

Molding High Current Alloy-TRMC-SA Series

The TRMC-SA series is designed with a low-profile form factor, featuring low DC resistance (RDC) and ultra-high current capacity. Its molded, magnetically shielded construction is suitable for high-density mounting and produces ultra-low buzzing noise. Soldering conditions can be easily verified during board mounting. This series is also available with embossed carrier tape packaging for automatic mounting machines.



Features



- RoHS, Halogen Free, Lead-Free & REACH Compliant
- High Current, Low Loss, High Efficiency, Ultra-Low Noise
- High reliability – AEC-Q200 Automotive Certified

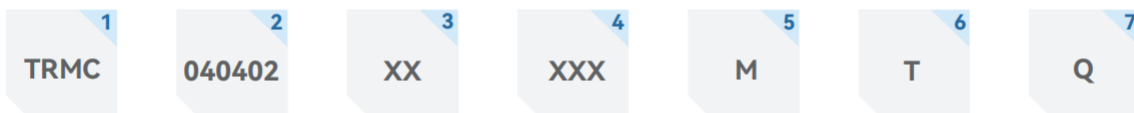
Applications

- Automotive applications

Operating Temp

- -55°C~+155°C

Product Identification



1	Product Symbol
TRMC	SMD Power Inductor

2	External Dimensions(mm)
040402	4.2*4.0*2.1
050503	5.45*5.25*2.8
070703	6.95*6.6*2.8
070745	7.2*6.6*4.3
080754	7.7*7.2*5.2
111004	10.85*10.0*3.8
111054	10.85*10.0*5.2
141365	13.45*12.6*6.2

3	Internal Code
SA	Alloy Powder
CA	Alloy Powder (T-type terminal)

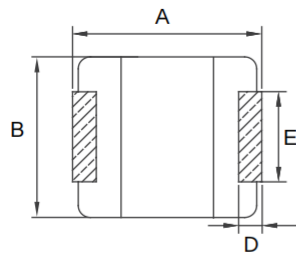
4	Nominal Inductance
R47	0.47μH
1R0	1.0μH

5	Inductance Tolerance
M	±20%

6	Packing
T	Tape Carrier Package

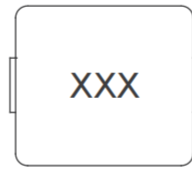
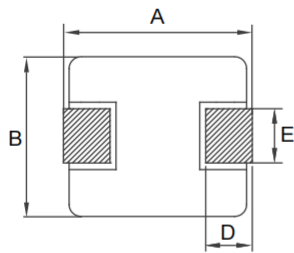
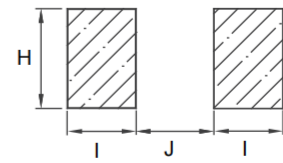
7	Internal Code
Q	Automotive grade

Shape and Dimensions



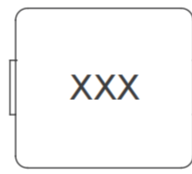
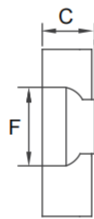
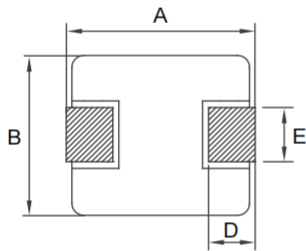
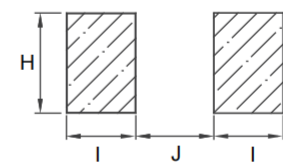
Remark:TRMC040402SA

Recommended pattern



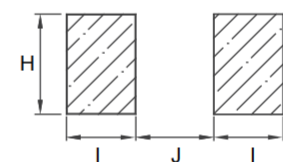
Remark:TRMC050503SA

Recommended pattern



Remark:TRMC070703CA-TRMC141365CA

Recommended pattern



Dimensions

Unit:mm

Series	A	B	C	D	E	F	H Typ.	I Typ.	J Typ.
TRMC040402SA	4.2±0.3	4.0±0.3	2.1Max.	0.8±0.3	3.0±0.3	\	3.5	1.5	2
TRMC050503SA	5.45±0.35	5.25±0.2	2.8±0.2	1.02±0.3	2.54±0.25	\	2.79	1.905	3
TRMC070703CA	6.95±0.35	6.6±0.2	2.8±0.2	1.27±0.3	3.18±0.3	4.3±0.3	3.43	2.41	3
TRMC070745CA	7.2±0.3	6.6±0.3	4.3±0.2	1.6±0.3	3.0±0.3	4.5±0.3	3.5	2.8	3
TRMC080754CA	7.7±0.35	7.2±0.3	5.2±0.2	2.0±0.3	3.0±0.3	5.3±0.3	3.5	3.355	3
TRMC111004CA	10.85±0.35	10.0±0.3	3.8±0.2	2.5±0.5	4.5±0.3	6.5±0.3	4.95	3.135	6
TRMC111054CA	10.85±0.35	10.0±0.3	5.2±0.2	2.2±0.5	4.5±0.3	6.5±0.3	5	3.99	5
TRMC141365CA	13.45±0.35	12.6±0.2	6.2±0.3	2.35±0.5	4.7±0.3	9.2±0.5	4.96	3.225	8

Specification

TRMC040402SA Series

Operating Temp: -55℃~+165℃

Part Number	Inductance	Saturation Current		Heating Rating Current		DC Resistance
	L (μH)	Isat (A)		Irms (A)		DCR (mΩ)
	±20 %	Max.	Typ.	Max.	Typ.	Max.
TRMC040402SAR10MTQ	0.10	21.40	25.00	18.90	21.00	2.28
TRMC040402SAR22MTQ	0.22	11.70	13.70	10.30	11.40	6.40
TRMC040402SAR33MTQ	0.33	11.50	13.50	9.80	10.90	7.00
TRMC040402SAR40MTQ	0.40	10.80	12.60	9.60	10.70	7.20
TRMC040402SAR47MTQ	0.47	9.40	10.90	9.50	10.60	7.60
TRMC040402SAR60MTQ	0.60	8.90	10.40	10.90	12.10	9.30
TRMC040402SAR68MTQ	0.68	8.10	9.50	8.20	9.10	10.30

TRMC040402SA Series

Operating Temp: -55℃~+165℃

Part Number	Inductance	Saturation Current		Heating Rating Current		DC Resistance
	L (μH)	Isat (A)		Irms (A)		DCR (mΩ)
	±20 %	Max.	Typ.	Max.	Typ.	Max.
TRMC040402SA1R0MTQ	1.0	6.70	7.90	8.00	8.90	10.50
TRMC040402SA1R5MTQ	1.5	5.30	6.20	6.50	7.30	15.40
TRMC040402SA2R2MTQ	2.2	4.50	5.30	5.30	5.80	23.00
TRMC040402SA3R3MTQ	3.3	3.40	4.00	4.10	4.60	36.80
TRMC040402SA4R7MTQ	4.7	3.60	4.60	3.60	4.00	53.80
TRMC040402SA5R6MTQ	5.6	2.50	2.90	3.00	3.40	71.10
TRMC040402SA6R8MTQ	6.8	2.20	2.60	2.60	2.90	92.50
TRMC040402SA8R2MTQ	8.2	2.10	2.50	2.30	2.60	118.50
TRMC040402SA100MTQ	10	2.00	2.40	2.20	2.50	129.00

TRMC050503SA Series

Part Number	Inductance	Saturation Current		Heating Rating Current		DC Resistance
	L (μH)	Isat (A)		Irms (A)		DCR (mΩ)
	±20 %	Max.	Typ.	Max.	Typ.	Max.
TRMC050503SAR33MTQ	0.33	9.60	11.20	15.00	16.70	5.00
TRMC050503SAR68MTQ	0.68	10.00	11.70	10.20	11.30	9.74
TRMC050503SA1R0MTQ	1.0	6.50	8.00	9.70	10.80	11.50
TRMC050503SA1R5MTQ	1.5	5.90	7.10	7.40	8.20	17.70
TRMC050503SA2R2MTQ	2.2	5.10	6.30	6.40	7.10	23.00
TRMC050503SA3R3MTQ	3.3	4.70	5.50	5.00	5.50	38.00
TRMC050503SA4R7MTQ	4.7	3.90	4.50	3.90	4.40	59.00
TRMC050503SA6R8MTQ	6.8	3.00	3.50	3.10	3.50	92.00
TRMC050503SA100MTQ	10	2.00	2.35	2.50	2.80	129.50

TRMC070703CA Series

Part Number	Inductance	Saturation Current		Heating Rating Current		DC Resistance
	L (μH)	Isat (A)		Irms (A)		DCR (mΩ)
	±20 %	Max.	Typ.	Max.	Typ.	Max.
TRMC070703CAR47MTQ	0.47	14.00	16.30	15.30	17.00	4.62
TRMC070703CAR68MTQ	0.68	11.00	13.00	14.10	16.50	5.30
TRMC070703CA1R0MTQ	1.0	11.10	13.00	11.70	13.00	7.80
TRMC070703CA1R5MTQ	1.5	9.90	11.60	9.50	10.60	12.50
TRMC070703CA2R2MTQ	2.2	6.90	8.00	8.10	9.00	16.50
TRMC070703CA3R3MTQ	3.3	7.10	8.30	6.80	7.50	26.00
TRMC070703CA4R7MTQ	4.7	5.10	6.00	5.40	6.00	33.40
TRMC070703CA6R8MTQ	6.8	3.90	4.50	5.00	5.50	46.80
TRMC070703CA100MTQ	10	3.00	3.50	3.60	4.00	70.50
TRMC070703CA150MTQ	15	2.40	2.80	2.90	3.20	110.00
TRMC070703CA220MTQ	22	2.10	2.40	2.50	2.80	174.00

TRMC070745CA Series

Part Number	Inductance	Saturation Current		Heating Rating Current		DC Resistance
	L (μH)	Isat (A)		Irms (A)		DCR (mΩ)
	±20 %	Max.	Typ.	Max.	Typ.	Max.
TRMC070745CAR22MTQ	0.22	49.00	57.20	20.00	22.20	2.40
TRMC070745CAR47MTQ	0.47	21.00	25.00	16.30	18.10	3.60
TRMC070745CA1R0MTQ	1.0	16.50	23.90	12.00	13.30	6.20
TRMC070745CA1R5MTQ	1.5	15.00	19.70	10.40	11.60	8.10
TRMC070745CA2R2MTQ	2.2	14.00	19.40	8.80	9.80	11.40
TRMC070745CA3R3MTQ	3.3	13.50	17.70	6.80	7.60	18.80
TRMC070745CA4R7MTQ	4.7	11.20	14.80	6.10	6.70	24.20
TRMC070745CA6R8MTQ	6.8	10.10	12.10	4.70	5.20	39.60
TRMC070745CA8R2MTQ	8.2	8.80	10.20	4.50	5.00	48.00

TRMC070745CA Series

Part Number	Inductance	Saturation Current		Heating Rating Current		DC Resistance
	L (μH)	Isat (A)		Irms (A)		DCR (mΩ)
	±20 %	Max.	Typ.	Max.	Typ.	Max.
TRMC070745CA100MTQ	10	8.20	9.60	3.90	4.30	57.50
TRMC070745CA150MTQ	15	5.30	6.20	3.40	3.70	79.20
TRMC070745CA220MTQ	22	4.10	5.20	2.90	3.20	104.00
TRMC070745CA330MTQ	33	3.50	4.40	2.40	2.70	145.20
TRMC070745CA470MTQ	47	3.30	4.20	2.10	2.30	212.00
TRMC070745CA680MTQ	68	3.00	3.90	1.60	1.80	374.00
TRMC070745CA101MTQ	100	2.10	2.40	1.35	1.50	496.00

TRMC080754CA Series

Operating Temp: -55℃~+165℃

Part Number	Inductance	Saturation Current		Heating Rating Current		DC Resistance
	L (μH)	Isat (A)		Irms (A)		DCR (mΩ)
	±20 %	Max.	Typ.	Max.	Typ.	Max.
TRMC080754CA1R5MTQ	1.5	14.00	16.30	10.30	11.40	7.30
TRMC080754CA2R2MTQ	2.2	12.70	14.80	8.70	9.70	11.40
TRMC080754CA3R3MTQ	3.3	11.60	13.50	7.20	8.00	15.40
TRMC080754CA4R7MTQ	4.7	11.20	13.10	6.30	7.00	20.90
TRMC080754CA5R6MTQ	5.6	9.10	10.60	5.90	6.50	24.00
TRMC080754CA6R8MTQ	6.8	8.70	10.20	5.50	6.10	26.60
TRMC080754CA8R2MTQ	8.2	7.70	9.00	5.00	5.60	31.90
TRMC080754CA100MTQ	10	6.90	8.00	4.70	5.20	38.00
TRMC080754CA150MTQ	15	5.90	6.90	3.40	3.80	66.00
TRMC080754CA220MTQ	22	5.40	6.30	3.00	3.30	93.50
TRMC080754CA330MTQ	33	4.20	4.90	2.80	3.20	127.60
TRMC080754CA470MTQ	47	3.50	4.10	2.20	2.40	171.60
TRMC080754CA560MTQ	56	2.80	3.30	2.00	2.20	209.30
TRMC080754CA680MTQ	68	2.40	2.80	1.80	2.00	255.00
TRMC080754CA101MTQ	100	2.20	2.60	1.80	2.00	348.00

TRMC111004CA Series

Part Number	Inductance	Saturation Current		Heating Rating Current		DC Resistance
	L (μH)	Isat (A)		Irms (A)		DCR (mΩ)
	±20 %	Max.	Typ.	Max.	Typ.	Max.
TRMC111004CA1R0MTQ	1.0	17.50	20.40	21.30	23.70	3.10
TRMC111004CA1R5MTQ	1.5	13.00	16.60	15.80	18.70	4.92
TRMC111004CA2R2MTQ	2.2	11.90	13.90	11.10	12.30	8.76
TRMC111004CA3R3MTQ	3.3	10.30	12.00	9.90	11.00	11.80
TRMC111004CA4R7MTQ	4.7	9.40	11.00	8.80	9.80	15.00
TRMC111004CA6R8MTQ	6.8	8.20	9.60	8.20	9.10	21.50
TRMC111004CA8R2MTQ	8.2	6.10	7.10	6.90	7.70	29.00
TRMC111004CA100MTQ	10	5.50	6.40	6.80	7.50	33.00
TRMC111004CA150MTQ	15	4.60	5.40	5.40	6.00	49.00
TRMC111004CA220MTQ	22	3.90	4.60	4.50	5.00	73.30
TRMC111004CA330MTQ	33	3.50	4.20	3.60	4.00	102.00
TRMC111004CA470MTQ	47	2.70	3.20	2.70	3.00	178.00

TRMC111054CA Series

Operating Temp: -55℃~+165℃

Part Number	Inductance	Saturation Current		Heating Rating Current		DC Resistance
	L (μH)	Isat (A)		Irms (A)		DCR (mΩ)
	±20 %	Max.	Typ.	Max.	Typ.	Max.
TRMC111054CAR68MTQ	0.68	39.40	46.00	28.80	32.00	2.22
TRMC111054CA1R0MTQ	1.0	31.70	37.00	27.00	30.00	2.76
TRMC111054CA1R5MTQ	1.5	23.00	26.80	22.30	24.80	4.20
TRMC111054CA2R2MTQ	2.2	21.40	25.00	20.70	23.00	4.90

TRMC111054CA Series

Part Number	Inductance	Saturation Current		Heating Rating Current		DC Resistance
	L (μH)	Isat (A)		Irms (A)		DCR (mΩ)
	±20 %	Max.	Typ.	Max.	Typ.	Max.
TRMC111054CA3R3MTQ	3.3	16.30	19.00	16.80	18.70	7.40
TRMC111054CA4R7MTQ	4.7	13.50	15.70	13.00	14.50	10.00
TRMC111054CA6R8MTQ	6.8	11.40	13.30	10.80	12.00	14.00
TRMC111054CA8R2MTQ	8.2	11.10	13.00	9.50	10.60	20.70
TRMC111054CA100MTQ	10	10.90	12.70	7.80	8.70	24.20
TRMC111054CA150MTQ	15	7.90	9.20	6.80	7.60	31.30
TRMC111054CA220MTQ	22	7.50	8.80	5.40	6.00	50.00
TRMC111054CA330MTQ	33	6.50	7.60	4.30	4.80	75.30
TRMC111054CA470MTQ	47	4.20	4.90	3.60	4.10	103.00
TRMC111054CA680MTQ	68	3.60	4.20	3.00	3.30	152.00
TRMC111054CA101MTQ	100	3.00	3.50	2.50	2.80	234.00

TRMC141365CA Series

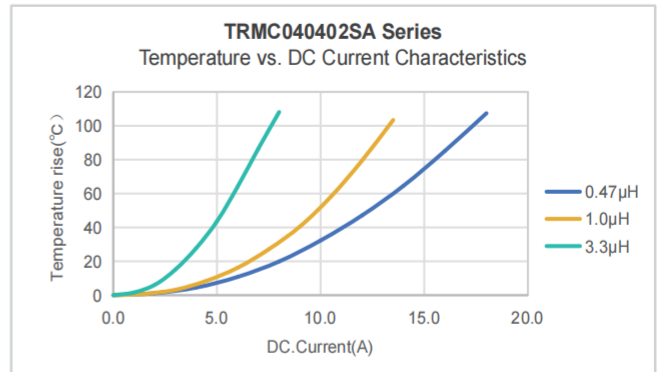
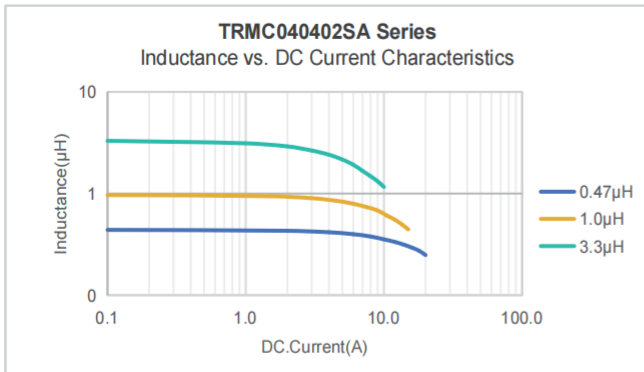
Part Number	Inductance	Saturation Current		Heating Rating Current		DC Resistance
	L (μH)	Isat (A)		Irms (A)		DCR (mΩ)
	±20 %	Max.	Typ.	Max.	Typ.	Max.
TRMC141365CA1R0MTQ	1.0	17.00	20.00	27.50	32.00	2.10
TRMC141365CA1R5MTQ	1.5	15.40	18.00	23.00	26.00	3.00
TRMC141365CA2R2MTQ	2.2	15.00	17.50	18.90	21.00	4.50
TRMC141365CA3R3MTQ	3.3	14.60	17.00	16.50	18.30	6.00
TRMC141365CA4R7MTQ	4.7	11.60	13.50	13.50	15.00	8.70
TRMC141365CA6R8MTQ	6.8	9.00	10.50	12.80	13.80	11.30
TRMC141365CA100MTQ	10	7.90	9.20	9.90	11.00	17.20
TRMC141365CA150MTQ	15	6.20	7.20	7.80	8.70	28.20
TRMC141365CA220MTQ	22	5.40	6.30	6.20	7.00	40.00
TRMC141365CA330MTQ	33	3.70	4.30	5.00	5.50	69.00
TRMC141365CA470MTQ	47	3.30	3.80	3.80	4.20	104.00

Notes

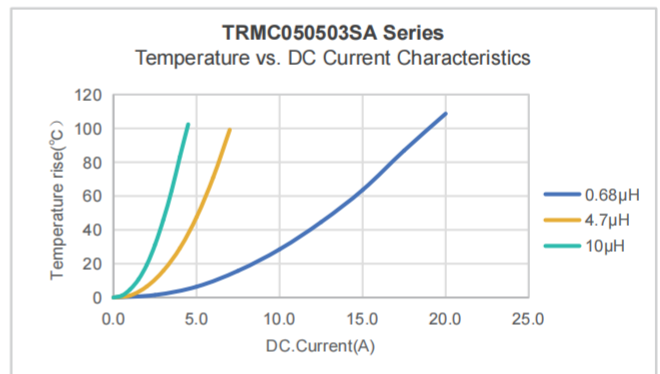
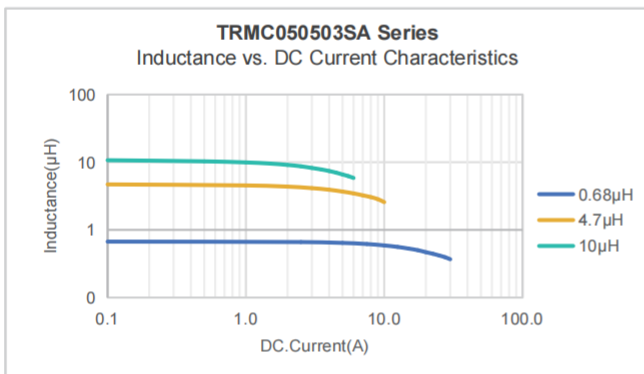
- Test frequency : L : 100KHz /0.1V.
- All test data for each model is referenced to a 25°C ambient temperature.
- The operating temperature range is from -55°C to an upper limit of 165°C for the TRMC040402SA series, TRMC080754CA series, TRMC111054CA series, and 155°C for other models.
- The heating current (Irms) is defined as the DC current that causes an approximate temperature rise (ΔT) of 40°C from the 25°C ambient reference.
- The saturation current (Isat) is defined as the DC current that causes the initial inductance (L0) to drop by a specified percentage. The typical drop rates are 30% or 20%, notably 35% for the TRMC111054CA (R68).
- The rated current listed is the lower value between the saturation current (Isat) and the heating current (Irms) (for applicable models).
- The total component temperature (ambient + temperature rise) must not exceed the maximum limit (155°C or 165°C) under worst-case conditions. The final temperature is affected by circuit design, placement, PCB traces, and cooling, and must be verified in the application.

Typical Characteristics Curves

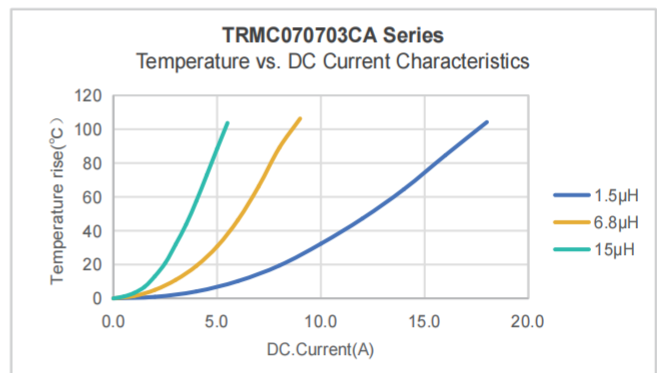
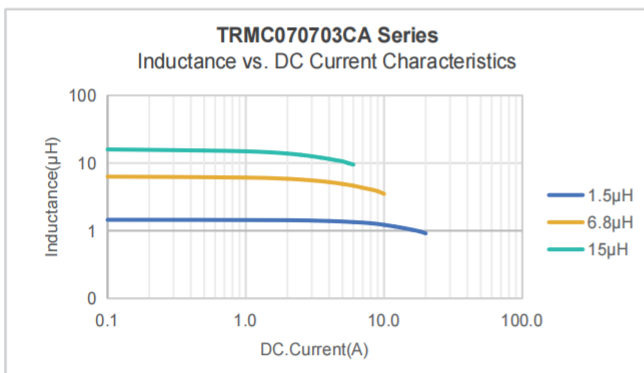
TRMC040402SA Series



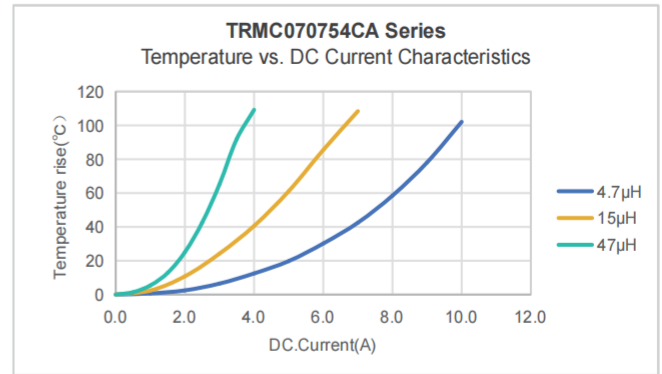
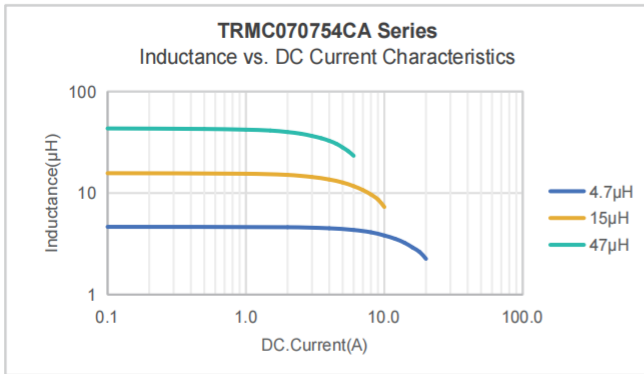
TRMC050503SA Series



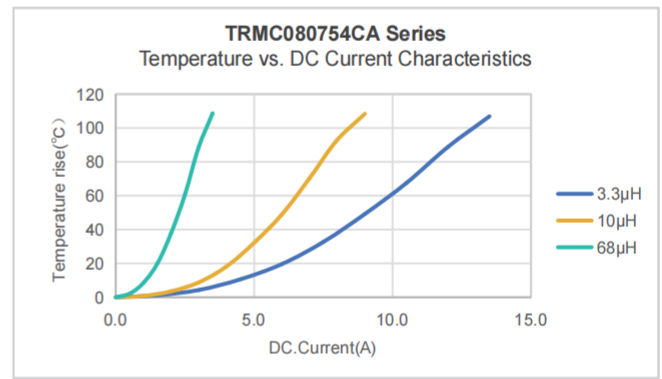
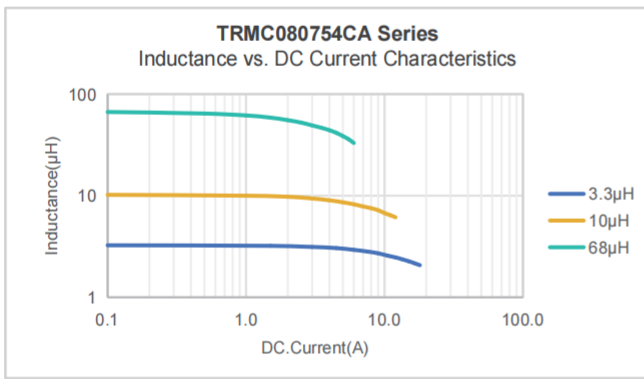
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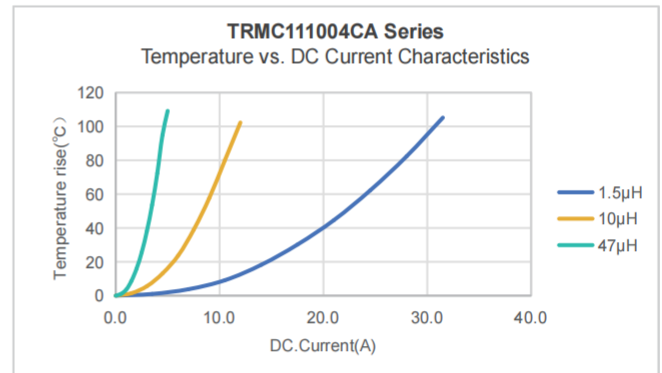
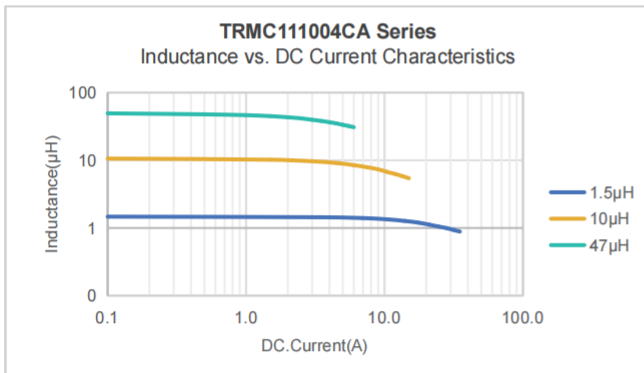
TRMC070754CA Series



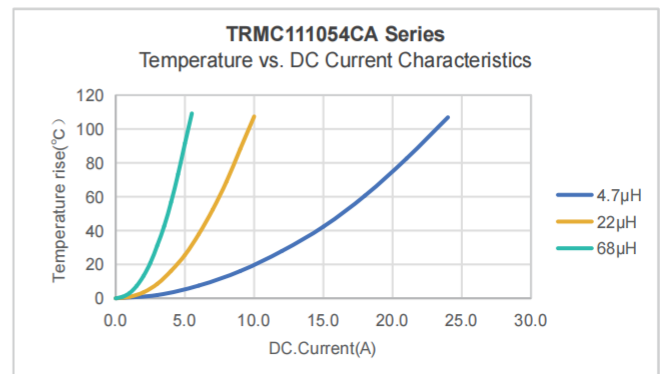
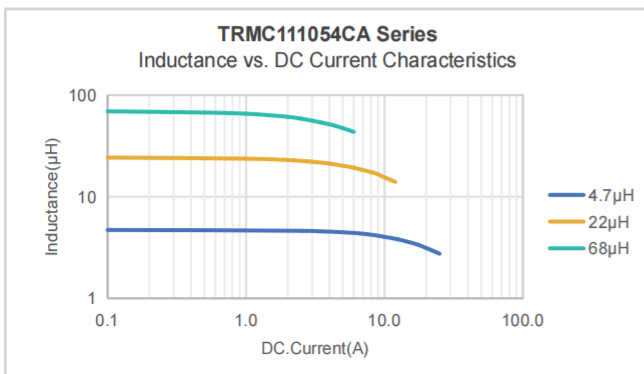
TRMC080754CA Series



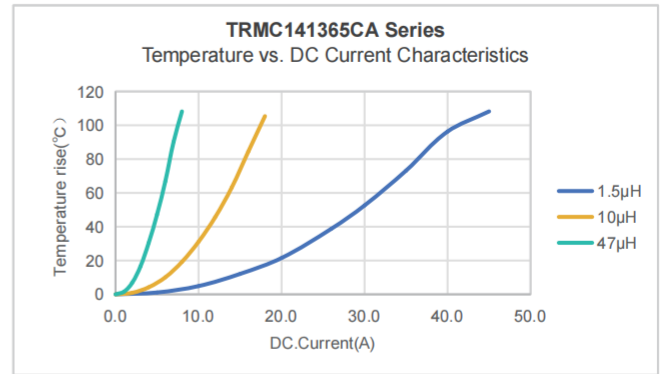
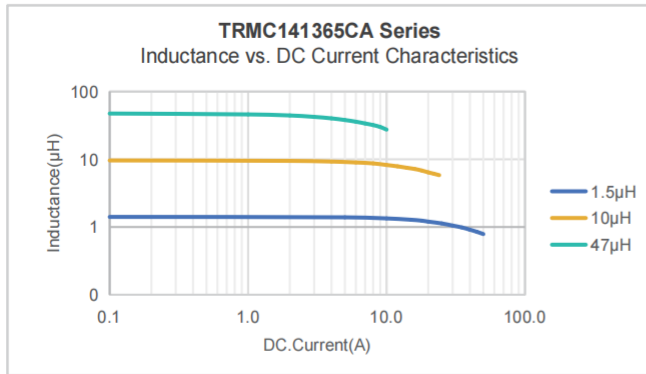
TRMC111004CA Series



TRMC111054CA Series

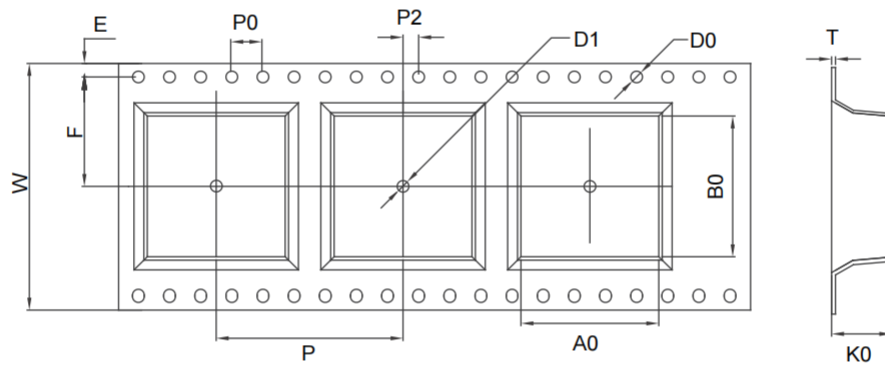


TRMC141365CA Series



Packaging Information

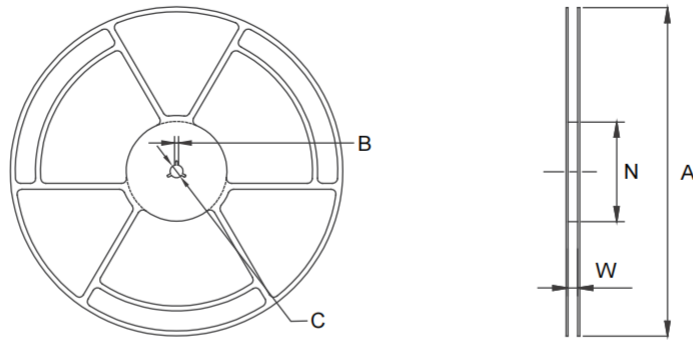
Tape Dimensions



Dimensions

Series	Tape Dimensions (mm)											
	W	P	P0	P2	D0	D1	T	A0	B0	K0	E	F
TRMC040402SA	12±0.3	8±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	4.4±0.1	4.7±0.1	2.4±0.1	1.75±0.1	5.5±0.1
TRMC050503SA	12±0.3	8±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	5.75±0.1	6.05±0.1	3.6±0.1	1.75±0.1	5.5±0.1
TRMC070703CA	16±0.3	12±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	7.0±0.1	7.7±0.1	3.4±0.1	1.75±0.1	7.5±0.1
TRMC070745CA	16±0.3	12±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.4±0.05	7.0±0.1	7.7±0.1	4.9±0.1	1.75±0.1	7.5±0.1
TRMC080754CA	16±0.3	12±0.1	4±0.1	2±0.1	1.55±0.1	1.55±0.1	0.45±0.05	7.7±0.1	8.2±0.1	5.7±0.1	1.75±0.1	7.5±0.1
TRMC111004CA	24±0.3	16±0.1	4±0.1	2±0.05	1.5±0.1	1.5±0.1	0.4±0.05	10.5±0.1	11.7±0.1	4.4±0.1	1.75±0.1	11.5±0.1
TRMC111054CA	24±0.3	16±0.1	4±0.1	2±0.05	1.5±0.1	1.5±0.1	0.4±0.05	10.4±0.1	11.6±0.1	5.8±0.1	1.75±0.1	11.5±0.1
TRMC141365CA	24±0.3	16±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.5±0.05	13.1±0.1	14.0±0.1	6.7±0.1	1.75±0.1	11.5±0.1

Reel Dimensions



Dimensions

Series	Reel Dimensions (mm)					Quantity
	A	W	N	B	C	Reel
TRMC040402SA	330+2.0	12.8+0.2	97+0.5	2.2+0.5	13.0±0.2	3000pcs / reel
TRMC050503SA	330+2.0	12.8+0.2	97+0.5	2.2+0.5	13.2±0.2	2000pcs / reel
TRMC070703CA	330+2.0	16.8+0.2	97+0.5	2.2+0.5	13.2±0.2	1500 pcs / reel
TRMC070745CA	330+2.0	16.8+0.2	97+0.5	2.2+0.5	13.2±0.2	1000pcs / reel
TRMC080754CA	330+2.0	16.8+0.2	97+0.5	2.2+0.5	13.2±0.2	500 pcs / reel
TRMC111004CA	330+2.0	24.0+0.5	97+0.5	2.2+0.5	13.0±0.2	500 pcs / reel
TRMC111054CA	330+2.0	24.0+0.5	97+0.5	2.2+0.5	13.0±0.2	500 pcs / reel
TRMC141365CA	330+2.0	16.8+0.2	97+0.5	2.2+0.5	13.2±0.2	500pcs / reel