

SMD Power Inductors SMR0504 Series

Electrical Characteristics

Part No	Inductance (μ H)	DCR (Ω) max	Isat (A) typ	Ir (A) typ
SMR0504-100M	10.0 \pm 20%	0.10	1.94	2.55
SMR0504-120M	12.0 \pm 20%	0.12	1.82	2.45
SMR0504-150M	15.0 \pm 20%	0.14	1.58	2.15
SMR0504-180M	18.0 \pm 20%	0.15	1.49	1.93
SMR0504-220M	22.0 \pm 20%	0.18	1.44	1.75
SMR0504-270M	27.0 \pm 20%	0.20	1.28	1.65
SMR0504-330M	33.0 \pm 20%	0.23	1.16	1.47
SMR0504-390M	39.0 \pm 20%	0.32	1.02	1.27
SMR0504-470M	47.0 \pm 20%	0.37	0.91	1.21
SMR0504-560M	56.0 \pm 20%	0.42	0.88	1.15
SMR0504-680M	68.0 \pm 20%	0.46	0.80	1.12
SMR0504-820M	82.0 \pm 20%	0.60	0.71	0.97
SMR0504-101K	100.0 \pm 10%	0.70	0.65	0.77
SMR0504-121K	120.0 \pm 10%	0.93	0.60	0.74
SMR0504-151K	150.0 \pm 10%	1.10	0.55	0.72
SMR0504-181K	180.0 \pm 10%	1.38	0.50	0.61
SMR0504-221K	220.0 \pm 10%	1.57	0.45	0.59

Test Equipment and Frequency:

- Inductance : LCR meter 4284A/4286A (HP) / 100kHz / 1.0V
- DC Resistance : HP4338B Milliohms Meter
- DC Bias : Waynekerr 3265B (Bias Current Source) / 1.0kHz / 1.0V

Test Condition:

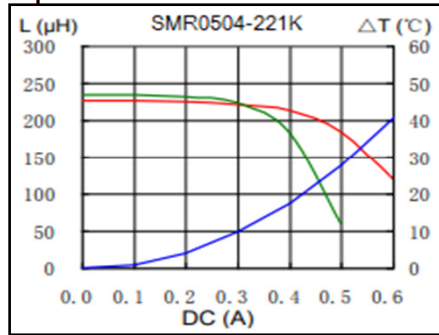
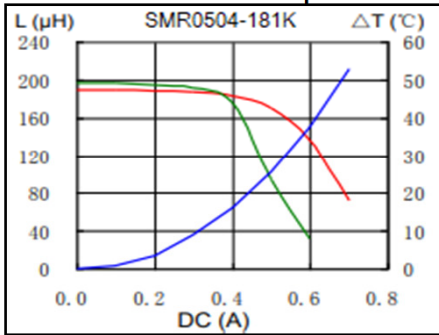
- Temperature : 26°C \pm 3°C
- Humidity : \leq 70% RH

General Specification:

- Temperature Rise : 40°C
- Operating Temperature : -40°C ~ +125°C
- Storage Temperature : -20°C up to +40°C, 75% RH max
- All data is tested based on 25°C ambient temperature
- Measuring frequency inductance : 10 μ H ~ 82 μ H ; at 2.52 MHz 100 μ H ~ 820 μ H ; at 1 kHz
- Saturation current: DC current which becomes inductance value drop by 10% from the nominal value.
- Temperature rise current: The value of D.C. current when the temperature of coil becomes $\Delta T=40^\circ\text{C}(T_a=20^\circ\text{C})$.

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Saturation Current & Temperature Rise Graph

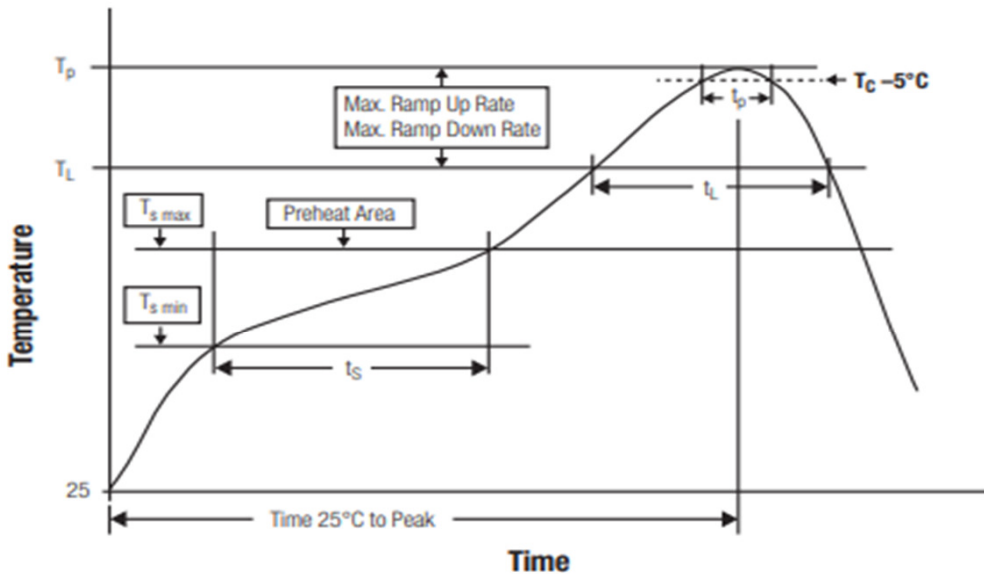


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Reflow Profile for SMT Component

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average Ramp-Up Rate ($T_{s_{max}}$ to T_p)	3°C/second max.	3°C/second max.
Preheat - Temperature Min ($T_{s_{min}}$) - Temperature Max ($T_{s_{max}}$) - Time ($t_{s_{min}}$ to $t_{s_{max}}$)	100°C 150°C 60 - 150 seconds	150°C 200°C 60 - 180 seconds
Time Maintained Above: - Temperature (T_L) - Time (t_L)	183°C 60 - 150 seconds	217°C 60 - 150 seconds
Peak / Classification Temperature (T_p)	See Table 4.10	See Table 4.20
Ramp-Down Rate	6°C / second max.	6°C / second max.
Time 25°C to Peak Temperature	6 minutes max.	8 minutes max.

Not All temperature refer to topside of the package, measured on the package body surface



Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
<1.60mm	260°C + 0°C	260°C + 0°C	260°C + 0°C
1.60mm - 2.50mm	260°C + 0°C	260°C + 0°C	260°C + 0°C
≥2.50mm	250°C + 0°C	245°C + 0°C	245°C + 0°C

*Tolerance: The device manufacture/supplier shall assure process compatibility up to and including the stated classification temperature (This mean Peak Reflow Temperature +0°C. For example 260°C + 0°C) at the rated MSL level.