

# Through Hole Fixed Inductors

**Token fixed inductors meet the needs of a variety of manufacturing methods (TCAL)**

## ▶ Preview

Token TCAL series fixed inductor utilizes the latest winding technology with special core material, sturdy construction, outer layer of epoxy resin processing, high Q value and self-resonance frequency, wide inductance range, high reliability, and low price.

The TCAL series is ideal for consumer electronics such as digital set-top boxes (DVB), digital video disc players (DVD), video cassette recorders (VCR), television (TV), computers, audio equipment, mobile communications, telephone, and various general-purpose electronic applications.

Token highly efficient automated production processes offer a full range of high-quality inductors products suitable for automatic plug-in operation. The TCAL provides 0204,0307,0410, and 0510 size varieties of different forming, such as Normal & Short Form, F Forming, U Forming, Pana Forming, and bulk products to meet the needs of a variety of manufacturing methods.

Token TCAL Series fixed inductors are full line conforming with RoHS specifications, Pb-free standards. Provide a complete inductor size and full range inductance, and custom parts are available on request. Token will also produce devices outside these specifications to meet specific customer requirements, please contact our sales for more information.

### Applications :

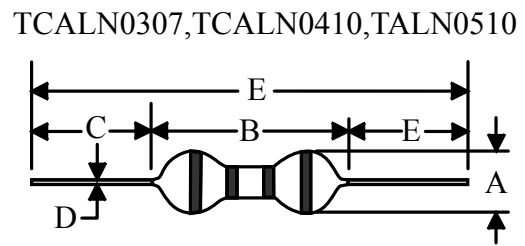
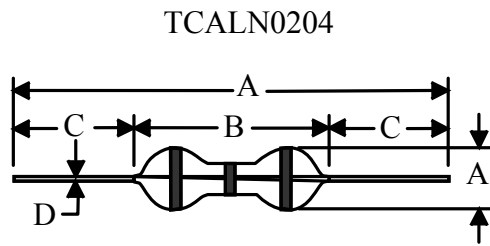
- TV, VCR.
- Computer Devices
- Electronics products.
- Communication equipment.

### Features :

- Low Cost.
- Coating epoxy resin that ensures the humidity resistance to be long life.

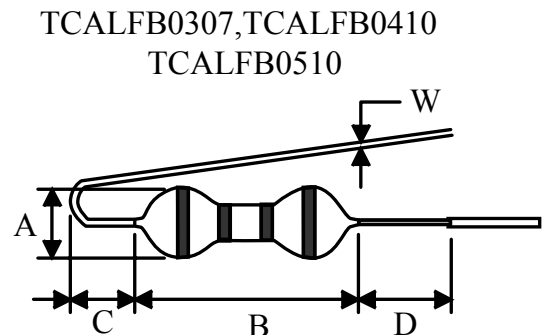
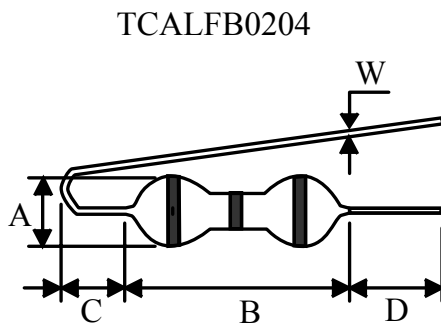


## Normal Form & Short Form



| Type      | $\Phi A(\text{max})$ | B(max) | $C \pm 3.0$ | $\Phi D \pm 0.05$ | $E \pm 1.5$ |
|-----------|----------------------|--------|-------------|-------------------|-------------|
| TCALN0204 | 2.8                  | 5.0    | 29.5        | 0.50              | 62.5        |
| TCALS0204 | 2.8                  | 5.0    | 16.0        | 0.50              | 36.5        |
| TCALN0307 | 3.0                  | 7.0    | 28.0        | 0.50              | 62.5        |
| TCALS0307 | 3.0                  | 7.0    | 15.0        | 0.50              | 36.5        |
| TCALN0410 | 4.0                  | 10.0   | 26.0        | 0.65              | 62.5        |
| TCALS0410 | 4.0                  | 10.0   | 14.0        | 0.65              | 36.5        |
| TCALN0510 | 5.0                  | 10.0   | 26.0        | 0.65              | 62.5        |
| TCALS0510 | 5.0                  | 10.0   | 14.0        | 0.65              | 36.5        |

## F Forming

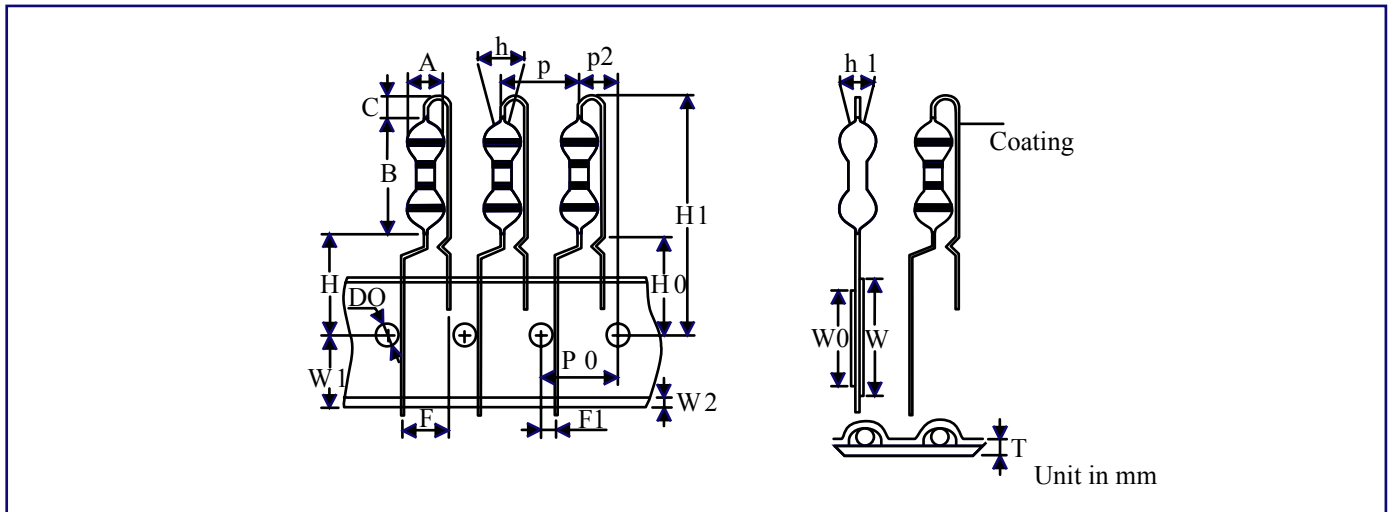


| Sym.         | TCALFB0204  | TCALFB0307  | TCALFB0410  | TCALFB0510  |
|--------------|-------------|-------------|-------------|-------------|
| A (max)      | 2.80        | 3.00        | 4.00        | 5.00        |
| B (max)      | 5.00        | 7.00        | 10.00       | 10.00       |
| C (max)      | 6.00        | 6.00        | 6.00        | 6.00        |
| D (min)      | 3.60        | 3.60        | 4.00        | 4.00        |
| $W \pm 0.05$ | 0.50 $\Phi$ | 0.50 $\Phi$ | 0.65 $\Phi$ | 0.65 $\Phi$ |

## U Forming

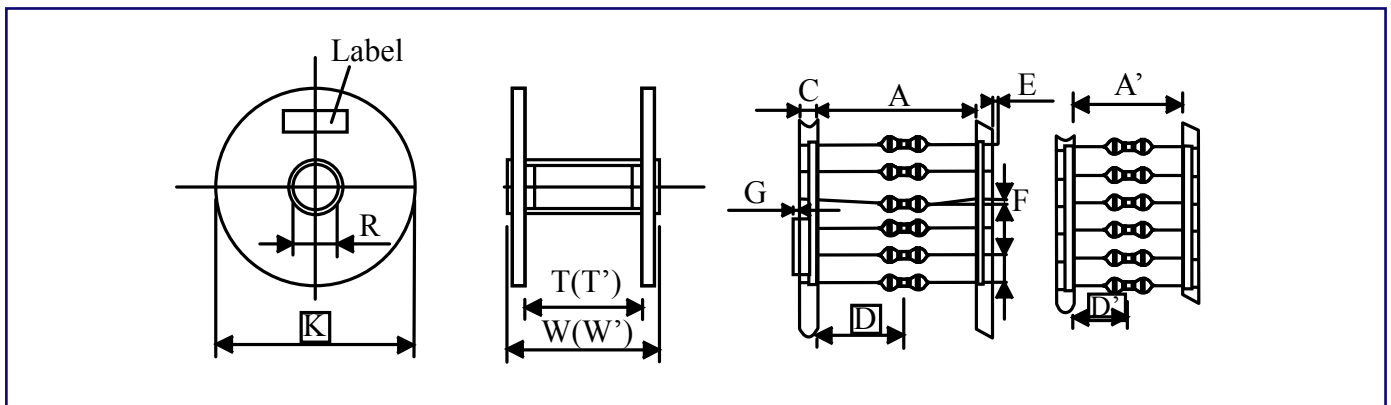
| Sym.     | TCALUB0204 | TCALUB0307 | TCALUB0410 | TCALUB0510 |
|----------|------------|------------|------------|------------|
| A (max)  | 2.80       | 3.00       | 4.00       | 5.00       |
| B (max)  | 5.00       | 7.00       | 10.00      | 10.00      |
| C (min)  | 3.60       | 3.60       | 3.60       | 3.60       |
| F        | 6 ~ 15     | 10 ~ 20    | 12.5 ~ 20  | 12.5 ~ 20  |
| W ± 0.05 | 0.50 Φ     | 0.50 Φ     | 0.65 Φ     | 0.65 Φ     |

## (TCAL 0307 Series) Pana Forming



|            |            |                  |          |                  |                   |           |                  |                 |                 |
|------------|------------|------------------|----------|------------------|-------------------|-----------|------------------|-----------------|-----------------|
| A          | B          | C                | D0       | F                | H                 | H0        | H1               | h               | h1              |
| 3.00 (max) | 7.00 (max) | 3.00 +0.00 -1.00 | 4.00±0.3 | 5.00 +0.80 -0.20 | 19.00 +1.00 -0.30 | 16.00±0.5 | 28.50 (max)      | 0.00 ±2.0 (±5°) | 0.00 ±2.0 (±5°) |
| P          | P0         | P1               | P2       | T                | W                 | W0        | W1               | W2              |                 |
| 12.7±1.0   | 12.7±0.3   | 3.85±0.7         | 6.35±1.3 | 0.7±0.2          | 18.00 +1.00 -0.50 | 13.00±1.0 | 9.00 +0.75 -0.50 | 4.00 (max)      |                 |

## (Axial Lead Type) Dimensions of Tape & Reel

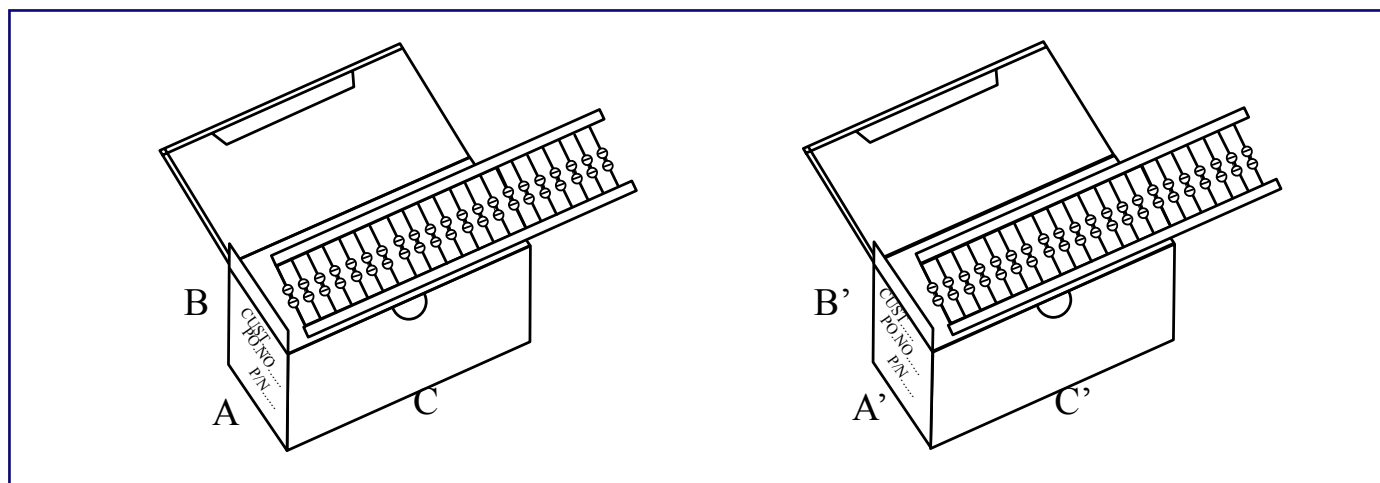


| Sym. | Dimensions   | Sym. | Dimensions    | Sym. | Dimensions   |
|------|--------------|------|---------------|------|--------------|
| A    | 52.00 ± 1.50 | E    | 0.00 ± 0.50   | T'   | 45.00 ± 0.50 |
| A'   | 26.00 ± 1.50 | F    | 1.00 (max)    | W    | 76.00 ± 0.50 |
| B    | 5.00 ± 0.50  | G    | 1.00 (max)    | W'   | 50.00 ± 0.50 |
| C    | 6.00 ± 1.00  | K    | 355.00 ± 0.50 |      |              |
| D    | 26.00 ± 0.50 | R    | 15.00 ± 0.50  |      |              |
| D'   | 13.00 ± 0.50 | T    | 71.00 ± 0.50  |      |              |

## (Axial Lead Type) Packing Unit for Reel

| Item              | TCAL0204        | TCAL0307        | TCAL0410        | TCAL0510        |
|-------------------|-----------------|-----------------|-----------------|-----------------|
| Q' TY/ Reel       | 5,000 PCS       | 5,000 PCS       | 5,000 PCS       | 3,000 PCS       |
| GW/Reel (Approx.) | 1.4 Kgm         | 1.6 Kgm         | 2.0 Kgm         | 2.0 Kgm         |
| Q' TY/CTN.        | 25,000 PCS      | 25,000 PCS      | 25,000 PCS      | 15,000 PCS      |
| NW/CTN. (Approx.) | 7.0 Kgm         | 8.0 Kgm         | 10.0 Kgm        | 10.0 Kgm        |
| GW/CTN. (Approx.) | 8.0 Kgm         | 9.0 Kgm         | 11.0 Kgm        | 11.0 Kgm        |
| Carton Size (mm)  | 397 × 397 × 479 | 397 × 397 × 479 | 397 × 397 × 479 | 397 × 397 × 479 |

## ▶ (Axial Lead Type) Dimensions of Ammo Box



| Sym. | Dimensions   | Sym. | Dimensions    | Sym. | Dimensions    |
|------|--------------|------|---------------|------|---------------|
| A    | 74.00 ± 0.30 | B    | 108.00 ± 0.30 | C    | 260.00 ± 0.30 |
| A'   | 48.00 ± 0.30 | B'   | 105.00 ± 0.30 | C'   | 255.00 ± 0.30 |

## ▶ (Axial Lead Type) Packing Unit for Box

| Item                | TCAL0204        | TCAL0307        | TCAL0410         | TCAL0510        |
|---------------------|-----------------|-----------------|------------------|-----------------|
| Q' TY / Ammo Box    | 3,000 PCS       | 3,000 PCS       | 2,000 PCS        | 1,500 PCS       |
| GW / Box(Approx.)   | 0.8 KGM         | 0.9 KGM         | 1.0 KGM          | 0.7 KGM         |
| Q' TY / CTN.        | 30,000 PCS      | 30,000 PCS      | 20,000 PCS       | 10,000 PCS      |
| NW / CTN. (Approx.) | 6.0 Kgm         | 7.0 Kgm         | 8.0 Kgm          | 5.0 Kgm         |
| GW / CTN.(Approx.)  | 8.0 Kgm         | 9.0 Kgm         | 10.0 Kgm         | 7.0 Kgm         |
| Carton Size (mm)    | 438 × 295 × 270 | 438 × 295 × 270 | 438 × 295 × 270s | 438 × 295 × 270 |

## ▶ (Axial Lead Type) Packing Unit for Bulk

| Item               | TCAL0204  | TCAL0307  | TCAL0410  | TCAL0510 |
|--------------------|-----------|-----------|-----------|----------|
| Q' TY / Bag        | 1,000 PCS | 1,000 PCS | 1,000 PCS | 500 PCS  |
| GW / Bag (Approx.) | 0.1 Kgm   | 0.15 Kgm  | 0.3 Kgm   | 0.3 Kgm  |

## How to Order



① Part Number: TCAL

② Form

| Code | Form                                      |
|------|---|
| N    | Normal Form                               |
| S    | Short Form                                |
| F    | F Forming                                 |
| U    | U Forming                                 |
| P    | Pana Forming without coating of lead wire |
| PC   | Pana Forming with coating of lead wire    |

③ Package

| Code | Package     |
|------|-------------|
| P    | Bulk        |
| TR   | Taping Reel |
| TB   | Taping Box  |

④ Size

| Code | Size       |
|------|------------|
| 0204 | 2.8×5.0mm  |
| 0307 | 3.0×7.0mm  |
| 0410 | 4.0×10.0mm |
| 0510 | 5.0×10.0mm |

④ Inductance

| Code | Inductance |
|------|------------|
| R10  | 0.10μH     |
| 1R0  | 1.00μH     |
| 100  | 10.00μH    |
| 101  | 100.00μH   |
| 102  | 1000.00μH  |

⑤ Tolerance

| Code | Tolerance |
|------|-----------|
| J    | 5%        |
| K    | 10%       |
| M    | 20%       |

## ▶ How to Select a fixed inductor

Perfectly, inductors should have zero resistance and capacitance. This is not practically possible, as the conducting copper wires, used for fixed inductors, have small internal resistance.

### Important criteria for the selection are:

- **Inductance Range (H):**

The rated inductance range of the inductor. This is designated by  $\pm 10\%$  of the inductance.

- **Quality Factor (Q):**

The Q value of an inductor is a measure of the relative losses in an inductor. The Q is also known as the “quality factor” and is technically defined as the ratio of inductive reactance to effective resistance.

- **Self-Resonant Frequency (SRF):**

The frequency at which the inductor’s distributed capacitance resonates with the inductance. It is at this frequency that the inductance is equal to the capacitance and they cancel each other. The inductor will act purely resistive with a high impedance at the SRF point.

- **Permissible DC Current:**

Measured in Ohms, it is the maximum DC current that the inductor should be exposed to.

## (TCAL0204) Characteristics

| Part Number     | Inductance (μH) | Q (min) | Freq. (MHz) | SRF (MHz)(min) | DCR (Ω)(max) | RDC (mA)(max) |
|-----------------|-----------------|---------|-------------|----------------|--------------|---------------|
| TCAL**0204-R22M | 0.22±20%        | 40      | 25.2        | 175            | 0.20         | 705           |
| TCAL**0204-R27M | 0.27±20%        | 40      | 25.2        | 160            | 0.22         | 670           |
| TCAL**0204-R33M | 0.33±20%        | 40      | 25.2        | 150            | 0.24         | 645           |
| TCAL**0204-R39M | 0.39±20%        | 50      | 25.2        | 150            | 0.27         | 605           |
| TCAL**0204-R47M | 0.47±20%        | 50      | 25.2        | 150            | 0.30         | 575           |
| TCAL**0204-R56M | 0.56±20%        | 50      | 25.2        | 150            | 0.34         | 540           |
| TCAL**0204-R68M | 0.68±20%        | 50      | 25.2        | 150            | 0.38         | 510           |
| TCAL**0204-R82M | 0.82±20%        | 50      | 25.2        | 150            | 0.43         | 480           |
| TCAL**0204-1R0K | 1.0±10%         | 50      | 25.2        | 150            | 0.46         | 465           |
| TCAL**0204-1R2K | 1.2±10%         | 50      | 7.96        | 110            | 0.52         | 435           |
| TCAL**0204-1R5K | 1.5±10%         | 50      | 7.96        | 80             | 0.57         | 415           |
| TCAL**0204-1R8K | 1.8±10%         | 50      | 7.96        | 66             | 0.60         | 405           |
| TCAL**0204-2R2K | 2.2±10%         | 50      | 7.96        | 60             | 0.65         | 390           |
| TCAL**0204-2R7K | 2.7±10%         | 50      | 7.96        | 54             | 0.73         | 370           |
| TCAL**0204-3R3K | 3.3±10%         | 50      | 7.96        | 48             | 0.82         | 345           |
| TCAL**0204-3R9K | 3.9±10%         | 50      | 7.96        | 44             | 0.90         | 330           |
| TCAL**0204-4R7K | 4.7±10%         | 50      | 7.96        | 38             | 1.00         | 315           |
| TCAL**0204-5R6K | 5.6±10%         | 50      | 7.96        | 34             | 1.10         | 300           |
| TCAL**0204-6R8K | 6.8±10%         | 50      | 7.96        | 30             | 1.20         | 285           |
| TCAL**0204-8R2K | 8.2±10%         | 50      | 7.96        | 26             | 1.30         | 275           |
| TCAL**0204-100K | 10±10%          | 50      | 7.96        | 24             | 1.40         | 265           |
| TCAL**0204-120K | 12±10%          | 50      | 2.52        | 22             | 1.50         | 255           |
| TCAL**0204-150K | 15±10%          | 50      | 2.52        | 20             | 1.65         | 245           |
| TCAL**0204-180K | 18±10%          | 50      | 2.52        | 18             | 1.90         | 225           |
| TCAL**0204-220K | 22±10%          | 50      | 2.52        | 17             | 2.20         | 210           |
| TCAL**0204-270K | 27±10%          | 50      | 2.52        | 16             | 2.50         | 200           |
| TCAL**0204-330K | 33±10%          | 50      | 2.52        | 14             | 3.80         | 160           |
| TCAL**0204-390K | 39±10%          | 50      | 2.52        | 13             | 4.20         | 150           |
| TCAL**0204-470K | 47±10%          | 50      | 2.52        | 12             | 4.60         | 145           |
| TCAL**0204-560K | 56±10%          | 40      | 2.52        | 11             | 5.10         | 140           |
| TCAL**0204-680K | 68±10%          | 40      | 2.52        | 10             | 5.60         | 130           |
| TCAL**0204-820K | 82±10%          | 40      | 2.52        | 9.5            | 9.60         | 100           |
| TCAL**0204-101K | 100±10%         | 40      | 2.52        | 8.0            | 10.8         | 95            |
| TCAL**0204-121K | 120±10%         | 40      | 0.796       | 6.5            | 12.5         | 85            |
| TCAL**0204-151K | 150±10%         | 40      | 0.796       | 6.0            | 14.5         | 80            |
| TCAL**0204-181K | 180±10%         | 40      | 0.796       | 5.5            | 16.3         | 75            |
| TCAL**0204-221K | 220±10%         | 40      | 0.796       | 5.0            | 20.0         | 70            |



## ▶ (TCAL0307) Characteristics

| Part Number     | Inductance( $\mu$ H) | Q(min) | Freq.(MHz) | SRF(MHz)(min) | DCR( $\Omega$ )(max) | RDC(mA)(max) |
|-----------------|----------------------|--------|------------|---------------|----------------------|--------------|
| TCAL**0307-R22M | 0.22 $\pm$ 20%       | 30     | 25.2       | 380           | 0.075                | 1150         |
| TCAL**0307-R27M | 0.27 $\pm$ 20%       | 30     | 25.2       | 360           | 0.08                 | 1110         |
| TCAL**0307-R33M | 0.33 $\pm$ 20%       | 30     | 25.2       | 350           | 0.08                 | 1110         |
| TCAL**0307-R39M | 0.39 $\pm$ 20%       | 30     | 25.2       | 320           | 0.09                 | 1000         |
| TCAL**0307-R47M | 0.47 $\pm$ 20%       | 30     | 25.2       | 300           | 0.10                 | 1000         |
| TCAL**0307-R56M | 0.56 $\pm$ 20%       | 30     | 25.2       | 280           | 0.11                 | 950          |
| TCAL**0307-R68M | 0.68 $\pm$ 20%       | 30     | 25.2       | 250           | 0.12                 | 900          |
| TCAL**0307-R82M | 0.82 $\pm$ 20%       | 30     | 25.2       | 200           | 0.12                 | 900          |
| TCAL**0307-1R0K | 1.0 $\pm$ 10%        | 40     | 25.2       | 180           | 0.15                 | 815          |
| TCAL**0307-1R2K | 1.2 $\pm$ 10%        | 40     | 7.96       | 165           | 0.18                 | 740          |
| TCAL**0307-1R5K | 1.5 $\pm$ 10%        | 40     | 7.96       | 150           | 0.20                 | 700          |
| TCAL**0307-1R8K | 1.8 $\pm$ 10%        | 50     | 7.96       | 125           | 0.23                 | 655          |
| TCAL**0307-2R2K | 2.2 $\pm$ 10%        | 50     | 7.96       | 110           | 0.25                 | 630          |
| TCAL**0307-2R7K | 2.7 $\pm$ 10%        | 50     | 7.96       | 95            | 0.28                 | 595          |
| TCAL**0307-3R3K | 3.3 $\pm$ 10%        | 50     | 7.96       | 70            | 0.30                 | 575          |
| TCAL**0307-3R9K | 3.9 $\pm$ 10%        | 45     | 7.96       | 65            | 0.32                 | 555          |
| TCAL**0307-4R7K | 4.7 $\pm$ 10%        | 45     | 7.96       | 50            | 0.35                 | 530          |
| TCAL**0307-5R6K | 5.6 $\pm$ 10%        | 45     | 7.96       | 40            | 0.40                 | 500          |
| TCAL**0307-6R8K | 6.8 $\pm$ 10%        | 40     | 7.96       | 30            | 0.45                 | 470          |
| TCAL**0307-8R2K | 8.2 $\pm$ 10%        | 40     | 7.96       | 28            | 0.55                 | 425          |
| TCAL**0307-100K | 10 $\pm$ 10%         | 40     | 7.96       | 22            | 0.72                 | 370          |
| TCAL**0307-120K | 12 $\pm$ 10%         | 40     | 2.52       | 20            | 0.80                 | 350          |
| TCAL**0307-150K | 15 $\pm$ 10%         | 50     | 2.52       | 16            | 0.88                 | 335          |
| TCAL**0307-180K | 18 $\pm$ 10%         | 50     | 2.52       | 15            | 1.00                 | 315          |
| TCAL**0307-220K | 22 $\pm$ 10%         | 50     | 2.52       | 13            | 1.20                 | 285          |
| TCAL**0307-270K | 27 $\pm$ 10%         | 50     | 2.52       | 11            | 1.35                 | 270          |
| TCAL**0307-330K | 33 $\pm$ 10%         | 50     | 2.52       | 10            | 1.50                 | 255          |
| TCAL**0307-390K | 39 $\pm$ 10%         | 50     | 2.52       | 9.5           | 1.70                 | 240          |
| TCAL**0307-470K | 47 $\pm$ 10%         | 60     | 2.52       | 8.5           | 2.30                 | 205          |
| TCAL**0307-560K | 56 $\pm$ 10%         | 60     | 2.52       | 7.5           | 2.60                 | 195          |
| TCAL**0307-680K | 68 $\pm$ 10%         | 60     | 2.52       | 6.5           | 2.90                 | 185          |
| TCAL**0307-820K | 82 $\pm$ 10%         | 60     | 2.52       | 6.0           | 3.20                 | 175          |
| TCAL**0307-101K | 100 $\pm$ 10%        | 60     | 2.52       | 5.5           | 3.50                 | 165          |
| TCAL**0307-121K | 120 $\pm$ 10%        | 60     | 0.796      | 5.4           | 3.80                 | 160          |
| TCAL**0307-151K | 150 $\pm$ 10%        | 60     | 0.796      | 4.75          | 4.40                 | 150          |
| TCAL**0307-181K | 180 $\pm$ 10%        | 60     | 0.796      | 4.35          | 5.00                 | 140          |
| TCAL**0307-221K | 220 $\pm$ 10%        | 60     | 0.796      | 4.0           | 5.70                 | 130          |
| TCAL**0307-271K | 270 $\pm$ 10%        | 60     | 0.796      | 3.7           | 6.50                 | 120          |
| TCAL**0307-331K | 330 $\pm$ 10%        | 60     | 0.796      | 3.4           | 9.50                 | 100          |
| TCAL**0307-391K | 390 $\pm$ 10%        | 60     | 0.796      | 2.8           | 10.5                 | 95           |
| TCAL**0307-471K | 470 $\pm$ 10%        | 60     | 0.796      | 2.55          | 11.6                 | 90           |
| TCAL**0307-561K | 560 $\pm$ 10%        | 60     | 0.796      | 2.35          | 13.0                 | 85           |
| TCAL**0307-681K | 680 $\pm$ 10%        | 60     | 0.796      | 2.0           | 18.0                 | 75           |
| TCAL**0307-821K | 820 $\pm$ 10%        | 60     | 0.796      | 1.5           | 23.0                 | 65           |
| TCAL**0307-102K | 1000 $\pm$ 10%       | 60     | 0.796      | 1.2           | 26.0                 | 60           |

## ▶ (TCAL0410) Characteristics

| Part Number     | Inductance( $\mu$ H) | Q(min) | Freq.(MHz) | SRF(MHz)(min) | DCR( $\Omega$ )(max) | RDC(mA)(max) |
|-----------------|----------------------|--------|------------|---------------|----------------------|--------------|
| TCAL**0410-R22M | 0.22 $\pm$ 20%       | 25     | 25.2       | 380           | 0.21                 | 880          |
| TCAL**0410-R27M | 0.27 $\pm$ 20%       | 25     | 25.2       | 340           | 0.24                 | 800          |
| TCAL**0410-R33M | 0.33 $\pm$ 20%       | 25     | 25.2       | 300           | 0.28                 | 750          |
| TCAL**0410-R39M | 0.39 $\pm$ 20%       | 25     | 25.2       | 280           | 0.32                 | 680          |
| TCAL**0410-R47M | 0.47 $\pm$ 20%       | 25     | 25.2       | 250           | 0.36                 | 650          |
| TCAL**0410-R56M | 0.56 $\pm$ 20%       | 25     | 25.2       | 230           | 0.41                 | 600          |
| TCAL**0410-R68M | 0.68 $\pm$ 20%       | 25     | 25.2       | 210           | 0.47                 | 550          |
| TCAL**0410-R82M | 0.82 $\pm$ 20%       | 45     | 25.2       | 172           | 0.17                 | 980          |
| TCAL**0410-1R0K | 1.0 $\pm$ 10%        | 45     | 25.2       | 157           | 0.19                 | 920          |
| TCAL**0410-1R2K | 1.2 $\pm$ 10%        | 50     | 7.96       | 144           | 0.21                 | 880          |
| TCAL**0410-1R5K | 1.5 $\pm$ 10%        | 50     | 7.96       | 131           | 0.23                 | 830          |
| TCAL**0410-1R8K | 1.8 $\pm$ 10%        | 55     | 7.96       | 121           | 0.25                 | 790          |
| TCAL**0410-2R2K | 2.2 $\pm$ 10%        | 55     | 7.96       | 110           | 0.28                 | 750          |
| TCAL**0410-2R7K | 2.7 $\pm$ 10%        | 60     | 7.96       | 100           | 0.30                 | 720          |
| TCAL**0410-3R3K | 3.3 $\pm$ 10%        | 60     | 7.96       | 94            | 0.34                 | 670          |
| TCAL**0410-3R9K | 3.9 $\pm$ 10%        | 60     | 7.96       | 86            | 0.37                 | 640          |
| TCAL**0410-4R7K | 4.7 $\pm$ 10%        | 60     | 7.96       | 80            | 0.39                 | 620          |
| TCAL**0410-5R6K | 5.6 $\pm$ 10%        | 60     | 7.96       | 74            | 0.43                 | 590          |
| TCAL**0410-6R8K | 6.8 $\pm$ 10%        | 60     | 7.96       | 68            | 0.48                 | 550          |
| TCAL**0410-8R2K | 8.2 $\pm$ 10%        | 60     | 7.96       | 53            | 0.52                 | 530          |
| TCAL**0410-100K | 10 $\pm$ 10%         | 60     | 7.96       | 45            | 0.58                 | 500          |
| TCAL**0410-120K | 12 $\pm$ 10%         | 60     | 2.52       | 34            | 0.63                 | 480          |
| TCAL**0410-150K | 15 $\pm$ 10%         | 60     | 2.52       | 20            | 0.72                 | 460          |
| TCAL**0410-180K | 18 $\pm$ 10%         | 60     | 2.52       | 14            | 0.77                 | 430          |
| TCAL**0410-220K | 22 $\pm$ 10%         | 60     | 2.52       | 9.9           | 0.84                 | 410          |
| TCAL**0410-270K | 27 $\pm$ 10%         | 50     | 2.52       | 7.6           | 0.94                 | 390          |
| TCAL**0410-330K | 33 $\pm$ 10%         | 50     | 2.52       | 6.3           | 1.03                 | 370          |
| TCAL**0410-390K | 39 $\pm$ 10%         | 50     | 2.52       | 6.3           | 1.12                 | 350          |
| TCAL**0410-470K | 47 $\pm$ 10%         | 50     | 2.52       | 6.3           | 1.22                 | 340          |
| TCAL**0410-560K | 56 $\pm$ 10%         | 40     | 2.52       | 6.2           | 1.34                 | 320          |
| TCAL**0410-680K | 68 $\pm$ 10%         | 40     | 2.52       | 5.7           | 1.47                 | 305          |
| TCAL**0410-820K | 82 $\pm$ 10%         | 35     | 2.52       | 5.3           | 1.62                 | 290          |
| TCAL**0410-101K | 100 $\pm$ 10%        | 35     | 2.52       | 4.8           | 1.80                 | 275          |
| TCAL**0410-121K | 120 $\pm$ 10%        | 60     | 0.796      | 3.8           | 3.70                 | 185          |
| TCAL**0410-151K | 150 $\pm$ 10%        | 60     | 0.796      | 3.5           | 4.20                 | 175          |
| TCAL**0410-181K | 180 $\pm$ 10%        | 60     | 0.796      | 3.3           | 4.60                 | 165          |
| TCAL**0410-221K | 220 $\pm$ 10%        | 60     | 0.796      | 3.0           | 5.10                 | 155          |
| TCAL**0410-271K | 270 $\pm$ 10%        | 60     | 0.796      | 2.8           | 5.80                 | 145          |
| TCAL**0410-331K | 330 $\pm$ 10%        | 60     | 0.796      | 2.6           | 6.40                 | 137          |
| TCAL**0410-391K | 390 $\pm$ 10%        | 60     | 0.796      | 2.4           | 7.00                 | 133          |
| TCAL**0410-471K | 470 $\pm$ 10%        | 60     | 0.796      | 2.25          | 7.70                 | 126          |
| TCAL**0410-561K | 560 $\pm$ 10%        | 60     | 0.796      | 2.1           | 8.50                 | 120          |
| TCAL**0410-681K | 680 $\pm$ 10%        | 55     | 0.796      | 1.95          | 9.40                 | 113          |
| TCAL**0410-821K | 820 $\pm$ 10%        | 55     | 0.796      | 1.85          | 10.5                 | 100          |
| TCAL**0410-102K | 1000 $\pm$ 10%       | 50     | 0.796      | 1.4           | 14.0                 | 100          |

## Fixed Inductors (TCAL0510) Characteristics

| Part Number     | Inductance( $\mu$ H) | Q(min) | Freq.(MHz) | SRF(MHz)(min) | DCR( $\Omega$ )(max) | RDC(mA)(max) |
|-----------------|----------------------|--------|------------|---------------|----------------------|--------------|
| TCAL**0510-R56M | 0.56 $\pm$ 10%       | 50     | 25.2       | 280           | 0.14                 | 1150         |
| TCAL**0510-R68K | 0.68 $\pm$ 10%       | 50     | 25.2       | 250           | 0.15                 | 1100         |
| TCAL**0510-R82M | 0.82 $\pm$ 10%       | 50     | 25.2       | 220           | 0.22                 | 900          |
| TCAL**0510-1R0K | 1.0 $\pm$ 10%        | 50     | 25.2       | 200           | 0.29                 | 785          |
| TCAL**0510-1R2K | 1.2 $\pm$ 10%        | 33     | 7.96       | 180           | 0.42                 | 650          |
| TCAL**0510-1R5K | 1.5 $\pm$ 10%        | 33     | 7.96       | 160           | 0.50                 | 600          |
| TCAL**0510-1R8K | 1.8 $\pm$ 10%        | 33     | 7.96       | 150           | 0.65                 | 525          |
| TCAL**0510-2R2K | 2.2 $\pm$ 10%        | 33     | 7.96       | 135           | 0.95                 | 435          |
| TCAL**0510-2R7K | 2.7 $\pm$ 10%        | 33     | 7.96       | 120           | 1.5                  | 385          |
| TCAL**0510-3R3K | 3.3 $\pm$ 10%        | 33     | 7.96       | 110           | 2.0                  | 300          |
| TCAL**0510-3R9K | 3.9 $\pm$ 10%        | 33     | 7.96       | 100           | 2.3                  | 280          |
| TCAL**0510-4R7K | 4.7 $\pm$ 10%        | 33     | 7.96       | 90            | 2.8                  | 260          |
| TCAL**0510-5R6K | 5.6 $\pm$ 10%        | 45     | 7.96       | 60            | 0.32                 | 495          |
| TCAL**0510-6R8K | 6.8 $\pm$ 10%        | 45     | 7.96       | 55            | 0.5                  | 395          |
| TCAL**0510-8R2K | 8.2 $\pm$ 10%        | 45     | 7.96       | 50            | 0.6                  | 360          |
| TCAL**0510-100K | 10 $\pm$ 10%         | 45     | 7.96       | 45            | 0.9                  | 290          |
| TCAL**0510-120K | 12 $\pm$ 10%         | 60     | 2.52       | 42            | 1.2                  | 265          |
| TCAL**0510-150K | 15 $\pm$ 10%         | 65     | 2.52       | 40            | 1.7                  | 240          |
| TCAL**0510-180K | 18 $\pm$ 10%         | 65     | 2.52       | 34            | 2.3                  | 185          |
| TCAL**0510-220K | 22 $\pm$ 10%         | 65     | 2.52       | 30            | 2.6                  | 175          |
| TCAL**0510-270K | 27 $\pm$ 10%         | 45     | 2.52       | 25            | 2.0                  | 170          |
| TCAL**0510-330K | 33 $\pm$ 10%         | 45     | 2.52       | 19            | 2.3                  | 165          |
| TCAL**0510-390K | 39 $\pm$ 10%         | 45     | 2.52       | 15            | 2.5                  | 165          |
| TCAL**0510-470K | 47 $\pm$ 10%         | 45     | 2.52       | 14            | 2.6                  | 165          |
| TCAL**0510-560K | 56 $\pm$ 10%         | 50     | 2.52       | 12            | 3.0                  | 164          |
| TCAL**0510-680K | 68 $\pm$ 10%         | 50     | 2.52       | 11            | 3.3                  | 156          |
| TCAL**0510-820K | 82 $\pm$ 10%         | 50     | 2.52       | 10            | 3.9                  | 143          |
| TCAL**0510-101K | 100 $\pm$ 10%        | 50     | 2.52       | 9             | 4.5                  | 133          |
| TCAL**0510-121K | 120 $\pm$ 10%        | 60     | 0.796      | 8.5           | 5.2                  | 124          |
| TCAL**0510-151K | 150 $\pm$ 10%        | 40     | 0.796      | 7.8           | 6.18                 | 114          |
| TCAL**0510-181K | 180 $\pm$ 10%        | 60     | 0.796      | 7.0           | 6.8                  | 108          |
| TCAL**0510-221K | 220 $\pm$ 10%        | 60     | 0.796      | 6.2           | 7.5                  | 103          |
| TCAL**0510-271K | 270 $\pm$ 10%        | 60     | 0.796      | 5.6           | 8.2                  | 103          |
| TCAL**0510-331K | 330 $\pm$ 10%        | 60     | 0.796      | 5.0           | 9.1                  | 102          |
| TCAL**0510-391K | 390 $\pm$ 10%        | 60     | 0.796      | 4.5           | 10                   | 102          |
| TCAL**0510-471K | 470 $\pm$ 10%        | 60     | 0.796      | 4.0           | 11                   | 100          |
| TCAL**0510-561K | 560 $\pm$ 10%        | 60     | 0.796      | 3.6           | 12.3                 | 85           |
| TCAL**0510-681K | 680 $\pm$ 10%        | 60     | 0.796      | 3.6           | 13.7                 | 81           |
| TCAL**0510-821K | 820 $\pm$ 10%        | 60     | 0.796      | 1.32          | 3.1                  | 180          |
| TCAL**0510-102K | 1000 $\pm$ 10%       | 60     | 0.796      | 1.25          | 4.1                  | 156          |

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