

積層式芯片 大电流磁珠

▶ 產品簡介

磁珠 (bead) 通常匝數較少，是一種能量消耗器件，用來在一些 RF 電路中吸收高頻信號，在對高頻信號表現出高阻抗，將信號轉化為熱能，磁珠的主要原料為鐵氧體。鐵氧體是一種立方晶格結構的亞鐵磁性材料。這種材料的特點是高頻損耗非常大，具有很高的導磁率，它可以使電感的線圈繞組之間在高頻高阻的情況下產生的電容最小。

鐵氧體抑制元件廣泛應用於印製電路板、電源線和資料線上。如在印製板的電源線入口端加上鐵氧體抑制元件，就可以濾除高頻干擾。鐵氧體磁環或磁珠專用於抑制信號線、電源線上的高頻干擾和尖峰干擾，它也具有吸收靜電放電脈衝干擾的能力。

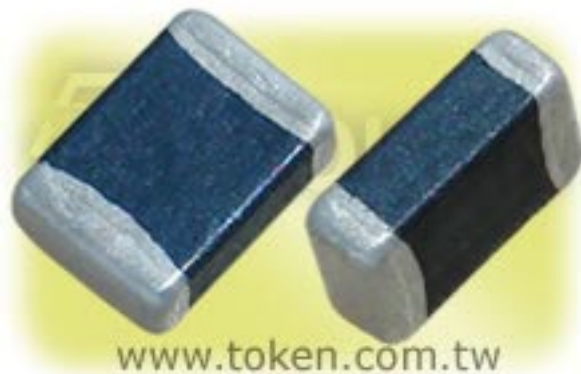
德鍵電子生產的大電流積層贴片磁珠採用封閉磁路結構，積層贴片磁珠可高密度安裝並避免干擾，符合RoHS規範、Lead-Free無鉛環保要求、無鉛銲接對技術。

▶ 特性:

- 低直流阻抗
- 效的EMI保護
- 多種尺寸可供選擇
- 良好的焊錫性及耐熱性

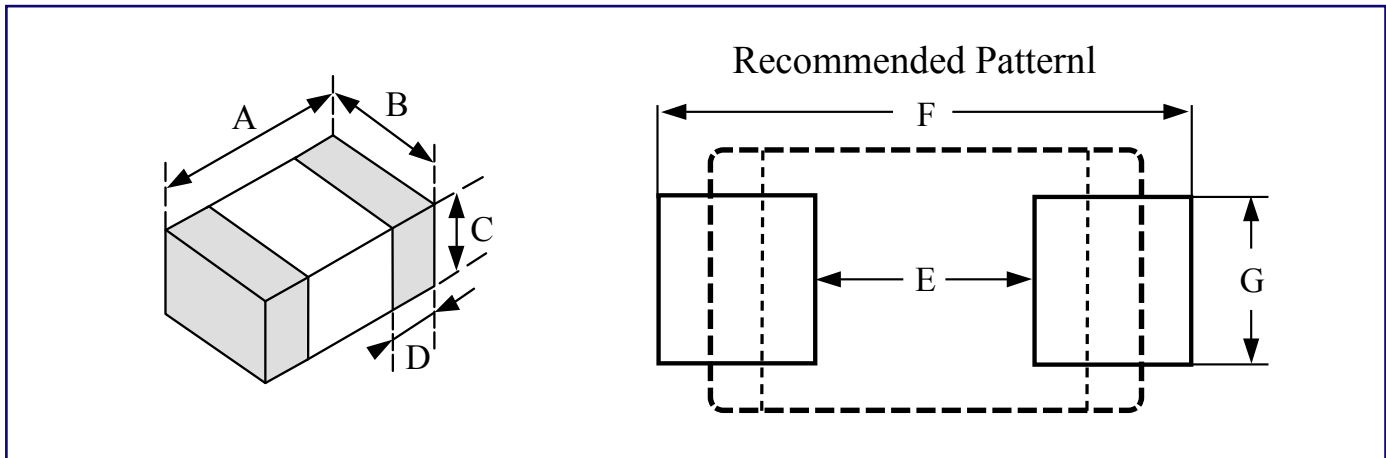
▶ 用途:

- 個人電腦
- 便攜式設備
- CD - ROM光碟機，硬盤，調制解調器，打印機



www.token.com.tw

▶ 磁珠電感 TRMA 系列 – 外形尺寸



型號	A	B	C	D	E	F	G
TRMA100505 (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
TRMA160808 (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
TRMA201209 (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
TRMA321611 (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
TRMA322513 (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
TRMA451616 (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
TRMA453215 (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

▶ TRMA100505 標準電氣特性規格 – EIA 0402 尺寸

產品料號	阻抗值 (Ω)	誤差值 (± %)	測試頻率 (MHz)	直流阻抗 (Ω)(max)	定格電流 (mA)(max)
TRMA100505 - YTRYH100	10	25	100	0.030	1000

▶ TRMA160808 標準電氣特性規格 – EIA 0603 尺寸

產品料號	阻抗值 (Ω)	誤差值 (± %)	測試頻率 (MHz)	直流阻抗 (Ω)(max)	定格電流 (mA)(max)
TRMA160808 - YTRYH100	10	25	100	0.020	4000
TRMA160808 - YTRYH110	11	25	100	0.020	4000
TRMA160808 - YTRYH150	15	25	100	0.030	3000
TRMA160808 - YTRYH170	17	25	100	0.030	3000
TRMA160808 - YTRYH190	19	25	100	0.030	3000
TRMA160808 - YTRYH200	20	25	100	0.030	3000
TRMA160808 - YTRYH220	22	25	100	0.030	3000
TRMA160808 - YTRYH250	25	25	100	0.030	3000
TRMA160808 - YTRYH300	30	25	100	0.030	3000

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產品料號	阻抗值 (Ω)	誤差值 (± %)	測試頻率 (MHz)	直流阻抗 (Ω)(max)	定格電流 (mA)(max)
TRMA160808 - YTRYH310	31	25	100	0.030	3000
TRMA160808 - YTRYH320	32	25	100	0.035	3000
TRMA160808 - YTRYH330	33	25	100	0.035	3000
TRMA160808 - YTRYH400	40	25	100	0.035	3000
TRMA160808 - YTRYH470	47	25	100	0.040	3000
TRMA160808 - YTRYH500	50	25	100	0.040	3000
TRMA160808 - YTRYH560	56	25	100	0.040	3000
TRMA160808 - YTRYH600	60	25	100	0.040	3000
TRMA160808 - YTRYH680	68	25	100	0.050	2500
TRMA160808 - YTRYH700	70	25	100	0.050	2500
TRMA160808 - YTRYH750	75	25	100	0.050	2500
TRMA160808 - YTRYH800	80	25	100	0.050	2500
TRMA160808 - YTRYH900	90	25	100	0.050	2500
TRMA160808 - YTRYH101	100	25	100	0.050	2500
TRMA160808 - YTRYH121	120	25	100	0.080	2500
TRMA160808 - YTRYH151	150	25	100	0.085	2000
TRMA160808 - YTRYH181	180	25	100	0.090	2000
TRMA160808 - YTRYH201	200	25	100	0.095	2000
TRMA160808 - YTRYH221	220	25	100	0.100	2000
TRMA160808 - YTRYH241	240	25	100	0.120	1500
TRMA160808 - YTRYH301	300	25	100	0.120	1500
TRMA160808 - YTRYH331	330	25	100	0.120	1500
TRMA160808 - YTRYH401	400	25	100	0.120	1500
TRMA160808 - YTRYH451	450	25	100	0.150	1500
TRMA160808 - YTRYH471	470	25	100	0.150	1500
TRMA160808 - YTRYH501	500	25	100	0.150	1500
TRMA160808 - YTRYH601	600	25	100	0.200	1000
TRMA160808 - YTRYH701	700	25	100	0.250	800
TRMA160808 - YTRYH751	750	25	100	0.250	800
TRMA160808 - YTRYH801	800	25	100	0.250	800
TRMA160808 - YTRYH102	1000	25	100	0.250	800
TRMA160808 - YTRYH152	1500	25	100	0.400	500

▶ TRMA201209 標準電氣特性規格 - EIA 0805 尺寸

產品料號	阻抗值 (Ω)	誤差值 (± %)	測試頻率 (MHz)	直流阻抗 (Ω)(max)	定格電流 (mA)(max)
TRMA201209 - YTRYH110	11	25	100	0.010	6000
TRMA201209 - YTRYH130	13	25	100	0.020	5000
TRMA201209 - YTRYH150	15	25	100	0.020	5000
TRMA201209 - YTRYH170	17	25	100	0.020	5000
TRMA201209 - YTRYH190	19	25	100	0.020	4000
TRMA201209 - YTRYH220	22	25	100	0.020	4000
TRMA201209 - YTRYH260	26	25	100	0.020	4000
TRMA201209 - YTRYH280	28	25	100	0.020	4000
TRMA201209 - YTRYH300	30	25	100	0.020	4000
TRMA201209 - YTRYH310	31	25	100	0.020	4000
TRMA201209 - YTRYH320	32	25	100	0.020	4000
TRMA201209 - YTRYH390	39	25	100	0.020	3000
TRMA201209 - YTRYH400	40	25	100	0.020	3000
TRMA201209 - YTRYH420	42	25	100	0.025	3000
TRMA201209 - YTRYH500	50	25	100	0.025	3000
TRMA201209 - YTRYH600	60	25	100	0.030	3000
TRMA201209 - YTRYH700	70	25	100	0.040	3000
TRMA201209 - YTRYH750	75	25	100	0.040	3000
TRMA201209 - YTRYH800	80	25	100	0.040	3000
TRMA201209 - YTRYH900	90	25	100	0.040	3000
TRMA201209 - YTRYH101	100	25	100	0.040	3000
TRMA201209 - YTRYH121	120	25	100	0.040	3000
TRMA201209 - YTRYH131	130	25	100	0.050	2500
TRMA201209 - YTRYH151	150	25	100	0.050	2500
TRMA201209 - YTRYH181	180	25	100	0.050	2500
TRMA201209 - YTRYH201	200	25	100	0.050	2500
TRMA201209 - YTRYH221	220	25	100	0.080	2000
TRMA201209 - YTRYH241	240	25	100	0.080	2000
TRMA201209 - YTRYH251	250	25	100	0.080	2000
TRMA201209 - YTRYH301	300	25	100	0.080	2000
TRMA201209 - YTRYH331	330	25	100	0.080	2000
TRMA201209 - YTRYH391	390	25	100	0.100	2000
TRMA201209 - YTRYH401	400	25	100	0.100	2000
TRMA201209 - YTRYH451	450	25	100	0.100	2000
TRMA201209 - YTRYH471	470	25	100	0.100	2000

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產品料號	阻抗值 (Ω)	誤差值 (\pm %)	測試頻率 (MHz)	直流阻抗 (Ω)(max)	定格電流 (mA)(max)
TRMA201209 - YTRYH501	500	25	100	0.100	2000
TRMA201209 - YTRYH601	600	25	100	0.100	2000
TRMA201209 - YTRYH751	750	25	100	0.120	1500
TRMA201209 - YTRYH102	1000	25	100	0.120	1500
TRMA201209 - YTRYH152	1500	25	100	0.300	1000

▶ TRMA321611 标准電氣特性規格 - EIA 1206 尺寸

產品料號	阻抗值 (Ω)	誤差值 (±%)	測試頻率 (MHz)	直流阻抗 (Ω)(max)	定格電流 (mA)(max)
TRMA321611 - YTRYH070	7	25	100	0.015	6000
TRMA321611 - YTRYH080	8	25	100	0.015	6000
TRMA321611 - YTRYH110	11	25	100	0.015	6000
TRMA321611 - YTRYH190	19	25	100	0.015	6000
TRMA321611 - YTRYH260	26	25	100	0.015	6000
TRMA321611 - YTRYH300	30	25	100	0.015	4000
TRMA321611 - YTRYH310	31	25	100	0.015	4000
TRMA321611 - YTRYH320	32	25	100	0.015	4000
TRMA321611 - YTRYH350	35	25	100	0.015	4000
TRMA321611 - YTRYH400	40	25	100	0.015	4000
TRMA321611 - YTRYH420	42	25	100	0.015	4000
TRMA321611 - YTRYH480	48	25	100	0.020	4000
TRMA321611 - YTRYH500	50	25	100	0.020	4000
TRMA321611 - YTRYH520	52	25	100	0.020	4000
TRMA321611 - YTRYH600	60	25	100	0.020	4000
TRMA321611 - YTRYH680	68	25	100	0.020	4000
TRMA321611 - YTRYH700	70	25	100	0.020	4000
TRMA321611 - YTRYH750	75	25	100	0.025	3000
TRMA321611 - YTRYH800	80	25	100	0.025	3000
TRMA321611 - YTRYH900	90	25	100	0.030	3000
TRMA321611 - YTRYH101	100	25	100	0.030	2500
TRMA321611 - YTRYH121	120	25	100	0.030	2500
TRMA321611 - YTRYH151	150	25	100	0.040	2000
TRMA321611 - YTRYH201	200	25	100	0.050	2000
TRMA321611 - YTRYH221	220	25	100	0.050	2000
TRMA321611 - YTRYH121	120	25	100	0.030	2500
TRMA321611 - YTRYH151	150	25	100	0.040	2000
TRMA321611 - YTRYH201	200	25	100	0.050	2000
TRMA321611 - YTRYH221	220	25	100	0.050	2000
TRMA321611 - YTRYH301	300	25	100	0.060	2000
TRMA321611 - YTRYH331	330	25	100	0.060	2000
TRMA321611 - YTRYH391	390	25	100	0.060	2000
TRMA321611 - YTRYH401	400	25	100	0.100	2000
TRMA321611 - YTRYH501	500	25	100	0.100	2000
TRMA321611 - YTRYH601	600	25	100	0.100	2000
TRMA321611 - YTRYH102	1000	25	50	0.150	1200
TRMA321611 - YTRYH122	1200	25	50	0.180	1000
TRMA321611 - YTRYH152	1500	25	50	0.200	800

▶ TRMA322513 标准電氣特性規格 - EIA 1210 尺寸

產品料號	阻抗值 (Ω)	誤差值 (± %)	測試頻率 (MHz)	直流阻抗 (Ω)(max)	定格電流 (mA)(max)
TRMA322513 - YTRYH190	19	25	100	0.025	4000
TRMA322513 - YTRYH320	32	25	100	0.025	4000
TRMA322513 - YTRYH600	60	25	100	0.025	4000
TRMA322513 - YTRYH900	90	25	100	0.025	3000

▶ TRMA451616 标准電氣特性規格 - EIA 1210 尺寸

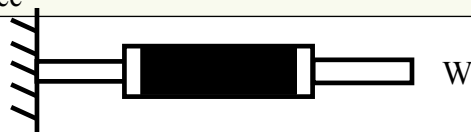
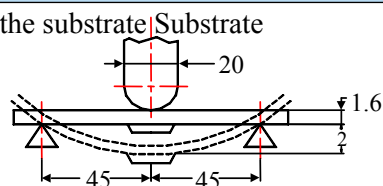
產品料號	阻抗值 (Ω)	誤差值 (± %)	測試頻率 (MHz)	直流阻抗 (Ω)(max)	定格電流 (mA)(max)
TRMA451616 - YTRYH190	19	25	100	0.020	6000
TRMA451616 - YTRYH400	40	25	100	0.020	6000
TRMA451616 - YTRYH500	50	25	100	0.020	6000
TRMA451616 - YTRYH600	60	25	100	0.020	5000
TRMA451616 - YTRYH700	70	25	100	0.025	5000
TRMA451616 - YTRYH750	75	25	100	0.025	5000
TRMA451616 - YTRYH800	80	25	100	0.025	4000
TRMA451616 - YTRYH900	90	25	100	0.100	2000
TRMA451616 - YTRYH101	100	25	100	0.100	2000
TRMA451616 - YTRYH151	150	25	100	0.100	2000
TRMA451616 - YTRYH191	190	25	100	0.100	2000
TRMA451616 - YTRYH301	300	25	100	0.100	2000
TRMA451616 - YTRYH471	470	25	100	0.100	2000
TRMA451616 - YTRYH601	600	25	100	0.100	2000
TRMA451616 - YTRYH851	850	25	100	0.100	2000
TRMA451616 - YTRYH102	1000	25	100	0.100	2000
TRMA451616 - YTRYH132	1300	25	100	0.100	2000

▶ TRMA453215 标准電氣特性規格 - EIA 1812 尺寸

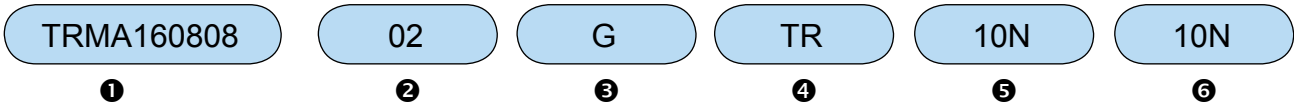
產品料號	阻抗值 (Ω)	誤差值 (± %)	測試頻率 (MHz)	直流阻抗 (Ω)(max)	定格電流 (mA)(max)
TRMA453215 - YTRYH190	19	25	100	0.030	6000
TRMA453215 - YTRYH300	30	25	100	0.030	6000
TRMA453215 - YTRYH470	47	25	100	0.030	6000
TRMA453215 - YTRYH500	50	25	100	0.030	6000
TRMA453215 - YTRYH600	60	25	100	0.030	6000
TRMA453215 - YTRYH700	70	25	100	0.030	6000
TRMA453215 - YTRYH800	80	25	100	0.030	4000
TRMA453215 - YTRYH900	90	25	100	0.030	4000
TRMA453215 - YTRYH121	120	25	100	0.030	4000
TRMA453215 - YTRYH125	125	25	100	0.030	4000
TRMA453215 - YTRYH151	150	25	100	0.030	4000
TRMA453215 - YTRYH191	190	25	100	0.030	4000

▶ 片式芯片磁珠 (TRMA 系列) - 環境特性

項目	特性	測試方法
彎曲強度	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: 100×40×1.6mm Deflection: 2.0mm Keeping Time: 30sec For 0402, substrate dimension is 100×40×0.8mm
耐振動		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
耐焊接熱	Appearance: No damage More than 75% of the terminal electrode should be covered with solder. Impedance: within± 30% of initial value	Pre-heating: 150°C, 1min Solder Temperature: 260 ± 5°C Immersion Time: 10 ± 1sec
可焊性	The electrodes shall be at least 90% covered with new solder coating	Pre-heating: 150°C, 1min Solder Temperature: 245 ± 5°C Immersion Time: 4 ± 1sec
端子拉引強度	0402 series : ≥0.2kg 0603 series : ≥0.5kg 0805 series : ≥1.0kg other series : ≥ 2.0kg	Test device shall be soldered on the substrate
溫度周期	Appearance: No damage Impedance: within ± 30% of initial value	One cycle: One cycle/step1: -55 ± 3°C for 30min step2: 25 ± 2°C for 3.0min step3: 125 ± 3°C for 30min step4: 25 ± 2°C for 3.0min Total: 100cycles Measured after exposure in the room condition for 24hrs
防潮性能		Temperature: 40 ± 2°C Relative Humidity: 90 ~ 95% time: 1000hrs Measured after exposure in the room condition for 24hrs
耐高溫		Temperature: 125 ± 3°C Relative Humidity : 0% Applied Current: Rated Current time: 1000hrs Measured after exposure in the room condition for 24hrs
低溫特性		Temperature: -55 ± 3°C TR elative Humidity : 0% time: 1000hrs Measured after exposure in the room condition for 24hrs



▶ 料號標識



❶ 型號:

編碼	型號
TRMA100505	0402
TRMA160808	0603
TRMA201209	0805
TRMA321611	1206
TRMA322513	1210
TRMA451616	1806
TRMA453215	1812

❷ 阻值公差

編碼	阻值公差
Y	± 25%
M	± 20%

❸ 包裝方式: TR (編帶卷裝)

❹ 設計規範

編碼	設計規範
Y	ui:200
Q	ui:75

❺ 電流

編碼	電流
H	高電流
N	標準電流

❻ 阻抗

編碼	阻抗
100	10 Ω
110	11 Ω
451	450 Ω
152	1500 Ω