

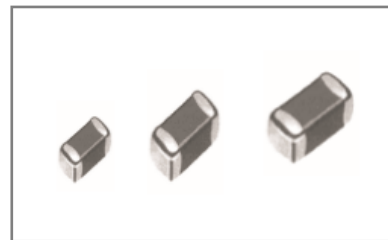
# **车规叠层片式铁氧体电感器**

## **Automotive Grade Multilayer Chip Ferrite Inductors**

### **◆特征**

#### **Feature**

- \* 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，适合高密度表面贴装  
No lead,ideal for high density SMT installation.
- \* 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**

#### **Application**

- \* 汽车多媒体和无线连接系统、车身与舒适系统。  
Automotive multimedia,wireless connection system and body comfort system.

### **◆型号表示法**

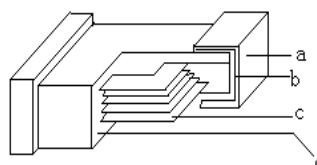
#### **Part Number**

AMI	201209	V	47N	K	T
①	②	③	④	⑤	⑥

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	
AMI	车规叠层片式铁氧体电感器	160808	1.6×0.8×0.8	V	示例		K	±10%	T	卷带盘装
		201209	2.0×1.2×0.9	U	Example		M	±20%	B	Tape & Reel
	Automotive Grade Multilayer Chip Ferrite Inductors	321609	3.2×1.6×0.9		47N	0.047				散装 Bulk
					R10	0.10				
					1R0	1.0				
					N=0.0(nH)					
					R=0.0(μH)					

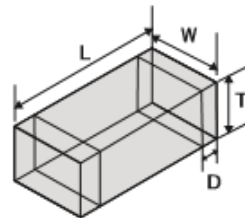
### **◆产品结构 Product Structure**

- 银层 Ag layer
- 镀层 Ni/Sn plating
- 内电极 Inner electrode
- 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)
321609 (1206)	3.2± 0.20 (0.126± 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)


**◆电性能参数**
**Electrical Characteristics**

\* 感量和品质因素测试条件: E4982A 或等同仪器, 测试电压 50mV±5mV, 温度 15°C~35°C, 湿度 25%~75%。

Inductance and Q testing conditions: E4982A or equivalent, test voltage 50mV ± 5mV, Temperature 15°C~35°C, Humidity 25%~75%.

\* 直流电阻测试条件: RM3542A 或等同仪器, 温度 15°C~35°C, 湿度 25%~75%。

RDC Testing conditions: RM3542A or equivalent, Temperature 15°C~35°C, Humidity 25%~75%.

\* 额定电流: 施加额定电流, 产品表面温升不超过 40°C。

Rated current: Apply the rated current, and the surface temperature rise of the product shall not exceed 40°C.

**1608 Type**

型号 Part NO	误差范围 Tolerance	标称感量 Inductance (μH)	Q 值 (min)	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
AMI160808V47NKT	±10%	0.047	15	50	0.20	260	50
AMI160808V56NKT	±10%	0.056	15	50	0.20	260	50
AMI160808V68NKT	±10%	0.068	15	50	0.20	250	50
AMI160808V82NKT	±10%	0.082	15	50	0.20	245	50
AMI160808VR10KT	±10%	0.10	20	25	0.25	240	50
AMI160808VR12KT	±10%	0.12	20	25	0.30	205	50
AMI160808VR15KT	±10%	0.15	20	25	0.30	180	50
AMI160808VR18KT	±10%	0.18	20	25	0.30	165	50
AMI160808VR22KT	±10%	0.22	20	25	0.40	150	50
AMI160808VR27KT	±10%	0.27	20	25	0.45	136	50
AMI160808VR33KT	±10%	0.33	20	25	0.50	125	50
AMI160808VR39KT	±10%	0.39	20	25	0.60	110	50
AMI160808VR47KT	±10%	0.47	20	25	0.70	105	50
AMI160808VR56KT	±10%	0.56	20	25	0.70	95	50
AMI160808VR68KT	±10%	0.68	20	25	0.90	90	50
AMI160808VR82KT	±10%	0.82	20	25	1.00	85	50
AMI160808U1R0KT	±10%	1.0	25	10	0.50	75	25
AMI160808U1R2KT	±10%	1.2	25	10	0.55	65	25

型号 Part NO	误差范围 Tolerance	标称感量 Inductance (μH)	Q 值 (min)	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
AMI160808U1R5KT	± 10%	1.5	25	10	0.70	60	25
AMI160808U1R8KT	± 10%	1.8	25	10	0.75	55	25
AMI160808U2R2KT	± 10%	2.2	25	10	0.80	50	25
AMI160808U2R7KT	± 10%	2.7	25	10	0.90	45	15
AMI160808U3R3KT	± 10%	3.3	25	10	1.00	40	15
AMI160808U3R9KT	± 10%	3.9	25	10	1.30	35	15

#### 2012 Type

型号 Part NO	误差范围 Tolerance	标称感量 Inductance (μH)	Q 值 (min)	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
AMI201209V47NKT	± 10%	0.047	25	50	0.15	320	300
AMI201209V56NKT	± 10%	0.056	25	50	0.15	320	300
AMI201209V68NKT	± 10%	0.068	25	50	0.20	280	300
AMI201209V82NKT	± 10%	0.082	25	50	0.20	280	300
AMI201209VR10KT	± 10%	0.10	20	25	0.20	235	250
AMI201209VR12KT	± 10%	0.12	20	25	0.25	220	250
AMI201209VR15KT	± 10%	0.15	20	25	0.25	200	250
AMI201209VR18KT	± 10%	0.18	20	25	0.30	185	250
AMI201209VR22KT	± 10%	0.22	20	25	0.30	170	250
AMI201209VR27KT	± 10%	0.27	20	25	0.40	150	250
AMI201209VR33KT	± 10%	0.33	20	25	0.40	145	250
AMI201209VR39KT	± 10%	0.39	25	25	0.50	135	200
AMI201209VR47KT	± 10%	0.47	25	25	0.50	125	200
AMI201209VR56KT	± 10%	0.56	25	25	0.60	115	150
AMI201209VR68KT	± 10%	0.68	25	25	0.65	105	150
AMI201209VR82KT	± 10%	0.82	25	25	0.70	100	150
AMI201209U1R0KT	± 10%	1.0	35	10	0.40	75	50
AMI201209U1R2KT	± 10%	1.2	35	10	0.40	65	50
AMI201209U1R5KT	± 10%	1.5	35	10	0.40	60	50
AMI201209U1R8KT	± 10%	1.8	35	10	0.40	55	50
AMI201209U2R2KT	± 10%	2.2	35	10	0.60	50	50
AMI201209U2R7KT	± 10%	2.7	35	10	0.60	45	50
AMI201209U3R3KT	± 10%	3.3	35	10	0.60	41	50
AMI201209U3R9KT	± 10%	3.9	35	10	0.80	38	50
AMI201209U4R7KT	± 10%	4.7	35	10	0.90	35	30

#### 3216 Type

型号 Part NO	误差范围 Tolerance	标称感量 Inductance (μH)	Q 值 (min)	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
AMI321609V47NKT	± 10%	0.047	30	50	0.15	320	300
AMI321609V56NKT	± 10%	0.056	30	50	0.20	320	300

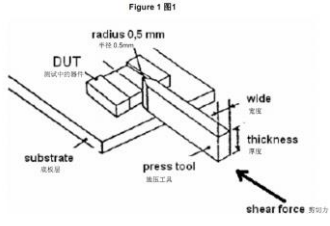
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AMI321609V68NKT	± 10%	0.068	30	50	0.25	280	300
AMI321609V82NKT	± 10%	0.082	30	50	0.25	280	300
AMI321609VR10KT	± 10%	0.10	25	25	0.25	235	250
AMI321609VR12KT	± 10%	0.12	25	25	0.25	220	250
AMI321609VR15KT	± 10%	0.15	25	25	0.25	200	250
AMI321609VR18KT	± 10%	0.18	25	25	0.30	185	250
AMI321609VR22KT	± 10%	0.22	25	25	0.30	170	250
AMI321609VR27KT	± 10%	0.27	25	25	0.30	150	250
AMI321609VR33KT	± 10%	0.33	25	25	0.30	145	250
AMI321609VR39KT	± 10%	0.39	30	25	0.50	135	200
AMI321609VR47KT	± 10%	0.47	30	25	0.50	125	200
AMI321609VR56KT	± 10%	0.56	30	25	0.50	115	150
AMI321609VR68KT	± 10%	0.68	30	25	0.50	105	150
AMI321609VR82KT	± 10%	0.82	30	25	0.60	100	150
AMI321609U1R0KT	± 10%	1.0	35	10	0.30	75	100
AMI321609U1R2KT	± 10%	1.2	35	10	0.40	65	100
AMI321609U1R5KT	± 10%	1.5	35	10	0.40	60	50
AMI321609U1R8KT	± 10%	1.8	35	10	0.40	55	50
AMI321609U2R2KT	± 10%	2.2	35	10	0.50	50	50
AMI321609U2R7KT	± 10%	2.7	35	10	0.50	45	50
AMI321609U3R3KT	± 10%	3.3	35	10	0.50	41	50
AMI321609U3R9KT	± 10%	3.9	35	10	0.60	38	50
AMI321609U4R7KT	± 10%	4.7	35	10	0.65	35	25

### ◆可靠性测试方法

#### Reliability Test Method

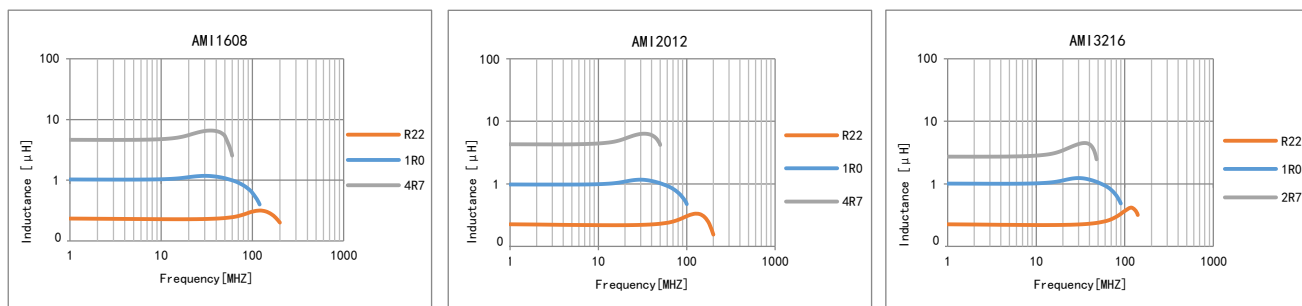
序号 No.	项目 Items	要求 Requirements	试验方法及备注 Test Methods and Remarks
1	工作温度范围 Operating Temperature Range	-40℃~+125℃	包含产品表面温升 Includes product surface temperature rise
2	可焊性 Solder ability	无可见损伤; 电极面 95%以上覆盖新的焊料。 95% or more of electrode area shall be coated by new solder.	焊槽法; 无铅焊锡; 温度 (245±5) °C; 浸渍时间 (3±0.3) s。 Solder bath; Lead-free solder; Temperature (245±5) °C; Immersion timer (3±0.3) seconds.

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	无可见损伤; 阻抗: $\Delta L/L \leq \pm 20\%$ ; Q 值: $\Delta Q/Q \leq \pm 30\%$ ; No Visible damage; Impedance: $\Delta L/L \leq \pm 20\%$ ; Q: $\Delta Q/Q \leq \pm 30\%$ ;	方法 1: 焊槽法; 温度 $(260 \pm 5) ^\circ\text{C}$ ; 浸渍时间 $(10 \pm 1) \text{ s}$ . Method 1: Solder bath; Temperature $(260 \pm 5) ^\circ\text{C}$ ; Immersion timer $(10 \pm 1) \text{ seconds}$ . 方法 2: 三次回流焊。 Method 2: 3 reflow soldering.
4	弯曲 Board flex	无可见损伤; 阻抗: $\Delta L/L \leq \pm 20\%$ ; Q 值: $\Delta Q/Q \leq \pm 30\%$ ; No Visible damage; Impedance: $\Delta L/L \leq \pm 20\%$ ; Q: $\Delta Q/Q \leq \pm 30\%$ ;	电感器安装在厚 1.6mm 环氧玻璃布板上, 以 1mm/s 的速度向下弯曲 2mm; 维持时间 $60\text{s} \pm 5\text{s}$ . The testing samples shall be mounted on a 100mm $\times$ 40mm FR4 PCB board, which is 1.6mm $\pm$ 0.2mm thick. Bending shall be applied to the 2.0mm with 1.0mm/sec; Duration: $60 \pm 5\text{s}$ .
5	振动 Vibration	无可见损伤; 阻抗: $\Delta L/L \leq \pm 20\%$ ; Q 值: $\Delta Q/Q \leq \pm 30\%$ ; No Visible damage; Impedance: $\Delta L/L \leq \pm 20\%$ ; Q: $\Delta Q/Q \leq \pm 30\%$ ;	频率 10Hz~2000Hz; 加速度 5g; 一个循环 20 分钟; X、Y、Z 三个方向每个方向 12 个循环, 共 36 个循环; The entire frequency range of 10 to 2000 Hz and return to 10 Hz shall be traversed in 20 minutes. This cycle shall be preformed 12 time in each of three mutually perpendicular directions (total of 36 times), so that the motion shall be applied for a total period of approximately 12 hours. Peak value 5g.
6	高温存储 High Temperature Exposure (Storage)	无可见损伤; 阻抗: $\Delta L/L \leq \pm 20\%$ ; Q 值: $\Delta Q/Q \leq \pm 30\%$ ; No Visible damage; Impedance: $\Delta L/L \leq \pm 20\%$ ; Q: $\Delta Q/Q \leq \pm 30\%$ ;	温度 $125^\circ\text{C}$ ; 不通电; 持续时间 1000h; 试验结束后 $(24 \pm 4) \text{ h}$ 内进行电性能测量。 Temperature $125^\circ\text{C}$ ; Unpowered; Duration 1000h; Measurement at $(24 \pm 4) \text{ hours}$ after test conclusion.
7	偏高湿度 (高温高湿) Biased Humidity	无可见损伤; 阻抗: $\Delta L/L \leq \pm 20\%$ ; Q 值: $\Delta Q/Q \leq \pm 30\%$ ; No Visible damage; Impedance: $\Delta L/L \leq \pm 20\%$ ; Q: $\Delta Q/Q \leq \pm 30\%$ ;	温度 $85^\circ\text{C}$ ; 湿度 85RH%; 持续时间 1000 小时, 不通电。 试验结束后 $24 \pm 4$ 小时内进行测试。 Temperature $85^\circ\text{C}$ ; Relative humidity 85%; Duration 1000 h; Unpowered. Measurement at $24 \pm 4 \text{ hours}$ after test conclusion.
8	工作寿命 Operational Life	无可见损伤; 阻抗: $\Delta L/L \leq \pm 20\%$ ; Q 值: $\Delta Q/Q \leq \pm 30\%$ ; No Visible damage; Impedance: $\Delta L/L \leq \pm 20\%$ ; Q: $\Delta Q/Q \leq \pm 30\%$ ;	温度 $125^\circ\text{C}$ ; 施加电流: 常温额定电流的 1/2; 持续时间: 1000 小时。 试验结束后 $24 \pm 4$ 小时内进行测试。 Temperature $125^\circ\text{C}$ ; Test current: half of Rated current at normal temperature; Duration 1000 h; Measurement at $24 \pm 4 \text{ hours}$ after test conclusion.

序号 No.	项目 Items	要求 Requirements	试验方法及备注 Test Methods and Remarks
9	温度循环 Temperature Cycling	无可见损伤; 阻抗: $\Delta L/L \leq \pm 20\%$ ; Q 值: $\Delta Q/Q \leq \pm 30\%$ ; No Visible damage; Impedance: $\Delta L/L \leq \pm 20\%$ ; Q: $\Delta Q/Q \leq \pm 30\%$ ;	高温 125℃; 低温 -40℃; 高、低温下暴露时间各 30 分钟; 转换时间 $\leq 1\text{min}$ ; 循环次数 1000 次。 试验结束后 24 $\pm$ 4 小时内进行测试。 High Temperature +125℃; low temperature -40℃; Duration at each temperature 30 min; Transition time $\leq 1\text{ min}$ . Severity 1000 cycles; Measurement at 24 $\pm$ 4 hours after test conclusion.
10	机械冲击 Mechanical Shock	无可见损伤; 阻抗: $\Delta L/L \leq \pm 20\%$ ; Q 值: $\Delta Q/Q \leq \pm 30\%$ ; No Visible damage; Impedance: $\Delta L/L \leq \pm 20\%$ ; Q: $\Delta Q/Q \leq \pm 30\%$ ;	正半弦波; 峰值加速度 100g; 脉冲持续时间 6ms; 三轴六向各 3 次, 共 18 次。 Half sine wave. Peak value 100g. Normal duration 6 ms; Three shocks in each direction shall be applied along the three mutually perpendicular axes of the test specimen (18 shocks)
11	端子强度 Terminal Strength (SMD)	无可见电极损伤和电极脱落; No visible electrode damage or electrode detachment.	试样安装在环氧玻璃布板上, 施加 1005 规格: 5N, $\geq$ 1608 规格: 17.7N 的力到试样的侧面, 保持 60s $\pm$ 1s。 The testing samples shall be mounted on the testing epoxy boards, exerting force on side of the samples, Size 1005: 5N; $\geq$ Size 1608: 17.7N, Duration 60s $\pm$ 1s. 

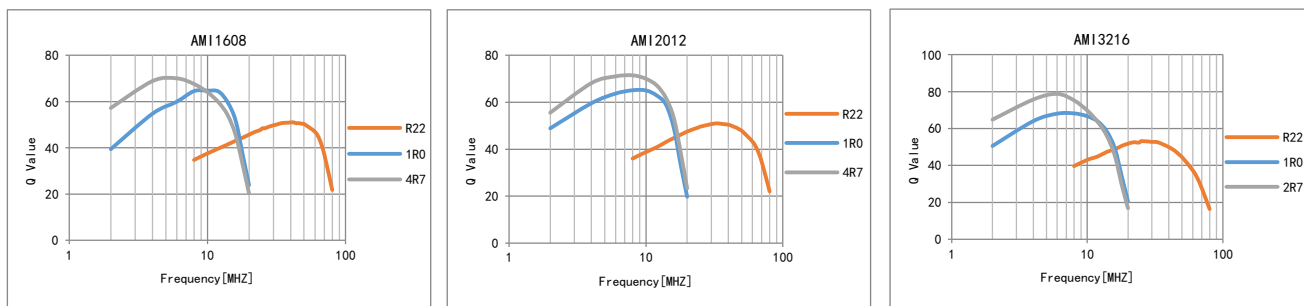
### ◆感量-频率特性

#### Inductance Vs. Frequency Characteristics



◆感量-频率特性

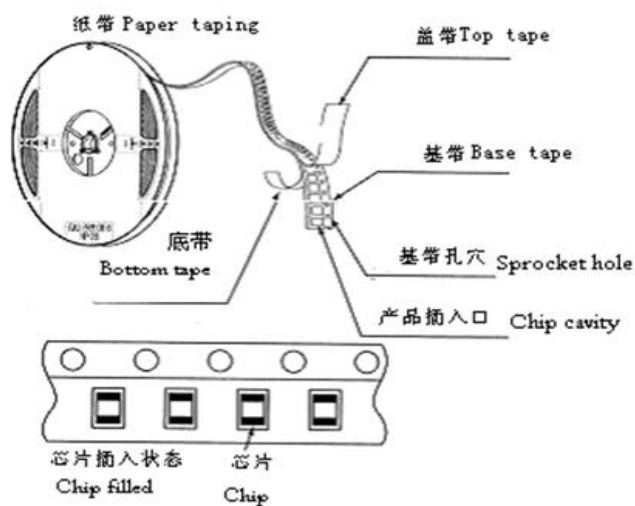
**Q Value Vs. Frequency Characteristics**



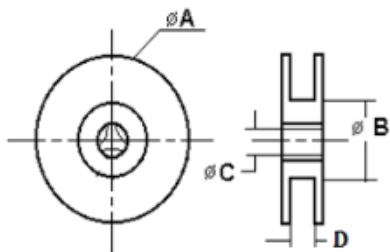
◆包装

**Packaging**

● 编带图 Taping drawings



● 卷盘尺寸 Reel dimensions (Unit: mm)

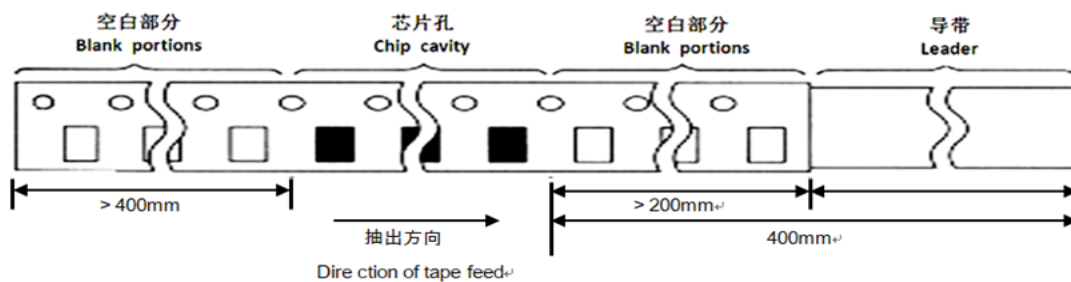


型号 Size	A	B	C	D
7 inch	178±2.0	60±2.0	13.0±1.0	9.5±2.0

说明：7 inch 适用 060303、100505、160808、201209、321609、322513、451616 尺寸。

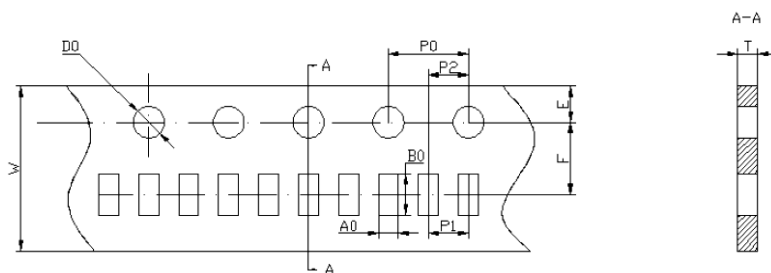
Note: 7 inch is available in 060303, 100505, 160808, 201209, 321609, 322513, 451616 sizes.

● 导带及空格部分 Leader and blank portion



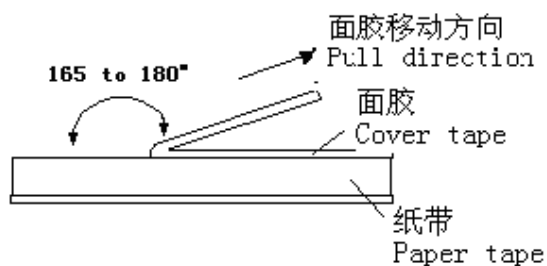
● 编带尺寸 Taping dimensions (Unit: mm)

\* 纸带 Paper tape



Part NO.	A0	B0	W	F	E	P1	P2	P0	D0	T
100505	0.59±0.10	1.12±0.10	8.00±0.20	3.50±0.10	1.75±0.20	2.00±0.10	2.00±0.10	4.00±0.20	1.55±0.10	0.60±0.10
160808	1.05±0.20	1.85±0.20	8.00±0.20	3.50±0.10	1.75±0.20	2.00±0.20	2.00±0.10	4.00±0.20	1.55±0.10	0.95±0.10
201209	1.45±0.20	2.35±0.20	8.00±0.20	3.50±0.10	1.75±0.20	2.00±0.20	2.00±0.10	4.00±0.20	1.55±0.10	0.95±0.10
321609	1.90±0.20	3.46±0.20	8.00±0.20	3.50±0.10	1.75±0.20	4.00±0.20	2.00±0.10	4.00±0.20	1.55±0.10	0.95±0.10

\* 剥离力检验 Peeling off force



(1) 盖带的剥离力：沿面胶移动方向拉时要求剥离力为 0.1N~0.7N。

Peeling force should be 0.1~0.7N pulling in the direction of arrow.

(2) 剥离速度：300mm/min。

Speed of peeling off: 300mm/min.

(3) 在纸带剥落时，面胶不能有破损，不能粘纸带。

The cover bond should not be damaged and bond the tape when it peeled off.

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



类型 SIZE	321609	201209	160808	100505
每卷数量 REEL	4000	4000	4000	10000
每盒数量 BOX	40000	40000	40000	100000
每箱数量 CASE	240000	240000	240000	600000

● 标签粘贴位置 Label stick station

卷盘标签 Reel label	纸盒标签 Carton label	纸盒标签 Carton label	外箱标签 Outer box label
			

◆ 推荐焊接条件 Recommend Soldering Conditions

● 焊接条件 Soldering Conditions

\* 产品适用于回流焊 Products can be applied to reflow soldering.

\* 焊接要求

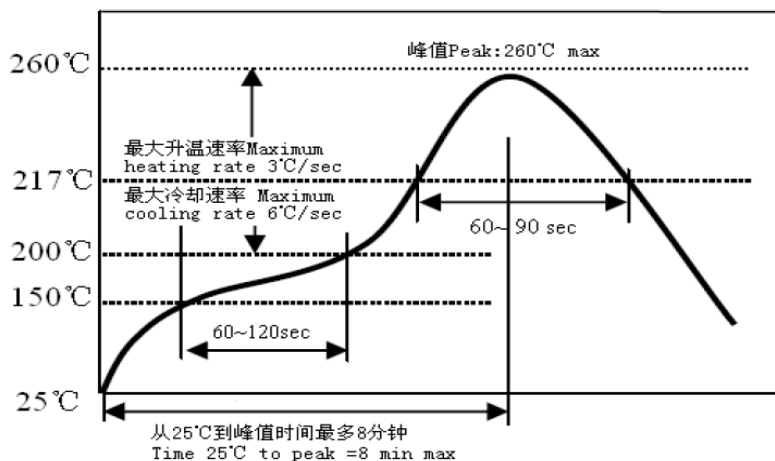
(1) 预热时，产品表温与焊料温度的温差最大不允许超出 150℃，焊接完冷却时，产品表温与溶剂温度之间的温差最大不超过 100℃。预热不足有可能引发产品表面裂纹，从而导致产品品质下降。

Pre-heating should be in such a way that the temperature difference between solder and ferrite surface is limited to 150℃ max. Also cooling into solvent after soldering should be in such way that the temperature difference is limited to 100℃ max. Un-enough pre-heating may cause cracks on the ferrite, resulting in the deterioration of product quality.

(2) 产品要在以下画出的曲线允许的范围内进行焊接。其它焊接条件可能引起产品电极的腐蚀。当焊接重复时，允许的时间为第一次做的累计时间。

Products should be soldered within the following allowable range indicated by the slanted line. The excessive soldering conditions may cause the corrosion of the electrode. When soldering is repeated, allowable time is the accumulated time.

● 回流焊曲线 Reflow soldering profile



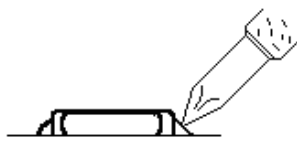
- (1) 预热条件: 150 ~ 200°C / 60 ~ 120 秒; PREHEAT CONDITION: 150 ~ 200°C / 60 ~ 120 SEC
- (2) 允许大于 217°C 时间: 60—90 秒; ALLOWED TIME ABOVE 217°C: 60~90 SEC
- (3) 最大温度: 260 °C; MAX TEMP: 260 °C
- (4) 最高温的最大时间: 10 秒; MAX TIME AT MAX TEMP: 10 SEC
- (5) 焊膏: SN/3.0Ag/0.5Cu; SOLDER PASTE: SN/3.0Ag/0.5Cu
- (6) 回流焊次数: 最多 2 次; ALLOWED REFLOW TIME: 2X MAX

#### ● 手工焊接 Iron soldering

烙铁温度: 350°C Perform soldering at 350°C on 30W max

功率: 最大为 30W Time: < 5S

烙铁停留时间: < 5S (注意不要将烙铁碰到产品端电极) Take care not to apply the tip of the soldering iron to the terminal electrodes



#### ◆清洗 Cleaning

##### ● 清洗条件 Cleaning Conditions

- (1) 清洗温度: 60°C (最高) Cleaning temperature : 60°C max
- (2) 清洗时间: 1 分钟 (最少) Cleaning time: 1 minute min.
- (3) 超声波功率: 最大为 200W Ultrasonic output power: 200W max

#### ◆存储要求 Storage Requirements

##### ● 存储期限 Storage period

距电感公司出厂检验时间 1 年内, 产品可以使用检验时间可以通过包装外侧标记的检验号确认。若时间超过 1 年, 应检查焊接性能后方可使用。

Products which inspected inductor company over 1 year ago should be examined and used, which can be Confirmed with inspection No. marked on the container. Solder ability should be checked if this period is exceeded.

##### ● 存储条件 Storage conditions

- (1) 存放货物的库房应满足以下条件: 温度: -10 ~ +40°C, 相对湿度: 30 ~ 70%。
- (2) 禁止将产品保管在腐蚀性物质中, 如硫磺、氯气或酸, 否则将引起端头氧化, 导致降低焊接性。
- (3) 为了避免受潮气、灰尘等物质的影响, 产品应保管于货架上。
- (4) 产品保管在库房中, 应避免热冲击、振动以及直接光照等等。
- (5) 产品应密封包装。

(1) Products should be storage in the warehouse on the following conditions:

Temperature : -10~+40°C Humidity: 30~70% relative humidity

(2) Don't keep products in corrosive gases such as sulfur, chlorine gas or acid , or it may case oxidization of Electrodes resulting in poor solder ability.

(3) Products should be stored on the palette for the prevention of the influence from humidity, dust and so on.

(4) Products should be stored in the warehouse without heat shock, vibration, direct sunlight and so on.

(5) Products should be stored under the airtight packaged condition.

#### ◆ODS (消耗臭氧层物质) 的使用情况 Usage Of ODS

对于以下所列物质, 我公司在生产过程中绝不使用。

ODS: CCl<sub>4</sub> (四氯化碳)、HCFC 等。

For ODS listed below , we don't use in process.

ODS: CCl<sub>4</sub>, HCFC, etc.

#### ◆注意事项 Notes

(1) 若本次承认的为“整体无铅”产品，则表明该产品符合 RoHS 指令的要求。

(2) 本承认书保证我司产品作为一个单体时的质量情况，当我司产品被安装到贵司产品上时请保证贵司的产品已根据贵司的规范进行了有效评价和确认。

(3) 如果贵司对我司产品的试用已超过了本测试规范所界定的产品功能，对于此所引发的失效我司将不予保证。

(1) If the parcel label on product is "Unitary lead free" that indicate the products in accord with ROHS appointed requests.

(2) This product specification guarantees the quality of our product as a single unit, Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.

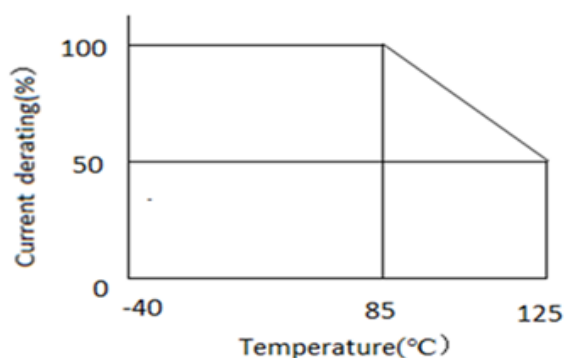
(3) We can't warrant against failure caused by any use of our product that deviates from the intended use as described in this product specification.

#### ◆备注 Remark

(1) 工作温度范围：-40℃~+125℃（包含产品表面温升）；

Operating Temperature Range: -40℃~+125℃ (Includes product surface temperature rise);

(2) 当工作温度超过+85℃时，产品的额定电流必须降额使用。具体请根据工作温度使用图示的降额曲线。When Operating Temperatures exceed +85℃, the rated current of the product must be derated for use. Please apply the derating curve shown in chart according to the operating temperature.



## ■修订履历 Revision of resume

[illegible]

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