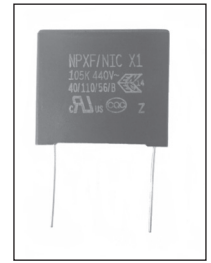


MOLDED BOX CONSTRUCTION, SUPPRESSION CAPACITOR, RADIAL LEAD

### FEATURES

- Safety Agency Listed: UL, cUL, ENEC, CQC
- "X1" Safety Cap Classification For Use In Across-The-Line Applications
- Metallized Polypropylene Film
- Non-Inductive & Self-Healing Construction
- RoHS Compliant & Pb-Free Finish
- Molded Case Meets UL-94V-0 Flammability Test

**HIGH  
VOLTAGE  
X1 440VAC**



### SPECIFICATIONS (CLASS X1)

|  |                               |   |
|--|-------------------------------|---|
| Operating Temperature                                      |                               | -40°C ~ +110°C  |
| Rated Voltage  |                               | 440VAC  |
| Capacitance Range  |                               | 0.001μF ~ 10μF  |
| Capacitance Tolerance                                      |                               | ±5% (J), ±10% (K), ±20% (M)   |
| Insulation Resistance (min.)                               |                               | ≤0.33μF IR > 15,000Megohm @ 100V after 60 sec.<br>>0.33μF IR ≥ 5,000Megohm @ 100V after 60 sec. |
| Dissipation Factor   |                               | < 0.1% max. @ 1KHz/20°C   |
| IEC 60068-1 Climatic category<br>(Damp heat, steady state) |                               | 40/110/56<br>Temp. +40°C ± 2°C with relative humidity (RH): 93% ±2% for 56 days                 |
| Dielectric Strength  | Between Terminals             | 3400VDC for 2 seconds max.  |
|  | Between Terminals & Enclosure | 2560VAC for 1 minute max.   |

### SAFETY AGENCY APPROVALS

| Agency | Standard                   | Capacitance Values | Voltages                 | Certificate Number |
|--------|----------------------------|--------------------|--------------------------|--------------------|
| UL/cUL | UL60384-14<br>CSAE60384-14 | 0.001μF ~ 10μF     | 440VAC                   | E209251            |
|        | ENEC                       |                    | EN60384-14 : 2005 (ed.3) | 440VAC             |
| CQC    |                            |                    | IEC60384-14 : 2005       | 440VAC             |

### DV/DT RATINGS

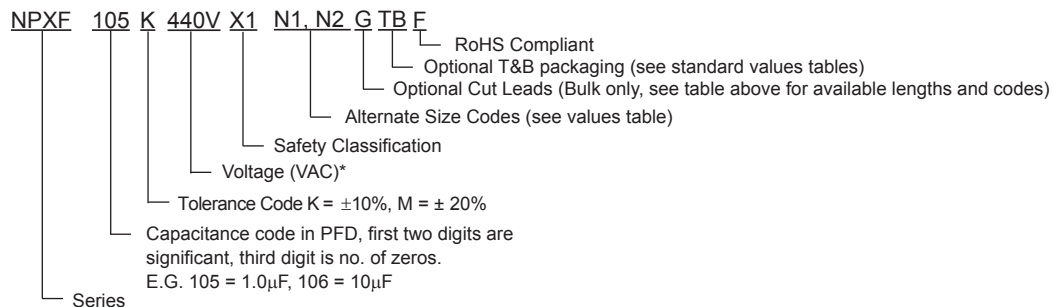
| Lead-Space (mm) | 7.5 | 10  | 15  | 22.5 | 27.5 | 32.5 | 37.5 | 47.5 | 52.5 |
|-----------------|-----|-----|-----|------|------|------|------|------|------|
| DV/DT (V/μS)    | 550 | 450 | 250 | 180  | 150  | 100  | 90   | 80   | 50   |

### CUT LEAD CODES (BULK PARTS ONLY)

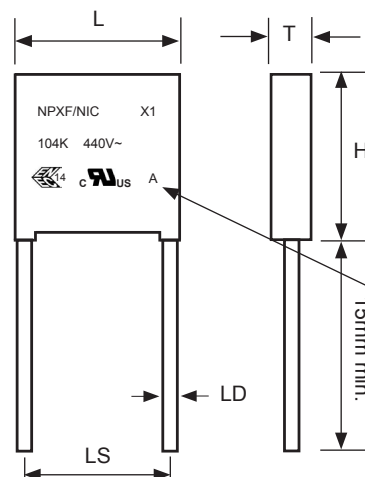
| Lead Length* | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 | 6.5 | 7.0 | 7.5 |
|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code         | A   | B   | C   | D   | E   | G   | H   | J   | K   | L   | M   |

\* Lead length ±0.5mm

### PART NUMBER SYSTEM

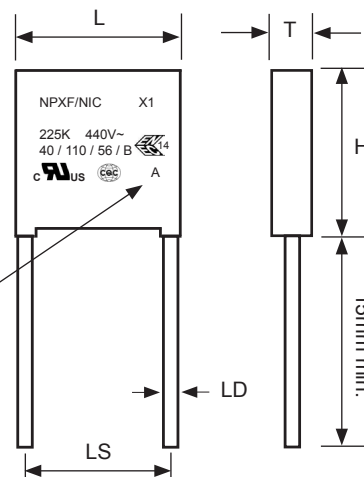


### Lead-space = 7.5mm



### MARKING

### Lead-space ≥ 10mm



## 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  |
| NPXF102K440VX1N1F | 0.001           | 102              | ±10% (K)            | 10.5   | 9.0    | 4.0    | 7.5     | 0.6      | 1000               | 1300 |
| NPXF102K440VX1N2F | 0.001           | 102              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF102K440VX1N3F | 0.001           | 102              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF152K440VX1N1F | 0.0015          | 152              | ±10% (K)            | 10.5   | 9.0    | 4.0    | 7.5     | 0.6      | 1000               | 1300 |
| NPXF152K440VX1N2F | 0.0015          | 152              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF152K440VX1N3F | 0.0015          | 152              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF222K440VX1N1F | 0.0022          | 222              | ±10% (K)            | 10.5   | 9.0    | 4.0    | 7.5     | 0.6      | 1000               | 1300 |
| NPXF222K440VX1N2F | 0.0022          | 222              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF222K440VX1N3F | 0.0022          | 222              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF272K440VX1N1F | 0.0027          | 272              | ±10% (K)            | 10.5   | 9.0    | 4.0    | 7.5     | 0.6      | 1000               | 1300 |
| NPXF272K440VX1N2F | 0.0027          | 272              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF272K440VX1N3F | 0.0027          | 272              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF332K440VX1N1F | 0.0033          | 332              | ±10% (K)            | 10.5   | 9.0    | 4.0    | 7.5     | 0.6      | 1000               | 1300 |
| NPXF332K440VX1N2F | 0.0033          | 332              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF332K440VX1N3F | 0.0033          | 332              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF392K440VX1N1F | 0.0039          | 392              | ±10% (K)            | 10.5   | 9.0    | 4.0    | 7.5     | 0.6      | 1000               | 1300 |
| NPXF392K440VX1N2F | 0.0039          | 392              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF392K440VX1N3F | 0.0039          | 392              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF472K440VX1N1F | 0.0047          | 472              | ±10% (K)            | 10.5   | 9.0    | 4.0    | 7.5     | 0.6      | 1000               | 1300 |
| NPXF472K440VX1N2F | 0.0047          | 472              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF472K440VX1N3F | 0.0047          | 472              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF562K440VX1N1F | 0.0056          | 562              | ±10% (K)            | 10.5   | 9.0    | 4.0    | 7.5     | 0.6      | 1000               | 1300 |
| NPXF562K440VX1N2F | 0.0056          | 562              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF562K440VX1N3F | 0.0056          | 562              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF682K440VX1N1F | 0.0068          | 682              | ±10% (K)            | 10.5   | 11.0   | 5.0    | 7.5     | 0.6      | 1000               | 1000 |
| NPXF682K440VX1N2F | 0.0068          | 682              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF682K440VX1N3F | 0.0068          | 682              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF822K440VX1N1F | 0.0082          | 822              | ±10% (K)            | 10.5   | 11.0   | 5.0    | 7.5     | 0.6      | 1000               | 1000 |
| NPXF822K440VX1N2F | 0.0082          | 822              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF822K440VX1N3F | 0.0082          | 822              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF103K440VX1N1F | 0.01            | 103              | ±10% (K)            | 10.5   | 11.0   | 5.0    | 7.5     | 0.6      | 1000               | 1000 |
| NPXF103K440VX1N2F | 0.01            | 103              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF103K440VX1N3F | 0.01            | 103              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF123K440VX1N1F | 0.012           | 123              | ±10% (K)            | 10.5   | 12.0   | 6.0    | 7.5     | 0.6      | 1000               | 800  |
| NPXF123K440VX1N2F | 0.012           | 123              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF123K440VX1N3F | 0.012           | 123              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF153M440VX1N1F | 0.015           | 153              | ±20% (M)            | 10.5   | 12.0   | 6.0    | 7.5     | 0.6      | 1000               | 800  |
| NPXF153K440VX1N2F | 0.015           | 153              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF153K440VX1N3F | 0.015           | 153              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF183K440VX1N1F | 0.018           | 183              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF183K440VX1N2F | 0.018           | 183              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF223K440VX1N1F | 0.022           | 223              | ±10% (K)            | 13.0   | 11.0   | 5.0    | 10.0    | 0.6      | 500                | 500  |
| NPXF223K440VX1N2F | 0.022           | 223              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF273K440VX1N1F | 0.027           | 273              | ±10% (K)            | 13.0   | 12.0   | 6.0    | 10.0    | 0.6      | 500                | 450  |
| NPXF273K440VX1N2F | 0.027           | 273              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF333K440VX1N1F | 0.033           | 333              | ±10% (K)            | 13.0   | 12.0   | 6.0    | 10.0    | 0.6      | 500                | 450  |
| NPXF333K440VX1N2F | 0.033           | 333              | ±10% (K)            | 18.0   | 11.0   | 5.0    | 15.0    | 0.6      | 500                | 450  |
| NPXF393K440VX1N1F | 0.039           | 393              | ±10% (K)            | 13.0   | 13.0   | 7.0    | 10.0    | 0.6      | 500                | 300  |
| NPXF393K440VX1N2F | 0.039           | 393              | ±10% (K)            | 18.0   | 12.0   | 6.0    | 15.0    | 0.8      | 500                | 400  |
| NPXF393K440VX1N3F | 0.039           | 393              | ±10% (K)            | 25.0   | 14.5   | 6.0    | 22.5    | 0.8      | 200                | NA   |
| NPXF473M440VX1N1F | 0.047           | 473              | ±20% (M)            | 13.0   | 13.0   | 7.0    | 10.0    | 0.6      | 500                | 300  |
| NPXF473K440VX1N2F | 0.047           | 473              | ±10% (K)            | 18.0   | 12.0   | 6.0    | 15.0    | 0.8      | 500                | 400  |
| NPXF473K440VX1N3F | 0.047           | 473              | ±10% (K)            | 25.0   | 14.5   | 6.0    | 22.5    | 0.8      | 200                | NA   |
| NPXF563K440VX1N1F | 0.056           | 563              | ±10% (K)            | 13.0   | 14.0   | 8.0    | 10.0    | 0.6      | 500                | 300  |
| NPXF563M440VX1N2F | 0.056           | 563              | ±20% (M)            | 18.0   | 12.0   | 6.0    | 15.0    | 0.8      | 500                | 400  |
| NPXF563K440VX1N3F | 0.056           | 563              | ±10% (K)            | 18.0   | 13.5   | 6.0    | 15.0    | 0.8      | 500                | 400  |
| NPXF563K440VX1N4F | 0.056           | 563              | ±10% (K)            | 25.0   | 14.5   | 6.0    | 22.5    | 0.8      | 200                | NA   |
| NPXF683K440VX1N1F | 0.068           | 683              | ±10% (K)            | 17.0   | 15.5   | 7.5    | 15.0    | 0.8      | 500                | 300  |
| NPXF683K440VX1N2F | 0.068           | 683              | ±10% (K)            | 25.0   | 14.5   | 6.0    | 22.5    | 0.8      | 200                | NA   |

\*10% tolerance items are also available in ±5% (J) and ±20% (M)



## 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 |
| NPXF823K440VX1N1F | 0.082           | 823              | ±10% (K)            | 17.0   | 15.5   | 7.5    | 15.0    | 0.8      | 500                | 300 |
| NPXF823K440VX1N2F | 0.082           | 823              | ±10% (K)            | 25.0   | 14.5   | 6.0    | 22.5    | 0.8      | 200                | NA  |
| NPXF104M440VX1N1F | 0.10            | 104              | ±20% (M)            | 17.0   | 15.5   | 7.5    | 15.0    | 0.8      | 500                | 300 |
| NPXF104K440VX1N2F | 0.10            | 104              | ±10% (K)            | 18.0   | 14.5   | 8.5    | 15.0    | 0.8      | 500                | 300 |
| NPXF104K440VX1N3F | 0.10            | 104              | ±10% (K)            | 25.0   | 14.5   | 6.0    | 22.5    | 0.8      | 200                | NA  |
| NPXF124K440VX1N1F | 0.12            | 124              | ±10% (K)            | 17.0   | 16.5   | 9.5    | 15.0    | 0.8      | 400                | 250 |
| NPXF124K440VX1N2F | 0.12            | 124              | ±10% (K)            | 25.0   | 14.5   | 6.0    | 22.5    | 0.8      | 200                | NA  |
| NPXF154M440VX1N1F | 0.15            | 154              | ±20% (M)            | 17.0   | 16.5   | 9.5    | 15.0    | 0.8      | 400                | 250 |
| NPXF154K440VX1N2F | 0.15            | 154              | ±10% (K)            | 17.0   | 19.0   | 11.0   | 15.0    | 0.8      | 200                | 200 |
| NPXF154K440VX1N3F | 0.15            | 154              | ±10% (K)            | 26.5   | 16.5   | 7.0    | 22.5    | 0.8      | 200                | NA  |
| NPXF154K440VX1N4F | 0.15            | 154              | ±10% (K)            | 31.5   | 16.5   | 7.5    | 27.5    | 0.8      | 100                | NA  |
| NPXF184K440VX1N1F | 0.18            | 184              | ±10% (K)            | 17.0   | 19.0   | 11.0   | 15.0    | 0.8      | 200                | 200 |
| NPXF184K440VX1N2F | 0.18            | 184              | ±10% (K)            | 26.5   | 17.5   | 8.5    | 22.5    | 0.8      | 200                | NA  |
| NPXF184K440VX1N3F | 0.18            | 184              | ±10% (K)            | 31.5   | 16.5   | 7.5    | 27.5    | 0.8      | 100                | NA  |
| NPXF224K440VX1N1F | 0.22            | 224              | ±10% (K)            | 26.5   | 17.5   | 8.5    | 22.5    | 0.8      | 200                | NA  |
| NPXF224K440VX1N2F | 0.22            | 224              | ±10% (K)            | 32.0   | 18.0   | 9.0    | 27.5    | 0.8      | 100                | NA  |
| NPXF274K440VX1N1F | 0.27            | 274              | ±10% (K)            | 26.5   | 19.0   | 10.0   | 22.5    | 0.8      | 200                | NA  |
| NPXF274K440VX1N2F | 0.27            | 274              | ±10% (K)            | 32.0   | 18.0   | 9.0    | 27.5    | 0.8      | 100                | NA  |
| NPXF334K440VX1N1F | 0.33            | 334              | ±10% (K)            | 26.0   | 20.0   | 11.0   | 22.5    | 0.8      | 300                | NA  |
| NPXF334K440VX1N2F | 0.33            | 334              | ±10% (K)            | 31.5   | 20.0   | 11.0   | 27.5    | 0.8      | 200                | NA  |
| NPXF334K440VX1N3F | 0.33            | 334              | ±10% (K)            | 32.0   | 12.0   | 18.0   | 27.5    | 0.8      | 100                | NA  |
| NPXF334K440VX1N4F | 0.33            | 334              | ±10% (K)            | 37.0   | 24.0   | 13.5   | 32.5    | 0.8      | 100                | NA  |
| NPXF334K440VX1N5F | 0.33            | 334              | ±10% (K)            | 41.0   | 22.0   | 11.0   | 37.5    | 1.0      | 50                 | NA  |
| NPXF394K440VX1N1F | 0.39            | 394              | ±10% (K)            | 26.0   | 20.0   | 11.0   | 22.5    | 0.8      | 100                | NA  |
| NPXF394K440VX1N2F | 0.39            | 394              | ±10% (K)            | 31.5   | 20.0   | 11.0   | 27.5    | 0.8      | 100                | NA  |
| NPXF394K440VX1N3F | 0.39            | 394              | ±10% (K)            | 37.0   | 24.0   | 13.5   | 32.5    | 0.8      | 50                 | NA  |
| NPXF394K440VX1N4F | 0.39            | 394              | ±10% (K)            | 41.0   | 22.0   | 11.0   | 37.5    | 1.0      | 300                | NA  |
| NPXF474K440VX1N1F | 0.47            | 474              | ±10% (K)            | 25.0   | 23.5   | 14.0   | 22.5    | 0.8      | 100                | NA  |
| NPXF474M440VX1N2F | 0.47            | 474              | ±20% (M)            | 26.0   | 21.5   | 12.0   | 22.5    | 0.8      | 100                | NA  |
| NPXF474M440VX1N3F | 0.47            | 474              | ±20% (M)            | 31.5   | 20.0   | 11.0   | 27.5    | 0.8      | 100                | NA  |
| NPXF474K440VX1N4F | 0.47            | 474              | ±10% (K)            | 32.0   | 12.0   | 22.0   | 27.5    | 0.8      | 100                | NA  |
| NPXF474K440VX1N5F | 0.47            | 474              | ±10% (K)            | 37.0   | 24.0   | 13.5   | 32.5    | 0.8      | 50                 | NA  |
| NPXF474K440VX1N6F | 0.47            | 474              | ±10% (K)            | 41.0   | 22.0   | 11.0   | 37.5    | 1.0      | 300                | NA  |
| NPXF524K440VX1N1F | 0.52            | 524              | ±10% (K)            | 25.0   | 23.5   | 14.0   | 22.5    | 0.8      | 100                | NA  |
| NPXF564M440VX1N1F | 0.56            | 564              | ±20% (M)            | 25.0   | 23.5   | 14.0   | 22.5    | 0.8      | 100                | NA  |
| NPXF564K440VX1N2F | 0.56            | 564              | ±10% (K)            | 26.0   | 25.0   | 15.0   | 22.5    | 0.8      | 100                | NA  |
| NPXF564K440VX1N3F | 0.56            | 564              | ±10% (K)            | 31.5   | 22.5   | 13.0   | 27.5    | 0.8      | 100                | NA  |
| NPXF564K440VX1N4F | 0.56            | 564              | ±10% (K)            | 37.0   | 24.0   | 13.5   | 32.5    | 0.8      | 50                 | NA  |
| NPXF564K440VX1N5F | 0.56            | 564              | ±10% (K)            | 41.0   | 22.0   | 11.0   | 37.5    | 1.0      | 300                | NA  |
| NPXF604K440VX1N1F | 0.60            | 604              | ±10% (K)            | 31.5   | 25.0   | 14.0   | 27.5    | 0.8      | 100                | NA  |
| NPXF684M440VX1N1F | 0.68            | 684              | ±20% (M)            | 26.0   | 25.0   | 15.0   | 22.5    | 0.8      | 100                | NA  |
| NPXF684M440VX1N2F | 0.68            | 684              | ±20% (M)            | 31.5   | 22.5   | 13.0   | 27.5    | 0.8      | 100                | NA  |
| NPXF684K440VX1N3F | 0.68            | 684              | ±10% (K)            | 31.5   | 25.0   | 14.0   | 27.5    | 0.8      | 100                | NA  |
| NPXF684K440VX1N4F | 0.68            | 684              | ±10% (K)            | 32.0   | 16.0   | 22.0   | 27.5    | 0.8      | 100                | NA  |
| NPXF684K440VX1N5F | 0.68            | 684              | ±10% (K)            | 37.0   | 24.0   | 13.5   | 32.5    | 0.8      | 50                 | NA  |
| NPXF684K440VX1N6F | 0.68            | 684              | ±10% (K)            | 41.0   | 22.0   | 11.0   | 37.5    | 1.0      | 300                | NA  |
| NPXF804K440VX1N1F | 0.80            | 804              | ±10% (K)            | 37.0   | 26.5   | 16.0   | 32.5    | 0.8      | 50                 | NA  |
| NPXF824M440VX1N1F | 0.82            | 824              | ±20% (M)            | 31.5   | 25.0   | 14.0   | 27.5    | 0.8      | 100                | NA  |
| NPXF824K440VX1N2F | 0.82            | 824              | ±10% (K)            | 32.0   | 28.0   | 14.0   | 27.5    | 0.8      | 50                 | NA  |
| NPXF824M440VX1N3F | 0.82            | 824              | ±20% (M)            | 37.0   | 24.0   | 13.5   | 32.5    | 0.8      | 50                 | NA  |
| NPXF824M440VX1N4F | 0.82            | 824              | ±20% (M)            | 41.0   | 22.0   | 11.0   | 37.5    | 1.0      | 300                | NA  |
| NPXF824K440VX1N5F | 0.82            | 824              | ±10% (K)            | 41.0   | 26.0   | 12.0   | 37.5    | 1.0      | 300                | NA  |
| NPXF105M440VX1N1F | 1.0             | 105              | ±20% (M)            | 32.0   | 16.0   | 27.5   | 27.5    | 0.8      | 50                 | NA  |
| NPXF105K440VX1N2F | 1.0             | 105              | ±10% (K)            | 32.0   | 18.5   | 31.0   | 27.5    | 0.8      | 50                 | NA  |
| NPXF105K440VX1N3F | 1.0             | 105              | ±10% (K)            | 32.0   | 28.0   | 18.0   | 27.5    | 0.8      | 50                 | NA  |
| NPXF105M440VX1N4F | 1.0             | 105              | ±20% (M)            | 37.0   | 26.5   | 16.0   | 32.5    | 0.8      | 50                 | NA  |
| NPXF105K440VX1N5F | 1.0             | 105              | ±10% (K)            | 37.0   | 28.5   | 18.0   | 32.5    | 0.8      | 200                | NA  |
| NPXF105K440VX1N6F | 1.0             | 105              | ±10% (K)            | 41.0   | 26.0   | 12.0   | 37.5    | 1.0      | 300                | NA  |
| NPXF105K440VX1N7F | 1.0             | 105              | ±10% (K)            | 42.0   | 15.0   | 24.0   | 37.5    | 1.0      | 250                | NA  |

\*10% tolerance items are also available in ±5% (J) and ±20% (M)



## 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 |
| NPXF125M440VX1N1F | 1.2             | 125              | ±20% (M)           | 32.0   | 28.0   | 18.0   | 27.5    | 0.8      | 50                 | NA  |
| NPXF125K440VX1N2F | 1.2             | 125              | ±10% (K)           | 32.0   | 29.0   | 19.0   | 27.5    | 0.8      | 200                | NA  |
| NPXF125K440VX1N3F | 1.2             | 125              | ±10% (K)           | 35.5   | 31.0   | 20.0   | 32.5    | 0.8      | 200                | NA  |
| NPXF125M440VX1N4F | 1.2             | 125              | ±20% (M)           | 37.0   | 28.5   | 18.0   | 32.5    | 0.8      | 200                | NA  |
| NPXF125K440VX1N5F | 1.2             | 125              | ±10% (K)           | 41.0   | 26.0   | 15.0   | 37.5    | 1.0      | 250                | NA  |
| NPXF125K440VX1N6F | 1.2             | 125              | ±10% (K)           | 41.0   | 28.0   | 14.0   | 37.5    | 1.0      | 200                | NA  |
| NPXF155K440VX1N1F | 1.5             | 155              | ±10% (K)           | 31.0   | 31.0   | 22.0   | 27.5    | 0.8      | 200                | NA  |
| NPXF155M440VX1N2F | 1.5             | 155              | ±20% (M)           | 32.0   | 18.5   | 31.0   | 27.5    | 0.8      | 50                 | NA  |
| NPXF155M440VX1N3F | 1.5             | 155              | ±20% (M)           | 32.0   | 29.0   | 19.0   | 27.5    | 0.8      | 200                | NA  |
| NPXF155M440VX1N4F | 1.5             | 155              | ±20% (M)           | 35.5   | 31.0   | 20.0   | 32.5    | 0.8      | 200                | NA  |
| NPXF155K440VX1N5F | 1.5             | 155              | ±10% (K)           | 37.0   | 34.0   | 22.0   | 32.5    | 0.8      | 180                | NA  |
| NPXF155M440VX1N6F | 1.5             | 155              | ±20% (M)           | 41.0   | 26.0   | 15.0   | 37.5    | 1.0      | 200                | NA  |
| NPXF155M440VX1N7F | 1.5             | 155              | ±20% (M)           | 41.0   | 28.0   | 14.0   | 37.5    | 1.0      | 200                | NA  |
| NPXF155K440VX1N8F | 1.5             | 155              | ±10% (K)           | 41.0   | 30.0   | 16.0   | 37.5    | 1.0      | 200                | NA  |
| NPXF155K440VX1N9F | 1.5             | 155              | ±10% (K)           | 42.0   | 19.0   | 24.0   | 37.5    | 1.0      | 200                | NA  |
| NPXF185K440VX1N1F | 1.8             | 185              | ±10% (K)           | 32.0   | 37.0   | 22.0   | 27.5    | 0.8      | 180                | NA  |
| NPXF185K440VX1N2F | 1.8             | 185              | ±10% (K)           | 37.0   | 34.0   | 22.0   | 32.5    | 0.8      | 180                | NA  |
| NPXF185M440VX1N3F | 1.8             | 185              | ±20% (M)           | 41.0   | 30.0   | 16.0   | 37.5    | 1.0      | 200                | NA  |
| NPXF185K440VX1N4F | 1.8             | 185              | ±10% (K)           | 41.0   | 32.0   | 17.0   | 37.5    | 1.0      | 200                | NA  |
| NPXF225M440VX1N1F | 2.2             | 225              | ±20% (M)           | 32.0   | 37.0   | 22.0   | 27.5    | 0.8      | 180                | NA  |
| NPXF225M440VX1N2F | 2.2             | 225              | ±20% (M)           | 37.0   | 34.0   | 22.0   | 32.5    | 0.8      | 180                | NA  |
| NPXF225M440VX1N3F | 2.2             | 225              | ±20% (M)           | 41.0   | 32.0   | 17.0   | 37.5    | 1.0      | 200                | NA  |
| NPXF225K440VX1N4F | 2.2             | 225              | ±10% (K)           | 41.0   | 33.5   | 19.5   | 37.5    | 1.0      | 196                | NA  |
| NPXF275K440VX1N1F | 2.7             | 275              | ±10% (K)           | 41.0   | 37.0   | 22.0   | 37.5    | 1.0      | 150                | NA  |
| NPXF335M440VX1N1F | 3.3             | 335              | ±20% (M)           | 41.0   | 37.0   | 22.0   | 37.5    | 1.0      | 150                | NA  |
| NPXF335K440VX1N2F | 3.3             | 335              | ±10% (K)           | 41.5   | 41.0   | 27.5   | 37.5    | 1.0      | 140                | NA  |
| NPXF395K440VX1N1F | 3.9             | 395              | ±10% (K)           | 41.0   | 43.0   | 28.0   | 37.5    | 1.0      | 120                | NA  |
| NPXF445K440VX1N1F | 4.4             | 445              | ±10% (K)           | 41.0   | 43.0   | 28.0   | 37.5    | 1.0      | 120                | NA  |
| NPXF445K440VX1N2F | 4.4             | 445              | ±10% (K)           | 51.0   | 43.5   | 29.0   | 47.5    | 1.0      | 100                | NA  |
| NPXF445K440VX1N3F | 4.4             | 445              | ±10% (K)           | 57.0   | 38.0   | 24.0   | 52.5    | 1.0      | 96                 | NA  |
| NPXF475M440VX1N1F | 4.7             | 475              | ±20% (M)           | 41.0   | 43.0   | 28.0   | 37.5    | 1.0      | 120                | NA  |
| NPXF475K440VX1N2F | 4.7             | 475              | ±10% (K)           | 42.0   | 45.0   | 30.0   | 37.5    | 1.0      | 80                 | NA  |
| NPXF475K440VX1N3F | 4.7             | 475              | ±10% (K)           | 51.0   | 43.5   | 29.0   | 47.5    | 1.0      | 100                | NA  |
| NPXF475K440VX1N4F | 4.7             | 475              | ±10% (K)           | 57.0   | 38.0   | 24.0   | 52.5    | 1.0      | 96                 | NA  |
| NPXF565M440VX1N1F | 5.6             | 565              | ±20% (M)           | 51.0   | 43.5   | 29.0   | 47.5    | 1.0      | 100                | NA  |
| NPXF565M440VX1N2F | 5.6             | 565              | ±20% (M)           | 57.0   | 38.0   | 24.0   | 52.5    | 1.0      | 96                 | NA  |
| NPXF565K440VX1N3F | 5.6             | 565              | ±10% (K)           | 57.0   | 45.0   | 30.0   | 52.5    | 1.0      | 50                 | NA  |
| NPXF685K440VX1N1F | 6.8             | 685              | ±10% (K)           | 51.0   | 49.5   | 35.0   | 47.5    | 1.0      | 80                 | NA  |
| NPXF685M440VX1N2F | 6.8             | 685              | ±20% (M)           | 57.0   | 30.0   | 44.0   | 52.5    | 1.0      | 48                 | NA  |
| NPXF685M440VX1N3F | 6.8             | 685              | ±20% (M)           | 57.0   | 45.0   | 30.0   | 52.5    | 1.0      | 50                 | NA  |
| NPXF685K440VX1N4F | 6.8             | 685              | ±10% (K)           | 57.0   | 50.0   | 35.0   | 52.5    | 1.0      | 50                 | NA  |
| NPXF825M440VX1N1F | 8.2             | 825              | ±20% (M)           | 51.0   | 49.5   | 35.0   | 47.5    | 1.0      | 80                 | NA  |
| NPXF825K440VX1N2F | 8.2             | 825              | ±10% (K)           | 57.0   | 50.0   | 35.0   | 52.5    | 1.0      | 48                 | NA  |
| NPXF106M440VX1N1F | 10              | 106              | ±20% (M)           | 57.0   | 50.0   | 35.0   | 52.5    | 1.0      | 48                 | NA  |
| NPXF106K440VX1N2F | 10              | 106              | ±10% (K)           | 57.0   | 55.0   | 45.0   | 52.5    | 1.0      | 24                 | NA  |

\*10% tolerance items are also available in ±5% (J) and ±20% (M)

## ENVIRONMENTAL CHARACTERISTICS

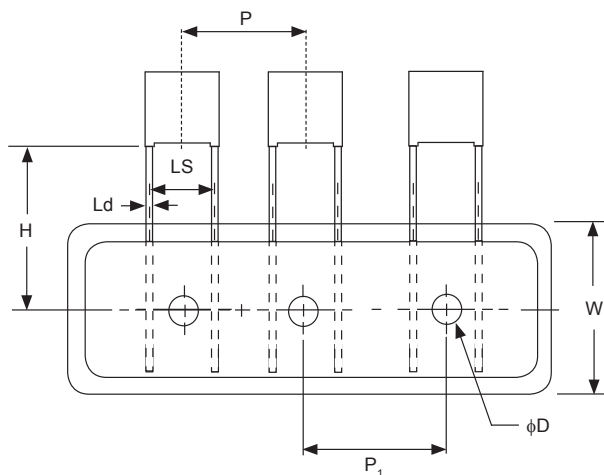
| Item                         | Test Method  | Standard  |
|------------------------------|--|---|
| Endurance                    | +110°C±2°C, 125% of RV for 1,000 hours<br>(Voltage applied through 47Ω ± 5% resistor, every hour voltage increased to 1,000Vrms for 0.1 seconds).  | Physical: No remarkable physical<br>Capacitance: Within ±10% of initial measured value<br>DF: C≤1.0μF 0.8% max., C>1.0μF 0.5% max.<br>IR ≥ 50% of specified value |
| Moisture Resistance          | +40°C±2°C, Rated Voltage, 87% ~ 93% RH, 500 hours.<br>(Part stabilized at room temperature for 1.5 ± 0.5 hours before taking measurements)   | Physical: No remarkable physical<br>Capacitance: Within ±5% of initial measured value<br>DF: ≤ 0.2%, IR ≥ 50% of specified value                                  |
| Temperature Cycling          | A total of 5 cycles.<br>Each cycle includes:<br>1. +20 ± 2°C for 3 minutes<br>2. -40 ± 3°C for 30 minutes<br>3. +20 ± 2°C for 3 minutes<br>4. +110 ± 2°C for 30 minutes<br>5. +20 ± 2°C for 3 minutes<br>After test allow parts to stabilize at room temperature for 1.5 ± 0.5 hours before taking measurements. | Physical: No remarkable physical<br>Capacitance: Within ±5% of initial measured value<br>DF: ≤ 0.2%, IR ≥ 50% of specified value                                  |
| Resistance to Dry Heat       | +110 ± 2°C for 16 +1/-0 hours  | Physical: No remarkable physical<br>Capacitance: Within ±5% of initial measured value<br>DF: ≤ 0.2%, IR ≥ 50% of specified value                                  |
| Resistance to Cold           | -40°C for 2 hours  | Physical: No remarkable physical<br>Capacitance: Within ±5% of initial measured value<br>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<br>Capacitance: Within ±3% of initial measured value<br>DF: ≤ 0.2%, IR ≥ 50% of specified value                                  |
| Vibration                    | Frequency: 10-55-10Hz<br>Magnitude: 1.5mm in X, Y and Z directions<br>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  |

## 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    |

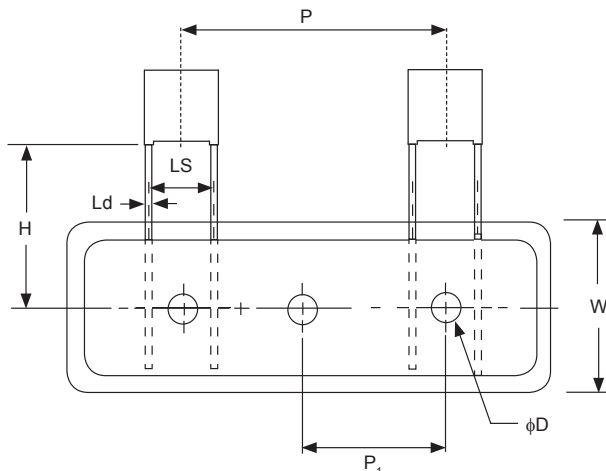
## AMMO PACK (TB) TAPING DIMENSIONS 7.5mm LEAD SPACE

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



## AMMO PACK BOX DIMENSIONS

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

