

## SMD Air Core Coils

**Flat Top Spring Inductors SMD Air Core Coils - TRAM Series**

**Token offers The Smallest Air Coil Inductors  
for Only (1.8 x 2.0 x 2.0 mm) (TRAM)**

### ► Preview

The latest range of air core surface mount coils from Token is fully compliant with RoHS legislation and available immediately in full production volumes. The TRAM series provides a cost effective and miniaturised alternative to the earlier version.

The wire-wound construction with a miniature core is ideal for high frequency applications. These new SMD coils measure 1.8 x 2.0 mm with a low 2.0 mm profile, which combined with a mould-sealed surface, makes them particularly suitable for high-density mounting.

Indeed, the TRAM series features high Q value in the high frequency range, offers stable inductance at high frequency and has high self-resonant frequency. Meanwhile, the low DC resistance design is ideal for low loss, high output and low power consumption. A wide range of devices in the series, with inductance values ranging from 3.9 to 538nH, allows designers to select the most appropriate part of their application.

These SMD air core coils are aimed at high frequency circuits in telecommunications equipment, including power amplifiers, antenna modules, VCOs and SAWs, and in mobile phones, such as GSM, CDMA, and PDC. Other applications include digital TV tuners, wireless LAN and Bluetooth devices.

This new SMD inductor provides a narrow inductance deviation with a complete range of inductance values, making chip inductors an excellent choice for high frequency circuit matching. SMD coils can be customised designs and tighter tolerances available on request. Application of RF air core coil specific designs also available including different inductance values and Q specifications.

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.

### Features

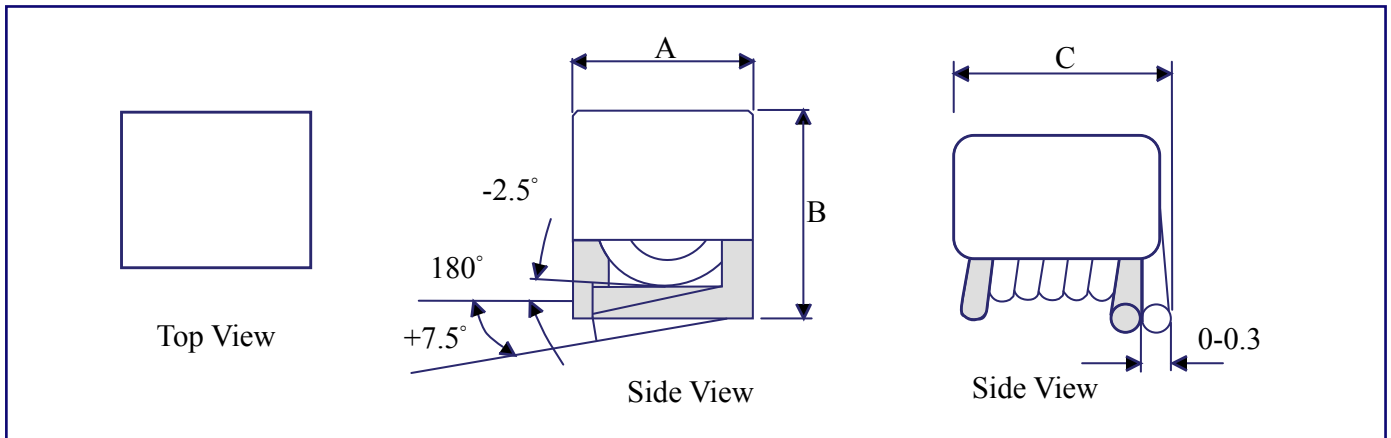
- High frequency
- Excellent SRFs and high Q
- Good constitutive property and easy to operate

### Applications

- Intercom, CATV.
- Pager, Cordless phone.
- High Freq. Communication Products.

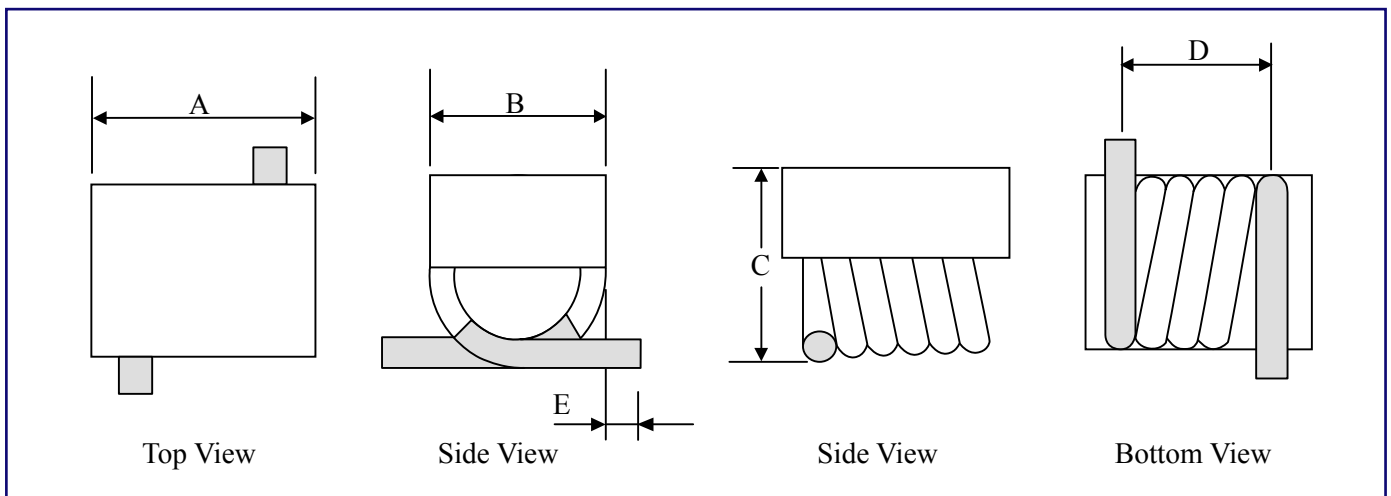


▶ TRAM0603 TRAM0805 TRAM1008 - Dimensions (Unit: mm)



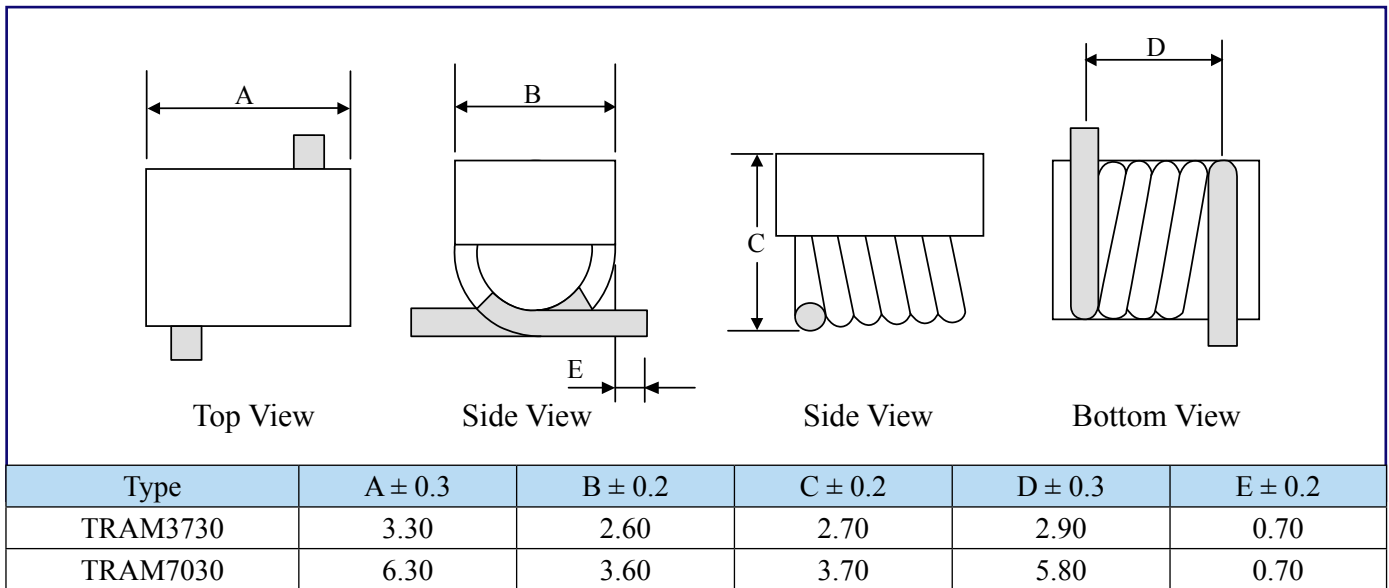
Type	A(max)	B(max)	C ± 0.2
TRAM0603	1.80	2.00	2.00
TRAM0805	1.80	2.10	2.85
TRAM1008	1.90	2.20	3.20

▶ TRAM2215 TRAM4015 TRAM132 - Dimensions (Unit: mm)

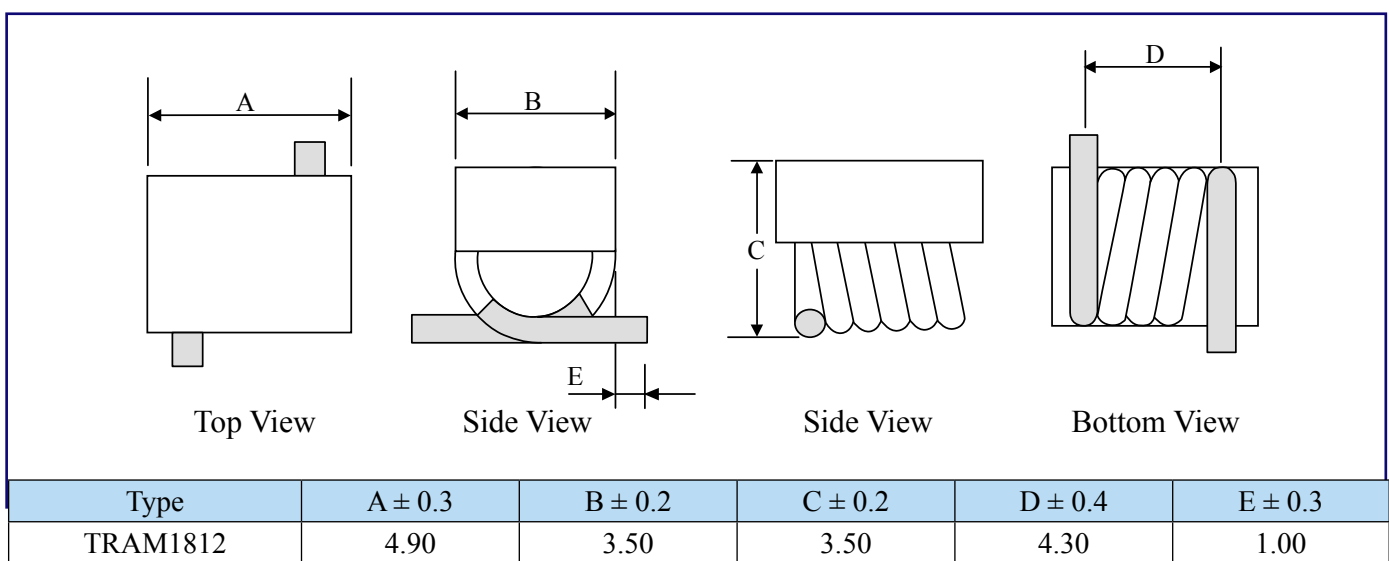


Type	A	B	C	D	E
TRAM2215	2.2 ± 0.3	1.4 ± 0.2	1.4 ± 0.2	1.8 ± 0.3	0.9 ± 0.3
TRAM4015	4.0 ± 0.3	1.4 ± 0.2	1.4 ± 0.2	3.5 ± 0.3	0.9 ± 0.3
TRAM132	9.0(max)	4.4 ± 0.3	4.6 ± 0.4	8.0 ± 0.5	1.3 ± 0.4

## ▶ TRAM3730 TRAM7030 - Dimensions (Unit: mm)



## ▶ TRAM1812 - Dimensions (Unit: mm)



## ▶ TRAM3730 TRAM7030 - How to Order

TRAM
3730
A01T

①
②
③

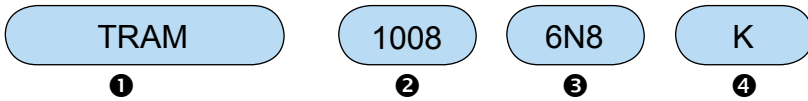
① Part Number: TRAM

② Size (L×W) (mm)

③ Turns

Code	Size
3730	3.30×2.60mm
7030	6.30×3.60mm

## ▶ TRAM0603 TRAM0805 TRAM1008 - How to Order



❶ Part Number: TRAM

❷ Size (L×W) (mm)

Code	Size
0603	1.80×2.00mm
0805	1.80×2.10mm
1008	1.90×2.20mm

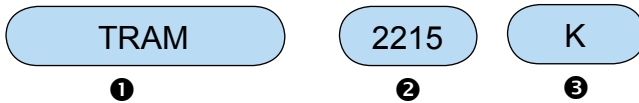
❹ Tolerance

Code	Tolerance
K	10%
M	20%

❸ Inductance

Code	Inductance
6N8	6.8nH
10N	10.0nH
R10	100.00nH

## ▶ TRAM3730 TRAM7030 - How to Order



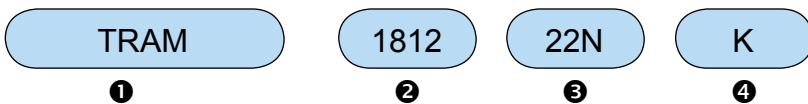
❶ Part Number: TRAM

❷ Size (L×W) (mm)

Code	Size
2215	2.20×1.40mm
4015	4.00×1.40mm
132	9.00×4.40mm

❸ Turns

## ▶ TRAM0603 TRAM0805 TRAM1008 - How to Order



❶ Part Number: TRAM

❷ Size (L×W) (mm)

Code	Size
1812	4.90×3.50mm

❹ Tolerance

Code	Tolerance
J	5%
K	10%

❸ Inductance

Code	Inductance
22N	22nH
R10	100nH

## ▶ TRAM 0603 - Electrical Characteristics

Part Number	Inductance (L)(nH)	Q (min)	Test Freq. (MHz)	SRF (MHz)(min)	DCR (mΩ)(max)	IDC (mA)(max)
TRAM0603 - 3N9K	3.9	80	300	>3000	3.0	950
TRAM0603 - 4N7K	4.7	80	300	>3000	3.6	900
TRAM0603 - 5N6K	5.6	80	300	>3000	3.8	950
TRAM0603 - 6N8K	6.8	80	300	>3000	4.5	900
TRAM0603 - 8N2K	8.2	80	300	>3000	5.3	840
TRAM0603 - 10NK	10.0	70	300	>3000	6.9	600
TRAM0603 - 12NK	12.0	70	300	>3000	8.3	600
TRAM0603 - 15NK	15.0	70	300	2500	11.5	500
TRAM0603 - 18NK	18.0	70	300	2500	12.8	500
TRAM0603 - 22NK	22.0	70	300	2400	11.3	550
TRAM0603 - 27NK	27.0	70	300	1600	17.0	500
TRAM0603 - 33NK	33.0	70	300	1600	26.9	320
TRAM0603 - 39NK	39.0	70	300	1500	30.7	320
TRAM0603 - 47NK	47.0	70	300	1500	34.5	320
TRAM0603 - 56NK	56.0	70	300	1300	38.4	320

## ▶ TRAM 0805 - Electrical Characteristics

Part Number	Inductance (L)(nH)	Q (min)	Test Freq. (MHz)	SRF (MHz)(min)	DCR (mΩ)(max)	IDC (mA)(max)
TRAM0805 - 3N9K	3.9	80	300	>3000	2.6	1200
TRAM0805 - 4N7K	4.7	80	300	>3000	3.6	900
TRAM0805 - 5N6K	5.6	80	300	>3000	3.7	950
TRAM0805 - 6N8K	6.8	80	300	>3000	4.5	900
TRAM0805 - 8N2K	8.2	80	300	>3000	5.3	840
TRAM0805 - 10NK	10.0	70	300	>3000	5.4	900
TRAM0805 - 12NK	12.0	70	300	>3000	6.3	900
TRAM0805 - 15NK	15.0	70	300	2500	7.2	900
TRAM0805 - 18NK	18.0	70	300	2500	12.5	500
TRAM0805 - 22NK	22.0	70	300	2400	12.9	550
TRAM0805 - 27NK	27.0	70	300	1600	14.5	550
TRAM0805 - 33NK	33.0	70	300	1600	18.7	500
TRAM0805 - 39NK	39.0	70	300	1500	25.7	380
TRAM0805 - 47NK	47.0	70	300	1500	34.5	320
TRAM0805 - 56NK	56.0	70	300	1300	38.4	320
TRAM0805 - 68NK	68.0	70	300	1300	42.2	320

## ▶ TRAM 1008 - Electrical Characteristics

Part Number	Inductance (L)(nH)	Q (min)	Test Freq. (MHz)	SRF (MHz)(min)	DCR (mΩ)(max)	IDC (mA)(max)
TRAM1008 - 6N8K	6.8	80	300	>3000	4.0	1200
TRAM1008 - 8N2K	8.2	80	300	>3000	5.0	950
TRAM1008 - 10NK	10.0	70	300	>3000	6.0	950
TRAM1008 - 12NK	12.0	70	300	>3000	6.5	900
TRAM1008 - 15NK	15.0	70	300	2500	7.3	900
TRAM1008 - 18NK	18.0	70	300	2500	9.6	840
TRAM1008 - 22NK	22.0	70	300	2400	10.8	840
TRAM1008 - 27NK	27.0	70	300	1600	13.9	600
TRAM1008 - 33NK	33.0	70	300	1600	19.5	500
TRAM1008 - 39NK	39.0	70	300	1500	21.6	500
TRAM1008 - 47NK	47.0	70	300	1500	25.2	470
TRAM1008 - 56NK	56.0	70	300	1300	27.5	470
TRAM1008 - 68NK	68.0	70	300	1300	37.1	380
TRAM1008 - 82NK	82.0	70	300	1000	51.5	320
TRAM1008 - R10K	100.0	70	300	1000	55.5	320
TRAM1008 - R12K	120.0	70	300	950	63.4	320

## ▶ TRAM 2215 - Electrical Characteristics

Part Number	Turns	Inductance(L)(nH)	Q(min)	Test Freq.(MHz)	SRF(GHz)(min)
TRAM2215 - 02	2	1.65 ± 10%	100	800	>3.0
TRAM2215 - 03	3	2.55 ± 10%	100	800	>3.0
TRAM2215 - 04	4	3.85 ± 10%	100	800	>3.0
TRAM2215 - 05	5	5.45 ± 5%	100	800	>3.0

## ▶ TRAM 4015 - Electrical Characteristics

Part Number	Turns	Inductance(L)(nH)	Q(min)	Test Freq.(MHz)	SRF(GHz)(min)
TRAM4015 - 06	6	5.60 ± 5%	100	800	>3.0
TRAM4015 - 07	7	7.15 ± 5%	100	800	>3.0
TRAM4015 - 08	8	8.80 ± 5%	100	800	>3.0
TRAM4015 - 09	9	9.85 ± 5%	100	800	>3.0
TRAM4015 - 10	10	12.55 ± 5%	100	800	>3.0

## ▶ TRAM 132 - Electrical Characteristics

Part Number	Turns	Inductance(L)(nH)	Q(min)	Test Freq.(MHz)	SRF(GHz)(min)
TRAM132 - 09	9	90 ± 5%	100	50	>1.0
TRAM132 - 10	10	111 ± 5%	100	50	>1.0

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Part Number	Turns	Inductance(L)(nH)	Q(min)	Test Freq.(MHz)	SRF(GHz)(min)
TRAM132 - 11	11	130 ± 5%	100	50	>0.9
TRAM132 - 12	12	169 ± 5%	100	50	>0.8
TRAM132 - 13	13	206 ± 5%	100	50	>0.7
TRAM132 - 14	14	222 ± 5%	100	50	>0.6
TRAM132 - 15	15	246 ± 5%	100	50	>0.6
TRAM132 - 16	16	307 ± 5%	100	50	>0.5
TRAM132 - 17	17	380 ± 5%	100	50	>0.5
TRAM132 - 18	18	422 ± 5%	100	50	>0.4
TRAM132 - 19	19	491 ± 5%	100	50	>0.4
TRAM132 - 20	20	538 ± 5%	100	50	>0.4

## ▶ TRAM 3730 - Electrical Characteristics

Part Number	Turns	Inductance(L)(nH)	Q(min)	Test Freq.(MHz)	SRF(GHz)(min)
TRAM3730 - A01T	1	2.5 ± 10%	145	150	>3.0
TRAM3730 - A02T	2	5.0 ± 10%	140	150	>3.0
TRAM3730 - A03T	3	8.0 ± 10%	140	150	>3.0
TRAM3730 - A04T	4	12.5 ± 5%	137	150	>3.0
TRAM3730 - A05T	5	18.5 ± 5%	132	150	>2.5

## ▶ TRAM 7030 - Electrical Characteristics

Part Number	Turns	Inductance(L)(nH)	Q(min)	Test Freq.(MHz)	SRF(GHz)(min)
TRAM7030 - B06T	6	17.5 ± 5%	100	150	>2.2
TRAM7030 - B07T	7	22.0 ± 5%	100	150	>2.0
TRAM7030 - B08T	8	28.0 ± 5%	100	150	>1.8
TRAM7030 - B09T	9	35.5 ± 5%	100	150	>1.2
TRAM7030 - B10T	10	43.5 ± 5%	100	150	>1.0

## ▶ TRAM 1812 - Electrical Characteristics

Part Number	Inductance(L)(nH)	Q(min)	Test Freq.(MHz)	SRF(GHz)(min)
TRAM1812 - 22NK	22	100	150	3.20
TRAM1812 - 27NK	27	100	150	2.70
TRAM1812 - 33NK	33	100	150	2.50
TRAM1812 - 39NJ	39	100	150	2.10
TRAM1812 - 47NJ	47	100	150	2.10
TRAM1812 - 56NJ	56	100	150	1.50
TRAM1812 - 68NJ	68	100	150	1.50
TRAM1812 - 82NJ	82	100	150	1.30
TRAM1812 - R10J	100	100	150	1.20
TRAM1812 - R12J	120	100	150	1.10

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