

Interference Suppression Capacitor

NPYT Series

MOLDED BOX CONSTRUCTION, SUPPRESSION CAPACITOR, RADIAL LEAD

FEATURES

- Self-Healing Construction
- Y2 Class Safety Capacitors
- High VAC Rating: 300VAC
- High Withstanding Voltage; 2000VAC or 4000VDC
- Safety Agency Listed: UL, cUL, ENEC, CQC
- IEC 60068-1 Climatic category 40/110/56

**HIGH VOLTAGE
Y2 300VAC
Safety Capacitors**



SPECIFICATIONS (CLASS Y2)

| | | |
|---|-------------------------------|---|
| Operating Temperature | | -40°C ~ +110°C |
| Rated Voltage | | 300VAC |
| Capacitance Range | | 0.001μF ~ 0.1μF |
| Capacitance Tolerance | | ±5% (J), ±10% (K), ±20% (M) |
| Insulation Resistance (min.) | | > 15,000Megohm @ 100V after 60 sec. |
| Dissipation Factor | | < 0.1% max. @ 1KHz/20°C |
| IEC 60068-1 Climatic category (Damp heat, steady state) | | 40/110/56 Temp. +40°C ± 2°C with relative humidity (RH): 93% ±2% for 56 days |
| Dielectric Strength | Between Terminals | 2,000VAC for 2 sec. or 4,000VDC for 2 sec. |
| | Between Terminals & Enclosure | 2,100 VAC for 5 sec. max. |

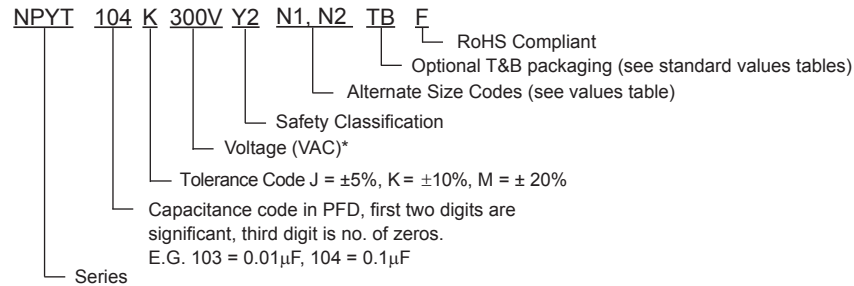
SAFETY AGENCY APPROVALS

| Agency | Standard | Capacitance Values | Voltages | Certificate Number |
|--------|----------------------------|--------------------|----------|--------------------|
| UL/cUL | UL60384-14 CSAE60384-14 | 0.001μF ~ 0.1μF | 300VAC | E209251 |
| ENEC | EN60384-14 : 2005 (ed.3) | | 300VAC | SE/12059-1A |
| CQC | IEC60384-14 : 2005 | | 300VAC | CQC13001099626 |

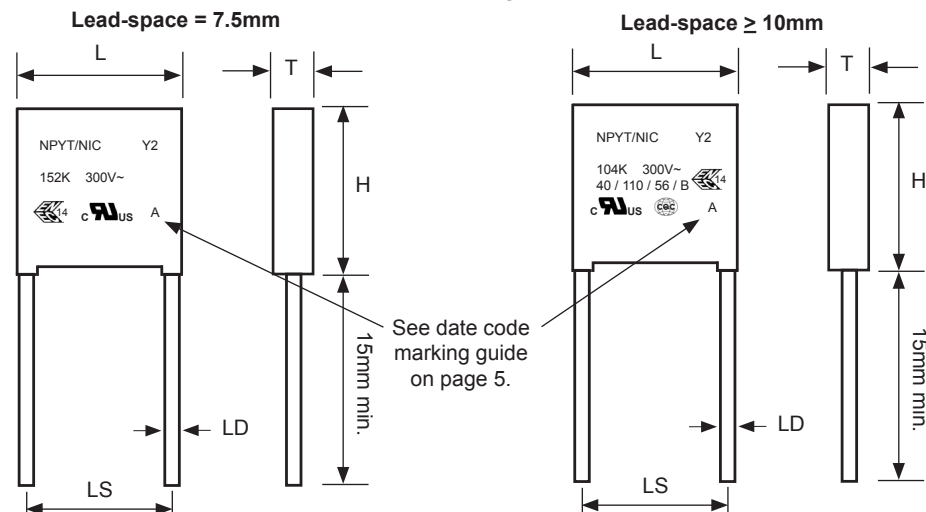
DV/DT RATINGS

| Lead-Space (mm) | 7.5 | 10 | 15 | 22.5 | 27.5 |
|-----------------|-----|-----|-----|------|------|
| DV/DT (V/μS) | 100 | 100 | 100 | 100 | 100 |

PART NUMBER SYSTEM



MARKING



STANDARD VALUES AND CASE SIZE (mm)

| Part Number | Cap. Value (µF) | Capacitance Code | Standard Tolerance* | L ±1.0 | H ±1.0 | T ±1.0 | LS ±1.0 | LD ±0.05 | Packaging Quantity | |
|-------------------|-----------------|------------------|---------------------|--------|--------|--------|---------|----------|--------------------|-------|
| | | | | | | | | | Bulk | T&B |
| NPYT102K300VY2N1F | 0.001 | 102 | ±10% (K) | 10.0 | 9.0 | 4.0 | 7.5 | 0.6 | 1,000 | 1,300 |
| NPYT102K300VY2N2F | 0.001 | 102 | ±10% (K) | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | 500 | 500 |
| NPYT102K300VY2N3F | 0.001 | 102 | ±10% (K) | 18.0 | 11.0 | 5.0 | 15.0 | 0.6 | 500 | 450 |
| NPYT152K300VY2N1F | 0.0015 | 152 | ±10% (K) | 10.0 | 9.0 | 4.0 | 7.5 | 0.6 | 1,000 | 1,300 |
| NPYT152K300VY2N2F | 0.0015 | 152 | ±10% (K) | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | 500 | 500 |
| NPYT152K300VY2N3F | 0.0015 | 152 | ±10% (K) | 18.0 | 11.0 | 5.0 | 15.0 | 0.6 | 500 | 450 |
| NPYT222K300VY2N1F | 0.0022 | 222 | ±10% (K) | 10.5 | 11.0 | 5.0 | 7.5 | 0.6 | 1,000 | 1,000 |
| NPYT222K300VY2N2F | 0.0022 | 222 | ±10% (K) | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | 500 | 500 |
| NPYT222K300VY2N3F | 0.0022 | 222 | ±10% (K) | 18.0 | 11.0 | 5.0 | 15.0 | 0.6 | 500 | 450 |
| NPYT272K300VY2N1F | 0.0027 | 272 | ±10% (K) | 10.5 | 11.0 | 5.0 | 7.5 | 0.6 | 1,000 | 1,000 |
| NPYT272K300VY2N2F | 0.0027 | 272 | ±10% (K) | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | 500 | 500 |
| NPYT272K300VY2N3F | 0.0027 | 272 | ±10% (K) | 18.0 | 11.0 | 5.0 | 15.0 | 0.6 | 500 | 450 |
| NPYT332K300VY2N1F | 0.0033 | 332 | ±10% (K) | 10.5 | 11.0 | 5.0 | 7.5 | 0.6 | 1,000 | 1,000 |
| NPYT332K300VY2N2F | 0.0033 | 332 | ±10% (K) | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | 500 | 500 |
| NPYT332K300VY2N3F | 0.0033 | 332 | ±10% (K) | 18.0 | 11.0 | 5.0 | 15.0 | 0.6 | 500 | 450 |
| NPYT392K300VY2N1F | 0.0039 | 392 | ±10% (K) | 10.5 | 11.0 | 5.0 | 7.5 | 0.6 | 1,000 | 1,000 |
| NPYT392K300VY2N2F | 0.0039 | 392 | ±10% (K) | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | 500 | 500 |
| NPYT392K300VY2N3F | 0.0039 | 392 | ±10% (K) | 18.0 | 11.0 | 5.0 | 15.0 | 0.6 | 500 | 450 |
| NPYT472K300VY2N1F | 0.0047 | 472 | ±10% (K) | 10.5 | 11.0 | 5.0 | 7.5 | 0.6 | 1,000 | 1,000 |
| NPYT472K300VY2N2F | 0.0047 | 472 | ±10% (K) | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | 500 | 500 |
| NPYT472K300VY2N3F | 0.0047 | 472 | ±10% (K) | 18.0 | 11.0 | 5.0 | 15.0 | 0.6 | 500 | 450 |
| NPYT562K300VY2N1F | 0.0056 | 562 | ±10% (K) | 10.5 | 11.0 | 5.0 | 7.5 | 0.6 | 1,000 | 1,000 |
| NPYT562K300VY2N2F | 0.0056 | 562 | ±10% (K) | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | 500 | 500 |
| NPYT562K300VY2N3F | 0.0056 | 562 | ±10% (K) | 18.0 | 11.0 | 5.0 | 15.0 | 0.6 | 500 | 450 |
| NPYT682K300VY2N1F | 0.0068 | 682 | ±10% (K) | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 | 500 | 450 |
| NPYT682K300VY2N2F | 0.0068 | 682 | ±10% (K) | 18.0 | 11.0 | 5.0 | 15.0 | 0.6 | 500 | 450 |
| NPYT822K300VY2N1F | 0.0082 | 822 | ±10% (K) | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 | 500 | 450 |
| NPYT822K300VY2N2F | 0.0082 | 822 | ±10% (K) | 18.0 | 11.0 | 5.0 | 15.0 | 0.6 | 500 | 450 |
| NPYT103K300VY2N1F | 0.01 | 103 | ±10% (K) | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 | 500 | 450 |
| NPYT103K300VY2N2F | 0.01 | 103 | ±10% (K) | 18.0 | 11.0 | 5.0 | 15.0 | 0.6 | 500 | 450 |
| NPYT123K300VY2N1F | 0.012 | 123 | ±10% (K) | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 | 500 | 450 |
| NPYT123K300VY2N2F | 0.012 | 123 | ±10% (K) | 18.0 | 11.0 | 5.0 | 15.0 | 0.6 | 500 | 450 |
| NPYT153K300VY2N1F | 0.015 | 153 | ±10% (K) | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | 500 | 450 |
| NPYT153K300VY2N2F | 0.015 | 153 | ±10% (K) | 18.0 | 11.0 | 5.0 | 15.0 | 0.6 | 500 | 450 |
| NPYT183K300VY2N1F | 0.018 | 183 | ±10% (K) | 18.0 | 11.0 | 5.0 | 15.0 | 0.6 | 500 | 450 |
| NPYT223K300VY2N1F | 0.022 | 223 | ±10% (K) | 17.0 | 11.0 | 5.5 | 15.0 | 0.6 | 500 | 450 |
| NPYT253K300VY2N1F | 0.025 | 253 | ±10% (K) | 18.0 | 12.0 | 6.0 | 15.0 | 0.6 | 500 | 400 |
| NPYT273K300VY2N1F | 0.027 | 273 | ±10% (K) | 17.0 | 11.0 | 5.5 | 15.0 | 0.6 | 500 | 450 |
| NPYT273K300VY2N1F | 0.027 | 273 | ±10% (K) | 18.0 | 12.0 | 6.0 | 15.0 | 0.6 | 500 | 400 |
| NPYT333K300VY2N1F | 0.033 | 333 | ±10% (K) | 18.0 | 12.0 | 6.0 | 15.0 | 0.6 | 500 | 400 |
| NPYT473K300VY2N1F | 0.047 | 473 | ±10% (K) | 18.0 | 13.5 | 6.0 | 15.0 | 0.6 | 500 | 400 |
| NPYT473K300VY2N2F | 0.047 | 473 | ±10% (K) | 25.0 | 14.5 | 6.0 | 22.5 | 0.6 | 200 | N/A |
| NPYT563K300VY2N1F | 0.056 | 563 | ±10% (K) | 17.0 | 15.5 | 7.5 | 15.0 | 0.6 | 500 | 300 |
| NPYT683K300VY2N1F | 0.068 | 683 | ±10% (K) | 17.0 | 15.5 | 7.5 | 15.0 | 0.6 | 500 | 300 |
| NPYT823K300VY2N1F | 0.082 | 823 | ±10% (K) | 17.0 | 16.5 | 9.5 | 15.0 | 0.6 | 400 | 250 |
| NPYT104K300VY2N1F | 0.1 | 104 | ±10% (K) | 17.0 | 16.5 | 9.5 | 15.0 | 0.6 | 400 | 250 |
| NPYT104K300VY2N2F | 0.1 | 104 | ±10% (K) | 26.5 | 16.5 | 7.0 | 22.5 | 0.8 | 200 | N/A |
| NPYT104K300VY2N3F | 0.1 | 104 | ±10% (K) | 31.5 | 16.5 | 7.5 | 27.5 | 0.8 | 100 | N/A |

*Also available in ±5% (J) and ±20% (M) tolerance.



ENVIRONMENTAL CHARACTERISTICS

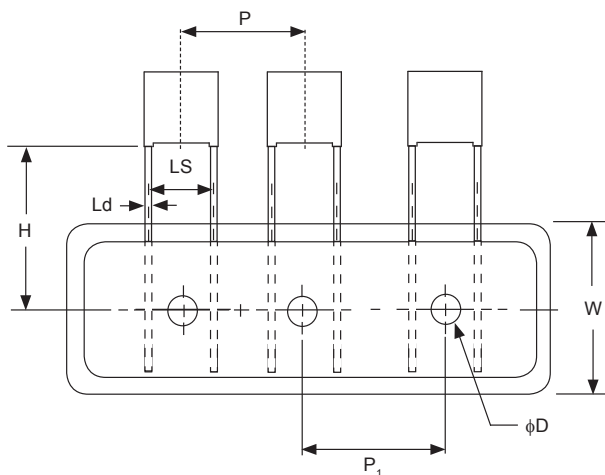
| Item | Test Method | Standard |
|------------------------------|---|--|
| Endurance | +110°C±2°C, 170% of RV for 1,000 hours (Voltage applied through 47Ω ± 5% resistor, every hour voltage is increased to 1,000Vrms for 0.1 seconds). | Physical: No remarkable physical Capacitance: Within ±10% of initial measured value DF: 0.8% max. IR ≥ 50% of specified value |
| Moisture Resistance | +40°C±2°C, Rated Voltage, 87% ~ 93% RH, 500 hours. (Part stabilized at room temperature for 1.5 ± 0.5 hours before taking measurements) | Physical: No remarkable physical Capacitance: Within ±5% of initial measured value DF: ≤ 0.2%, IR ≥ 50% of specified value |
| Temperature Cycling | A total of 5 cycles. Each cycle includes: 1. +20 ± 2°C for 3 minutes 2. -40 ± 3°C for 30 minutes 3. +20 ± 2°C for 3 minutes 4. +110 ± 3°C for 30 minutes 5. +20 ± 2°C for 3 minutes After test allow parts to stabilized at room temperature for 1.5 ± 0.5 hours before taking measurements. | Physical: No remarkable physical Capacitance: Within ±5% of initial measured value DF: ≤ 0.2%, IR ≥ 50% of specified value |
| Resistance to Dry Heat | +110 ± 2°C for 16 +1/-0 hours | Physical: No remarkable physical Capacitance: Within ±5% of initial measured value DF: ≤ 0.2%, IR ≥ 50% of specified value |
| Resistance to Cold | -40°C ± 3°C for 2 hours ± 1 hours | Physical: No remarkable physical Capacitance: Within ±5% of initial measured value DF: ≤ 0.2%, IR ≥ 50% of specified value |
| Resistance to Soldering Heat | Preheat: +100°C ~ +120°C (60 seconds max). Ramp-up rate: 3°C per second max. Peak soldering temperature: +260 ± 5°C for 5 seconds max. Immersion depth: 4.8mm max from base of component (Part stabilized at room temperature for 1.5 ± 0.5 hours before taking measurements) | Physical: No remarkable physical Capacitance: Within ±5% of initial measured value DF: ≤ 0.2%, IR ≥ 50% of specified value |
| Vibration | Frequency: 10-55-10Hz Magnitude: 1.5mm in X, Y and Z directions Duration: 2 +1/-0 hours in each direction | No short/open circuit and stable connection |
| Terminal Strength | Apply 1.0Kg of force for 10 ± 1 seconds to the terminal in the axial direction away from the body of the part. | No abnormalities |
| Bending Strength | Apply 0.5Kg of force for 2 cycles. Each cycle includes 90° once, return to original position for 2 ~ 3 seconds and then bend in the opposite direction. | No abnormalities |

DATE CODE MARKING

| Year | Month | Code | Year | Month | Code | Year | Month | Code | Year | Month | Code |
|------|-------|------|------|-------|------|------|-------|------|------|-------|------|
| 2016 | Jan. | n | 2017 | Jan. | A | 2018 | Jan. | N | 2019 | Jan. | a |
| | Feb. | p | | Feb. | B | | Feb. | P | | Feb. | b |
| | Mar. | q | | Mar. | C | | Mar. | Q | | Mar. | c |
| | Apr. | r | | Apr. | D | | Apr. | R | | Apr. | d |
| | May. | s | | May. | E | | May. | S | | May. | e |
| | Jun. | t | | Jun. | F | | Jun. | T | | Jun. | f |
| | Jul. | u | | Jul. | G | | Jul. | U | | Jul. | g |
| | Aug. | v | | Aug. | H | | Aug. | V | | Aug. | h |
| | Sept. | w | | Sept. | J | | Sept. | W | | Sept. | j |
| | Oct. | x | | Oct. | K | | Oct. | X | | Oct. | k |
| | Nov. | y | | Nov. | L | | Nov. | Y | | Nov. | l |
| | Dec. | z | | Dec. | M | | Dec. | Z | | Dec. | m |

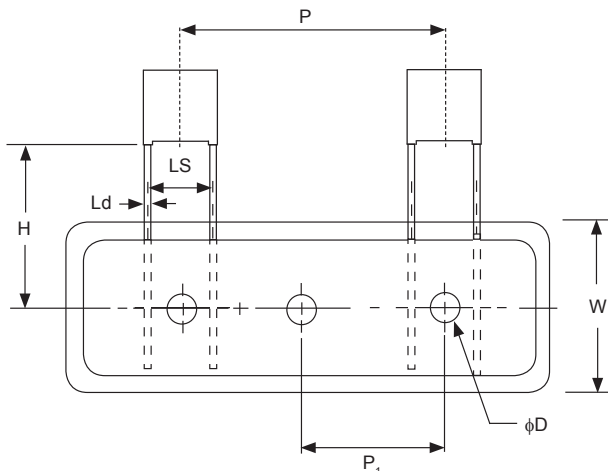
AMMO PACK (TB) TAPING DIMENSIONS 7.5mm LEAD SPACE

| Item | Dimension (mm) |
|-----------------|----------------|
| H | 18.5 ± 1.0 |
| Ld | 0.60 ± 0.1 |
| LS | 7.5 ± 1.0 |
| P | 12.7 ± 1.5 |
| P ₁ | 12.7 ± 0.3 |
| W | 18.0 ± 1.0 |
| φD ₁ | 4.0 ± 0.3 |



AMMO PACK (TB) TAPING DIMENSIONS 10 & 15mm LEAD SPACE

| Item | Dimension (mm) | |
|-----------------|----------------|-----------------|
| H | 18.5 ± 1.0 | |
| Ld | 0.60 ± 0.1 | 0.60/0.80 ± 0.1 |
| LS | 10.0 ± 1.0 | 15.0 ± 1.0 |
| P | 25.4 ± 1.5 | |
| P ₁ | 12.7 ± 0.3 | |
| W | 18.0 ± 1.0 | |
| φD ₁ | 4.0 ± 0.3 | |



AMMO PACK BOX DIMENSIONS

| Item | Dimension (mm) |
|------|----------------|
| A | 270 |
| B | 50 |
| C | 330 |

