dekielectronics.com