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(TRMB)
Multilayer Bead RF Inductors

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Product Introduction

Token RF inductor chip multilayer bead offer high impedance for high speed signals.

Features :

- Low DC Resistance.
- Effective EMI Protection.
- Multiple Size Availability.
- High Soldering Heat Resistance.

Applications :

- Portable Equipment.
- Personal Computers.
- CD-ROM, Hard Disk, Modem,Printers.

Token Electronics has introduced the (TRMB) Series, a family of twelve multilayer chip bead inductors offering high impedance. The (TRMB) Bead series is a multilayer technology with good overall characteristics in a cost effective package. In addition, (TRMB) parts offer a high-performance noise-filtering capability over a wide range of high frequencies.

In systems that currently use multiple narrow-band inductors to cover a wide frequency range, the (TRMB) can provide the same function in a single chip, reducing component count and board area. The (TRMB) multilayer inductor series is available in 1812, 1806, 1210, 1206, 0805, 0603, and 0402 sizes in three catalogs, standard, low profile, and High Speed Signals. This product provides a good addition of electrical performance and low cost.

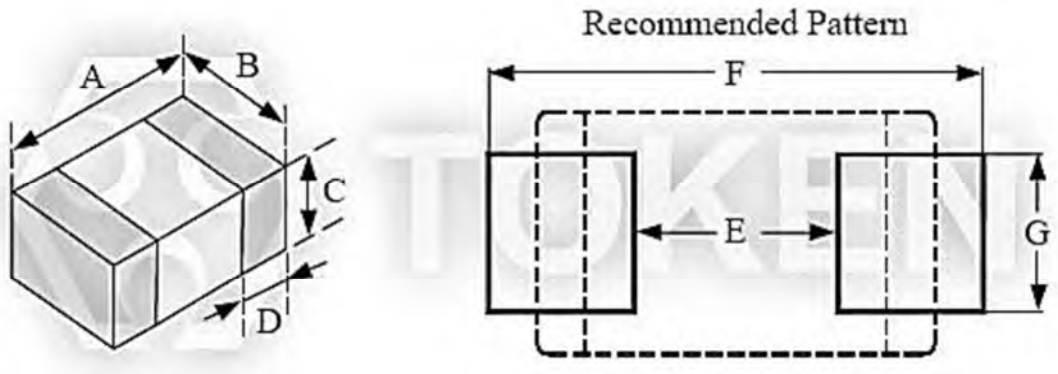
Token Multilayer Bead RF Inductor (TRMB) series is primarily designed for effective EMI protection and low dc resistance. Full series conform to the RoHS directive and Lead-free. Multilayer Bead Chip Inductor with wide inductance selection and impedance can be customed designs and tighter tolerances available on request.

Application of specific designs also available including different factor values to frequency requirements. Custom parts are available on request. Token will also produce devices outside these specifications to meet specific customer requirements, Contact us with your specific needs. For more information, please link to Token official website “RF Inductors”.

Dimensions

Configurations & Dimensions (Unit: mm) (TRMB)

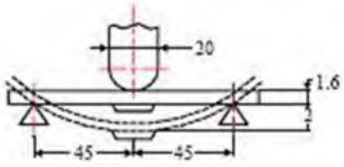
Type	A	B	C	D	E	F	G
TRMB100505 (0402)	1.0 ± 0.10	0.50 ± 0.10	0.5 ± 0.10	0.25 ± 0.10	0.4	1.2~1.4	0.4
TRMB160808 (0603)	1.6 ± 0.20	0.80 ± 0.15	0.8 ± 0.15	0.30 ± 0.20	0.8	2.4~3.4	0.6
TRMB201209 (0805)	2.0 ± 0.20	1.25 ± 0.20	0.9 ± 0.20	0.50 ± 0.30	1.2	3.0~4.0	1.0
TRMB321611 (1206)	3.2 ± 0.20	1.60 ± 0.20	1.1 ± 0.20	0.50 ± 0.30	2.0	4.2~5.2	1.2
TRMB321616 (1206)	3.2 ± 0.20	1.60 ± 0.20	1.6 ± 0.20	0.50 ± 0.30	2.0	4.2~5.2	1.2
TRMB322513 (1210)	3.2 ± 0.20	2.50 ± 0.20	1.3 ± 0.20	0.50 ± 0.30	2.0	5.5~6.5	1.8
TRMB451616 (1806)	4.5 ± 0.25	1.60 ± 0.20	1.6 ± 0.20	0.50 ± 0.30	3.0	5.5~6.5	1.2
TRMB453215 (1812)	4.5 ± 0.25	3.20 ± 0.20	1.5 ± 0.20	0.50 ± 0.30	3.0	5.5~6.5	2.4



(TRMB) Recommended Pattern and Dimensions (Unit: mm)

Characteristics

Environmental Characteristics (TRMB)

Item	Specification	Test Methods
Flexure Strength	The forces applied on the right conditions must not damage the terminal electrode and the ferrite	Test device shall be soldered on the substrate Dimension:100×40×1.6 mm Deflection: 2.0mm Keeping Time: 30sec For 0402, substrate dimension is 100×40×0.8mm 
Vibration		Test device shall be soldered on the substrate Oscillation Frequency : 10 to 55 to 10Hz for 1min Amplitude : 1.5mm Time : 2hrs for each axis (X,Y&Z), total 6hrs
Resistance to Soldering Heat	Appearance: No damage More than 75% of the terminal electrode should be covered with solder. Impedance: within± 30% of initial value	Pre-heating: 150℃, 1min Solder Temperature: 260 ± 5℃ Immersion Time: 10 ± 1sec
Solderability	The electrodes shall be at least 90% covered with new solder coating	Pre-heating: 150℃, 1min Solder Temperature: 245 ± 5℃ Immersion Time: 4 ± 1sec
Terminal Strength Test	0402 series : ≥0.2kg 0603 series : ≥0.5kg 0805 series : ≥1.0kg other series : ≥ 2.0kg	Test device shall be soldered on the substrate 
Temperature Cycle	Appearance: No damage Impedance: within ± 30% of initial value	One cycle: One cycle/step1: -55 ± 3℃ for 30min step2: 25 ± 2℃ for 3.0min step3:125 ± 3℃ for 30min step4:25 ± 2℃ for 3.0min Total: 100cycles Measured after exposure in the room condition for 24hrs
Humidity Resistance		Temperature: 40 ± 2℃ Relative Humidity: 90 ~ 95% time: 1000hrs Measured after exposure in the room condition for 24hrs
High Temperature Resistance		Temperature: 125 ± 3℃ Relative Humidity : 0% Applied Current: Rated Current time: 1000hrs Measured after exposure in the room condition for 24hrs
Low Temperature Resistance		Temperature: -55 ± 3℃ TR relative Humidity : 0% time: 1000hrs Measured after exposure in the room condition for 24hrs

Electrical Characteristics

Electrical Characteristics (TRMB100505) - (EIA 0402)

Part Number	Impedance (Ω)	Tolerance (± %)	Freq. (MHz)	DCR (Ω)(Max.)	IDC (mA)(Max.)
TRMB100505 - YTRYN060	6	25	100	0.05	500
TRMB100505 - YTRYN100	10	25	100	0.05	500
TRMB100505 - YTRYN300	30	25	100	0.30	300
TRMB100505 - YTRYN330	33	25	100	0.30	300
TRMB100505 - YTRYN400	40	25	100	0.30	300
TRMB100505 - YTRYN470	47	25	100	0.40	300
TRMB100505 - YTRYN600	60	25	100	0.40	300
TRMB100505 - YTRYN700	70	25	100	0.40	300
TRMB100505 - YTRYN750	75	25	100	0.40	300
TRMB100505 - YTRYN800	80	25	100	0.40	300
TRMB100505 - YTRYN900	90	25	100	0.50	300
TRMB100505 - YTRYN101	100	25	100	0.50	300
TRMB100505 - YTRYN121	120	25	100	0.50	300
TRMB100505 - YTRYN151	150	25	100	0.50	300
TRMB100505 - YTRYN221	220	25	100	0.50	300
TRMB100505 - YTRYN241	240	25	100	0.50	300
TRMB100505 - YTRYN301	300	25	100	0.80	300
TRMB100505 - YTRYN331	330	25	100	0.80	300
TRMB100505 - YTRYN481	480	25	100	0.80	300
TRMB100505 - YTRYN601	600	25	100	1.00	300
TRMB100505 - YTRYN102	1000	25	100	1.50	100
TRMB100505 - YTRYN152	1500	25	100	2.00	60

Electrical Characteristics (TRMB160808) - (EIA 0603)

Part Number	Impedance (Ω)	Tolerance (± %)	Freq. (MHz)	DCR (Ω)(Max.)	IDC (mA)(Max.)
TRMB160808 - YTRYN060	6	25	100	0.05	500
TRMB160808 - YTRYN070	7	25	100	0.05	500
TRMB160808 - YTRYN100	10	25	100	0.05	500
TRMB160808 - YTRYN110	11	25	100	0.05	500
TRMB160808 - YTRYN150	15	25	100	0.08	500
TRMB160808 - YTRYN170	17	25	100	0.08	500
TRMB160808 - YTRYN190	19	25	100	0.08	500
TRMB160808 - YTRYN200	20	25	100	0.10	400
TRMB160808 - YTRYN220	22	25	100	0.10	400
TRMB160808 - YTRYN250	25	25	100	0.10	400
TRMB160808 - YTRYN260	26	25	100	0.10	400
TRMB160808 - YTRYN300	30	25	100	0.10	400
TRMB160808 - YTRYN310	31	25	100	0.10	400
TRMB160808 - YTRYN320	32	25	100	0.10	400
TRMB160808 - YTRYN330	33	25	100	0.10	400
TRMB160808 - YTRYN400	40	25	100	0.10	400
TRMB160808 - YTRYN470	47	25	100	0.10	400
TRMB160808 - YTRYN500	50	25	100	0.10	400
TRMB160808 - YTRYN520	52	25	100	0.10	400
TRMB160808 - YTRYN550	55	25	100	0.10	400
TRMB160808 - YTRYN560	56	25	100	0.10	400
TRMB160808 - YTRYN600	60	25	100	0.10	400
TRMB160808 - YTRYN680	68	25	100	0.15	400
TRMB160808 - YTRYN700	70	25	100	0.15	400
TRMB160808 - YTRYN750	75	25	100	0.15	400
TRMB160808 - YTRYN800	80	25	100	0.15	400
TRMB160808 - YTRYN900	90	25	100	0.20	400
TRMB160808 - YTRYN101	100	25	100	0.20	400
TRMB160808 - YTRYN121	120	25	100	0.25	400
TRMB160808 - YTRYN141	140	25	100	0.25	300
TRMB160808 - YTRYN151	150	25	100	0.30	200
TRMB160808 - YTRYN181	180	25	100	0.30	200
TRMB160808 - YTRYN201	200	25	100	0.30	200
TRMB160808 - YTRYN221	220	25	100	0.30	200
TRMB160808 - YTRYN241	240	25	100	0.40	200
TRMB160808 - YTRYN301	300	25	100	0.40	200
TRMB160808 - YTRYN331	330	25	100	0.50	200
TRMB160808 - YTRYN401	400	25	100	0.50	200
TRMB160808 - YTRYN421	420	25	100	0.50	200
TRMB160808 - YTRYN451	450	25	100	0.50	200

Part Number	Impedance (Ω)	Tolerance (± %)	Freq. (MHz)	DCR (Ω)(Max.)	IDC (mA)(Max.)
TRMB160808 - YTRYN471	470	25	100	0.50	200
TRMB160808 - YTRYN501	500	25	100	0.50	200
TRMB160808 - YTRYN601	600	25	100	0.50	200
TRMB160808 - YTRYN751	750	25	100	0.70	200
TRMB160808 - YTRYN801	800	25	100	0.70	200
TRMB160808 - YTRYN102	1000	25	100	0.70	200
TRMB160808 - YTRYN122	1200	25	100	1.00	50
TRMB160808 - YTRYN152	1500	25	100	1.00	50
TRMB160808 - YTRYN172	1700	25	100	1.20	50
TRMB160808 - YTRYN202	2000	25	100	1.20	50
TRMB160808 - YTRYN222	2200	25	100	1.20	50
TRMB160808 - YTRYN252	2500	25	100	1.30	50
TRMB160808 - YTRYN272	2700	25	100	1.30	50

Electrical Characteristics (TRMB201209) - (EIA 0805)

Part Number	Impedance (Ω)	Tolerance (± %)	Freq. (MHz)	DCR (Ω)(Max.)	IDC (mA)(Max.)
TRMB201209 - YTRYN050	5	25	100	0.10	600
TRMB201209 - YTRYN070	7	25	100	0.10	600
TRMB201209 - YTRYN090	9	25	100	0.10	600
TRMB201209 - YTRYN100	10	25	100	0.10	600
TRMB201209 - YTRYN110	11	25	100	0.10	600
TRMB201209 - YTRYN120	12	25	100	0.10	600
TRMB201209 - YTRYN150	15	25	100	0.10	600
TRMB201209 - YTRYN170	17	25	100	0.10	600
TRMB201209 - YTRYN190	19	25	100	0.10	600
TRMB201209 - YTRYN220	22	25	100	0.10	600
TRMB201209 - YTRYN260	26	25	100	0.10	600
TRMB201209 - YTRYN280	28	25	100	0.10	600
TRMB201209 - YTRYN300	30	25	100	0.10	600
TRMB201209 - YTRYN310	31	25	100	0.10	600
TRMB201209 - YTRYN320	32	25	100	0.10	600
TRMB201209 - YTRYN330	33	25	100	0.10	500
TRMB201209 - YTRYN390	39	25	100	0.10	500
TRMB201209 - YTRYN400	40	25	100	0.10	500
TRMB201209 - YTRYN420	42	25	100	0.10	500
TRMB201209 - YTRYN470	47	25	100	0.10	500
TRMB201209 - YTRYN500	50	25	100	0.10	500
TRMB201209 - YTRYN520	52	25	100	0.15	500
TRMB201209 - YTRYN560	56	25	100	0.15	500
TRMB201209 - YTRYN600	60	25	100	0.15	500
TRMB201209 - YTRYN700	70	25	100	0.15	500
TRMB201209 - YTRYN750	75	25	100	0.15	500
TRMB201209 - YTRYN800	80	25	100	0.15	500
TRMB201209 - YTRYN900	90	25	100	0.15	500
TRMB201209 - YTRYN950	95	25	100	0.15	500
TRMB201209 - YTRYN101	100	25	100	0.25	300
TRMB201209 - YTRYN121	120	25	100	0.25	300
TRMB201209 - YTRYN151	150	25	100	0.25	300
TRMB201209 - YTRYN181	180	25	100	0.30	300
TRMB201209 - YTRYN201	200	25	100	0.30	300
TRMB201209 - YTRYN221	220	25	100	0.3	300
TRMB201209 - YTRYN241	240	25	100	0.3	300
TRMB201209 - YTRYN301	300	25	100	0.3	300
TRMB201209 - YTRYN331	330	25	100	0.3	300
TRMB201209 - YTRYN401	400	25	100	0.3	300
TRMB201209 - YTRYN421	420	25	100	0.3	300

Part Number	Impedance (Ω)	Tolerance (± %)	Freq. (MHz)	DCR (Ω)(Max.)	IDC (mA)(Max.)
TRMB201209 - YTRYN431	430	25	100	0.4	300
TRMB201209 - YTRYN451	450	25	100	0.4	300
TRMB201209 - YTRYN471	470	25	100	0.4	300
TRMB201209 - YTRYN501	500	25	100	0.4	300
TRMB201209 - YTRYN601	600	25	100	0.4	300
TRMB201209 - YTRYN681	680	25	100	0.4	300
TRMB201209 - YTRYN751	750	25	100	0.5	200
TRMB201209 - YTRYN102	1000	25	100	0.5	200
TRMB201209 - YTRYN122	1200	25	100	0.6	200
TRMB201209 - YTRYN152	1500	25	100	0.6	200
TRMB201209 - YTRYN202	2000	25	100	0.7	200
TRMB201209 - YTRYN222	2200	25	100	0.7	200
TRMB201209 - YTRYN252	2500	25	100	0.7	200
TRMB201209 - YTRYN272	2700	25	100	0.7	200

Electrical Characteristics (TRMB321611) - (EIA 1206)

Part Number	Impedance (Ω)	Tolerance (± %)	Freq. (MHz)	DCR (Ω)(Max.)	IDC (mA)(Max.)
TRMB321611 - YTRYN080	8	25	100	0.05	600
TRMB321611 - YTRYN090	9	25	100	0.05	600
TRMB321611 - YTRYN110	11	25	100	0.05	600
TRMB321611 - YTRYN170	17	25	100	0.05	600
TRMB321611 - YTRYN190	19	25	100	0.05	600
TRMB321611 - YTRYN220	22	25	100	0.05	600
TRMB321611 - YTRYN240	24	25	100	0.05	600
TRMB321611 - YTRYN260	26	25	100	0.05	600
TRMB321611 - YTRYN300	30	25	100	0.05	600
TRMB321611 - YTRYN310	31	25	100	0.05	600
TRMB321611 - YTRYN320	32	25	100	0.05	600
TRMB321611 - YTRYN330	33	25	100	0.05	600
TRMB321611 - YTRYN350	35	25	100	0.10	500
TRMB321611 - YTRYN470	47	25	100	0.10	500
TRMB321611 - YTRYN500	50	25	100	0.10	500
TRMB321611 - YTRYN520	52	25	100	0.10	500
TRMB321611 - YTRYN600	60	25	100	0.10	500
TRMB321611 - YTRYN700	70	25	100	0.10	500
TRMB321611 - YTRYN750	75	25	100	0.15	500
TRMB321611 - YTRYN800	80	25	100	0.15	500
TRMB321611 - YTRYN900	90	25	100	0.15	500
TRMB321611 - YTRYN101	100	25	100	0.15	500
TRMB321611 - YTRYN121	120	25	100	0.15	500
TRMB321611 - YTRYN151	150	25	100	0.15	500
TRMB321611 - YTRYN181	180	25	100	0.20	400
TRMB321611 - YTRYN201	200	25	100	0.20	400
TRMB321611 - YTRYN221	220	25	100	0.20	400
TRMB321611 - YTRYN241	240	25	100	0.20	400
TRMB321611 - YTRYN301	300	25	100	0.20	400
TRMB321611 - YTRYN401	400	25	100	0.20	400
TRMB321611 - YTRYN471	470	25	100	0.20	400
TRMB321611 - YTRYN501	500	25	100	0.20	400
TRMB321611 - YTRYN601	600	25	100	0.30	400
TRMB321611 - YTRYN701	700	25	100	0.40	200
TRMB321611 - YTRYN102	1000	25	50	0.40	200
TRMB321611 - YTRYN122	1200	25	50	0.40	200
TRMB321611 - YTRYN152	1500	25	50	0.45	200
TRMB321611 - YTRYN202	2000	25	30	0.60	200
TRMB321611 - YTRYN272	2700	25	30	0.60	200

Electrical Characteristics (TRMB321616) - (EIA 1206)

Part Number	Impedance (Ω)	Tolerance (± %)	Freq. (MHz)	DCR (Ω)(Max.)	IDC (mA)(Max.)
TRMB321616 - YTRYN250	25	25	100	0.10	500
TRMB321616 - YTRYN600	60	25	100	0.20	500
TRMB321616 - YTRYN700	70	25	100	0.20	500

Electrical Characteristics (TRMB322513) - (EIA 1210)

Part Number	Impedance (Ω)	Tolerance (± %)	Freq. (MHz)	DCR (Ω)(Max.)	IDC (mA)(Max.)
TRMB322513 - YTRYN320	32	25	100	0.20	500
TRMB322513 - YTRYN600	60	25	100	0.20	500
TRMB322513 - YTRYN900	90	25	100	0.20	500
TRMB322513 - YTRYN121	120	25	100	0.20	500

Electrical Characteristics (TRMB451616) - (EIA 1806)

Part Number	Impedance (Ω)	Tolerance (± %)	Freq. (MHz)	DCR (Ω)(Max.)	IDC (mA)(Max.)
TRMB451616 - YTRYN330	33	25	100	0.20	600
TRMB451616 - YTRYN500	50	25	100	0.20	600
TRMB451616 - YTRYN600	60	25	100	0.20	600
TRMB451616 - YTRYN800	80	25	100	0.20	600
TRMB451616 - YTRYN900	90	25	100	0.30	500
TRMB451616 - YTRYN101	100	25	100	0.30	500
TRMB451616 - YTRYN151	150	25	100	0.30	500
TRMB451616 - YTRYN171	170	25	100	0.30	500

Electrical Characteristics (TRMB453215) - (EIA 1812)

Part Number	Impedance (Ω)	Tolerance (± %)	Freq. (MHz)	DCR (Ω)(Max.)	IDC (mA)(Max.)
TRMB453215 - YTRYN700	70	25	100	0.30	500
TRMB453215 - YTRYN121	120	25	100	0.30	500

Order Codes

Order Codes (TRMB)

TRMB160808	Y	TR	Y	H	100

Part Number	
TRMB100505	0402
TRMB160808	0603
TRMB201209	0805
TRMB321611	1206
TRMB321616	1206
TRMB322513	1210
TRMB451616	1806
TRMB453215	1812

Impedance Tolerance	
Y	± 25%
M	± 20%

Package	
TR	Taping Reel

Design Code	
Y	ui:200
Q	ui:75

Current	
H	High Current
N	General Current

Impedance	
060	6 Ω
100	10 Ω
330	33 Ω
152	1500 Ω

Introduction (TRMB)

About using multilayer chips:

- Chip Beads, perform the function of removing RF energy that exists within a transmission line structure (Printed circuit board tracking). This RF energy is an AC sine wave component that co-exists with the DC voltage level of the transmitted signal. The DC component is the intended signal of interest whereas RF energy will propagate down the trace and radiate as EMI.
- Beads perform the function of being a high frequency resistor (attenuator) allowing DC energy to pass through whilst removing AC energy.
- Chip Beads consist of a soft ferrite material which responds to RF energy. This material contains high resistivity in monolithic form. Eddy current losses are inversely proportional to resistivity. These losses increase with the square of the frequency. The eddy currents are the RF energy that travels through the device.
- Hard ferrite is associated with a permanent magnetic field, its polarities become fixed as North and South. Soft ferrite material will change its impedance value based on the frequency that the bead presents to the circuit and does not permanently retain the magnetic field.

Advantages of using Multilayer Chips:

- Suitable to high density printed circuit boards.
- Perfect shape for automatic mounting, with no directionality.
- Monolithic inorganic material construction for high reliability.
- Outstanding soldering heat resistance. Both flow and reflow soldering methods can be used.
- Small size chips generate high impedance. Minimum floating capacity and excellent high frequency characteristics.

A selection guide to miniature ferrite chip beads:

- The TRMB100505, TRMB160808, TRMB201209, and TRMB321611 Series covers a wide range of impedance characteristics. It is designed to prevent electromagnetic interference.
- The TRMB100505-YTRQN060, TRMB160808-YTRQN060, TRMB201209-YTRQN050, and TRMB321611-YTRQN150 Series can minimize attenuation of the signal wave form due to its sharp impedance characteristics. Those are designed for high speed applications. Those series generates an impedance down to relatively low frequency.
- The TRMB100505-YTRYN060, TRMB100505-YTRQN060, TRMB160808-YTRYN060, TRMB160808-YTRQN060, TRMB321611-YTRYN080, and TRMB201209-YTRQN050 Series can be used in high current circuits due to its low DC resistance.

Electrical Characteristics for High Speed Signals Use

Electrical Characteristics for High Speed Signals Use (TRMB100505) - EIA 0402

Part Number	Impedance (Ω)	Tolerance (± %)	Freq. (MHz)	DCR (Ω)(Max.)	IDC (mA)(Max.)
TRMB100505 - YTRQN060	6	25	100	0.08	300
TRMB100505 - YTRQN100	10	25	100	0.10	300
TRMB100505 - YTRQN220	22	25	100	0.25	300
TRMB100505 - YTRQN260	26	25	100	0.25	300
TRMB100505 - YTRQN300	30	25	100	0.25	300
TRMB100505 - YTRQN400	40	25	100	0.25	350
TRMB100505 - YTRQN750	75	25	100	0.30	300
TRMB100505 - YTRQN800	80	25	100	0.30	300
TRMB100505 - YTRQN101	100	25	100	0.40	300
TRMB100505 - YTRQN121	120	25	100	0.40	300
TRMB100505 - YTRQN221	220	25	100	0.60	200

Electrical Characteristics for High Speed Signals Use (TRMB160808) - EIA 0603

Part Number	Impedance (Ω)	Tolerance (± %)	Freq. (MHz)	DCR (Ω)(Max.)	IDC (mA)(Max.)
TRMB160808 - YTRQN060	6	25	100	0.05	500
TRMB160808 - YTRQN070	7	25	100	0.05	400
TRMB160808 - YTRQN100	10	25	100	0.07	400
TRMB160808 - YTRQN190	19	25	100	0.20	300
TRMB160808 - YTRQN200	20	25	100	0.20	300
TRMB160808 - YTRQN220	22	25	100	0.20	300
TRMB160808 - YTRQN300	30	25	100	0.20	300
TRMB160808 - YTRQN400	40	25	100	0.20	300
TRMB160808 - YTRQN470	47	25	100	0.20	300
TRMB160808 - YTRQN500	50	25	100	0.25	300
TRMB160808 - YTRQN600	60	25	100	0.25	300
TRMB160808 - YTRQN680	68	25	100	0.25	300
TRMB160808 - YTRQN700	70	25	100	0.25	300
TRMB160808 - YTRQN750	75	25	100	0.25	300
TRMB160808 - YTRQN800	80	25	100	0.25	300
TRMB160808 - YTRQN101	100	25	100	0.30	300
TRMB160808 - YTRQN121	120	25	100	0.30	300
TRMB160808 - YTRQN131	130	25	100	0.30	300
TRMB160808 - YTRQN141	140	25	100	0.30	300
TRMB160808 - YTRQN151	150	25	100	0.30	200
TRMB160808 - YTRQN161	160	25	100	0.30	200
TRMB160808 - YTRQN181	180	25	100	0.35	200
TRMB160808 - YTRQN201	200	25	100	0.35	200
TRMB160808 - YTRQN221	220	25	100	0.35	200
TRMB160808 - YTRQN241	240	25	100	0.35	200
TRMB160808 - YTRQN301	300	25	100	0.40	200
TRMB160808 - YTRQN401	400	25	100	0.50	200
TRMB160808 - YTRQN421	420	25	100	0.50	200
TRMB160808 - YTRQN471	470	25	100	0.50	200
TRMB160808 - YTRQN481	480	25	100	0.50	200
TRMB160808 - YTRQN601	600	25	100	0.50	200
TRMB160808 - YTRQN102	1000	25	100	0.60	100
TRMB160808 - YTRQN122	1200	25	100	0.60	100
TRMB160808 - YTRQN152	1500	25	100	0.70	100
TRMB160808 - YTRQN182	1800	25	100	0.80	100
TRMB160808 - YTRQN222	2200	25	100	1.00	50
TRMB160808 - YTRQN252	2500	25	100	1.50	50

Electrical Characteristics for High Speed Signals Use (TRMB201209) - EIA 0805

Part Number	Impedance (Ω)	Tolerance (± %)	Freq. (MHz)	DCR (Ω)(Max.)	IDC (mA)(Max.)
TRMB201209 - YTRQN050	5	25	100	0.07	800
TRMB201209 - YTRQN060	6	25	100	0.07	800
TRMB201209 - YTRQN070	7	25	100	0.10	700
TRMB201209 - YTRQN110	11	25	100	0.10	700
TRMB201209 - YTRQN260	26	25	100	0.15	600
TRMB201209 - YTRQN300	30	25	100	0.15	600
TRMB201209 - YTRQN320	32	25	100	0.15	600
TRMB201209 - YTRQN400	40	25	100	0.15	500
TRMB201209 - YTRQN600	60	25	100	0.15	500
TRMB201209 - YTRQN700	70	25	100	0.15	500
TRMB201209 - YTRQN750	75	25	100	0.15	500
TRMB201209 - YTRQN900	90	25	100	0.15	500
TRMB201209 - YTRQN101	100	25	100	0.20	400
TRMB201209 - YTRQN121	120	25	100	0.20	400
TRMB201209 - YTRQN151	150	25	100	0.20	400
TRMB201209 - YTRQN171	170	25	100	0.30	400
TRMB201209 - YTRQN201	200	25	100	0.30	300
TRMB201209 - YTRQN221	220	25	100	0.30	300
TRMB201209 - YTRQN241	240	25	100	0.30	300
TRMB201209 - YTRQN301	300	25	100	0.30	300
TRMB201209 - YTRQN401	400	25	100	0.30	300
TRMB201209 - YTRQN421	420	25	100	0.30	300
TRMB201209 - YTRQN471	470	25	100	0.35	200
TRMB201209 - YTRQN501	500	25	100	0.35	200
TRMB201209 - YTRQN601	600	25	100	0.35	200
TRMB201209 - YTRQN751	750	25	100	0.40	200
TRMB201209 - YTRQN102	1000	25	100	0.40	200
TRMB201209 - YTRQN122	1200	25	100	0.45	200
TRMB201209 - YTRQN152	1500	25	100	0.45	200
TRMB201209 - YTRQN202	2000	25	100	0.50	200
TRMB201209 - YTRQN222	2200	25	100	0.50	200
TRMB201209 - YTRQN252	2500	25	100	0.60	200
TRMB201209 - YTRQN272	2700	25	100	0.60	200

Electrical Characteristics for High Speed Signals Use (TRMB321611) - EIA 1206

Part Number	Impedance (Ω)	Tolerance (± %)	Freq. (MHz)	DCR (Ω)(Max.)	IDC (mA)(Max.)
TRMB321611 - YTRQN150	15	25	100	0.15	600
TRMB321611 - YTRQN170	17	25	100	0.15	600
TRMB321611 - YTRQN190	19	25	100	0.15	600
TRMB321611 - YTRQN300	30	25	100	0.15	600
TRMB321611 - YTRQN320	32	25	100	0.15	600
TRMB321611 - YTRQN500	50	25	100	0.15	500
TRMB321611 - YTRQN600	60	25	100	0.15	500
TRMB321611 - YTRQN800	80	25	100	0.15	500
TRMB321611 - YTRQN900	90	25	100	0.15	500
TRMB321611 - YTRQN121	120	25	100	0.20	400
TRMB321611 - YTRQN151	150	25	100	0.20	400
TRMB321611 - YTRQN201	200	25	100	0.25	300
TRMB321611 - YTRQN221	220	25	100	0.30	300
TRMB321611 - YTRQN301	300	25	100	0.30	300
TRMB321611 - YTRQN351	350	25	100	0.30	300
TRMB321611 - YTRQN401	400	25	100	0.30	300
TRMB321611 - YTRQN601	600	25	100	0.35	300
TRMB321611 - YTRQN102	1000	25	100	0.40	200
TRMB321611 - YTRQN122	1200	25	100	0.40	200
TRMB321611 - YTRQN152	1500	25	100	0.45	200

Order Codes

Order Codes (TRMB)

TRMB160808	Y	TR	Y	H	100

Part Number		Impedance Tolerance		Package		Design Code		Current		Impedance	
TRMB100505	0402	Y	± 25%	TR	Taping Reel	Y	ui:200	H	High Current	060	6 Ω
TRMB160808	0603	M	± 20%			Q	ui:75	N	General Current	100	10 Ω
TRMB201209	0805									330	33 Ω
TRMB321611	1206									152	1500 Ω

General Information

Token Cuts Inductor Size and Cost

Token utilizes the latest technology enabling the most cost-effective designs in manufacturing inductors. The 0402, 0603, 0805, 1206, 1210, to 1812 series of RF Miniature Inductors all contain wire wound or multi-layer technology with material substrate in ceramic or ferrite cores. Thus providing economic cost with the ultimate performance demanded by today's RF applications. Inductors feature high Q factor, SRFs (self-resonant or series resonant frequency), and Idc (maximum current carrying capacity).

How to quickly search RF inductors for all of the characteristics?

Searching and comparing data sheets of inductor manufacturers can be time consuming.
Token's Parameter Sorting Search Mode allows selection of inductors based on different parameters.
To enter Searching Mode:

- By entering just the inductance value,
- By sorting parameter to narrow down searching range,
- Or by enter keyword / part number / size dimensions L*W*H to partial or exact searching.

Inductors Selection Notes:

For choke applications, the SRFs (self-resonant or series resonant frequency) is the frequency that provides the best signal blocking.

- At the SRF, impedance is at its maximum.
- At frequencies below the SRF, impedance increases with frequency.
- At frequencies above the SRF, impedance decreases with frequency.

For higher order filter or impedance matching applications, in general, the choice of inductance value typically determines the SRF and vice versa. The higher the inductance value, the lower the SRF, due to increased winding capacitance. It is more important to have a relatively flat inductance curve (constant inductance vs. frequency) near the required frequency. This suggests selecting an inductor with an SRF well above the design frequency. A rule of thumb is to select an inductor with an SRF that is a decade (10X) higher than the operating frequency.

What is Q factor? High Q leads to low insertion loss, minimizing power consumption, and narrow bandwidth. It is important if the inductor is to be used as part of an LC (oscillator) circuit or in narrow band pass applications. In general, wire wound inductors have much higher Q values than multilayer inductors of the same size and value. Token's material science and manufacturing expertise effectively bridges the gap between wire-wound performance and multi-layer inductors with its TRMF100505 (EIA 0402) and TRMI160808 (EIA 0603) series.

How does current requirement affect inductor? Higher current requires larger wire or more threads of the same wire size to keep losses and temperature rise to a minimum. Larger wire lowers the DCR and increases the Q factor. Using a ferrite core inductor with a lower turn count can achieve higher current capacity and lower DCR. Ferrite, however, may introduce new limitations such as larger variation of inductance with temperature, looser tolerances, lower Q, and reduced saturation current ratings. Token's ferrite inductors with open magnetic structures, will not saturate, even at full rated current.