

SMD Power Inductor

TMIM0503SV-Series(G)-D02

1. Features

1. Low loss realized with low DCR.
2. High performance realized by metal dust core.
3. Ultra low buzz noise, due to composite construction.
4. 100% Lead(Pb)-Free and RoHS compliant.
5. High reliability -Reliability test complied with AEC-Q200.



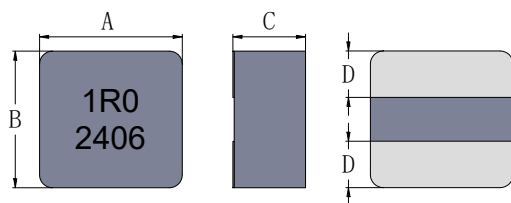
AEC-Q200



2. Applications

Automotive applications.

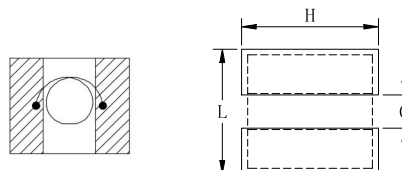
3. Dimensions



A	B	C	D
5.5±0.2	5.3±0.2	2.8±0.2	1.8±0.3

Unit: mm

Recommend PC Board Pattern



L	G	H
5.6	1.3	6.0

Note:

1. PCB layout is referred to standard IPC-7351B.
2. The above PCB layout reference only.
3. Recommend solder paste thickness at 0.12mm and above.

4. Part Numbering

TMIM	0503	SV	-	1R0	MG	-	D02
A	B	C		D	E		F

A: Series

B: Dimension

C: Material

D: Inductance

E: Inductance Tolerance

F: Code

AxBxC

1R0=1.0uH

M=±20%, G: Coating

Marking: Black, 1R0 and 2406 (24 YY, 06 WW, follow production date).

5. Specification

Part Number	Inductance (μ H) $\pm 20\%$ @ 0 A DC	I rms (A)		I sat (A)		DCR (m Ω)	
		Typ	Max	Typ	Max	Typ	Max
TMIM0503SV-R10MG-D02	0.10	52.0	44.0	73.0	65.0	0.66	0.76
TMIM0503SV-R15MG-D02	0.15	42.0	38.0	48.0	44.0	0.85	0.96
TMIM0503SV-R18MG-D02	0.18	35.0	32.0	40.0	35.0	1.1	1.32
TMIM0503SV-R20MG-D02	0.20	33.0	30.0	38.0	33.0	1.3	1.6
TMIM0503SV-R22MG-D02	0.22	31.0	28.0	34.0	30.0	1.3	1.6
TMIM0503SV-R33MG-D02	0.33	29.0	26.0	32.0	28.0	1.8	2.2
TMIM0503SV-R36MG-D02	0.36	27.0	24.5	30.0	26.0	1.9	2.3
TMIM0503SV-R47MG-D02	0.47	24.0	22.0	28.0	24.0	2.4	2.9
TMIM0503SV-R56MG-D02	0.56	22.0	20.0	25.0	22.0	2.7	3.3
TMIM0503SV-R68MG-D02	0.68	20.0	18.0	24.0	21.0	3.3	4.0
TMIM0503SV-R82MG-D02	0.82	18.0	16.5	22.0	19.0	4.1	4.9
TMIM0503SV-1R0MG-D02	1.00	17.0	15.5	19.5	17.0	5.0	6.0
TMIM0503SV-1R5MG-D02	1.50	14.5	13.0	17.0	15.0	7.1	8.6
TMIM0503SV-1R8MG-D02	1.80	13.0	11.5	15.0	13.0	8.6	10.3
TMIM0503SV-2R2MG-D02	2.20	12.0	10.5	12.0	10.5	9.8	11.8
TMIM0503SV-3R3MG-D02	3.30	10.0	9.0	10.0	9.0	14.0	17.0
TMIM0503SV-4R7MG-D02	4.70	9.0	8.0	9.0	8.0	22.0	26.4

Note:

1. Test frequency : L_s : 100KHz /1.0V.
2. All test data referenced to 25 $^{\circ}$ C ambient.
3. Testing Instrument(equ) : Agilent 4284A, E4991A, 4339B, KEYSIGHT E4980A/AL, chroma3302, 3250, 16502.
4. Heat Rated current (Irms) : will cause the coil temperature rise approximately ΔT of 40 $^{\circ}$ C.
5. Saturation current (Isat) : will cause L0 to drop approximately 30%.
6. The part temperature (ambient + temp rise) should not exceed 150 $^{\circ}$ C under worst case operating conditions.Circuit design, component, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
7. Irms Testing : temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.
8. Rated DC current : the lower value of Irms and Isat.
9. Rated voltage 25V DC, the application of voltage depends on many factors, over voltage may cause components failure、high temperature、 and burn-out, user needs to verify for appropriate usage.

6. Typical Performance Curves

