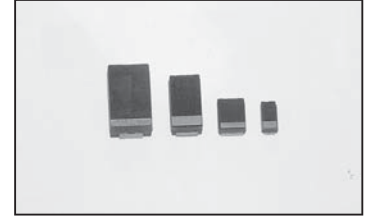


### FEATURES

- Low ESR and High Ripple Current Ratings
- Values from 10 $\mu$ F to 470 $\mu$ F
- Suitable for Flow and Reflow Soldering Processes
- Available in EIA B, C and D Case Sizes

**RoHS Compliant**  
includes all homogeneous materials

\*See Part Number System for Details



### SPECIFICATIONS

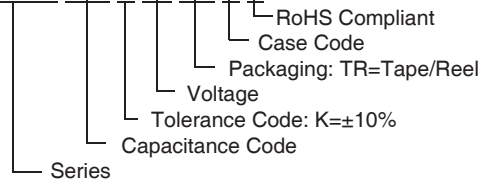
|   |  |                  |                   |
|---|--|------------------|-------------------|
| Capacitance Range   | 10 $\mu$ F to 470 $\mu$ F  |                  |                   |
| Capacitance Tolerance   | $\pm$ 10% (K)  |                  |                   |
| Operating Temperature Range                                       | -55 $^{\circ}$ C ~ +125 $^{\circ}$ C<br>(voltage derating above 85 $^{\circ}$ C, see table below)          |                  |                   |
| Dissipation Factor @ 120Hz/25 $^{\circ}$ C                        | See Part Number & Specifications Table   |                  |                   |
| Capacitance Change Versus Temperature                             | -55 $^{\circ}$ C   | +85 $^{\circ}$ C | +125 $^{\circ}$ C |
|   | $\Delta$ C -10%  | $\Delta$ C +10%  | $\Delta$ C +12%   |
| Soldering Heat Resistance (+260 $^{\circ}$ C for 5-10 sec.)       | $\Delta$ C $\pm$ 10% Max., Leakage Current and Dissipation Factor will be less than value specified below. |                  |                   |
| Moisture Resistance (500 hours; 90-95% RH @ 40 $^{\circ}$ C)      |  |                  |                   |
| Load Life Test @at Rated Voltage<br>2,000 hours @ 85 $^{\circ}$ C |  |                  |                   |
| Base Failure Rate (1.0 $\Omega$ /Volt)                            |  |                  |                   |

### STANDARD RATINGS AND CASE SIZE

|                                    |        |           |           |           |           |           |
|------------------------------------|--------|-----------|-----------|-----------|-----------|-----------|
| Rated Voltage @ 85 $^{\circ}$ C    | 6.3Vdc | 10Vdc     | 16Vdc     | 20Vdc     | 25Vdc     | 35Vdc     |
| Surge Voltage @ 85 $^{\circ}$ C    | 8      | 13        | 20        | 26        | 32        | 45        |
| Derated Voltage @ 125 $^{\circ}$ C | 4      | 6.3       | 10        | 13        | 16        | 22        |
| Capacitance ( $\mu$ F)             | Code   | Case Size | Case Size | Case Size | Case Size | Case Size |
| 10                                 | 106    | -         | -         | B         | C         | -         |
| 15                                 | 156    | -         | B         | -         | C         | D         |
| 22                                 | 226    | B         | C         | C         | D         | D         |
| 33                                 | 336    | C         | C         | D         | D         | -         |
| 47                                 | 476    | C         | D         | D         | D         | -         |
| 68                                 | 686    | -         | D         | D         | -         | -         |
| 100                                | 107    | D         | D         | D         | -         | -         |
| 150                                | 157    | D         | D         | -         | -         | -         |
| 220                                | 227    | D         | D         | -         | -         | -         |
| 330                                | 337    | D         | D         | -         | -         | -         |
| 470                                | 477    | D         | -         | -         | -         | -         |

### PART NUMBER SYSTEM

NTC-L 106 K 16 TR B F



### PRECAUTIONS

Please review the notes on correct use, safety and precautions found on our website at [www.niccomp.com/tantpc](http://www.niccomp.com/tantpc)  
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: [tpmg@niccomp.com](mailto:tpmg@niccomp.com)

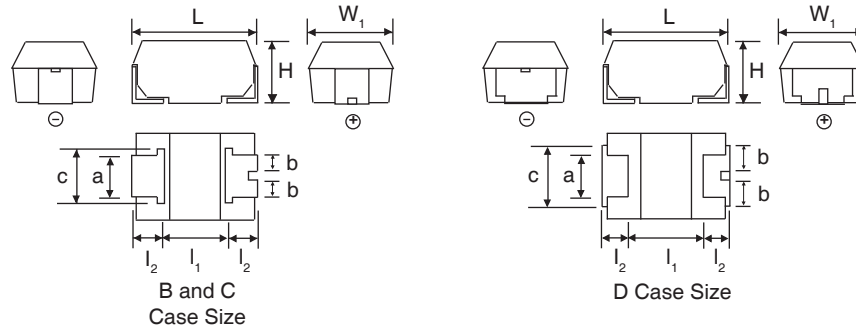


## PART NUMBER AND SPECIFICATIONS TABLE

| Part Number      | Cap. (μF) | Voltage (Vdc) | Dissipation Factor @ 120Hz/20°C | Leakage Current (μA) @ 25°C | ESR (ohms) @ 100KHz/20°C | Ripple Current Rating (mA) @ 100KHz/25°C |
|------------------|-----------|---------------|---------------------------------|-----------------------------|--------------------------|--|
| NTC-L226K6.3TRBF | 22        | 6.3           | 0.06                            | 1.4                         | 0.50                     | 440                                      |
| NTC-L336K6.3TRCF | 33        |               | 0.06                            | 2.1                         | 0.35                     | 530                                      |
| NTC-L476K6.3TRCF | 47        |               | 0.06                            | 3.0                         | 0.35                     | 530                                      |
| NTC-L107K6.3TRDF | 100       |               | 0.08                            | 6.3                         | 0.15                     | 890                                      |
| NTC-L157K6.3TRDF | 150       |               | 0.08                            | 9.5                         | 0.10                     | 1,100                                    |
| NTC-L227K6.3TRDF | 220       |               | 0.10                            | 14                          | 0.10                     | 1,100                                    |
| NTC-L337K6.3TRDF | 330       |               | 0.10                            | 20.8                        | 0.10                     | 1,100                                    |
| NTC-L477K6.3TRDF | 470       |               | 0.18                            | 32.9                        | 0.20                     | 770                                      |
| NTC-L156K10TRBF  | 15        | 10            | 0.06                            | 1.5                         | 0.60                     | 400                                      |
| NTC-L226K10TRCF  | 22        |               | 0.06                            | 2.2                         | 0.50                     | 440                                      |
| NTC-L336K10TRCF  | 33        |               | 0.06                            | 3.3                         | 0.35                     | 530                                      |
| NTC-L476K10TRDF  | 47        |               | 0.06                            | 4.7                         | 0.25                     | 690                                      |
| NTC-L686K10TRDF  | 68        |               | 0.06                            | 6.8                         | 0.20                     | 770                                      |
| NTC-L107K10TRDF  | 100       |               | 0.08                            | 10                          | 0.10                     | 1,100                                    |
| NTC-L157K10TRDF  | 150       |               | 0.08                            | 15                          | 0.10                     | 1,100                                    |
| NTC-L227K10TRDF  | 220       |               | 0.10                            | 22                          | 0.10                     | 1,100                                    |
| NTC-L337K10TRDF  | 330       | 0.18          | 33                              | 0.15                        | 890                      |  |
| NTC-L106K16TRBF  | 10        | 16            | 0.06                            | 1.6                         | 0.60                     | 400                                      |
| NTC-L226K16TRCF  | 22        |               | 0.06                            | 3.5                         | 0.40                     | 500                                      |
| NTC-L336K16TRDF  | 33        |               | 0.06                            | 5.3                         | 0.25                     | 690                                      |
| NTC-L476K16TRDF  | 47        |               | 0.06                            | 7.5                         | 0.20                     | 770                                      |
| NTC-L686K16TRDF  | 68        |               | 0.06                            | 11                          | 0.15                     | 890                                      |
| NTC-L107K16TRDF  | 100       |               | 0.08                            | 16                          | 0.10                     | 1,100                                    |
| NTC-L106K20TRCF  | 10        | 20            | 0.06                            | 2.0                         | 0.60                     | 400                                      |
| NTC-L156K20TRCF  | 15        |               | 0.06                            | 3.0                         | 0.50                     | 440                                      |
| NTC-L226K20TRDF  | 22        |               | 0.06                            | 4.4                         | 0.35                     | 580                                      |
| NTC-L336K20TRDF  | 33        |               | 0.06                            | 6.6                         | 0.30                     | 630                                      |
| NTC-L476K20TRDF  | 47        |               | 0.06                            | 9.4                         | 0.20                     | 830                                      |
| NTC-L156K25TRDF  | 15        | 25            | 0.06                            | 3.8                         | 0.30                     | 630                                      |
| NTC-L226K25TRDF  | 22        |               | 0.06                            | 5.5                         | 0.30                     | 630                                      |
| NTC-L336K25TRDF  | 33        |               | 0.06                            | 8.3                         | 0.30                     | 630                                      |
| NTC-L106K35TRDF  | 10        | 35            | 0.06                            | 3.5                         | 0.30                     | 630                                      |
| NTC-L156K35TRDF  | 15        |               | 0.06                            | 5.3                         | 0.30                     | 630                                      |
| NTC-L226K35TRDF  | 22        |               | 0.06                            | 7.7                         | 0.50                     | 490                                      |

## CASE DIMENSIONS (mm)

| Case Code | L ±0.2 | W ±0.2  | HL ±0.2 | I <sub>1</sub> ±0.2 | I <sub>2</sub> ±0.2 | a ±0.2 | b ±0.2 | c ±0.2 |
|-----------|--------|---------|---------|---------------------|---------------------|--------|--------|--------|
| B         | 3.4    | 2.6     | 1.9     | 1.4                 | 0.8                 | 2.0    | 0.7    | 2.2    |
| C         | 5.8    | 3.2     | 2.5     | 2.4                 | 1.3                 | 2.2    | 0.7    | 2.4    |
| D         | 7.3    | 4.3±0.3 | 2.8     | 3.8                 | 1.3                 | 2.4    | 1.2    | 3.3    |

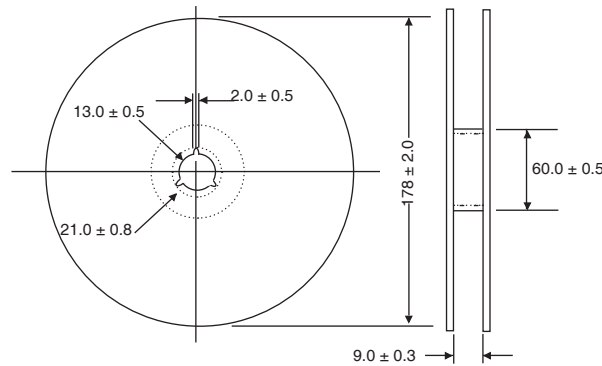
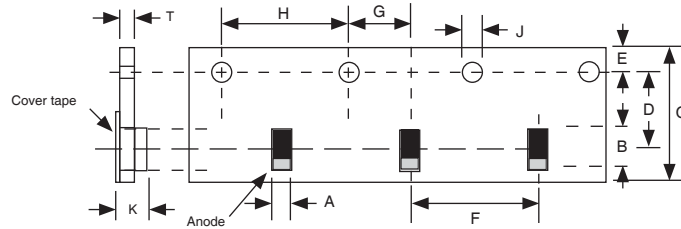


Terminations:  
100% Sn (Lead-Free)  
Standard



## TAPING SPECIFICATIONS (mm)

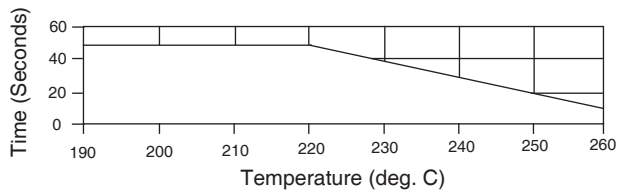
| Case Code | A ±0.1 | B ±0.1 | C ±0.3 | D ±0.1 | E ±0.1 | F ±0.1 | G ±0.1 | H ±0.1 | J ±0.1 | K max. | t max. | Reel Qty |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| B         | 3.1    | 3.8    | 8.0    | 3.5    | 1.75   | 4.0    | 2.0    | 4.0    | 1.5    | 2.5    | 0.2    | 2000     |
| C         | 3.7    | 6.3    | 12.0   | 5.5    | 1.75   | 8.0    | 2.0    | 4.0    | 1.5    | 3.0    | 0.3    | 500      |
| D         | 4.8    | 7.7    | 12.0   | 5.5    | 1.75   | 8.0    | 2.0    | 4.0    | 1.5    | 3.4    | 0.3    | 500      |



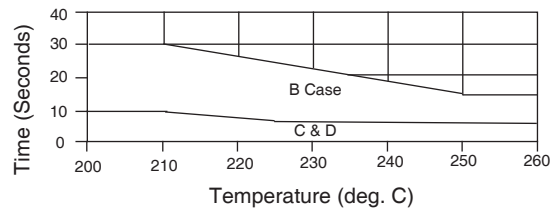
## RECOMMENDED SOLDERING PROFILES

Note: To avoid thermal shock a preheating stage, 130°C ~ 160°C for 1 minute, should be incorporated into the soldering process

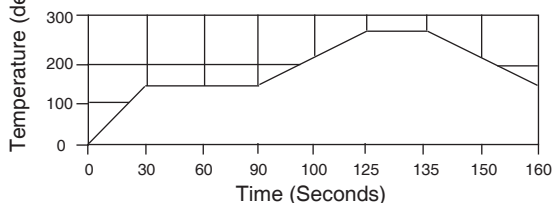
Reflow Soldering - Permitted Temperature/Time Range



Flow Soldering - Permitted Temperature/Time Range



Reflow Soldering - Recommended Profile Maximum Temperature/Time: 260°C/10 Sec.



Flow Soldering - Recommended Profile Maximum Temperature/Time: 245°C/5 Sec.

