

Molded SMD Power Inductors – MWSA–S Series



Operating temp. : -40°C ~+125°C (Including self-heating)

FEATURES

- ◆ Metal material for large current and low DCR
- ◆ Closed magnetic circuit design reduces leakage flux
- ◆ Halogen free, RoHS compliant

APPLICATIONS

- ◆ TV, graphics, memory
- ◆ Notebooks, tablets
- ◆ Communication equipments, industrial equipments

PRODUCT IDENTIFICATION

1	2	3	4	5	6
MWSA	0412S	XXX	□	T	□□□

1 Type	
MWSA	Molded SMD Power Inductors

3 Nominal Inductance[μH]	
Example	Nominal Value[μH]
R15	0.15μH
1R0	1.0μH

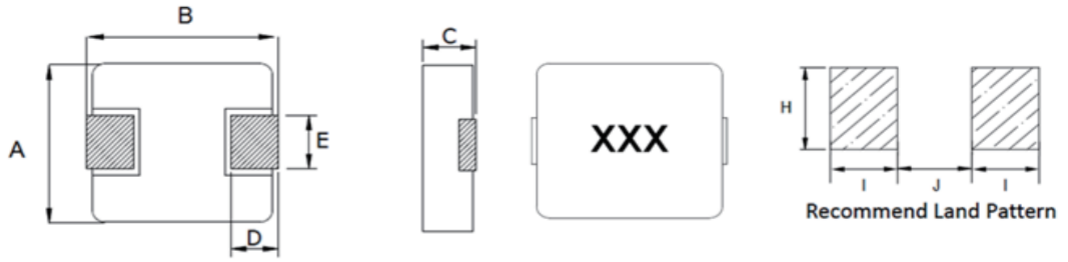
4 Inductance Tolerance	
M	±20%

5 Packing	
T	Tape & Reel

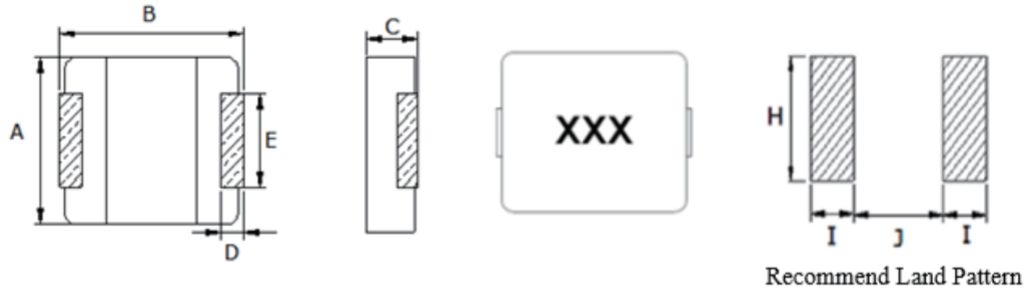
6 Design Code	
□□□	Design Code
* Standard product is blank	

2 External Dimensions (L×W×H) [mm]	
0412	4.2×4.4×1.0
0402	4.2×4.4×1.8
0515	5.2×5.4×1.3
0518	5.2×5.4×1.6
0503	5.2×5.4×2.8
0615	6.6×7.0×1.3
0618	6.6×7.0×1.6
0602	6.6×7.0×1.8
0624	6.6×7.0×2.2
0603	6.6×7.0×2.8
0605	6.6×7.0×4.8
0804	8.2×8.8×3.8
1003	10.0×11.5×2.8
1004	10.0×11.0×3.8
1005	10.0×11.5×4.8
1204	12.8×13.45×4.0
1205	12.6×13.45×4.8
1206	12.6×13.45×5.8
1265	12.6×13.45×6.5
1707	17.15×17.15×6.7
2213	23.5×22.0×12.6

SHAPE AND DIMENSIONS



Remark: MWSA0412S ~ MWSA1265S Series



Remark: MWSA1707S ~ MWSA2213S Series

Series	A	B	C	D	E	I Typ.	J Typ.	H Typ.
MWSA0412S	4.2±0.25	4.4±0.35	1.0±0.2	0.8±0.3	2.0±0.3	1.5	2.2	2.5
MWSA0402S	4.2±0.25	4.4±0.35	1.8±0.2	0.8±0.3	2.0±0.3	1.5	2.2	2.5
MWSA0515S	5.2±0.2	5.4±0.35	1.3±0.2	1.2±0.2	2.2±0.3	1.9	2.2	2.5
MWSA0518S	5.2±0.2	5.4±0.35	1.6±0.2	1.2±0.2	2.2±0.3	1.9	2.2	2.5
MWSA0503S	5.2±0.2	5.4±0.35	2.8±0.2	1.2±0.2	2.2±0.3	1.9	2.2	2.5
MWSA0615S	6.6±0.2	7.0±0.3	1.3±0.2	1.6±0.3	3.0±0.3	2.35	3.7	3.5
MWSA0618S	6.6±0.2	7.0±0.3	1.6±0.2	1.6±0.3	3.0±0.3	2.35	3.7	3.5
MWSA0602S	6.6±0.2	7.0±0.3	1.8±0.2	1.6±0.3	3.0±0.3	2.35	3.7	3.5
MWSA0624S	6.6±0.2	7.0±0.3	2.2±0.2	1.6±0.3	3.0±0.3	2.35	3.7	3.5
MWSA0603S	6.6±0.2	7.0±0.3	2.8±0.2	1.6±0.3	3.0±0.3	2.35	3.7	3.5
MWSA0605S	6.6±0.2	7.0±0.3	4.8±0.2	1.6±0.3	3.0±0.3	2.35	3.7	3.5
MWSA0804S	8.8±0.4	8.2±0.3	3.8±0.2	1.4±0.3	5.0±0.3	2.75	4.0	5.5
MWSA1003S	10.0±0.3	11.5 Max.	2.8±0.2	2.0±0.5	3.0±0.3	4.1	5.4	4.1
MWSA1004S	10.0±0.3	11.0±0.5	3.8±0.2	2.0±0.5	3.0±0.5	4.1	5.4	4.1
MWSA1005S	10.0±0.3	11.5 Max.	4.8±0.2	2.0±0.5	3.0±0.5	4.1	5.4	4.1
MWSA1204S	12.8±0.5	13.45±0.35	4.0 Max.	2.0±0.5	See Remarks	3.25	8.0	5.5
MWSA1205S	12.6±0.3	13.45±0.35	4.8±0.2	2.0±0.5	See Remarks	3.25	8.0	5.5
MWSA1206S	12.6±0.3	13.45±0.35	5.8±0.2	2.0±0.5	See Remarks	3.25	8.0	5.5
MWSA1265S	12.6±0.3	13.45±0.35	6.5 Max.	2.0±0.5	5.0±0.3	3.25	8.0	5.5
MWSA1707S	17.15 Max.	17.15±0.35	6.7±0.3	2.5±0.5	12.0±0.3	3.50	11.2	12.8
MWSA2213S	22.0±0.3	23.5±0.5	12.6±0.4	5.0±0.4	19.0±0.3	5.75	12.5	19.6

Unit: mm

Remarks:

Series	E(mm)	Dimensions
MWSA1204S	3.85±0.5	R22/R47
	5.0±0.3	R68/R82/1R0/1R5/2R2/3R3/4R7/6R8/100/150/220
MWSA1205S	3.85±0.5	R22/R36/R50/R68/R82/1R0/1R5/2R2
	5.0±0.3	3R3/4R7/6R8/100/150/220/330/470
MWSA1206S	3.85±0.5	R68/1R5/2R2
	5.0±0.3	3R3/4R7/5R6/6R8/8R2/100/120/150/180/220/270/330/470/680/101/121/151

Multilayer Chip Ferrite Inductor
Multilayer Chip Inductor for Choke
Multilayer Chip Power Inductor
Multilayer Ultra High Q Chip Ceramic Inductor
Multilayer High Q Chip Ceramic Inductor
Multilayer Chip Ceramic Inductor
Multilayer High Frequency Chip Ceramic Inductor
Wire Wound Chip Ceramic Inductor
Wire Wound Chip Ferrite Inductor
SMD Power Inductor

SPECIFICATIONS MWSA0412S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA0412S-R15MT	0.15 \pm 20%	9	12.0	15.0	6.80	7.50
MWSA0412S-R22MT	0.22 \pm 20%	11	8.80	11.0	6.50	7.00
MWSA0412S-R33MT	0.33 \pm 20%	19	6.70	8.40	5.70	6.50
MWSA0412S-R47MT	0.47 \pm 20%	21	5.40	6.80	5.20	6.00
MWSA0412S-R68MT	0.68 \pm 20%	36	4.80	6.00	4.20	4.70
MWSA0412S-1R0MT	1.0 \pm 20%	47	4.40	5.50	3.80	4.50
MWSA0412S-1R5MT	1.5 \pm 20%	75	3.20	4.00	2.70	3.25
MWSA0412S-2R2MT	2.2 \pm 20%	83.5	2.40	3.00	2.20	2.75
MWSA0412S-3R3MT	3.3 \pm 20%	160	2.38	2.70	1.77	2.00
MWSA0412S-4R7MT	4.7 \pm 20%	195	1.80	2.20	1.45	1.80

MWSA0402S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA0402S-R10MT	0.10 \pm 20%	4	17.6	22.0	11.2	13.0
MWSA0402S-R22MT	0.22 \pm 20%	6.6	10.0	12.5	8.20	9.50
MWSA0402S-R33MT	0.33 \pm 20%	11	9.60	12.0	8.60	10.0
MWSA0402S-R47MT	0.47 \pm 20%	14	7.60	9.50	6.65	7.50
MWSA0402S-R56MT	0.56 \pm 20%	16	7.20	9.00	6.10	7.00
MWSA0402S-R68MT	0.68 \pm 20%	18	6.40	8.00	6.15	7.00
MWSA0402S-1R0MT	1.0 \pm 20%	27	5.60	7.00	5.40	6.00
MWSA0402S-1R0MTB01	1.0 \pm 20%	27	8.00	9.00	5.40	6.00
MWSA0402S-1R2MT	1.2 \pm 20%	27	5.20	6.50	5.40	6.00
MWSA0402S-1R5MT	1.5 \pm 20%	46	4.40	5.50	4.30	5.00
MWSA0402S-2R2MT	2.2 \pm 20%	58	4.00	5.00	3.80	4.50
MWSA0402S-3R3MT	3.3 \pm 20%	87	2.80	3.50	2.80	3.30
MWSA0402S-4R7MT	4.7 \pm 20%	105	2.40	3.00	2.20	2.80
MWSA0402S-5R6MT	5.6 \pm 20%	150	2.24	2.80	2.00	2.50
MWSA0402S-6R8MT	6.8 \pm 20%	175	2.00	2.50	1.90	2.40
MWSA0402S-100MT	10 \pm 20%	282	1.60	2.00	1.30	1.60
MWSA0402S-220MT	22 \pm 20%	363	1.12	1.40	0.90	1.20

MWSA0515S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA0515S-R47MT	0.47 \pm 20%	13	12.0	13.0	8.70	9.50
MWSA0515S-R68MT	0.68 \pm 20%	15.5	9.50	11.2	8.10	9.00
MWSA0515S-1R0MT	1.0 \pm 20%	23	8.00	9.50	5.80	6.50
MWSA0515S-2R2MT	2.2 \pm 20%	52	4.80	5.80	4.00	5.00
MWSA0515S-3R3MT	3.3 \pm 20%	72	4.00	4.50	3.00	3.30
MWSA0515S-4R7MT	4.7 \pm 20%	106	3.70	4.20	2.60	3.00

SPECIFICATIONS MWSA0518S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V		Max.	Max.	Typ.	Max.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA0518S-R47MT	0.47 \pm 20%	9	9.60	12.0	9.50	10.5
MWSA0518S-R56MT	0.56 \pm 20%	10	8.80	11.0	8.20	9.50
MWSA0518S-R68MT	0.68 \pm 20%	13.8	9.30	10.5	7.70	8.70
MWSA0518S-1R0MT	1.0 \pm 20%	17	7.20	9.00	7.20	8.00
MWSA0518S-1R5MT	1.5 \pm 20%	26	6.40	8.00	6.60	7.50
MWSA0518S-2R2MT	2.2 \pm 20%	35	4.80	6.00	4.20	5.00
MWSA0518S-3R3MT	3.3 \pm 20%	58	3.84	4.80	3.80	4.50
MWSA0518S-4R7MT	4.7 \pm 20%	85	3.20	4.00	3.00	3.50
MWSA0518S-6R8MT	6.8 \pm 20%	120	2.72	3.40	2.40	2.80
MWSA0518S-100MT	10 \pm 20%	155	2.00	2.50	2.20	2.50

MWSA0503S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V		Max.	Max.	Typ.	Max.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA0503S-R10MT	0.10 \pm 20%	3	24.0	30.0	23.0	25.0
MWSA0503S-R20MT	0.20 \pm 20%	3.9	16.0	20.0	13.0	14.0
MWSA0503S-R33MT	0.33 \pm 20%	5.5	14.4	18.0	13.1	14.0
MWSA0503S-R47MT	0.47 \pm 20%	8.5	12.0	15.0	10.0	11.0
MWSA0503S-R68MT	0.68 \pm 20%	12	9.20	11.5	8.20	9.00
MWSA0503S-R82MT	0.82 \pm 20%	10.4	9.20	10.5	9.00	10.5
MWSA0503S-1R0MT	1.0 \pm 20%	14	8.00	10.0	7.80	8.50
MWSA0503S-1R2MT	1.2 \pm 20%	16	7.60	9.50	7.85	8.50
MWSA0503S-1R5MT	1.5 \pm 20%	25	7.20	9.00	7.60	8.20
MWSA0503S-2R2MT	2.2 \pm 20%	29	5.60	7.00	6.40	7.00
MWSA0503S-3R3MT	3.3 \pm 20%	38	4.80	6.00	5.00	5.50
MWSA0503S-4R7MT	4.7 \pm 20%	60	3.68	4.60	4.00	4.50
MWSA0503S-6R8MT	6.8 \pm 20%	90	2.88	3.60	2.90	3.50
MWSA0503S-100MT	10 \pm 20%	125	2.80	3.50	2.80	3.20
MWSA0503S-150MT	15 \pm 20%	170	2.00	2.20	1.60	1.80

MWSA0615S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V		Max.	Max.	Typ.	Max.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA0615S-R47MT	0.47 \pm 20%	8.5	14.16	16.0	8.85	10.0
MWSA0615S-R56MT	0.56 \pm 20%	11	12.38	14.0	7.96	9.00
MWSA0615S-R68MT	0.68 \pm 20%	12	10.62	12.0	7.52	8.50
MWSA0615S-R82MT	0.82 \pm 20%	17	8.85	10.0	7.08	8.00
MWSA0615S-1R0MT	1.0 \pm 20%	21	7.96	9.00	5.30	6.00
MWSA0615S-1R5MT	1.5 \pm 20%	40	7.00	8.00	4.40	5.00
MWSA0615S-2R2MT	2.2 \pm 20%	54	6.19	7.00	3.36	3.80
MWSA0615S-3R3MT	3.3 \pm 20%	63	4.87	5.50	3.10	3.50
MWSA0615S-4R7MT	4.7 \pm 20%	85	4.42	5.00	2.83	3.20
MWSA0615S-6R8MT	6.8 \pm 20%	135	3.54	4.00	2.21	2.50
MWSA0615S-100MT	10 \pm 20%	175	2.65	3.00	1.77	2.00
MWSA0615S-220MT	22 \pm 20%	510	2.20	2.50	1.32	1.40

SPECIFICATIONS MWSA0618S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V		Max.	Max.	Typ.	Max.
Units	μ H	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA0618S-R10MT	0.10 \pm 20%	2.3	30.4	38.0	23.0	25.0
MWSA0618S-R22MT	0.22 \pm 20%	3.5	19.2	24.0	20.0	22.0
MWSA0618S-R47MT	0.47 \pm 20%	8.4	16.0	18.0	10.0	11.5
MWSA0618S-R68MT	0.68 \pm 20%	12	13.2	16.5	8.40	9.50
MWSA0618S-1R0MT	1.0 \pm 20%	16	9.60	12.0	7.60	8.50
MWSA0618S-1R5MT	1.5 \pm 20%	26	7.36	9.20	7.10	8.00
MWSA0618S-2R2MT	2.2 \pm 20%	35	6.40	8.00	6.20	7.00
MWSA0618S-3R3MT	3.3 \pm 20%	50	4.80	6.00	3.80	4.50
MWSA0618S-4R7MT	4.7 \pm 20%	62	4.00	5.00	3.50	4.00
MWSA0618S-6R8MT	6.8 \pm 20%	110	3.60	4.50	2.40	3.00
MWSA0618S-8R2MT	8.2 \pm 20%	135	2.90	3.60	2.10	2.40
MWSA0618S-100MT	10 \pm 20%	155	3.20	4.00	1.95	2.30
MWSA0618S-220MT	22 \pm 20%	350	1.84	2.30	1.40	1.80

MWSA0602S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V		Max.	Max.	Typ.	Max.
Units	μ H	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA0602S-1R5MT	1.5 \pm 20%	18	10.0	12.0	7.00	8.00
MWSA0602S-4R7MT	4.7 \pm 20%	60	-	5.50	-	4.30
MWSA0602S-100MT	10 \pm 20%	145	-	4.00	-	2.80

MWSA0624S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V		Max.	Max.	Typ.	Max.
Units	μ H	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA0624S-R22MT	0.22 \pm 20%	3	24.0	30.0	19.0	21.0
MWSA0624S-R33MT	0.33 \pm 20%	4.1	19.6	24.5	16.0	18.0
MWSA0624S-R47MT	0.47 \pm 20%	5.1	16.0	20.0	13.5	15.0
MWSA0624S-R56MT	0.56 \pm 20%	6.5	13.6	17.0	11.5	13.0
MWSA0624S-R68MT	0.68 \pm 20%	7	12.8	16.0	10.5	12.0
MWSA0624S-1R0MT	1.0 \pm 20%	13.5	12.0	15.0	8.00	9.00
MWSA0624S-1R5MT	1.5 \pm 20%	20	10.8	13.5	7.00	8.20
MWSA0624S-2R2MT	2.2 \pm 20%	28	8.00	10.0	6.20	7.00
MWSA0624S-3R3MT	3.3 \pm 20%	39	6.40	8.00	4.80	5.50
MWSA0624S-4R7MT	4.7 \pm 20%	50	5.20	6.50	4.30	5.00
MWSA0624S-6R8MT	6.8 \pm 20%	70	4.80	6.00	3.20	4.00
MWSA0624S-100MT	10 \pm 20%	101	3.20	4.00	2.40	3.10
MWSA0624S-150MT	15 \pm 20%	160	2.64	3.30	2.00	2.50
MWSA0624S-220MT	22 \pm 20%	230	2.00	2.50	1.60	2.00

SPECIFICATIONS MWSA0603S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	$\text{m}\Omega$	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA0603S-R10MT	0.10±20%	1.7	53.0	60.0	28.5	32.5
MWSA0603S-R12MT	0.12±20%	0.77±7%	30.0	40.0	32.0	38.0
MWSA0603S-R22MT	0.22±20%	3	27.2	34.0	21.0	24.0
MWSA0603S-R24MT	0.24±20%	3.1	22.4	28.0	18.4	23.0
MWSA0603S-R24MTY02	0.24±20%	1.19±7%	30.0	35.0	26.0	30.0
MWSA0603S-R33MT	0.33±20%	3.5	20.0	25.0	19.0	21.0
MWSA0603S-R47MT	0.47±20%	4.1	16.0	20.0	16.5	18.0
MWSA0603S-R56MT	0.56±20%	4.5	14.4	18.0	15.0	16.5
MWSA0603S-R68MT	0.68±20%	5.3	13.6	17.0	14.5	16.0
MWSA0603S-R82MT	0.82±20%	6.0	12.8	16.0	12.5	14.0
MWSA0603S-1R0MT	1.0±20%	7.4	12.0	15.0	10.5	12.0
MWSA0603S-1R5MT	1.5±20%	12.1	9.60	12.0	10.5	12.0
MWSA0603S-1R5MTB01	1.5±20%	11	-	14.0	-	10.5
MWSA0603S-1R8MT	1.8±20%	12.6	9.40	11.8	8.20	9.30
MWSA0603S-2R2MT	2.2±20%	15	8.00	10.0	8.50	9.50
MWSA0603S-3R3MT	3.3±20%	22	7.60	9.50	7.50	8.50
MWSA0603S-4R7MT	4.7±20%	33	7.20	9.00	5.00	6.00
MWSA0603S-5R6MT	5.6±20%	42	5.20	6.50	4.80	5.50
MWSA0603S-6R8MT	6.8±20%	48	4.80	6.00	4.20	5.00
MWSA0603S-8R2MT	8.2±20%	60	4.40	5.50	4.20	5.00
MWSA0603S-100MT	10±20%	68	4.40	5.50	3.80	4.50
MWSA0603S-150MT	15±20%	113	3.20	4.00	2.30	3.00
MWSA0603S-220MT	22±20%	170	2.40	3.00	2.00	2.50
MWSA0603S-330MT	33±20%	270	2.00	2.50	1.60	2.00
MWSA0603S-330MTB01	33±20%	210	2.00	2.50	1.70	2.20
MWSA0603S-470MT	47±20%	385	1.60	2.00	1.20	1.50

MWSA0605S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	$\text{m}\Omega$	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA0605S-R47MT	0.47±20%	3.9	16.8	21.0	17.0	20.0
MWSA0605S-R68MT	0.68±20%	4.5	14.4	18.0	14.5	16.5
MWSA0605S-1R0MT	1.0±20%	6.6	12.8	16.0	10.0	12.0
MWSA0605S-1R5MT	1.5±20%	10	10.4	13.0	8.20	9.50
MWSA0605S-2R2MT	2.2±20%	12.5	8.80	11.0	8.00	9.00
MWSA0605S-3R3MT	3.3±20%	22	8.00	10.0	7.60	8.50
MWSA0605S-4R7MT	4.7±20%	29	6.40	8.00	5.00	6.00
MWSA0605S-6R8MT	6.8±20%	41	5.04	6.30	4.00	5.80
MWSA0605S-8R2MT	8.2±20%	48	4.40	5.50	4.80	5.50
MWSA0605S-100MT	10±20%	60	4.24	5.30	3.80	4.50
MWSA0605S-150MT	15±20%	90	3.20	4.00	2.60	3.10
MWSA0605S-220MT	22±20%	140	2.80	3.50	2.00	2.60
MWSA0605S-330MT	33±20%	190	2.40	3.00	1.80	2.30
MWSA0605S-470MT	47±20%	230	2.08	2.60	1.50	2.00

SPECIFICATIONS MWSA0804S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA0804S-R10MT	0.10 \pm 20%	1.6	68.0	72.0	35.0	40.0
MWSA0804S-R15MT	0.15 \pm 20%	1.65	65.0	70.0	33.0	39.0
MWSA0804S-R22MT	0.22 \pm 20%	1.8	55.0	60.0	30.0	36.0
MWSA0804S-R33MT	0.33 \pm 20%	2.4	40.0	45.0	25.0	30.0
MWSA0804S-R47MT	0.47 \pm 20%	2.8	36.0	42.0	25.0	28.0
MWSA0804S-R56MT	0.56 \pm 20%	3.2	23.0	26.0	22.0	24.0
MWSA0804S-R68MT	0.68 \pm 20%	3.8	22.0	24.0	21.0	23.0
MWSA0804S-R82MT	0.82 \pm 20%	4.4	19.0	21.0	19.0	21.0
MWSA0804S-1R0MT	1.0 \pm 20%	4.62	17.0	19.0	17.0	19.0
MWSA0804S-1R5MT	1.5 \pm 20%	7.6	15.0	17.0	15.0	17.0
MWSA0804S-1R8MT	1.8 \pm 20%	11	13.5	15.0	12.5	15.0
MWSA0804S-2R2MT	2.2 \pm 20%	11.4	12.0	14.0	12.0	14.0
MWSA0804S-3R3MT	3.3 \pm 20%	15	11.0	12.5	10.0	12.0
MWSA0804S-4R7MT	4.7 \pm 20%	26.5	10.5	11.5	8.50	9.50
MWSA0804S-5R6MT	5.6 \pm 20%	30	10.0	11.0	8.00	9.00
MWSA0804S-6R8MT	6.8 \pm 20%	36.8	8.00	9.00	7.00	8.00
MWSA0804S-8R2MT	8.2 \pm 20%	46	7.70	8.70	6.00	7.00
MWSA0804S-100MT	10 \pm 20%	59	7.00	8.00	5.50	6.50
MWSA0804S-150MT	15 \pm 20%	71	4.90	5.50	4.80	5.40
MWSA0804S-220MT	22 \pm 20%	113	4.50	5.00	4.20	4.80
MWSA0804S-330MT	33 \pm 20%	156	3.30	3.50	3.00	3.50
MWSA0804S-470MT	47 \pm 20%	225	2.90	3.10	2.50	2.90

MWSA1003S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA1003S-R22MT	0.22 \pm 20%	1.2	44.24	50.0	29.2	33.0
MWSA1003S-R33MT	0.33 \pm 20%	1.6	28.3	32.0	20.35	23.0
MWSA1003S-R36MT	0.36 \pm 20%	1.6	24.8	28.0	20.35	23.0
MWSA1003S-R47MT	0.47 \pm 20%	2.5	23.0	26.0	19.47	22.0
MWSA1003S-R82MT	0.82 \pm 20%	3.7	20.35	23.0	15.93	18.0
MWSA1003S-1R0MT	1.0 \pm 20%	6	18.58	21.0	13.27	15.0
MWSA1003S-1R5MT	1.5 \pm 20%	7.5	17.69	20.0	11.5	13.0
MWSA1003S-2R2MT	2.2 \pm 20%	9	12.38	14.0	9.73	11.0
MWSA1003S-3R3MT	3.3 \pm 20%	16	10.61	12.0	7.96	9.00
MWSA1003S-4R7MT	4.7 \pm 20%	22.5	8.84	10.0	6.19	7.00
MWSA1003S-8R2MT	8.2 \pm 20%	45	6.20	7.00	4.42	5.00
MWSA1003S-100MT	10 \pm 20%	55	5.75	6.50	3.98	4.50
MWSA1003S-150MT	15 \pm 20%	65	5.30	6.00	3.50	4.00
MWSA1003S-220MT	22 \pm 20%	99	4.40	5.00	2.65	3.00
MWSA1003S-330MT	33 \pm 20%	160	3.53	4.00	2.30	2.60

MWSA1004S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA1004S-R13MT	0.13 \pm 20%	0.52 \pm 5%	63.0	92.0	63.0	72.0
MWSA1004S-R15MT	0.15 \pm 20%	0.65	60.0	75.0	40.0	45.0
MWSA1004S-R22MT	0.22 \pm 20%	1	48.0	60.0	30.0	35.0

SPECIFICATIONS MWSA1004S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V		Max.	Max.	Typ.	Max.
Units	μH	$\text{m}\Omega$	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA1004S-R30MT	0.30±20%	1.1	36.0	45.0	30.0	35.0
MWSA1004S-R33MT	0.33±20%	1.15	36.0	45.0	28.0	32.0
MWSA1004S-R36MT	0.36±20%	1.2	36.0	45.0	25.0	30.0
MWSA1004S-R45MT	0.45±20%	1.5	34.0	43.0	25.0	30.0
MWSA1004S-R47MT	0.47±20%	1.7	32.0	40.0	25.0	30.0
MWSA1004S-R56MT	0.56±20%	1.8	26.4	33.0	20.0	25.0
MWSA1004S-R68MT	0.68±20%	2.4	24.0	30.0	19.0	23.0
MWSA1004S-R80MT	0.80±20%	2.7	23.2	29.0	19.0	23.0
MWSA1004S-1R0MT	1.0±20%	3.3	22.4	28.0	16.0	19.0
MWSA1004S-1R5MT	1.5±20%	4.2	19.2	24.0	14.0	16.0
MWSA1004S-1R8MT	1.8±20%	4.5	16.0	20.0	14.0	16.0
MWSA1004S-2R2MT	2.2±20%	7	13.2	16.5	10.0	12.0
MWSA1004S-3R3MT	3.3±20%	11.8	12.8	16.0	9.50	11.0
MWSA1004S-4R7MT	4.7±20%	20	10.4	13.0	7.50	9.00
MWSA1004S-6R8MT	6.8±20%	25	9.60	12.0	7.00	8.50
MWSA1004S-8R2MT	8.2±20%	27	7.20	9.00	6.80	8.00
MWSA1004S-100MT	10±20%	30	6.80	8.50	6.90	7.80
MWSA1004S-150MT	15±20%	45	5.60	7.00	5.60	6.50
MWSA1004S-220MT	22±20%	66	4.40	5.50	4.20	5.00
MWSA1004S-330MT	33±20%	92	3.84	4.80	3.80	4.40
MWSA1004S-470MT	47±20%	145	3.10	3.50	2.80	3.30
MWSA1004S-680MT	68±20%	195	2.40	3.00	2.00	2.50
MWSA1004S-820MT	82±20%	285	2.30	2.80	2.10	2.30
MWSA1004S-101MT	100±20%	340	2.10	2.30	1.80	2.00

MWSA1005S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V		Max.	Max.	Typ.	Max.
Units	μH	$\text{m}\Omega$	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA1005S-R22MT	0.22±20%	0.8	57.5	65.0	32.5	37.0
MWSA1005S-R68MT	0.68±20%	1.95	34.0	37.0	21.0	23.0
MWSA1005S-1R0MT	1.0±20%	3	28.0	30.0	20.3	23.0
MWSA1005S-1R5MT	1.5±20%	3.8	22.0	25.0	18.5	21.0
MWSA1005S-2R2MT	2.2±20%	6	16.8	19.0	13.2	15.0
MWSA1005S-3R3MT	3.3±20%	10	14.0	16.0	11.5	13.0
MWSA1005S-4R7MT	4.7±20%	14	13.2	15.0	9.70	11.0
MWSA1005S-5R6MT	5.6±20%	17	12.3	14.0	8.50	9.50
MWSA1005S-6R8MT	6.8±20%	18.5	12.3	14.0	8.00	9.00
MWSA1005S-100MT	10±20%	28	8.80	10.0	7.00	8.00
MWSA1005S-150MT	15±20%	42	6.50	7.50	5.70	6.50
MWSA1005S-220MT	22±20%	50	5.30	6.00	5.00	5.50
MWSA1005S-330MT	33±20%	86	4.60	5.20	4.20	4.80
MWSA1005S-470MT	47±20%	127	4.00	4.50	3.20	3.70
MWSA1005S-680MT	68±20%	185	2.80	3.20	2.40	2.70
MWSA1005S-820MT	82±20%	280	3.00	3.50	1.70	2.00
MWSA1005S-101MT	100±20%	290	2.50	2.80	1.80	2.10

SPECIFICATIONS MWSA1204S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA1204S-R22MT	0.22±20%	0.9	40.0	50.0	38.0	42.0
MWSA1204S-R47MT	0.47±20%	2	38.4	48.0	29.0	33.0
MWSA1204S-R68MT	0.68±20%	3.5	37.6	47.0	24.0	28.0
MWSA1204S-R82MT	0.82±20%	4.5	32.0	40.0	24.0	28.0
MWSA1204S-1R0MT	1.0±20%	7.5	28.0	35.0	20.0	24.0
MWSA1204S-1R5MT	1.5±20%	9.5	24.4	30.5	17.0	20.0
MWSA1204S-2R2MT	2.2±20%	11.5	20.8	26.0	15.0	18.0
MWSA1204S-3R3MT	3.3±20%	13	16.8	21.0	13.0	15.0
MWSA1204S-4R7MT	4.7±20%	14.5	14.4	18.0	11.0	13.0
MWSA1204S-6R8MT	6.8±20%	20	11.2	14.0	8.00	9.00
MWSA1204S-100MT	10±20%	25	8.00	10.0	7.00	8.00
MWSA1204S-150MT	15±20%	39	6.00	7.50	5.80	6.50
MWSA1204S-220MT	22±20%	51	4.80	6.00	3.80	4.50

MWSA1205S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA1205S-R22MT	0.22±20%	0.7	60.0	75.0	45.0	50.0
MWSA1205S-R36MT	0.36±20%	0.85	40.0	50.0	37.0	42.0
MWSA1205S-R50MT	0.50±20%	1.15	38.4	48.0	33.0	38.0
MWSA1205S-R68MT	0.68±20%	1.55	36.8	46.0	29.0	33.0
MWSA1205S-R82MT	0.82±20%	1.67	31.2	39.0	26.0	30.0
MWSA1205S-1R0MT	1.0±20%	2.2	28.0	35.0	22.0	26.0
MWSA1205S-1R5MT	1.5±20%	3.2	26.4	33.0	19.0	23.0
MWSA1205S-2R2MT	2.2±20%	5	19.2	24.0	13.0	15.0
MWSA1205S-3R3MT	3.3±20%	7	17.6	22.0	12.0	14.0
MWSA1205S-4R7MT	4.7±20%	9	16.0	20.0	11.0	13.0
MWSA1205S-6R8MT	6.8±20%	18	12.8	16.0	10.0	12.0
MWSA1205S-100MT	10±20%	22	9.60	12.0	8.00	9.00
MWSA1205S-150MT	15±20%	30	8.00	10.0	7.00	8.00
MWSA1205S-220MT	22±20%	58	5.20	6.50	3.80	4.50
MWSA1205S-330MT	33±20%	84	4.80	6.00	2.80	3.50
MWSA1205S-330MTY01	33±20%	63	4.80	6.00	2.80	3.50
MWSA1205S-470MT	47±20%	130	4.00	5.00	2.60	3.00

MWSA1206S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA1206S-1R5MT	1.5±20%	2.9	27.0	30.0	23.0	27.0
MWSA1206S-2R2MT	2.2±20%	4.2	24.0	28.0	18.0	22.0
MWSA1206S-3R3MT	3.3±20%	6.8	21.0	25.0	14.0	17.0
MWSA1206S-4R7MT	4.7±20%	9	19.2	24.0	12.0	15.0
MWSA1206S-5R6MT	5.6±20%	11	18.0	22.5	11.0	13.0
MWSA1206S-6R8MT	6.8±20%	13.5	15.2	19.0	10.0	12.0
MWSA1206S-8R2MT	8.2±20%	16	10.8	13.5	9.00	11.0

SPECIFICATIONS MWSA1206S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz, 1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA1206S-100MT	10 \pm 20%	20.7	11.1	12.5	8.50	10.0
MWSA1206S-120MT	12 \pm 20%	23	8.00	10.0	7.80	9.00
MWSA1206S-150MT	15 \pm 20%	29	7.20	9.00	7.50	8.50
MWSA1206S-180MT	18 \pm 20%	35	6.40	8.00	6.50	7.50
MWSA1206S-220MT	22 \pm 20%	39.5	6.00	7.50	6.00	7.00
MWSA1206S-270MT	27 \pm 20%	56	5.20	6.50	5.00	6.00
MWSA1206S-330MT	33 \pm 20%	75	4.80	6.00	4.80	5.50
MWSA1206S-470MT	47 \pm 20%	90	4.40	5.50	4.20	5.00
MWSA1206S-680MT	68 \pm 20%	140	3.60	4.50	3.20	4.00
MWSA1206S-101MT	100 \pm 20%	200	2.80	3.50	2.50	3.00
MWSA1206S-121MT	120 \pm 20%	235	2.56	3.20	1.70	2.00
MWSA1206S-151MT	150 \pm 20%	350	2.16	2.70	1.20	1.50

MWSA1265S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz, 1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA1265S-4R7MT	4.7 \pm 20%	8.5	-	24.0	-	16.0
MWSA1265S-5R6MT	5.6 \pm 20%	10.5	-	22.5	-	14.0
MWSA1265S-6R8MT	6.8 \pm 20%	12	-	19.0	-	13.0
MWSA1265S-8R2MT	8.2 \pm 20%	14	-	16.0	-	12.0
MWSA1265S-100MT	10 \pm 20%	16.5	-	15.0	-	11.0
MWSA1265S-150MT	15 \pm 20%	26	-	11.0	-	9.50
MWSA1265S-220MT	22 \pm 20%	36	-	9.00	-	8.00
MWSA1265S-330MT	33 \pm 20%	65	-	8.00	-	6.50
MWSA1265S-470MT	47 \pm 20%	70	-	6.80	-	5.50
MWSA1265S-470MTB01	47 \pm 20%	67	-	7.60	-	8.00
MWSA1265S-680MT	68 \pm 20%	120	-	5.20	-	4.80
MWSA1265S-820MT	82 \pm 20%	135	-	4.50	-	4.00
MWSA1265S-101MT	100 \pm 20%	170	-	4.00	-	3.50

MWSA1707S Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz, 1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	m Ω	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA1707S-1R5MT	1.5 \pm 20%	2.1	35.0	40.0	29.0	33.0
MWSA1707S-2R2MT	2.2 \pm 20%	2.5	30.0	34.0	25.5	29.0
MWSA1707S-3R3MT	3.3 \pm 20%	3.95	26.0	30.0	21.0	24.0
MWSA1707S-4R7MT	4.7 \pm 20%	4.75	21.0	24.0	18.5	21.0
MWSA1707S-6R8MT	6.8 \pm 20%	7.5	19.5	22.0	15.0	17.0
MWSA1707S-8R2MT	8.2 \pm 20%	8.7	17.5	20.0	11.5	13.0
MWSA1707S-100MT	10 \pm 20%	9.9	16.5	19.0	10.5	12.0
MWSA1707S-150MT	15 \pm 20%	17	12.5	14.5	9.50	11.0
MWSA1707S-220MT	22 \pm 20%	23	10.0	11.5	7.50	8.50
MWSA1707S-330MT	33 \pm 20%	37	8.50	10.0	7.00	8.00
MWSA1707S-470MT	47 \pm 20%	47	6.50	7.50	5.30	6.00
MWSA1707S-560MT	56 \pm 20%	66	6.30	7.20	5.10	5.80
MWSA1707S-680MT	68 \pm 20%	85	5.50	6.50	4.50	5.20
MWSA1707S-820MT	82 \pm 20%	110	5.30	6.00	4.00	4.50
MWSA1707S-101MT	100 \pm 20%	130	4.40	5.00	3.20	3.70

MWSA2213 Series

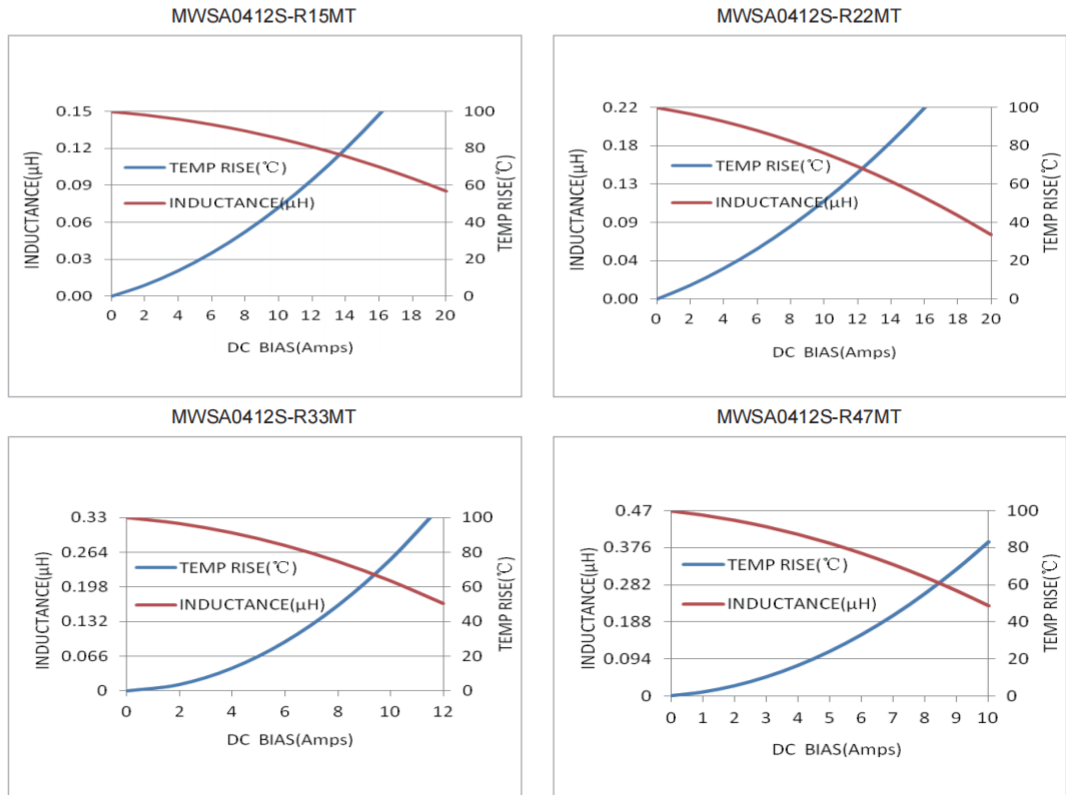
SPECIFICATIONS

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	$\text{m}\Omega$	A		A	
Symbol	L	DCR	Isat		Irms	
MWSA2213S-1R0MT	1.0 \pm 20%	0.95	54.0	60.0	65.0	70.0
MWSA2213S-1R5MT	1.5 \pm 20%	1.15	48.0	52.0	57.0	62.0
MWSA2213S-2R2MT	2.2 \pm 20%	1.25	43.0	48.0	52.0	58.0
MWSA2213S-3R3MT	3.3 \pm 20%	1.75	37.0	41.0	47.0	49.0
MWSA2213S-4R7MT	4.7 \pm 20%	2.2	34.0	38.0	44.0	47.0
MWSA2213S-6R8MT	6.8 \pm 20%	3.1	32.0	36.0	36.0	40.0
MWSA2213S-100MT	10 \pm 20%	4.15	20.0	28.0	30.0	33.0
MWSA2213S-150MT	15 \pm 20%	6.12	18.0	23.0	23.0	26.0
MWSA2213S-220MT	22 \pm 20%	11	14.0	15.0	18.0	22.0
MWSA2213S-330MT	33 \pm 20%	15.4	10.5	12.0	16.0	19.0
MWSA2213S-470MT	47 \pm 20%	20.8	10.0	12.0	14.0	17.0
MWSA2213S-680MT	68 \pm 20%	29.5	9.00	12.0	12.0	14.0
MWSA2213S-820MT	82 \pm 20%	34.2	7.70	9.00	10.0	12.0
MWSA2213S-101MT	100 \pm 20%	40	7.50	9.00	9.50	11.0

- ※1: All test data is referenced to 20°C ambient;
- ※2: Rated current: Isat or Irms, whichever is smaller;
- ※3: Isat(Typ): DC current at which the inductance drops approximate 30% from its value without current;
- ※4: Isat(Max): DC current at which the inductance drops approximate 30% from its value without current;
- ※5: Irms(Typ): DC current that causes the temperature rise ($\Delta T=40^\circ\text{C}$) from 20°C ambient.
- ※6: Irms(Max): DC current that causes the temperature rise ($\Delta T=20^\circ\text{C}$) from 20°C ambient.
- ※7: Absolute maximum voltage 30VDC

TYPICAL ELECTRICAL CHARACTERISTICS

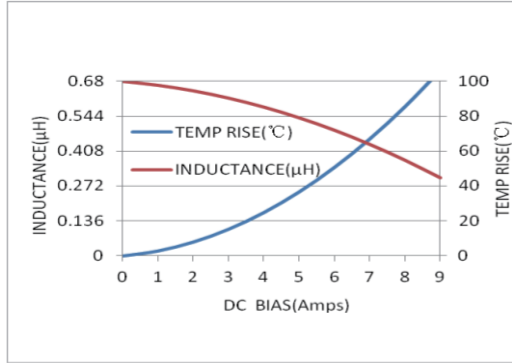
MWSA0412S Series



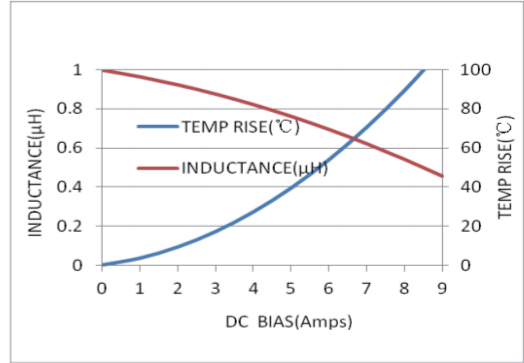
TYPICAL ELECTRICAL CHARACTERISTICS

MWSA0412S Series

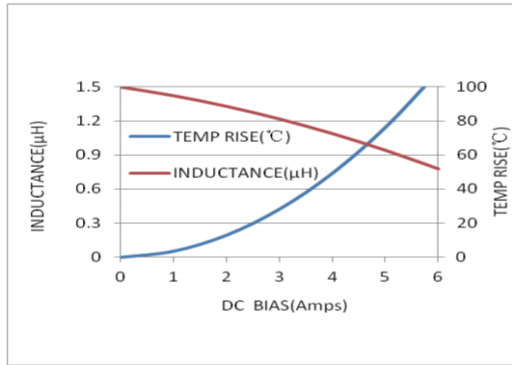
MWSA0412S-R68MT



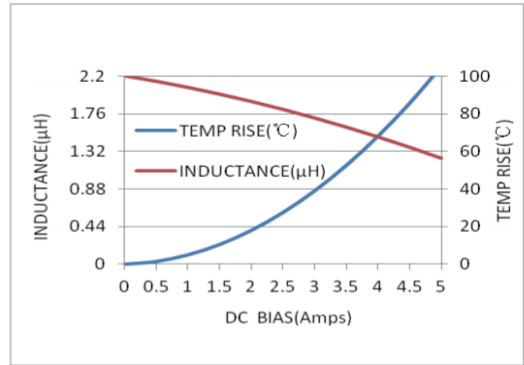
MWSA0412S-1R0MT



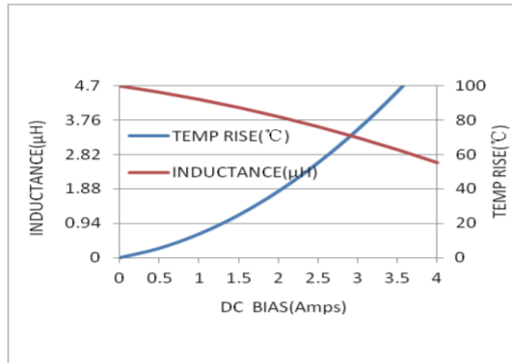
MWSA0412S-1R5MT



MWSA0412S-2R2MT

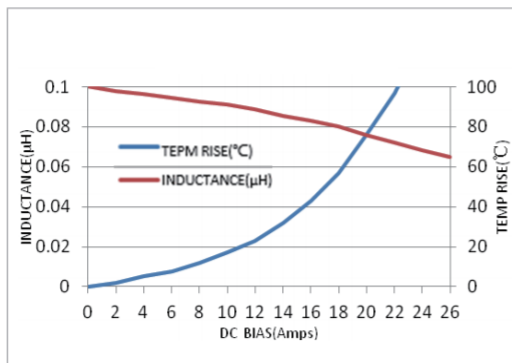


MWSA0412S-4R7MT

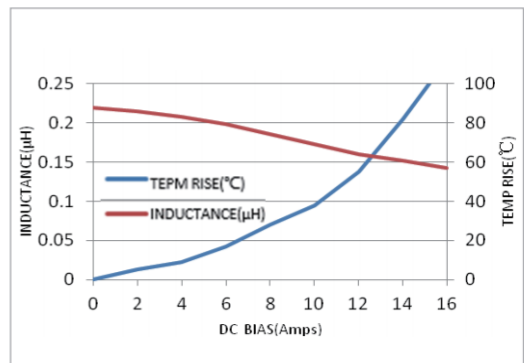


MWSA0402S Series

MWSA0402S-R10MT



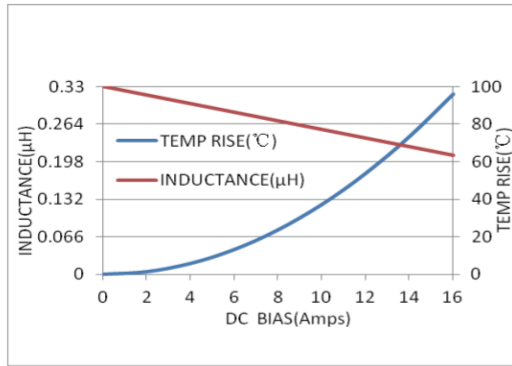
MWSA0402S-R22MT



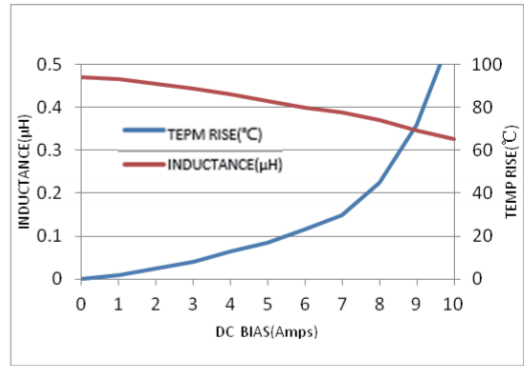
TYPICAL ELECTRICAL CHARACTERISTICS

MWSA0402S Series

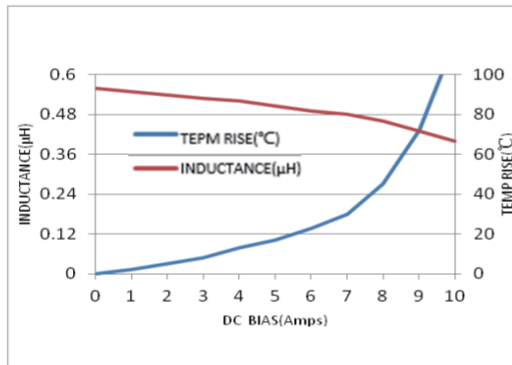
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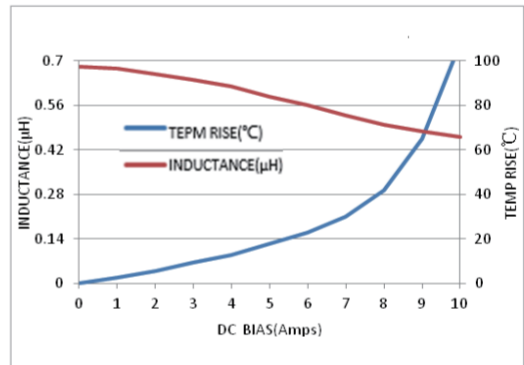
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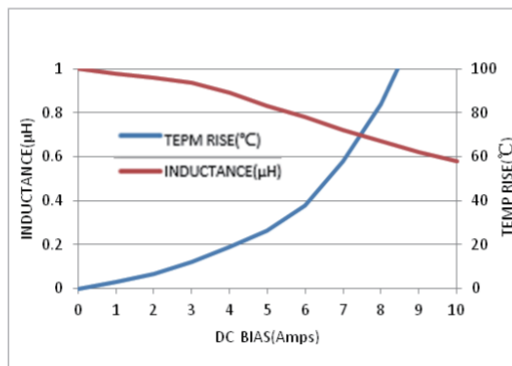
MWSA0402S-R56MT



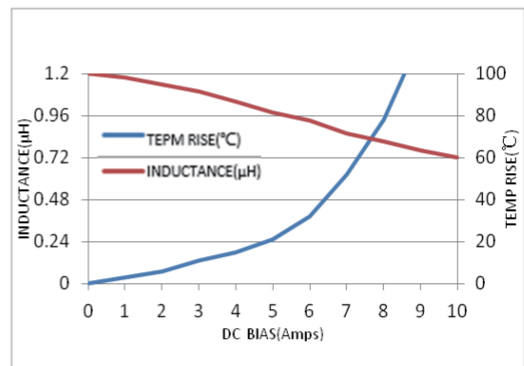
MWSA0402S-R68MT



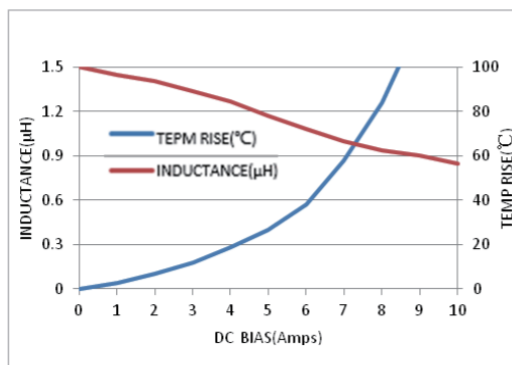
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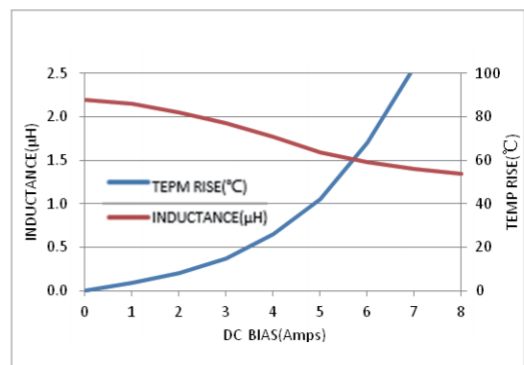
MWSA0402S-1R2MT



MWSA0402S-1R5MT



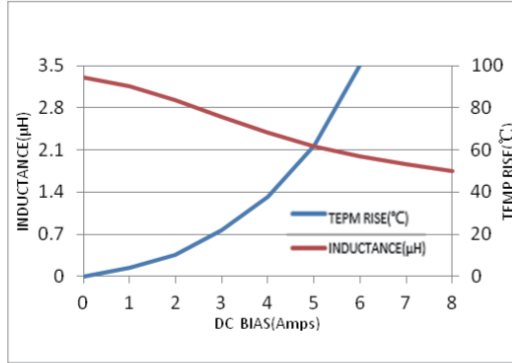
MWSA0402S-2R2MT



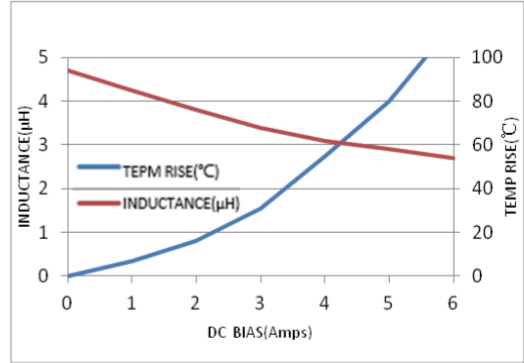
TYPICAL ELECTRICAL CHARACTERISTICS

MWSA0402S Series

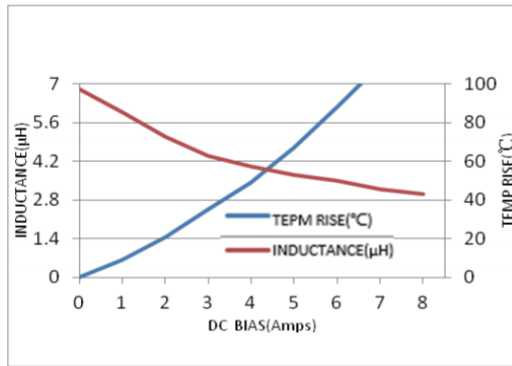
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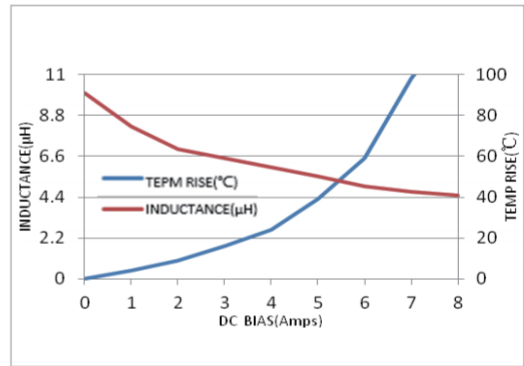
MWSA0402S-4R7MT



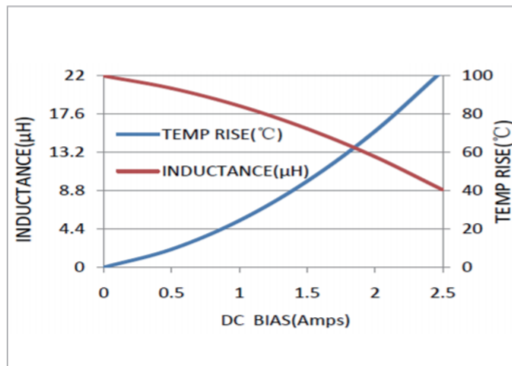
MWSA0402S-6R8MT



MWSA0402S-100MT

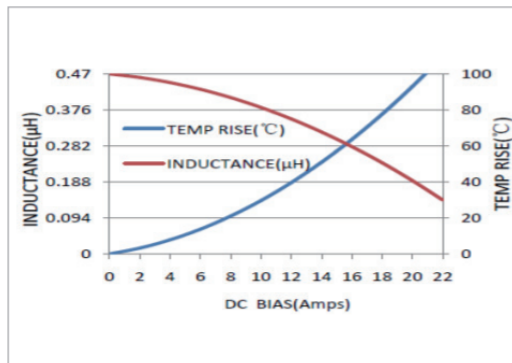


MWSA0402S-220MT

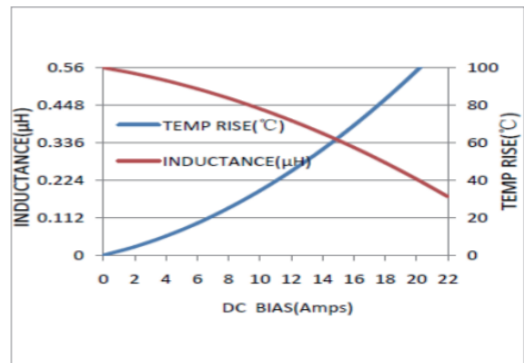


MWSA0518S Series

MWSA0518S-R47MT



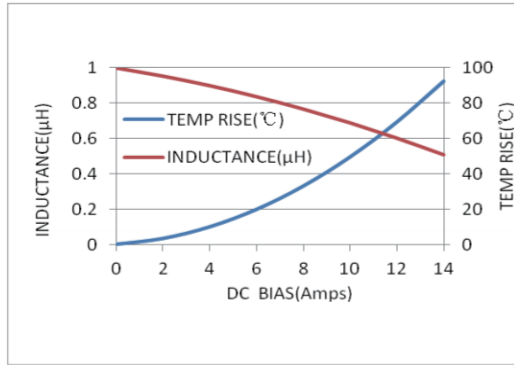
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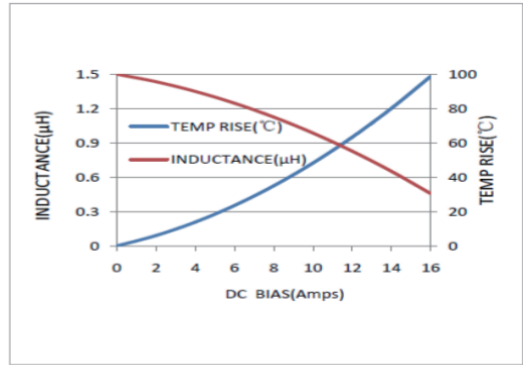
TYPICAL ELECTRICAL CHARACTERISTICS

MWSA0518S Series

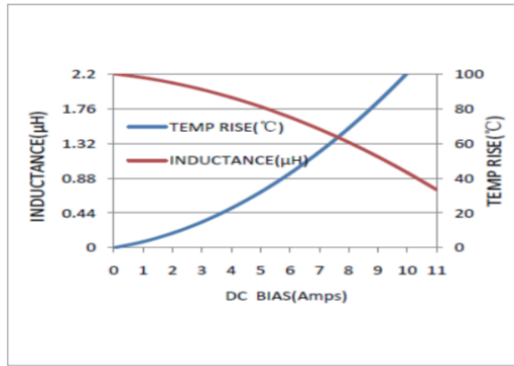
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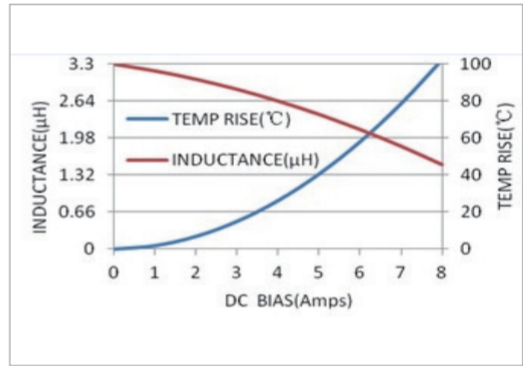
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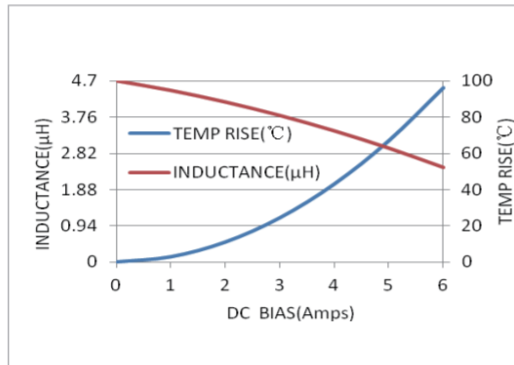
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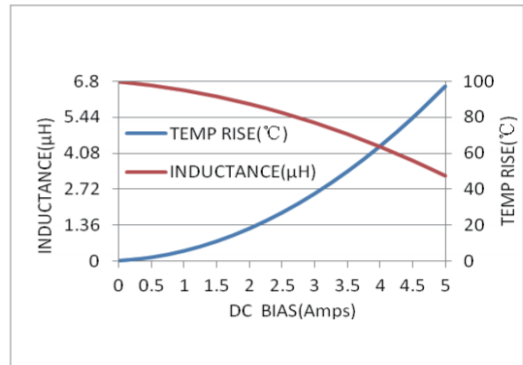
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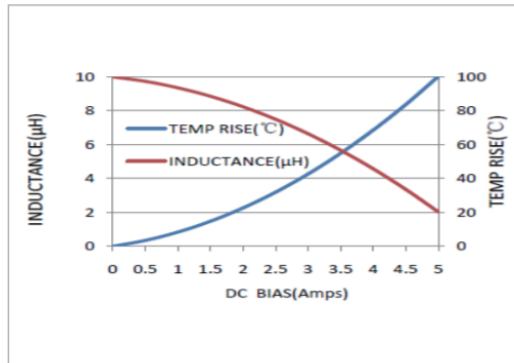
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MWSA0518S-6R8MT



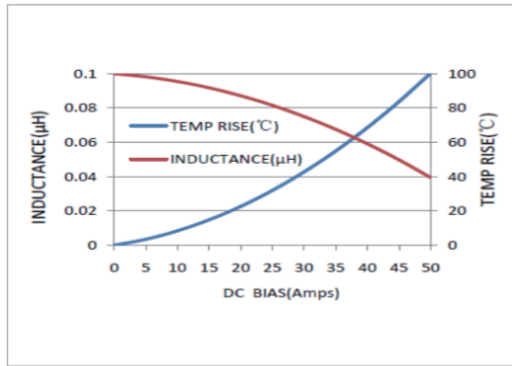
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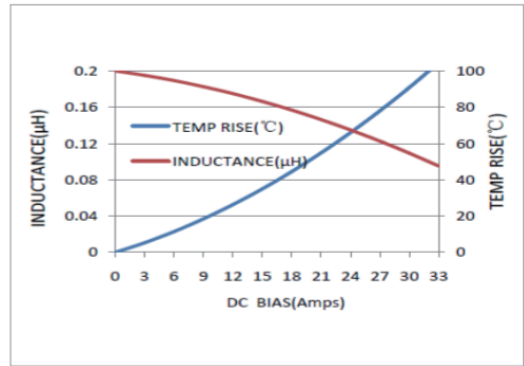
TYPICAL ELECTRICAL CHARACTERISTICS

MWSA0503S Series

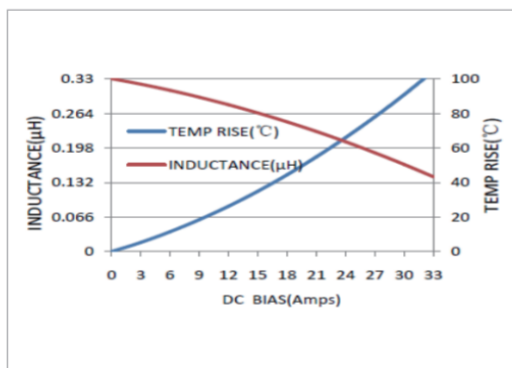
MWSA0503S-R10MT



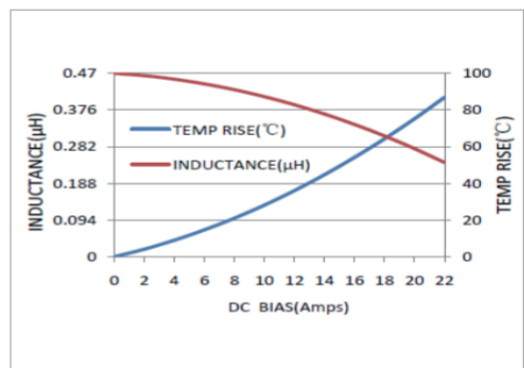
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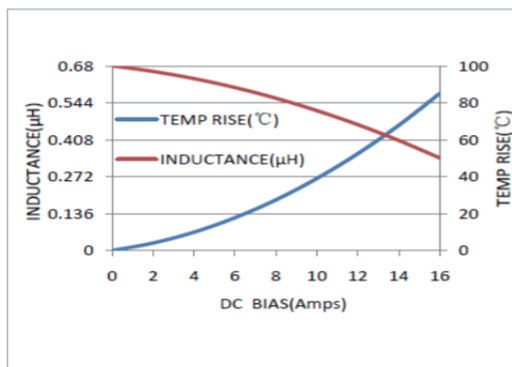
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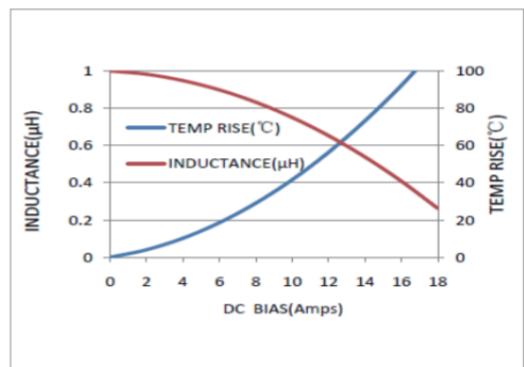
MWSA0503S-R47MT



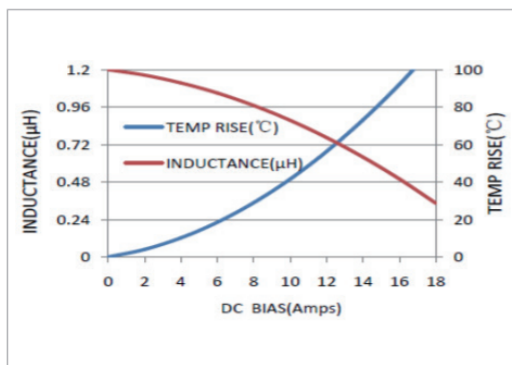
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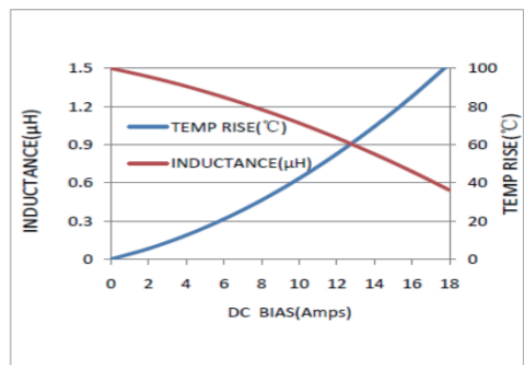
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MWSA0503S-1R2MT



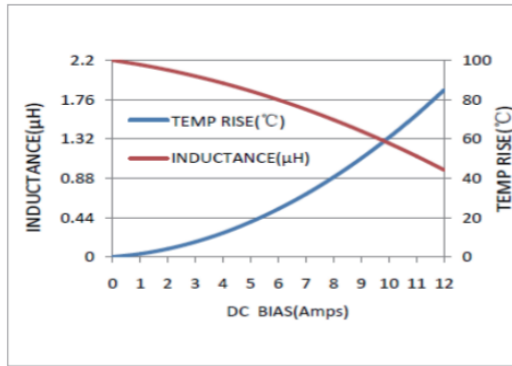
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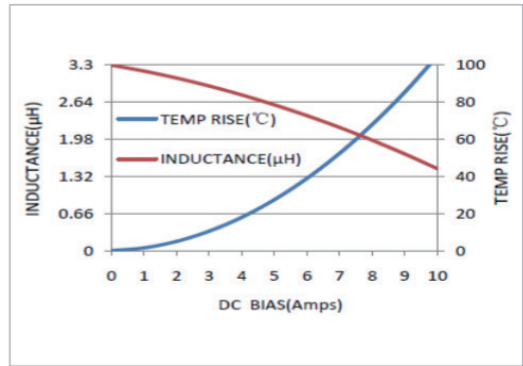
TYPICAL ELECTRICAL CHARACTERISTICS

MWSA0503S Series

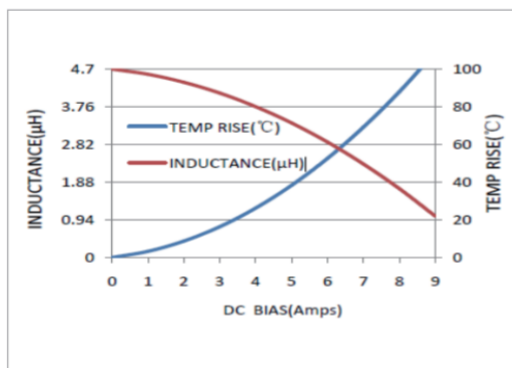
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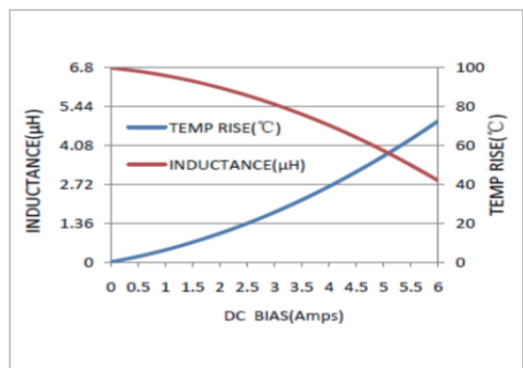
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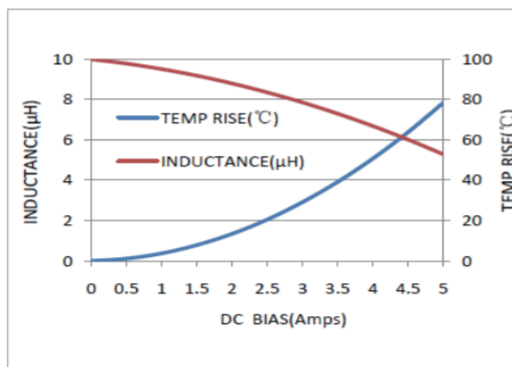
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MWSA0503S-6R8MT

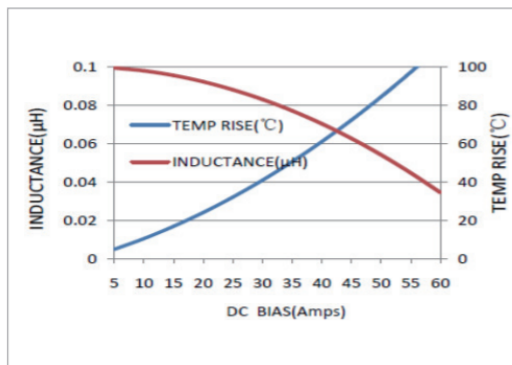


MWSA0503S-100MT

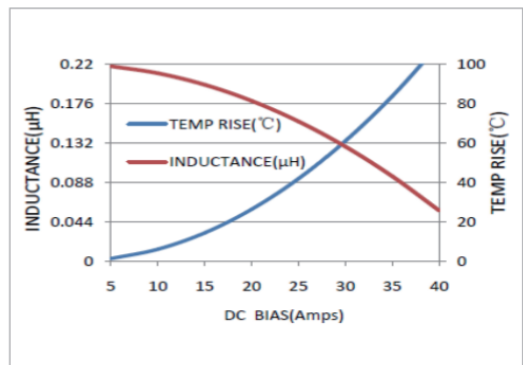


MWSA0618S Series

MWSA0618S-R10MT

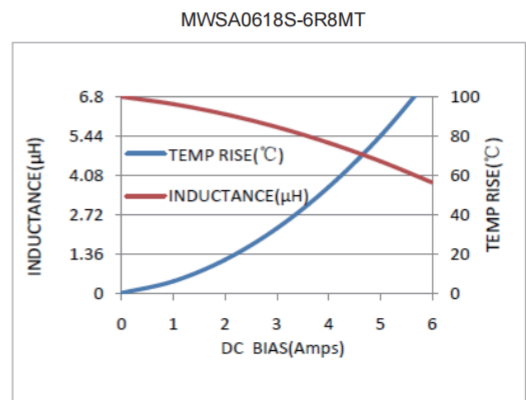
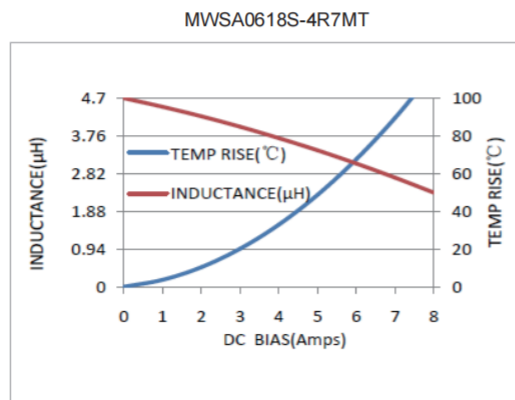
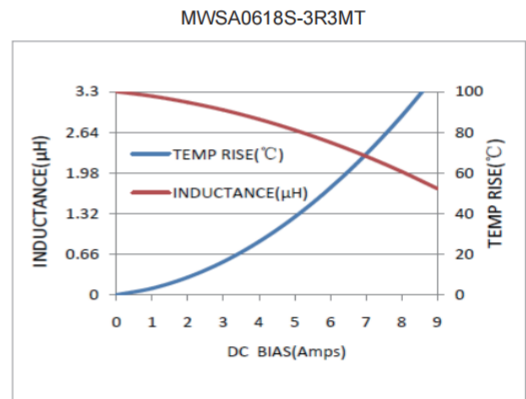
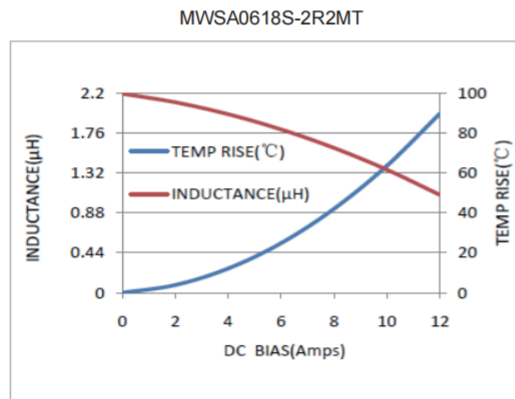
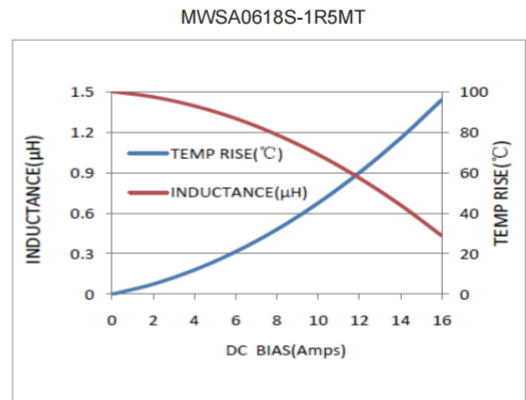
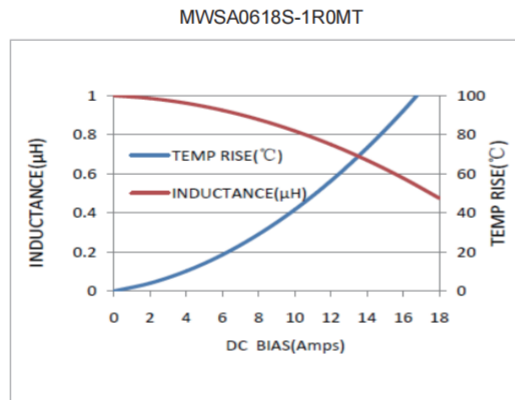
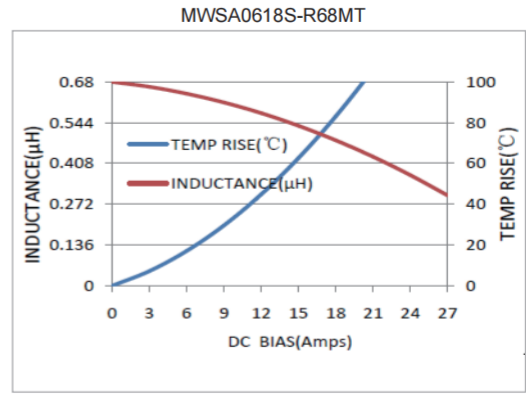
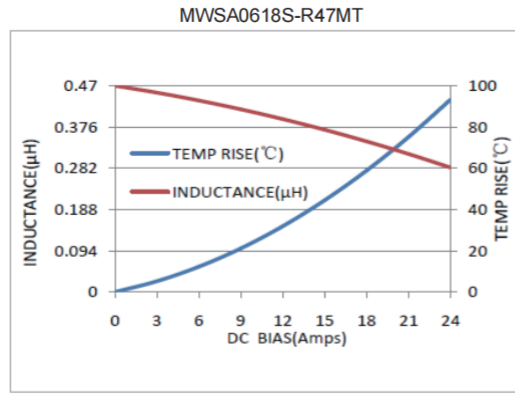


MWSA0618S-R22MT



TYPICAL ELECTRICAL CHARACTERISTICS

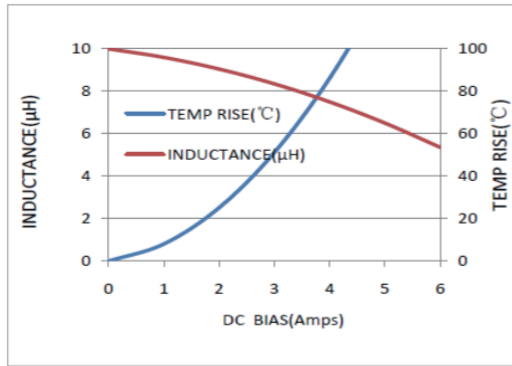
MWSA0618S Series



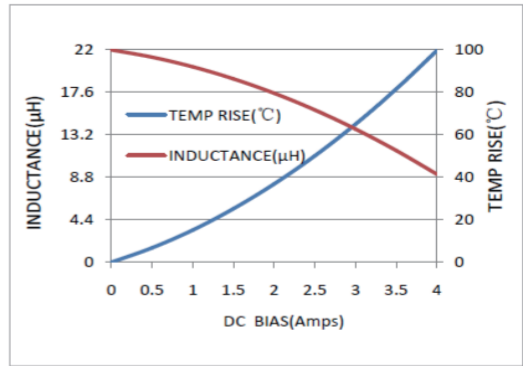
TYPICAL ELECTRICAL CHARACTERISTICS

MWSA0618S Series

MWSA0618S-100MT

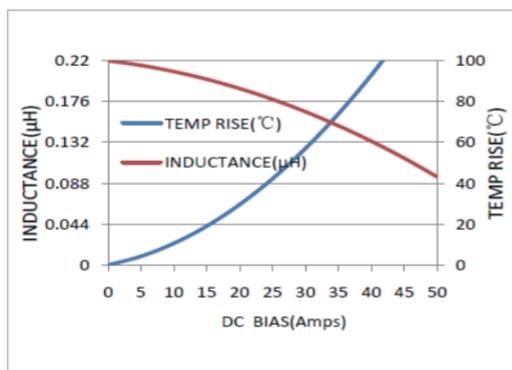


MWSA0618S-220MT

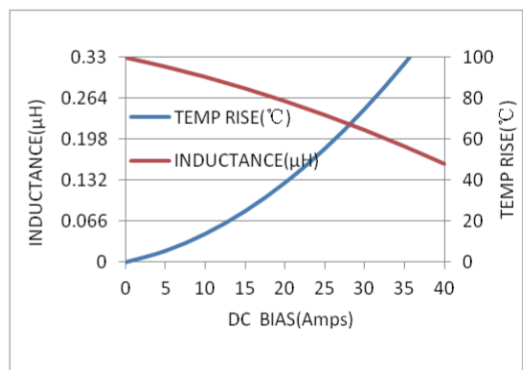


MWSA0624S Series

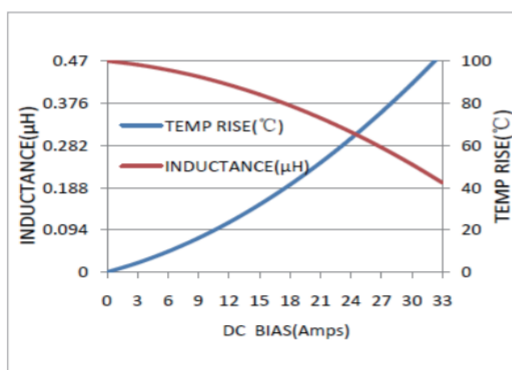
MWSA0624S-R22MT



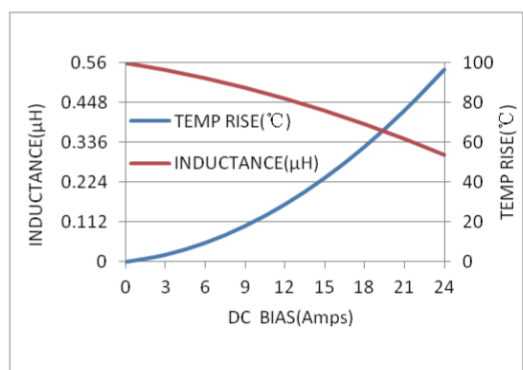
MWSA0624S-R33MT



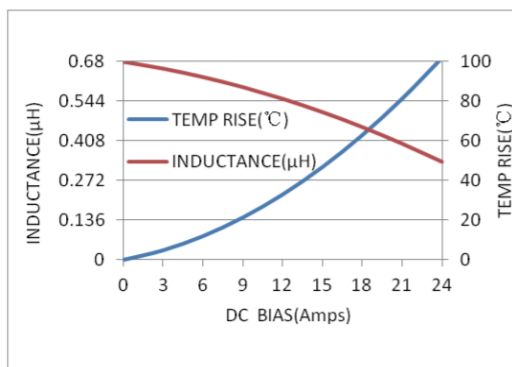
MWSA0624S-R47MT



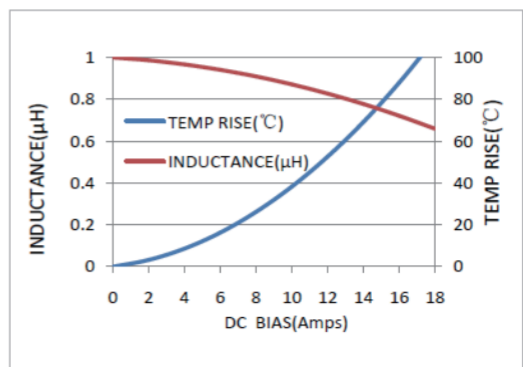
MWSA0624S-R56MT



MWSA0624S-R68MT

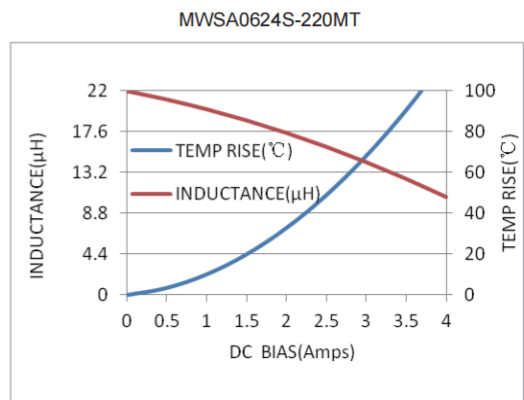
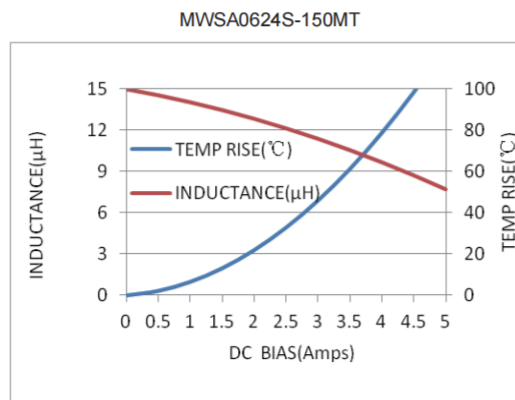
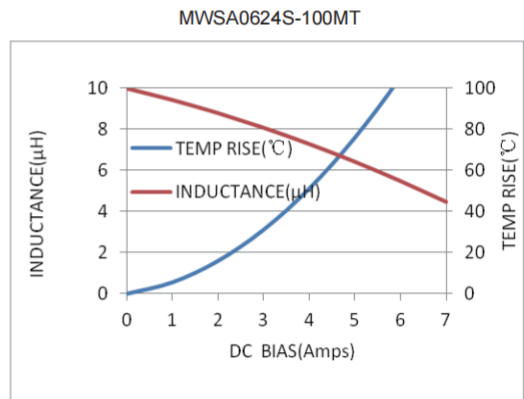
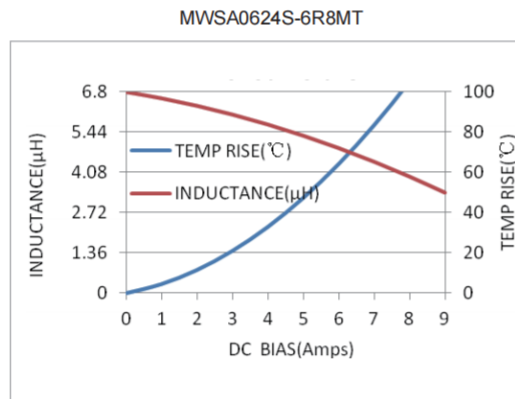
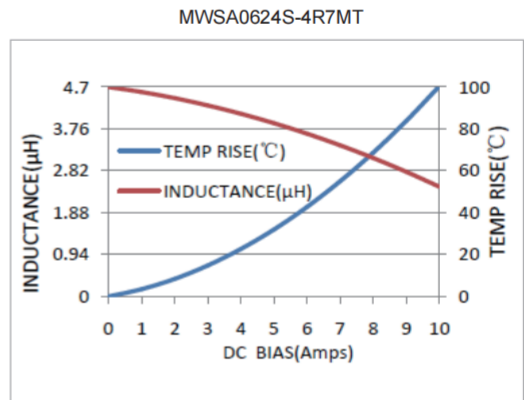
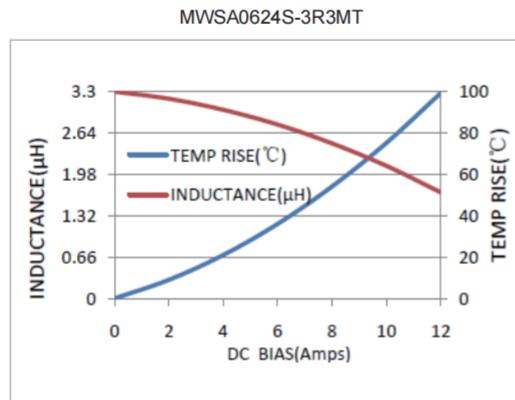
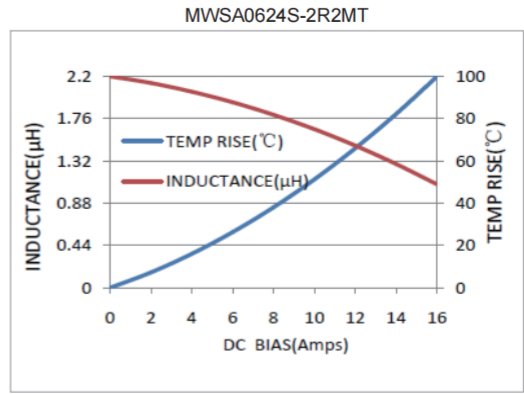
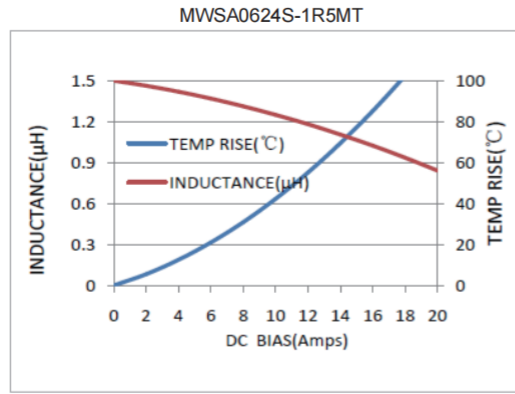


MWSA0624S-1R0MT



TYPICAL ELECTRICAL CHARACTERISTICS

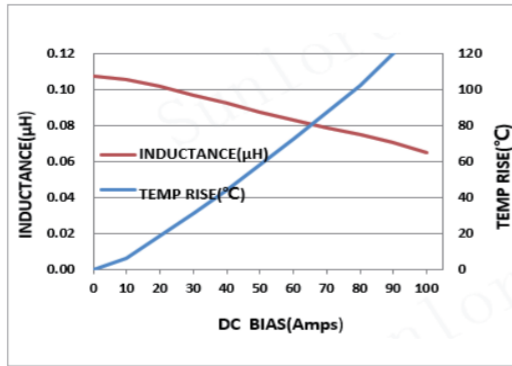
MWSA0624S Series



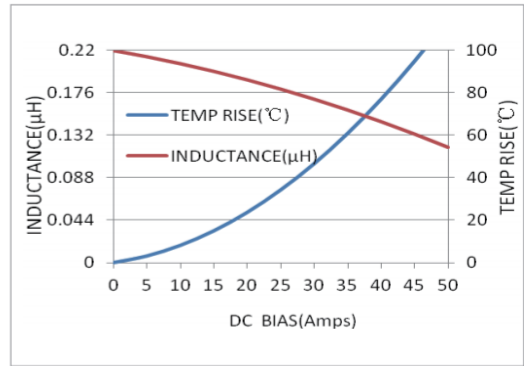
TYPICAL ELECTRICAL CHARACTERISTICS

MWSA0603S Series

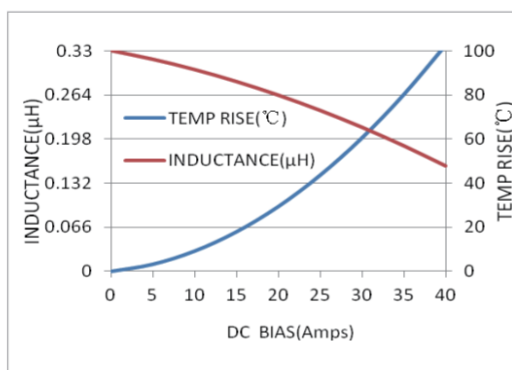
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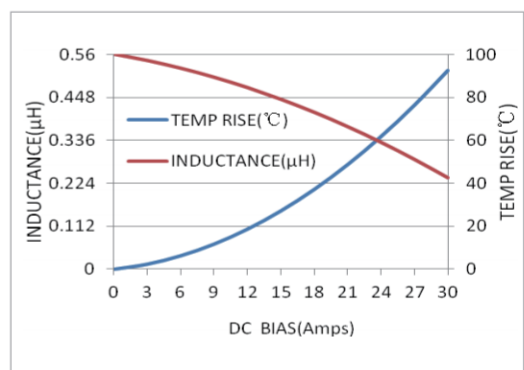
MWSA0603S-R22MT



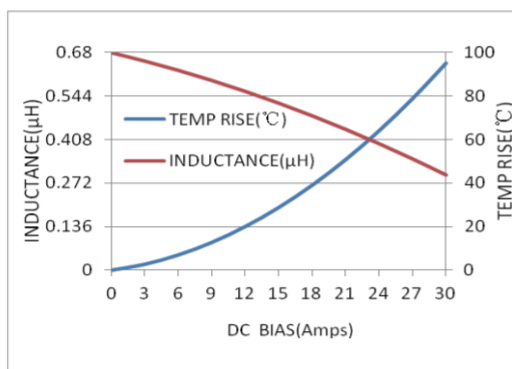
MWSA0603S-R33MT



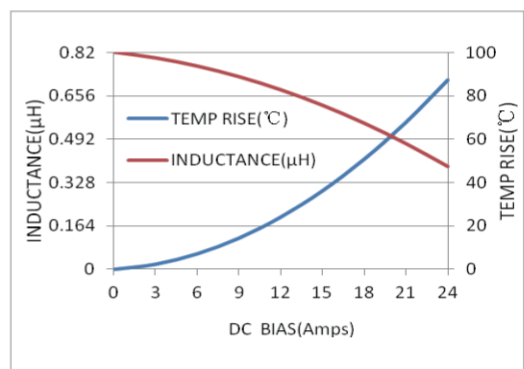
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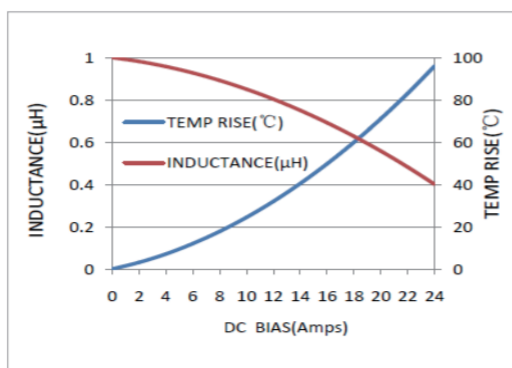
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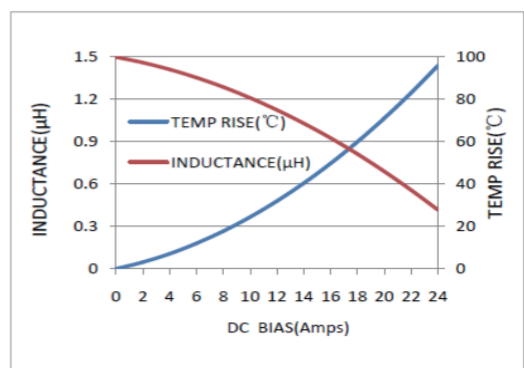
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MWSA0603S-1R0MT



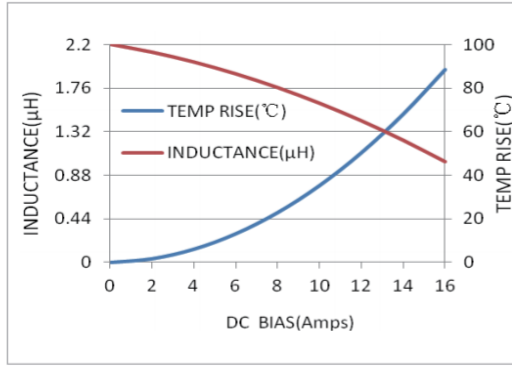
MWSA0603S-1R5MT



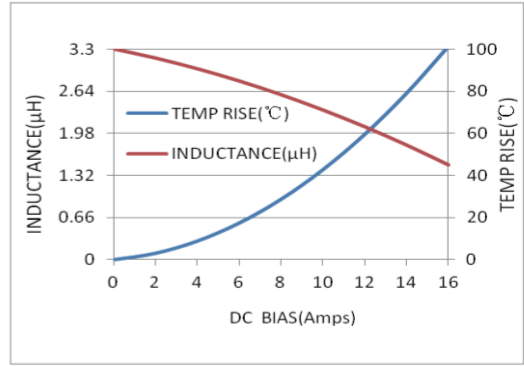
TYPICAL ELECTRICAL CHARACTERISTICS

MWSA0603S Series

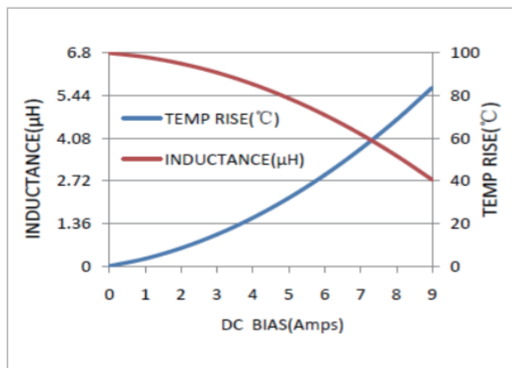
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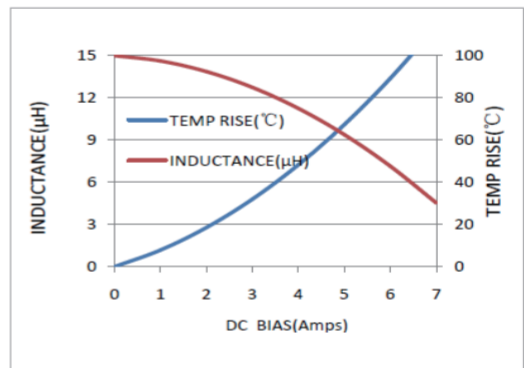
MWSA0603S-3R3MT



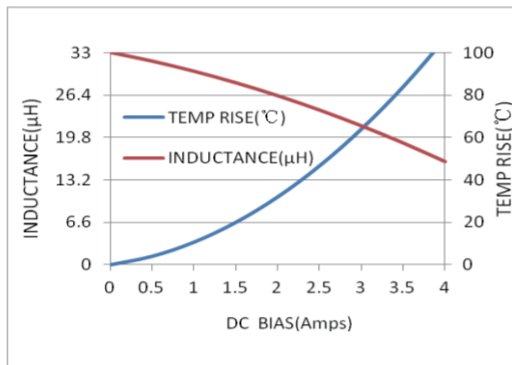
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MWSA0603S-150MT

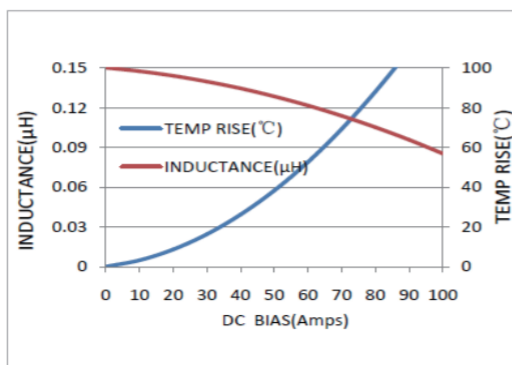


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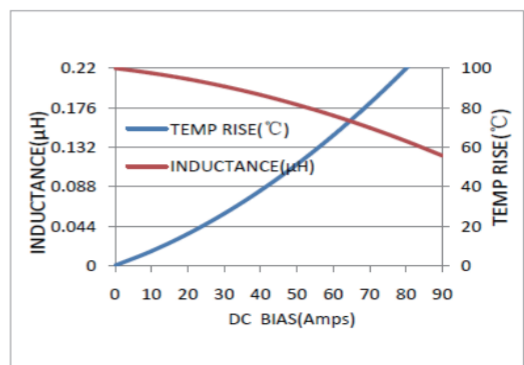


MWSA1004S Series

MWSA1004S-R15MT



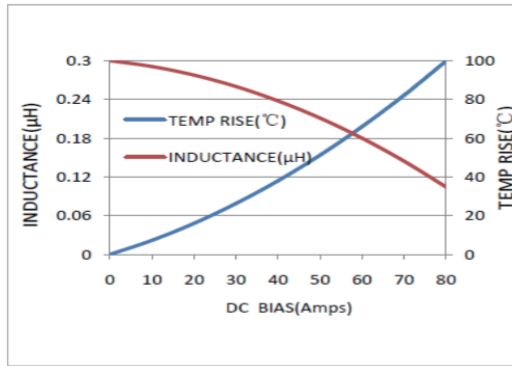
MWSA1004S-R22MT



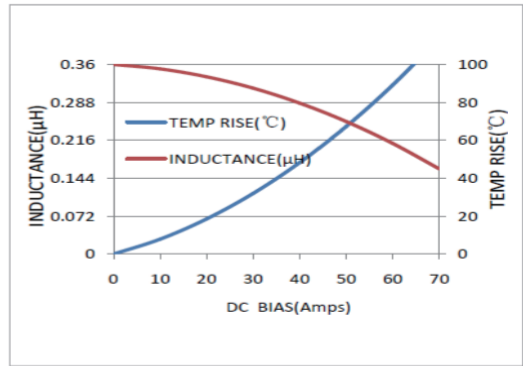
TYPICAL ELECTRICAL CHARACTERISTICS

MWSA1004S Series

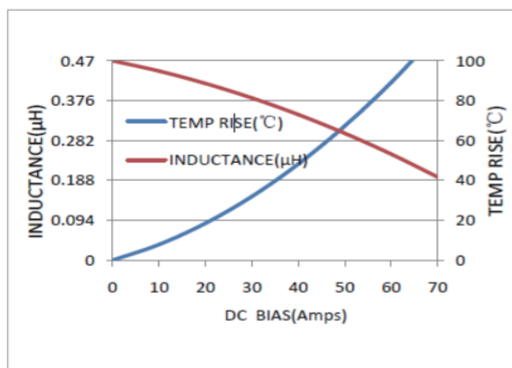
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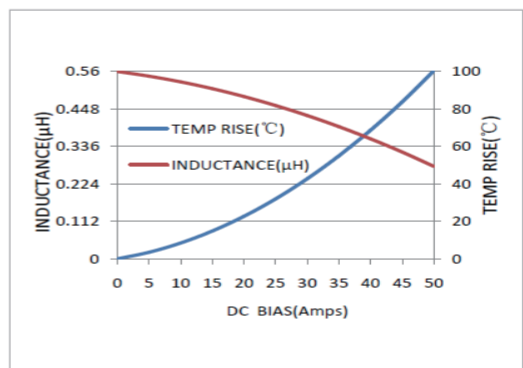
MWSA1004S-R36MT



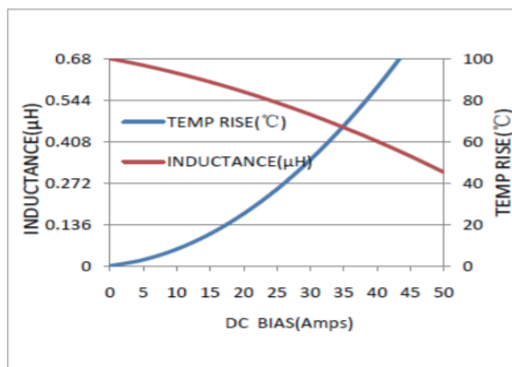
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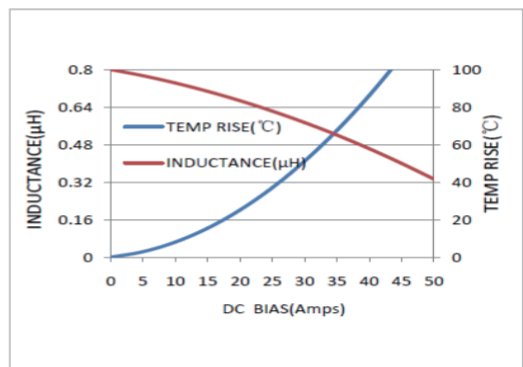
MWSA1004S-R56MT



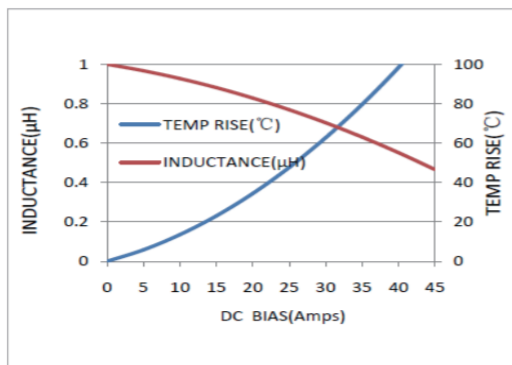
MWSA1004S-R68MT



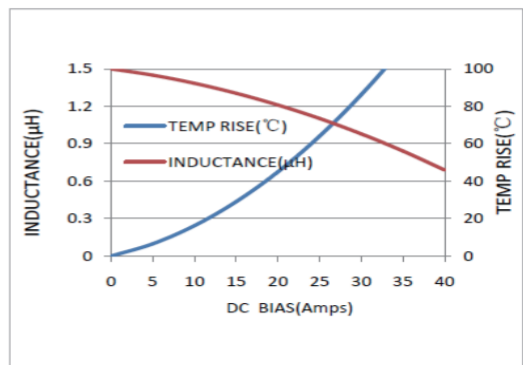
MWSA1004S-R80MT



MWSA1004S-1R0MT



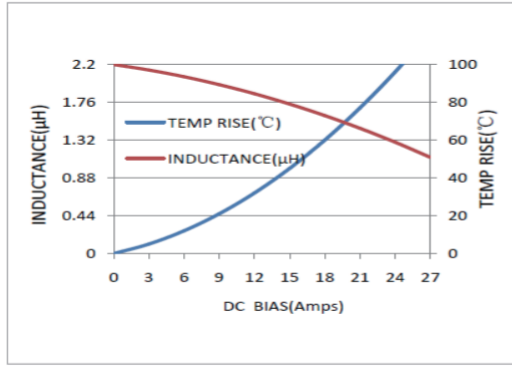
MWSA1004S-1R5MT



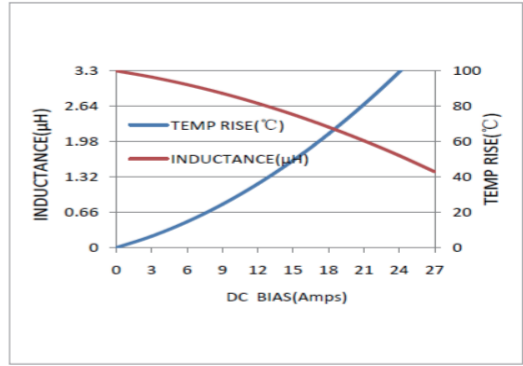
TYPICAL ELECTRICAL CHARACTERISTICS

MWSA1004S Series

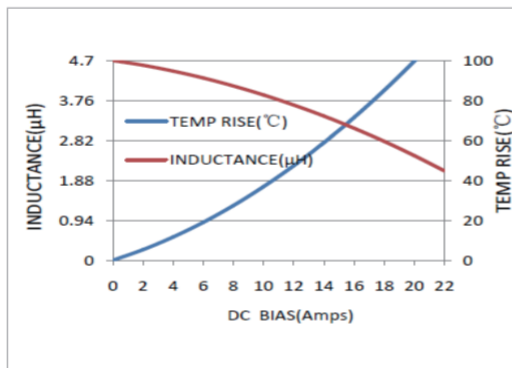
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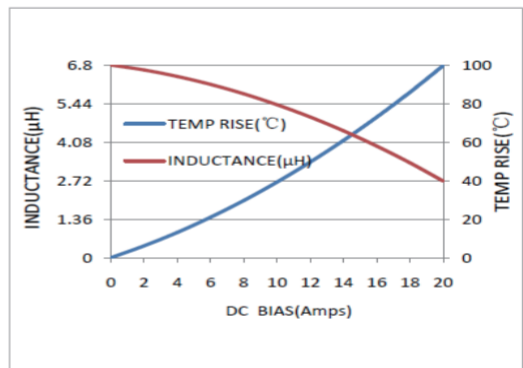
MWSA1004S-3R3MT



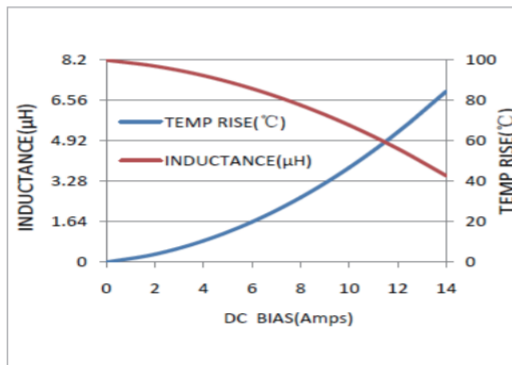
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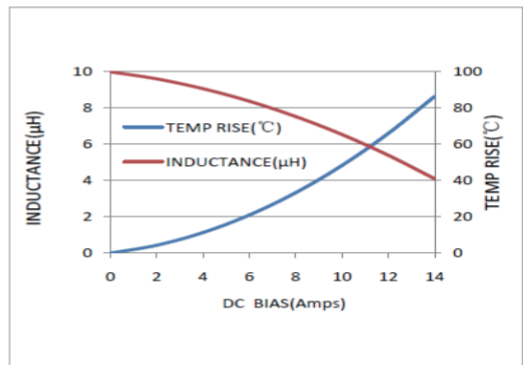
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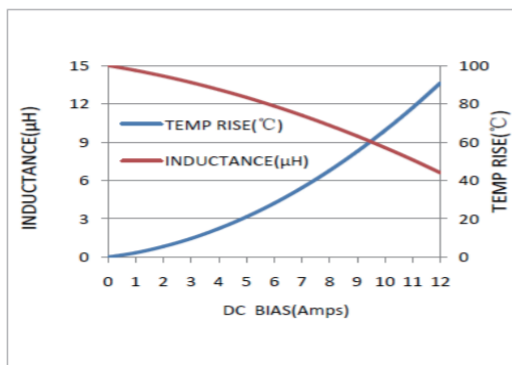
MWSA1004S-8R2MT



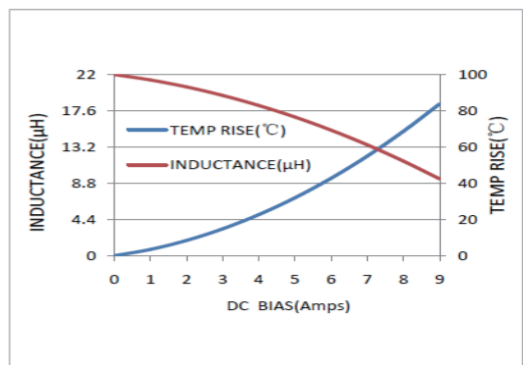
MWSA1004S-100MT



MWSA1004S-150MT



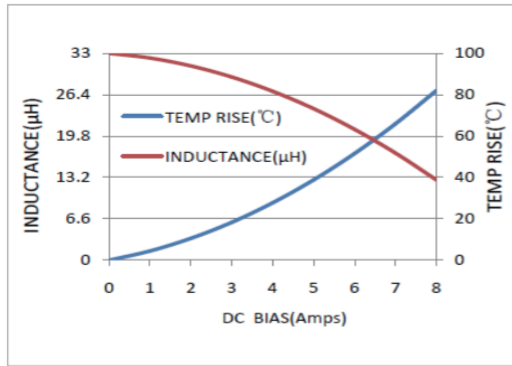
MWSA1004S-220MT



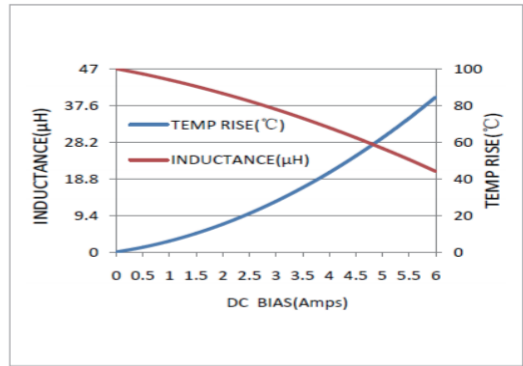
TYPICAL ELECTRICAL CHARACTERISTICS

MWSA1004S Series

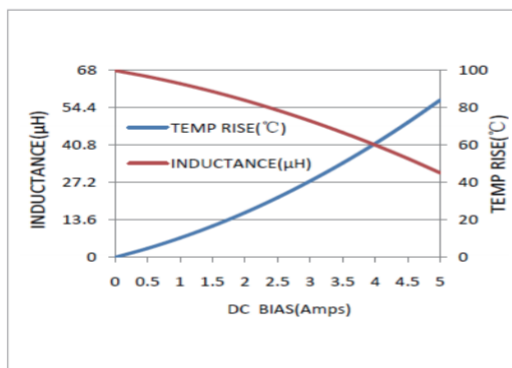
MWSA1004S-330MT



MWSA1004S-470MT

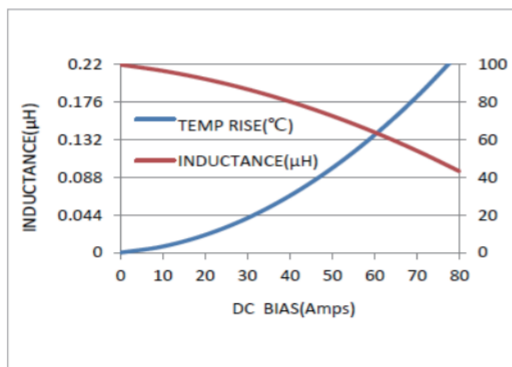


MWSA1004S-680MT

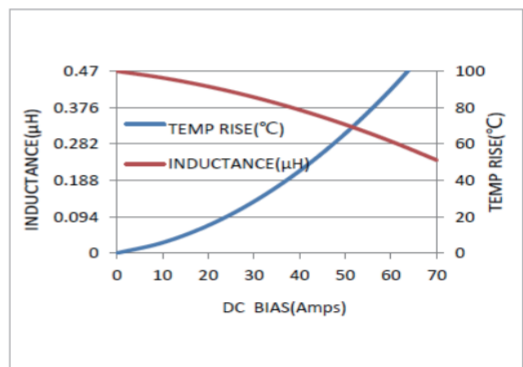


MWSA1204S Series

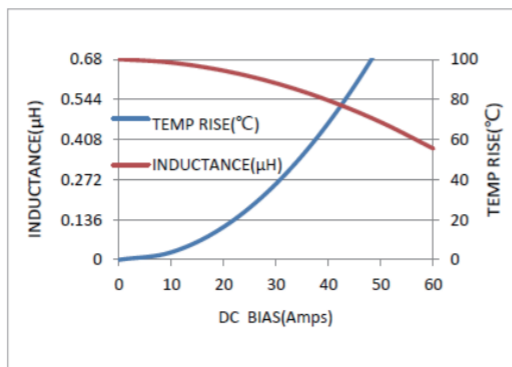
MWSA1204S-R22MT



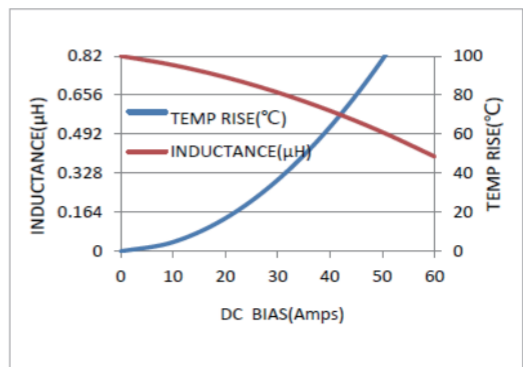
MWSA1204S-R47MT



MWSA1204S-R68MT

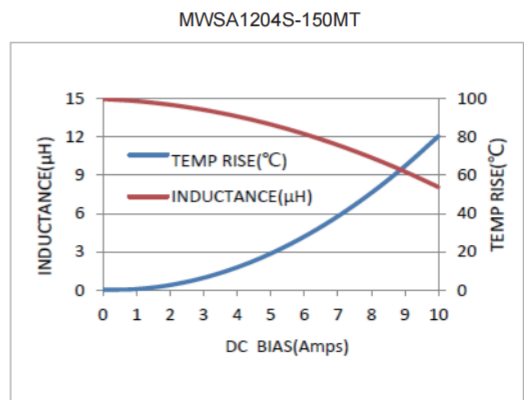
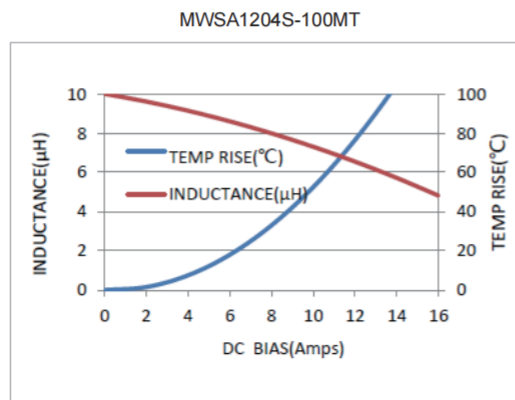
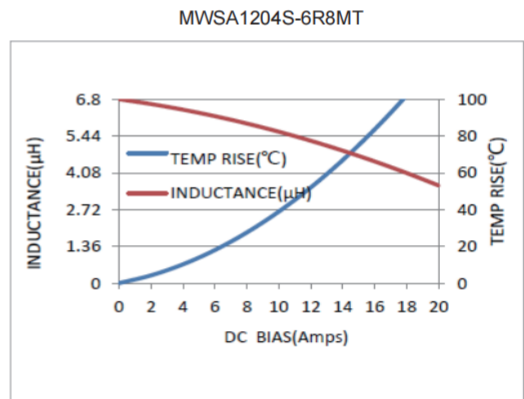
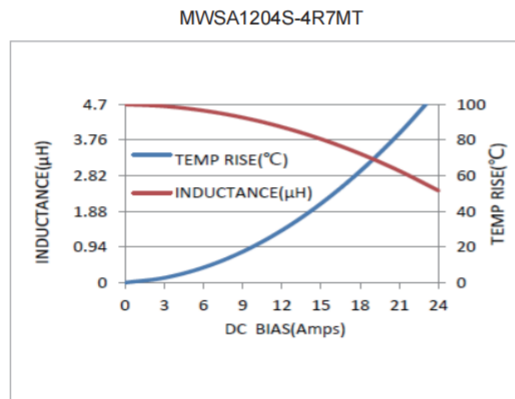
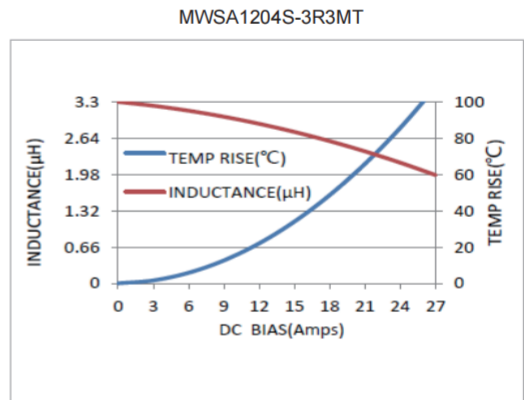
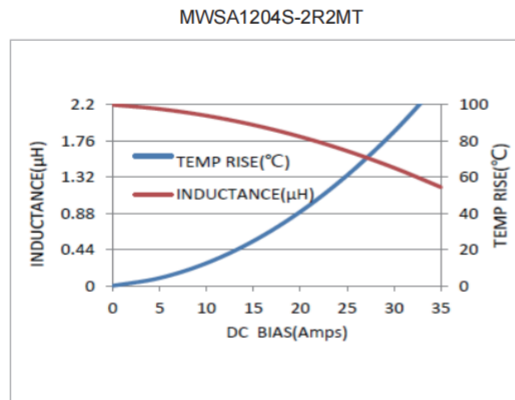
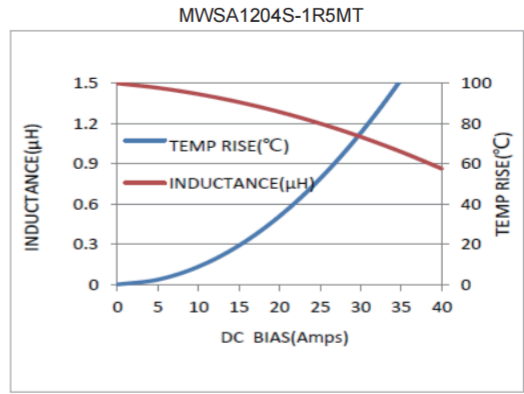
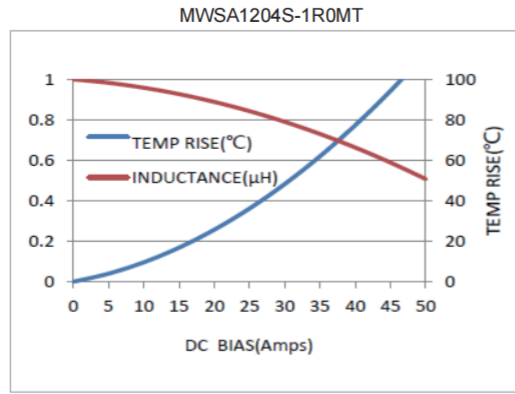


MWSA1204S-R82MT



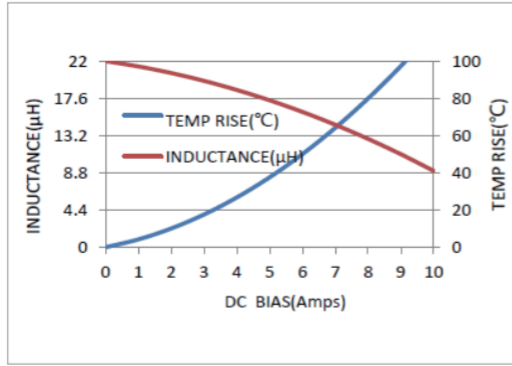
TYPICAL ELECTRICAL CHARACTERISTICS

MWSA1204S Series

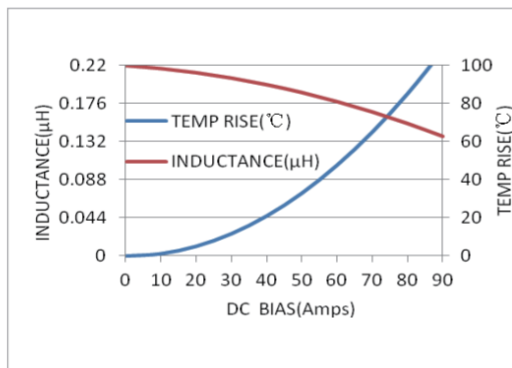


TYPICAL ELECTRICAL CHARACTERISTICS

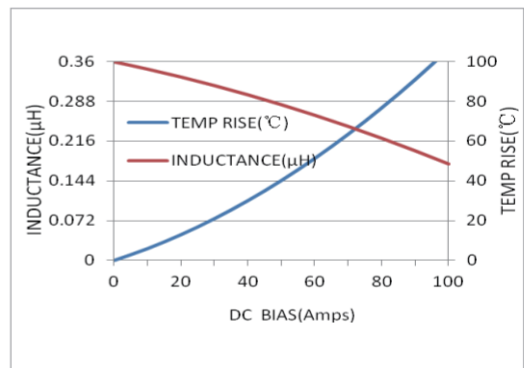
MWSA1204S Series
MWSA1204S-220MT



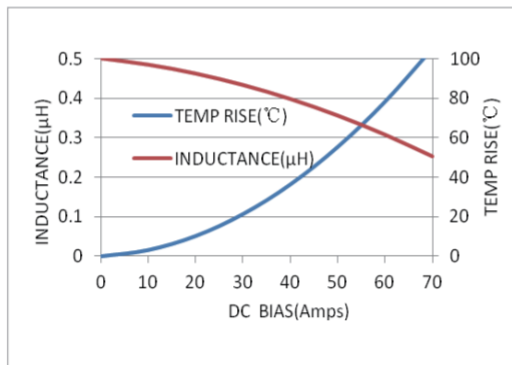
MWSA1205S Series
MWSA1205S-R22MT



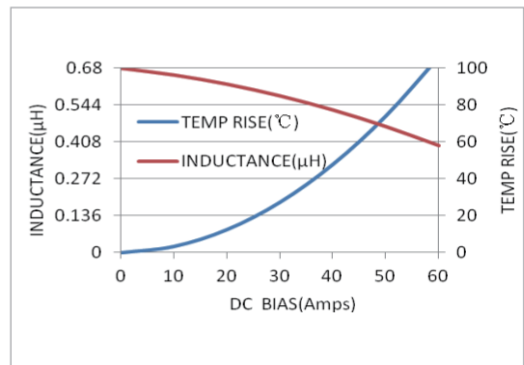
MWSA1205S-R36MT



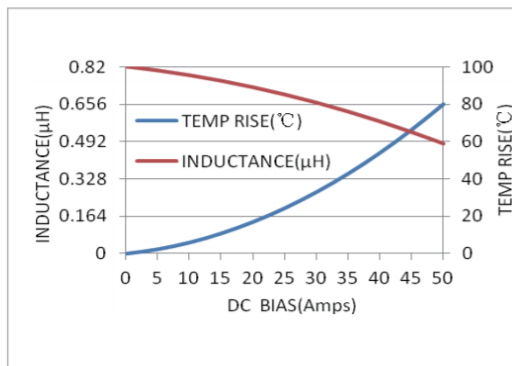
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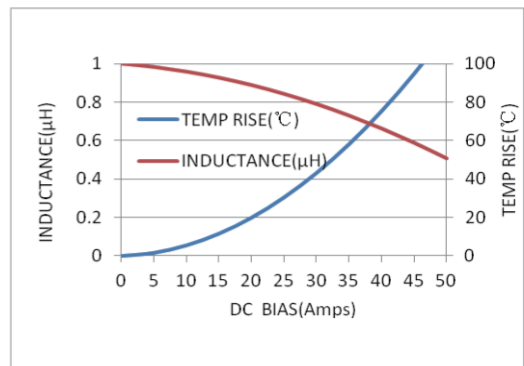
MWSA1205S-R68MT



MWSA1205S-R82MT

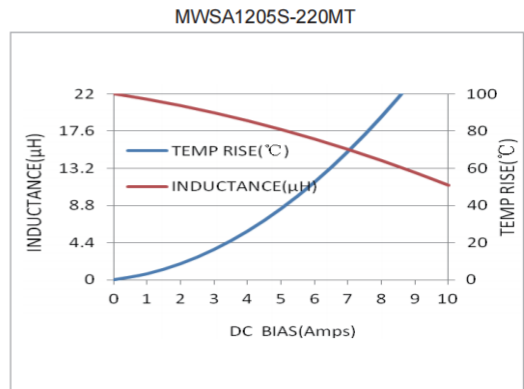
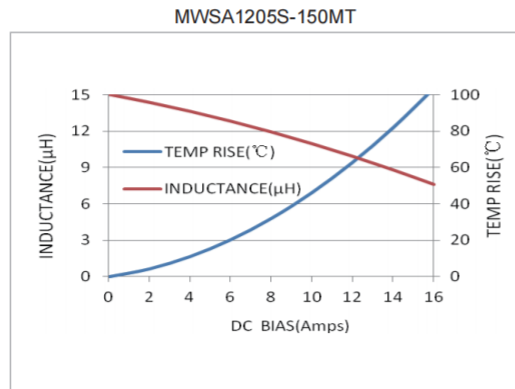
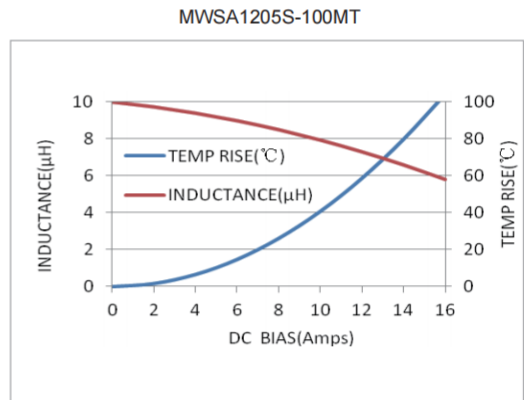
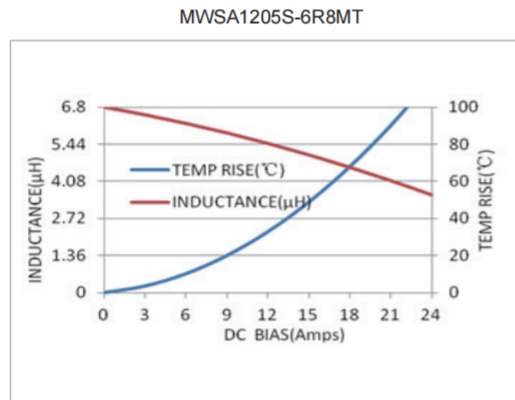
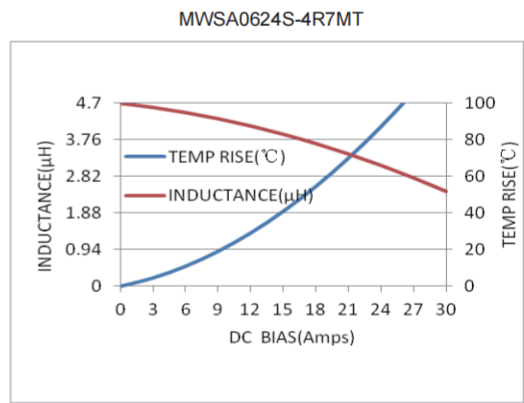
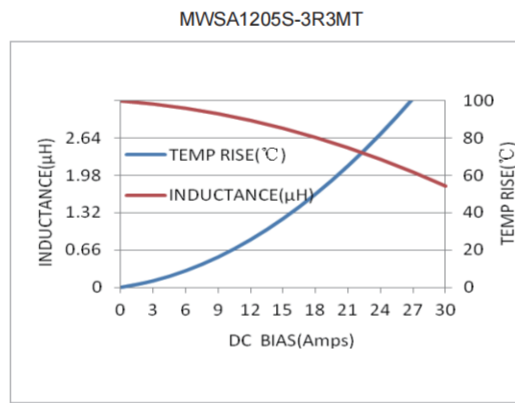
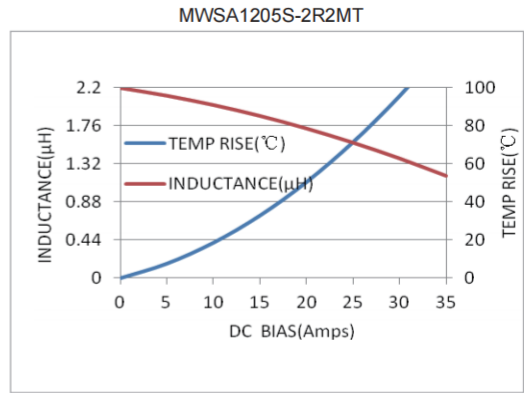
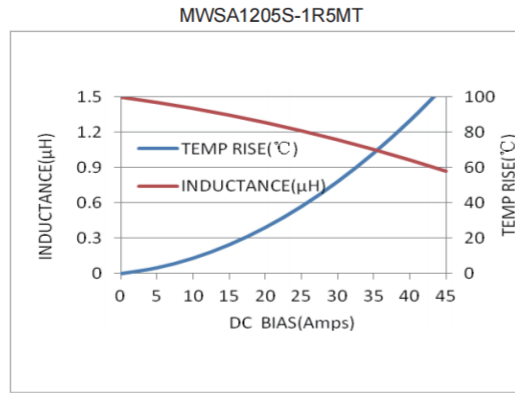


MWSA1205S-1R0MT



TYPICAL ELECTRICAL CHARACTERISTICS

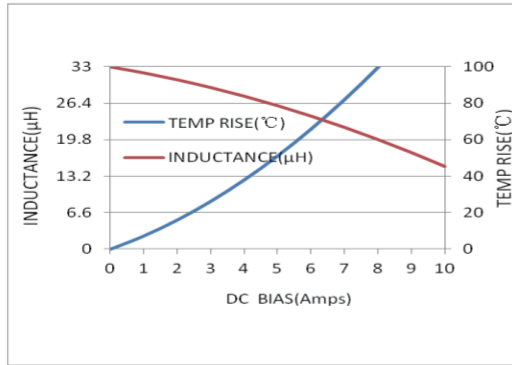
MWSA1205S Series



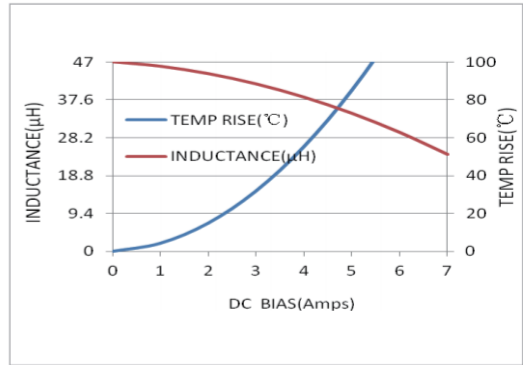
**TYPICAL
ELECTRICAL
CHARACTERISTICS**

MWSA1205S Series

MWSA1205S-330MT

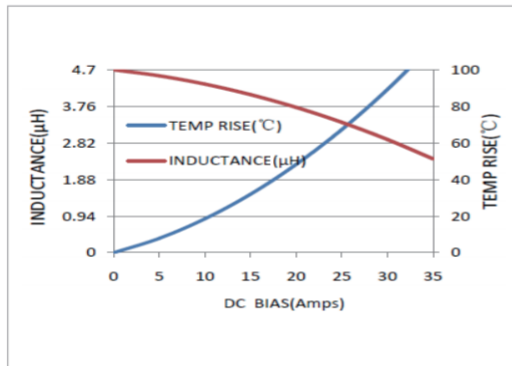


MWSA1205S-470MT

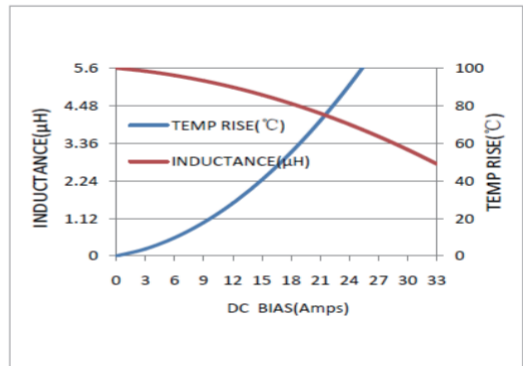


MWSA1206S Series

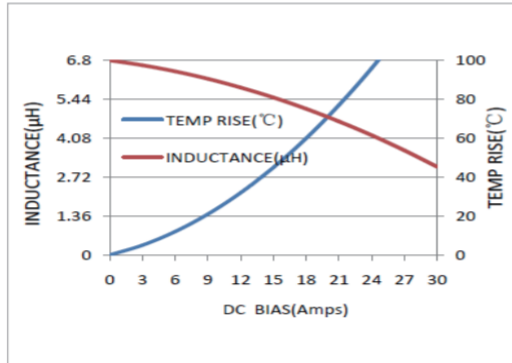
MWSA1206S-4R7MT



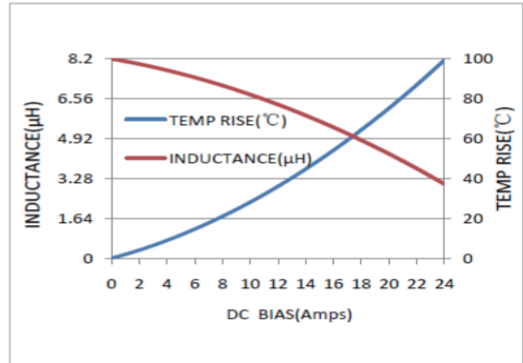
MWSA1206S-5R6MT



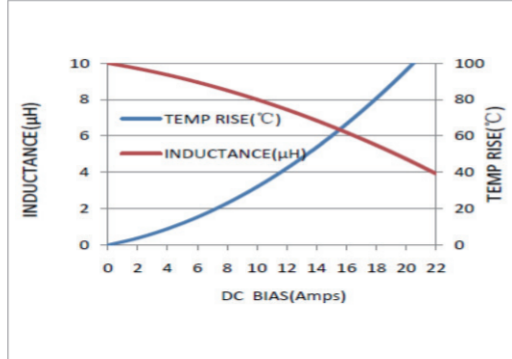
MWSA1206S-6R8MT



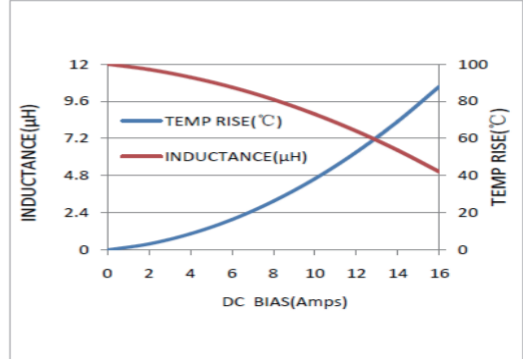
MWSA1206S-8R2MT



MWSA1206S-100MT



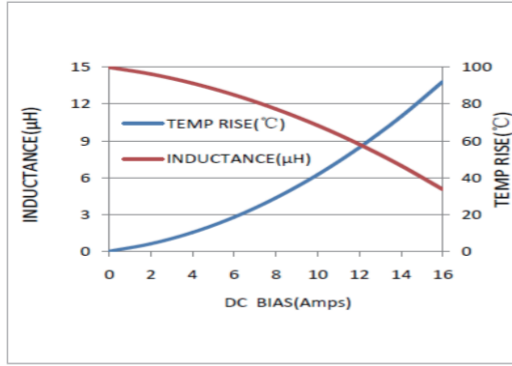
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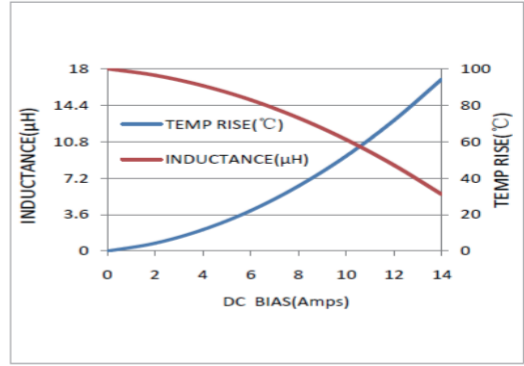
TYPICAL ELECTRICAL CHARACTERISTICS

MWSA1206S Series

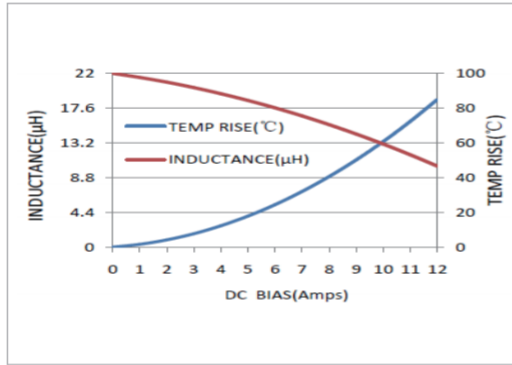
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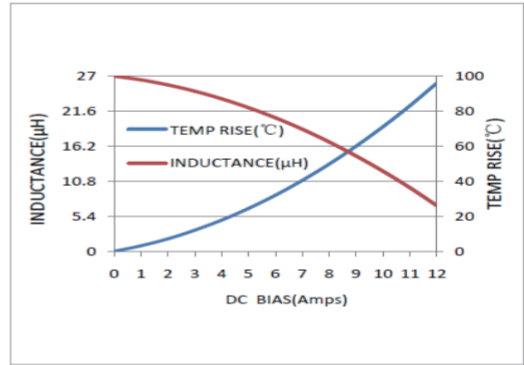
MWSA1206S-180MT



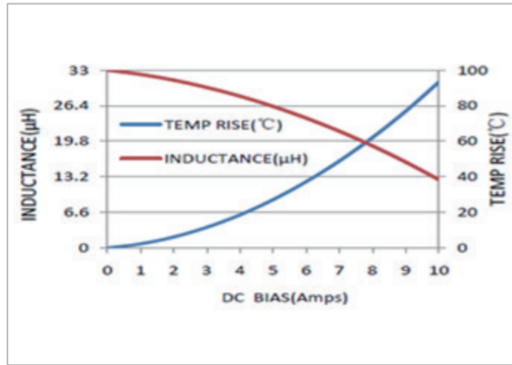
MWSA1206S-220MT



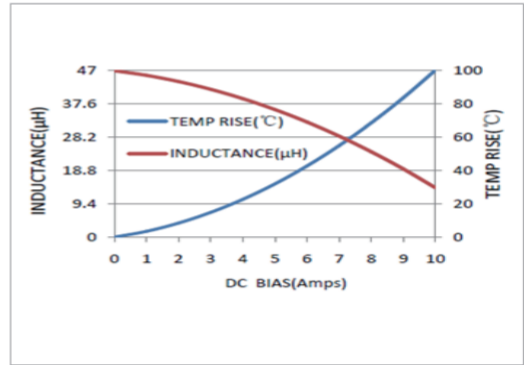
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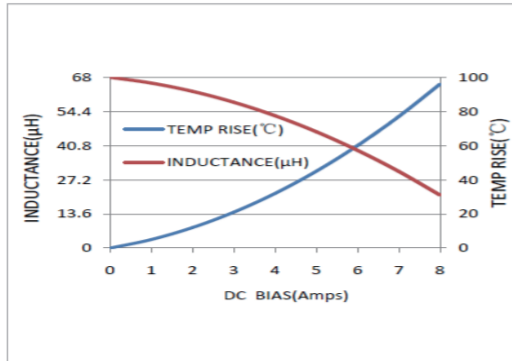
MWSA1206S-330MT



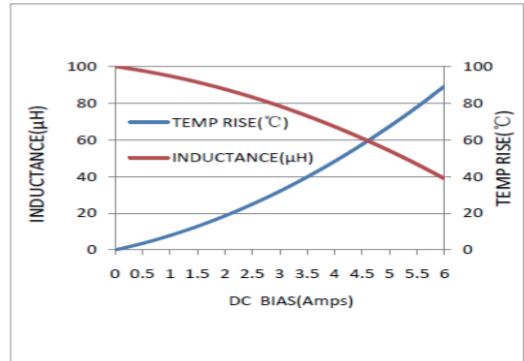
MWSA1206S-470MT



MWSA1206S-680MT



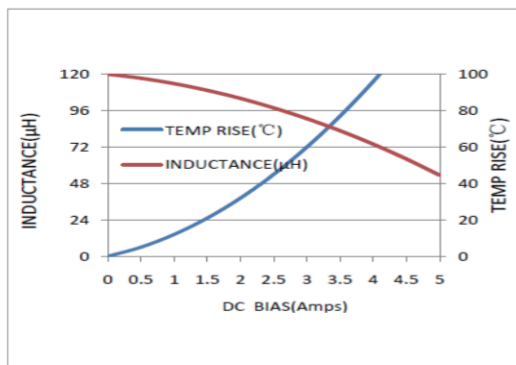
MWSA1206S-101MT



TYPICAL
ELECTRICAL
CHARACTERISTICS

MWSA1206S Series

MWSA1206S-121MT



MWSA1206S-151MT

