

■ 叠层片式铁氧体功率电感器
Multilayer Chip Ferrite Power Inductors



◆ 特征
Feature

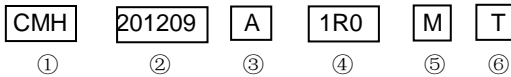
- * 超大的额定电流，极低的直流电阻
Very large rated current and low direct-current resistance.
- * 体积小
Miniature volume.
- * 漏磁小，不产生耦合，可靠性高
No cross coupling between inductors due to low magnetic shield and high reliability.
- * 无引线，不产生跟踪性，适合高密度表面贴装
No lead, ideal for high density SMT installation, with no directionality.
- * 优良的可焊性及耐热冲击性，适合回流焊
Superior solderability and resistance to soldering heat, suitable for reflow soldering.
- * 通过 AEC-Q200 符合性测试
Pass AEC-Q200 compliance test.

◆ 应用
Applications

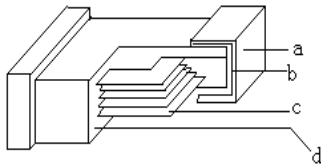
*用于智能手机、平板终端、数码相机、摄像机、硬盘、电源模块等；用于手机、可穿戴设备、DVCs、HDDs 等 DC-DC 转换电路

Tablet terminals, digital cameras, camcorders, hard disks, power modules, etc. DC-DC conversion circuits for mobile phones, wearable devices, DVCs, HDDs, etc.

◆ 型号表示法
Part Number



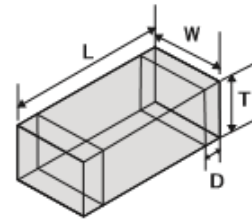
① 产品代号 Product Code		② 规格尺寸(L×W×T) Dimensions (mm)		③ 材料代号 Material Code	④ 感量(μH) Inductance		⑤ 误差 Tolerance	⑥ 包装方式 Packaging Style	
CM H	车规叠层片式铁氧体功率电感器	160808	1.6×0.8×0.8	A	示例 Example	0.047	K ±10%	T	卷带盘装
	Automotive Grade	201209	2.0×1.2×0.9	B	47N	0.10	M ±20%	B	Tape & Reel
	Multilayer Chip	201609	2.0×1.6×0.9		1R0	1.0			散装 Bulk
	Ferrite Power Inductors	252010	2.5×1.0×1.0		N=0.0(nH)				
					R=0.0(μH)				

◆产品结构 Product Structure


- a. 银层 Ag layer
- b. 镀层 Ni/Sn plating
- c. 内电极 Inner electrode
- d. 瓷体 Body

◆规格尺寸
Dimension

Part No	L(mm)	W(mm)	T(mm)	D(mm)
160808 (0603)	1.6± 0.20 (0.063± 0.008)	0.8± 0.20 (0.031± 0.008)	0.8± 0.20 (0.031± 0.008)	0.3± 0.2 (0.01± 0.008)
201209 (0805)	2.0± 0.20 (0.079± 0.008)	1.2± 0.20 (0.047± 0.008)	0.9± 0.20 (0.035± 0.008)	0.5± 0.3 (0.020± 0.012)
201609 (0806)	3.2± 0.20 (0.079± 0.008)	1.6± 0.20 (0.063± 0.008)	0.9± 0.20 (0.035± 0.008)	0.5± 0.3 (0.020± 0.012)
252010 (1008)	2.5± 0.20 (0.098± 0.008)	2.0± 0.20 (0.079± 0.008)	1.0± 0.20 (0.039± 0.008)	0.5± 0.3 (0.020± 0.012)


◆电性能参数
Electrical Characteristics
1608 Type

型号 Part NO	误差范围 Tolerance	标称感量 Inductance (μH)	测试频率 Test frequency(MHz)	直流电阻 DCR (Ω)Max	自谐振频率 SRF(MHZ)min	额定电流 I _r (mA)Max
CMH160808BR47MT	±20%	0.047	1	0.10±30%	100	1050
CMH160808BR56MT	±20%	0.056	1	0.12±30%	100	1050
CMH160808B1R0MT	±20%	1.0	1	0.20±30%	98	900
CMH160808B1R8MT	±20%	1.8	1	0.24±30%	95	750
CMH160808B2R2MT	±20%	2.2	1	0.24±30%	95	750
CMH160808B4R7MT	±20%	4.7	1	0.50±30%	65	700

2012 Type

型号 Part NO	误差范围 Tolerance	标称感量 Inductance (μH)	测试频率 Test frequency(MHz)	直流电阻 DCR (Ω)Max	自谐振频率 SRF(MHZ)min	额定电流 I _r (mA)Max
CMH201209A1R0MT	±20%	1.0	1	0.14±25%	75	300
CMH201209A2R2MT	±20%	2.2	1	0.224±25%	50	220
CMH201209A3R3MT	±20%	3.3	1	0.24±25%	35	200
CMH201209A4R7MT	±20%	4.7	1	0.30±25%	25	180

型号 Part NO	误差范围 Tolerance	标称感量 Inductance (μH)	测试频率 Test frequency(MHz)	直流电阻 DCR (Ω)Max	自谐振频率 SRF(MHZ)min	额定电流 Ir (mA)Max
CMH201209B1R0MT	±20%	1.0	1	0.11±25%	75	1150
CMH201209B2R2MT	±20%	2.2	1	0.20±25%	50	950
CMH201209B3R3MT	±20%	3.3	1	0.22±25%	35	800
CMH201209B4R7MT	±20%	4.7	1	0.30±25%	25	750
CMH201209B6R8MT	±20%	6.8	1	0.30±25%	25	600

2016 Type

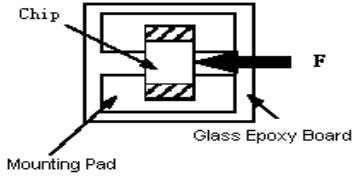
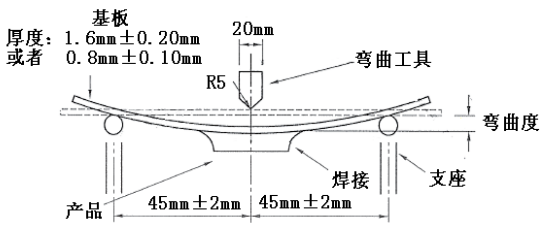
型号 Part NO	误差范围 Tolerance	标称感量 Inductance (μH)	测试频率 Test frequency(MHz)	直流电阻 DCR (Ω)Max	自谐振频率 SRF(MHZ)min	额定电流 Ir (mA)Max
CMH201609B1R0MT	±20%	1.0	1	0.10±25%	70	1400
CMH201609B2R2MT	±20%	2.2	1	0.16±25%	50	1200
CMH201609B3R3MT	±20%	3.3	1	0.20±25%	40	1200
CMH201609B4R7MT	±20%	4.7	1	0.26±25%	30	1100

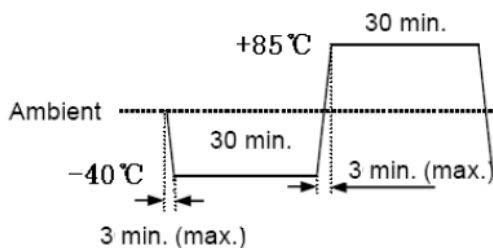
2520 Type

型号 Part NO	误差范围 Tolerance	标称感量 Inductance (μH)	测试频率 Test frequency(MHz)	直流电阻 DCR (Ω)Max	自谐振频率 SRF(MHZ)min	额定电流 Ir (mA)Max
CMH252010B1R0MT	±20%	1.0	1	0.06±25%	70	1600
CMH252010B2R2MT	±20%	2.2	1	0.10±25%	55	1300
CMH252010B3R3MT	±20%	3.3	1	0.14±25%	30	1200
CMH252010B4R7MT	±20%	4.7	1	0.18±25%	25	1100

◆可靠性测试方法
Reliability Test Method

序号 No.	项目 Items	要求 Requirements	试验方法及备注 Test Methods and Remarks
1	工作温度范围 Operating Temperature Range	-40°C~+85°C	/
2	可焊性 Solder ability	无可见损伤; 电极面 95%以上覆盖新的焊料。 95% or more of electrode area shall be coated by new solder.	预热温度:120°C ~ 150°C 预热时间: 60s 焊料: (96.5%Sn/3.0%Ag/0.5%Cu) 焊锡 焊锡温度: 245°C±5°C 浸锡深度:10mm 浸锡时间 : 5±1s 浸渍到助焊剂约:3 ~ 5 s Preheating temperature:120°C to 150°C Preheating time: 60s Solder 96.5%Sn/3.0%Ag/0.5%Cu of the Sn solder. Solder temperature: 245±5°C Immersion tin depth:10mm Duration : 5±1s Dip performance to a flux of about:3 ~ 5 s

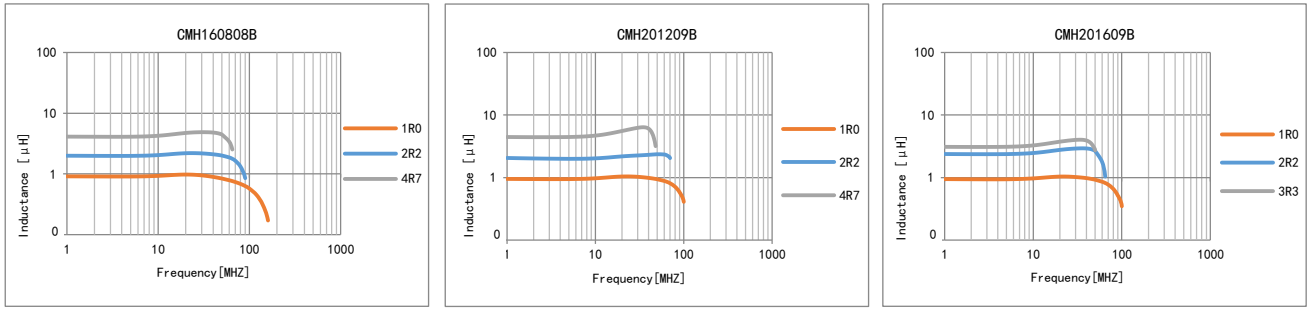
序号 No.	项目 Items	要求 Requirements	试验方法及备注 Test Methods and Remarks
3	耐焊接热 Resistance to Soldering Heat	至少 95% 的焊锡覆盖在端电极表面，无可见机械损伤。 电感量变化率如下： 铁氧体电感（B 工艺）：±30% 铁氧体电感（A 工艺）：±30% At least 95% of terminal electrode should be covered with solder. No mechanical damage. Inductance : B: change within ±30% A: change within ±30%	预热温度：120°C~150°C 预热时间：60s 焊料：（96.5%Sn/3.0%Ag/0.5%Cu）焊锡 浸锡温度：260°C±5°C 浸锡深度：10mm 浸锡时间：10±1s 浸渍助焊剂约：3~5 s Preheating temperature: 120°C to 150°C Preheating time: 60s Solder 96.5%Sn/3.0%Ag/0.5%Cu of the Sn solder. Solder temperature: 260°C±5°C Immersion tin depth:10mm Duration : 10±1s Dip performance to a flux of about:3~5 s
4	端电极强度 Adhesion of electrode	端电极与磁体不应受损，无可见机械损伤。 The termination and body should be no damage.	施加力：11608 系列为 7N；2012、2016、2520 系列为 10N。 保持时间：10±1S Applied force: 7N force for 1608 series; 10N force for 2012、2016、2520 series. Keep time : 10±1S 
5	耐低温 Low temperature resistance	无可见机械损伤， 电感量变化率小于±10%， No mechanical damage. Inductance change: within ±10%	测试温度：-40±2°C 测试时间：1000 ⁺²⁴ ₀ h Temperature:-40±2°C Testing time: 1000 ⁺²⁴ ₀ h
6	抗弯强度 Bending strength	无可见机械损伤 No mechanical damage	测试基板：玻璃环氧树脂基板 加压速度为 0.5mm/s，弯度：2mm，保持时间 20s±1s Testing board: glass epoxy-resin substrate For 0.5 mm/s compression speed, curvature: 2mm, hold time 20s±1s 。 

序号 No.	项目 Items	要求 Requirements	试验方法及备注 Test Methods and Remarks
7	振动 Vibration	无可见机械损伤, 电感量变化率小于±10%, No mechanical damage. Inductance change: within ±10%	振幅: 1.5mm 测试时间: 沿三个垂直方向各做 2 小时 频率范围: 10Hz~55Hz~10Hz (1 分钟) Amplitude modulation: 1.5mm Test time: A period of 2h in each of 3 mutually perpendicular directions. Frequency range: 10Hz to 55Hz to 10Hz for 1min.
8	耐高温 High temperature resistance	无可见机械损伤, 电感量变化率小于±10%, No mechanical damage. Inductance change: within ±10%	测试时间: 1000_{-0}^{+24} h 测试温度: $85 \pm 2^{\circ}\text{C}$ Testing time: 1000_{-0}^{+24} h Temperature: $85 \pm 2^{\circ}\text{C}$
9	恒定湿热 Static Humidity	无可见机械损伤, 电感量变化率小于±10%, No mechanical damage. Inductance change: within ±10%	湿度: 90%~95% RH, 温度: $60^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 测试时间: 1000_{-0}^{+24} h Humidity: 90% to 95% RH Temperature: $60^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Testing time: 1000_{-0}^{+24} h
10	高温负载 High temperature load	无可见机械损伤, 电感量变化率小于±10%, No mechanical damage. Inductance change: within ±10%	施加电流: 额定电流 测试时间: 1000_{-0}^{+24} h 测试温度: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ impose current: at room Testing time: 1000_{-0}^{+24} h Temperature: $85 \pm 2^{\circ}\text{C}$
11	温度冲击 Temperature Shock	无可见机械损伤, 电感量变化率小于±10%, No mechanical damage. Inductance change: within ±10%	温度: -40°C , 30±3 分钟 $+85^{\circ}\text{C}$, 30±3 分钟 循环次数: 32 Temperature: -40°C for 30±3min $+85^{\circ}\text{C}$ for 30±3min Number of cycles: 32 

注: 以上要求测试电性能的项目, 应试验后在标准条件下放置 24 小时后测试。
 Note: When there are questions concerning, measurement shall be made after 24±2hrs of recovery under the standard condition.

◆ 感量-频率特性

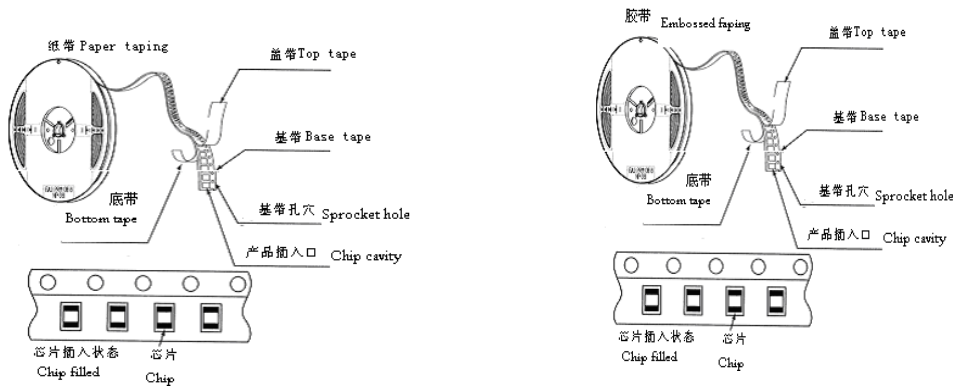
Inductance Vs. Frequency Characteristics



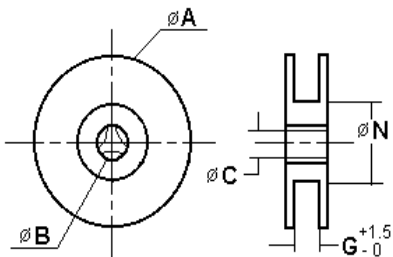
◆ 包装

Packaging

* 编带图 Taping drawings

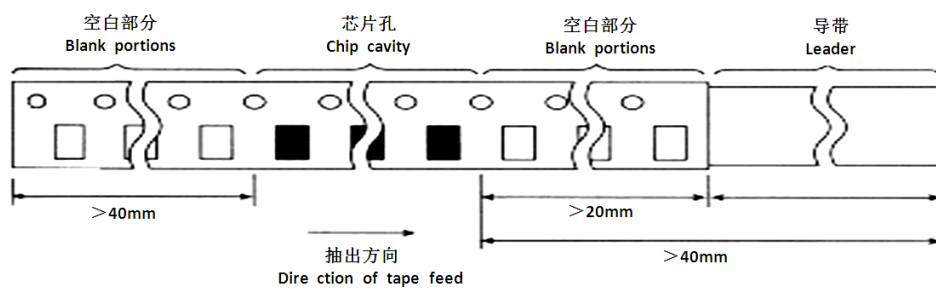


* 卷盘尺寸 Reel dimensions (Unit: mm)



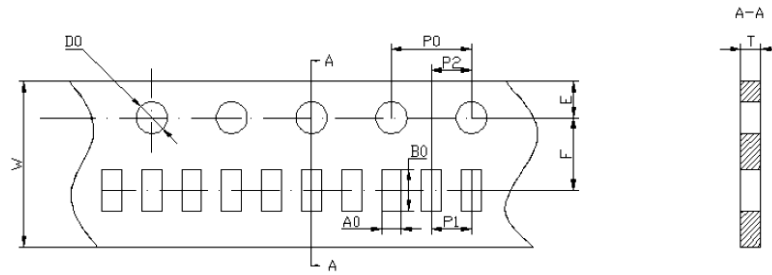
型号 Size	A	B	C	N	G
CF-8	178±2.0	22.0±2.0	12.5±1.5	57±2.0	8

* 导带及空格部分 Leader and blank portion



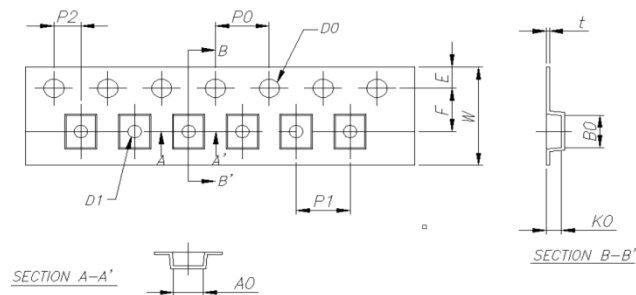
* 编带尺寸 Taping dimensions (Unit: mm)

纸带 Paper tape



Part NO.	A0	B0	W	F	E	P1	P2	P0	D0	T
160808	1.10±0.2	1.90±0.2	8.0±0.2	3.5±0.1	1.75±0.2	4.0±0.2	2.0±0.1	4.0±0.2	1.55±0.1	0.95±0.1
201209	1.50±0.2	2.30±0.2	8.0±0.2	3.5±0.1	1.75±0.2	4.0±0.2	2.0±0.1	4.0±0.2	1.55±0.1	0.95±0.1
201609	1.85±0.1	2.35±0.1	8.0±0.1	3.5±0.1	1.75±0.2	4.0±0.2	2.0±0.1	4.0±0.2	1.55±0.1	0.95±0.1

塑料胶带 Embossed tape



型号 Size	252010
W	8.00+/-0.20
E	1.75+/-0.10
F	3.50+/-0.10
D0	1.50+/-0.10
D1	1.00+/-0.10
P0	4.00+/-0.10
P010	40.0+/-0.20
P1	4.00+/-0.10
P2	2.00+/-0.10
A0	2.20+/-0.10
B0	2.75+/-0.10
K0	1.05+/-0.10
t	0.23+/-0.20

* 包装数量 (单位: 粒) Packaging number (Unit: Pcs)

类型 SIZE	252010	201609	201209	160808
每卷数量 REEL	3000	4000	4000	4000
每盒数量 BOX	30000	40000	40000	40000
每箱数量 CASE	180000	240000	240000	240000