

■ 叠层片式高频电感器

Multilayer Chip High Frequency Ceramic Inductors

◆ 特征

Feature

- * 高自谐振频率

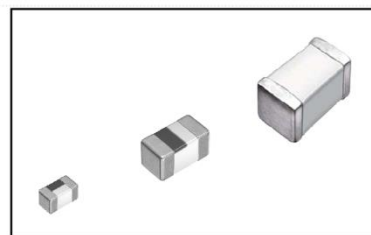
High self-resonant frequency.

- * 叠层独石结构，具有高可靠性

Multilayer monolithic construction yields high reliability.

- * 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.



◆ 应用

Application

- * 移动电话、对讲机、PHS、PDA 和各种高频回路。

Mobile phones, walkie-talkies, PHS, PDAs and various high-frequency circuits.

◆ 型号表示法

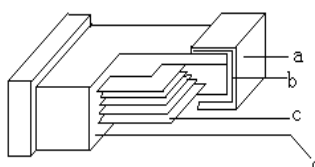
Part Number

VHF	060303	HQ	3N3	S	T	02
①	②	③	④	⑤	⑥	⑦

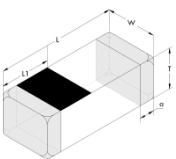
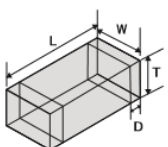
① 产品代号 Product Code		② 规格尺寸(L×W×T) Dimensions (mm)		③ 材料代 号 Material Code	④ 感量(nH) Inductance		⑤ 误差 Tolerance		⑥ 包装方式 Packaging Style		⑦ 内部代 号 Intern al code
VHF	叠层片式高频电感器	040202	0.4×0.2×0.2	H HQ	示例	1.0 10 100	B	±0.1nH	T B	卷带盘装 Tape & Reel 散装 Bulk	02
	Multilayer Chip	060303	0.6×0.3×0.3		Example		C	±0.2nH			
	High	100505	1.0×0.5×0.5		1N0		S	±0.3nH			
	Frequency	160808	1.6×0.8×0.8		10N		G	±2%			
	Ceramic	201209	2.0×1.2×0.9		N=0.0(nH)		H	±3%			
	Inductors				R=0.0(μH)		J	±5%			

◆ 产品结构 Product Structure

- 镀层 Ni/Sn plating
- 银层 Ag layer
- 内电极 Inner electrode
- 瓷体 Body



◆规格尺寸
Dimension

Part No	L(mm)	W(mm)	T(mm)	D(mm)	
040202 (01005)	0.4 ± 0.02 (0.016 ± 0.0008)	0.2 ± 0.02 (0.008 ± 0.0008)	0.2 ± 0.02 (0.008 ± 0.0008)	0.095 ± 0.025 (0.0037 ± 0.001)	
060303 (0201)	0.6 ± 0.03 (0.024 ± 0.001)	0.3 ± 0.03 (0.012 ± 0.001)	0.3 ± 0.03 (0.012 ± 0.001)	0.15 ± 0.05 (0.006 ± 0.002)	
100505 (0402)	1.0 ± 0.15 (0.040 ± 0.006)	0.5 ± 0.15 (0.020 ± 0.006)	0.5 ± 0.15 (0.020 ± 0.006)	0.25 ± 0.1 (0.010 ± 0.004)	
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)	

◆电性能参数
Electrical Characteristics

* 补偿值表 The compensation value table.

产品系列 Product series	电感量范围 Inductance range	测试频率 Test Frequency	电感量范围 Inductance range	补偿值 Compensation value	测试仪器和夹具 Testing instruments and fixtures
VHF040202HQ	$L_s \leq 30\text{nH}$	500MHZ	$L_s \leq 30\text{N}$	0.11nH	E4991B+16196D
	$L_s > 30\text{nH}$	300MHZ	$L_s > 30\text{N}$	0.11nH	E4991B+16196D
VHF060303HQ-T02	$L_s < 33\text{nH}$	500MHZ	$L_s < 1\text{N0}$	0.25nH	E4892A+16197A
			$1\text{N0} \leq L_s < 33\text{N}$	0.48nH	E4892A+16197A
	$L_s \geq 33\text{nH}$	300MHZ	$L_s \geq 33\text{N}$	0.48nH	E4892A+16197A
VHF100505HQ	全系列	100MHZ	全系列	0 nH	E4892A+16197A
VHF160808H	全系列	100MHZ	全系列	0 nH	E4892A+16196B
VHF201209H	$L_s < 120\text{nH}$	100MHZ	$L_s \leq 39\text{N}$	0 nH	E4892A+16197A
			$39\text{N} < L_s \leq 68\text{N}$	-1 nH	E4892A+16197A
			$75\text{N} < L_s < \text{R}12$	-2 nH	E4892A+16197A
	$L_s < 120\text{nH}$	50MHZ	$L_s = \text{R}12$	-2 nH	E4892A+16197A
			$\text{R}15 \leq L_s \leq \text{R}18$	-4 nH	E4892A+16197A
			$L_s = \text{R}22$	-5 nH	E4892A+16197A
			$L_s = \text{R}27$	-8 nH	E4892A+16197A
			$L_s = \text{R}33$	-9 nH	E4892A+16197A
			$L_s = \text{R}39$	-11 nH	E4892A+16197A
			$L_s = \text{R}47$	-13 nH	E4892A+16197A

说明 Explain:

产品测试值=标称值-补偿值 Test values=Nominal inductance-Compensation value

如: VHF060303HQ1N0ST02, 其感量标称值是 1.0nH, 补偿值是 0.48nH, 则实际测试中心值是 0.52nH。

0.52nH (测试值) = 1.0nH (标称值) - 0.48nH (补偿值)。

For example :VHF060303HQ1N0ST02, The nominal inductance of its inductance is 1.0nH, the compensation value is

0.48nH, and the actual test center value is 0.52nH.

0.52nH (Test values) = 1.0nH (Nominal inductance) - 0.48nH (Compensation value) .

* 感量和品质因素测试条件: E4982A 或相同仪器, 测试电压 50mV±5mV, 温度 15℃~35℃, 湿度 25%~75%。

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

* 直流电阻测试条件: RM3542A 或相同仪器, 温度 15℃~35℃, 湿度 25%~75%。

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

* 额定电流: 施加额定电流, 产品表面温升不超过 40℃。

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

VHF040202HQ-T02 Type

* ☐ 表示感量公差 Represents inductance tolerance:

$L_s \leq 4.2\text{nH}$, ☐ 请选择 "B/C/S" 级; $4.2\text{nH} < L_s < 5.6\text{nH}$, ☐ 请选择 "H/J/S" 级; $L_s \geq 5.6\text{nH}$, ☐ 请选择 "H/J" 级。

For $L_s \leq 4.2\text{nH}$, ☐ choose "B/C/S"; $4.2\text{nH} < L_s < 5.6\text{nH}$, ☐ choose "H/J/S"; $L_s \geq 5.6\text{nH}$, ☐ choose "H/J".

型号 Part NO	标称感量 Inductance (nH)	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
VHF040202HQ0N2 <input type="checkbox"/> T02	0.2	-	500	0.1	20000	350
VHF040202HQ0N3 <input type="checkbox"/> T02	0.3	-	500	0.2	20000	350
VHF040202HQ0N4 <input type="checkbox"/> T02	0.4	8	500	0.2	18000	350
VHF040202HQ0N5 <input type="checkbox"/> T02	0.5	8	500	0.2	18000	350
VHF040202HQ0N6 <input type="checkbox"/> T02	0.6	8	500	0.3	17000	320
VHF040202HQ0N7 <input type="checkbox"/> T02	0.7	8	500	0.3	16500	320
VHF040202HQ0N8 <input type="checkbox"/> T02	0.8	8	500	0.4	13000	320
VHF040202HQ0N9 <input type="checkbox"/> T02	0.9	8	500	0.4	13000	320
VHF040202HQ1N0 <input type="checkbox"/> T02	1.0	8	500	0.4	13000	250
VHF040202HQ1N1 <input type="checkbox"/> T02	1.1	8	500	0.5	12500	250
VHF040202HQ1N2 <input type="checkbox"/> T02	1.2	8	500	0.5	12500	250
VHF040202HQ1N3 <input type="checkbox"/> T02	1.3	8	500	0.6	11500	250
VHF040202HQ1N4 <input type="checkbox"/> T02	1.4	8	500	0.6	11500	250
VHF040202HQ1N5 <input type="checkbox"/> T02	1.5	8	500	0.6	9500	220
VHF040202HQ1N6 <input type="checkbox"/> T02	1.6	8	500	0.6	9500	220
VHF040202HQ1N7 <input type="checkbox"/> T02	1.7	8	500	0.6	9500	200
VHF040202HQ1N8 <input type="checkbox"/> T02	1.8	8	500	0.6	9000	200
VHF040202HQ1N9 <input type="checkbox"/> T02	1.9	8	500	0.6	9000	200
VHF040202HQ2N0 <input type="checkbox"/> T02	2.0	8	500	0.6	9000	200
VHF040202HQ2N1 <input type="checkbox"/> T02	2.1	8	500	0.6	9000	200
VHF040202HQ2N2 <input type="checkbox"/> T02	2.2	8	500	0.7	7500	200
VHF040202HQ2N3 <input type="checkbox"/> T02	2.3	8	500	0.8	7500	200
VHF040202HQ2N4 <input type="checkbox"/> T02	2.4	8	500	0.8	7500	200
VHF040202HQ2N5 <input type="checkbox"/> T02	2.5	8	500	0.8	7500	200

型号 Part NO	标称感量 Inductance (nH)	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
VHF040202HQ2N6□T02	2.6	8	500	0.8	7500	200
VHF040202HQ2N7□T02	2.7	8	500	0.8	7500	200
VHF040202HQ2N8□T02	2.8	8	500	0.8	7500	200
VHF040202HQ2N9□T02	2.9	8	500	0.8	7500	200
VHF040202HQ3N0□T02	3.0	8	500	0.8	7500	200
VHF040202HQ3N1□T02	3.1	8	500	0.9	7500	200
VHF040202HQ3N2□T02	3.2	8	500	1.0	7500	200
VHF040202HQ3N3□T02	3.3	8	500	1.1	7500	180
VHF040202HQ3N4□T02	3.4	8	500	1.1	7500	180
VHF040202HQ3N5□T02	3.5	8	500	1.1	7500	180
VHF040202HQ3N6□T02	3.6	8	500	1.1	7500	180
VHF040202HQ3N7□T02	3.7	8	500	1.1	7500	180
VHF040202HQ3N8□T02	3.8	8	500	1.1	7500	180
VHF040202HQ3N9□T02	3.9	8	500	1.2	7500	180
VHF040202HQ4N0□T02	4.0	8	500	1.2	7500	180
VHF040202HQ4N1□T02	4.1	8	500	1.2	7500	180
VHF040202HQ4N3□T02	4.3	8	500	1.2	7000	180
VHF040202HQ4N7□T02	4.7	8	500	1.3	6500	160
VHF040202HQ5N1□T02	5.1	8	500	1.4	6500	160
VHF040202HQ5N6□T02	5.6	8	500	1.5	6000	140
VHF040202HQ6N2□T02	6.2	8	500	1.5	5500	140
VHF040202HQ6N8□T02	6.8	8	500	1.6	5500	140
VHF040202HQ7N5□T02	7.5	8	500	1.7	4500	140
VHF040202HQ8N2□T02	8.2	8	500	1.8	4500	140
VHF040202HQ9N1□T02	9.1	8	500	1.8	4000	140
VHF040202HQ10N□T02	10	8	500	2.1	4000	140
VHF040202HQ11N□T02	11	7	500	2.8	3500	140
VHF040202HQ12N□T02	12	7	500	2.8	3500	140
VHF040202HQ13N□T02	13	7	500	3.2	3000	140
VHF040202HQ15N□T02	15	7	500	3.2	2500	140
VHF040202HQ18N□T02	18	7	500	3.5	2500	140
VHF040202HQ20N□T02	20	6	500	5.0	2300	130
VHF040202HQ22N□T02	22	6	500	5.0	2300	130
VHF040202HQ24N□T02	24	6	500	5.5	2000	120
VHF040202HQ27N□T02	27	6	500	5.5	2000	120

型号 Part NO	标称感量 Inductance (nH)	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
VHF040202HQ30N□T02	30	6	500	6.5	1800	120
VHF040202HQ33N□T02	33	4	300	6.5	1800	120
VHF040202HQ36N□T02	36	4	300	7.0	1600	90
VHF040202HQ39N□T02	39	4	300	7.0	1600	90

VHF0603HQ-T02 Type

*□表示感量公差 Represents inductance tolerance:

$L_s \leq 4.2\text{nH}$, □请选择 "B/C/S" 级; $4.2\text{nH} < L_s < 5.6\text{nH}$, □请选择 "H/J/S" 级; $L_s \geq 5.6\text{nH}$, □请选择 "H/J" 级.

For $L_s \leq 4.2\text{nH}$, □choose "B/C/S"; $4.2\text{nH} < L_s < 5.6\text{nH}$, □choose "H/J/S"; $L_s \geq 5.6\text{nH}$, □choose "H/J".

型号 Part NO	标称感量 Inductance (nH)	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
VHF060303HQ0N6□T02	0.6	14	500	0.05	10000	1000
VHF060303HQ0N7□T02	0.7	14	500	0.05	10000	1000
VHF060303HQ0N8□T02	0.8	14	500	0.06	10000	1000
VHF060303HQ0N9□T02	0.9	14	500	0.06	10000	800
VHF060303HQ1N0□T02	1.0	14	500	0.07	10000	800
VHF060303HQ1N1□T02	1.1	14	500	0.07	10000	800
VHF060303HQ1N2□T02	1.2	14	500	0.10	10000	800
VHF060303HQ1N3□T02	1.3	14	500	0.10	10000	700
VHF060303HQ1N4□T02	1.4	14	500	0.10	10000	700
VHF060303HQ1N5□T02	1.5	14	500	0.10	10000	650
VHF060303HQ1N6□T02	1.6	14	500	0.10	10000	650
VHF060303HQ1N7□T02	1.7	14	500	0.10	10000	650
VHF060303HQ1N8□T02	1.8	14	500	0.15	9000	650
VHF060303HQ2N0□T02	2.0	14	500	0.15	8500	650
VHF060303HQ2N2□T02	2.2	14	500	0.15	7500	650
VHF060303HQ2N4□T02	2.4	14	500	0.15	7500	550
VHF060303HQ2N6□T02	2.6	14	500	0.20	7500	550
VHF060303HQ2N7□T02	2.7	14	500	0.20	7500	550
VHF060303HQ2N8□T02	2.8	14	500	0.20	7500	500
VHF060303HQ3N0□T02	3.0	14	500	0.20	7500	450
VHF060303HQ3N3□T02	3.3	14	500	0.25	7500	450
VHF060303HQ3N6□T02	3.6	14	500	0.25	6500	400
VHF060303HQ3N9□T02	3.9	14	500	0.25	6500	400
VHF060303HQ4N3□T02	4.3	14	500	0.35	6000	350
VHF060303HQ4N7□T02	4.7	14	500	0.40	6000	350
VHF060303HQ5N1□T02	5.1	14	500	0.40	5500	350

型号 Part NO	标称感量 Inductance (nH)	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
VHF060303HQ5N6□T02	5.6	14	500	0.40	5000	350
VHF060303HQ6N2□T02	6.2	14	500	0.40	5000	300
VHF060303HQ6N8□T02	6.8	14	500	0.50	4500	300
VHF060303HQ7N5□T02	7.5	14	500	0.50	4000	300
VHF060303HQ8N2□T02	8.2	14	500	0.50	4000	250
VHF060303HQ9N1□T02	9.1	14	500	0.70	4000	250
VHF060303HQ10N□T02	10	14	500	0.70	4000	250
VHF060303HQ12N□T02	12	13	500	0.70	3500	250
VHF060303HQ15N□T02	15	13	500	0.85	3200	250
VHF060303HQ18N□T02	18	13	500	1.00	3000	200
VHF060303HQ20N□T02	20	13	500	1.10	2200	150
VHF060303HQ22N□T02	22	13	500	1.20	2200	150
VHF060303HQ27N□T02	27	13	500	1.50	2200	140
VHF060303HQ33N□T02	33	12	300	1.80	1800	120
VHF060303HQ36N□T02	36	12	300	2.00	1700	120
VHF060303HQ39N□T02	39	12	300	2.00	1600	120
VHF060303HQ43N□T02	43	12	300	2.20	1600	100
VHF060303HQ47N□T02	47	12	300	2.20	1500	100
VHF060303HQ56N□T02	56	12	300	2.50	1200	100
VHF060303HQ68N□T02	68	12	300	3.20	1000	100
VHF060303HQ75N□T02	75	11	300	3.60	1000	100
VHF060303HQ82N□T02	82	11	300	3.80	1000	100
VHF060303HQ91N□T02	91	11	300	3.80	900	80
VHF060303HQR10□T02	100	11	300	4.00	800	80
VHF060303HQR12□T02	120	10	300	5.00	800	80

VHF1005HQ Type

□表示感量公差 Represents inductance tolerance:

$L_s \leq 6.2\text{nH}$, □请选择"B/C/S"级; $L_s > 6.2\text{nH}$, □请选择"G/H/J"级。For $L_s \leq 6.2\text{nH}$, □choose "B/C/S"; $L_s > 6.2\text{nH}$, □choose "G/H/J".

型号 Part NO	标称感量 Inductance (nH)	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
VHF100505HQ1N0□T	1.0	8	100	0.06	10000	1000
VHF100505HQ1N1□T	1.1	8	100	0.07	10000	1000
VHF100505HQ1N2□T	1.2	8	100	0.07	10000	1000
VHF100505HQ1N3□T	1.3	8	100	0.07	10000	1000
VHF100505HQ1N5□T	1.5	8	100	0.08	6000	1000

型号 Part NO	标称感量 Inductance (nH)	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
VHF100505HQ1N6□T	1.6	8	100	0.08	6000	1000
VHF100505HQ1N8□T	1.8	8	100	0.08	6000	900
VHF100505HQ2N0□T	2.0	8	100	0.09	6000	900
VHF100505HQ2N2□T	2.2	8	100	0.09	6000	900
VHF100505HQ2N4□T	2.4	8	100	0.10	6000	800
VHF100505HQ2N7□T	2.7	8	100	0.12	6000	800
VHF100505HQ3N0□T	3.0	8	100	0.12	6000	800
VHF100505HQ3N3□T	3.3	8	100	0.13	6000	800
VHF100505HQ3N6□T	3.6	8	100	0.15	4000	700
VHF100505HQ3N9□T	3.9	8	100	0.16	4000	700
VHF100505HQ4N3□T	4.3	8	100	0.16	4000	700
VHF100505HQ4N7□T	4.7	8	100	0.16	4000	700
VHF100505HQ5N1□T	5.1	8	100	0.16	4000	600
VHF100505HQ5N6□T	5.6	8	100	0.20	4000	600
VHF100505HQ6N2□T	6.2	8	100	0.20	3900	600
VHF100505HQ6N8□T	6.8	8	100	0.20	3900	600
VHF100505HQ7N5□T	7.5	8	100	0.24	3700	500
VHF100505HQ8N2□T	8.2	8	100	0.24	3600	500
VHF100505HQ9N1□T	9.1	8	100	0.26	3400	500
VHF100505HQ10N□T	10	8	100	0.26	3200	500
VHF100505HQ12N□T	12	8	100	0.50	2700	400
VHF100505HQ15N□T	15	8	100	0.50	2300	400
VHF100505HQ18N□T	18	8	100	0.60	2100	350
VHF100505HQ20N□T	20	8	100	0.60	2000	350
VHF100505HQ22N□T	22	8	100	0.60	1900	350
VHF100505HQ27N□T	27	8	100	0.70	1600	300
VHF100505HQ33N□T	33	8	100	0.80	1300	300
VHF100505HQ39N□T	39	8	100	1.00	1200	250
VHF100505HQ43N□T	43	8	100	1.10	1100	250
VHF100505HQ47N□T	47	8	100	1.10	1000	250
VHF100505HQ56N□T	56	8	100	1.20	750	200
VHF100505HQ68N□T	68	8	100	1.40	750	200
VHF100505HQ82N□T	82	8	100	1.60	750	200
VHF100505HQR10□T	100	8	100	2.00	700	200
VHF100505HQR12□T	120	8	100	2.50	600	150
VHF100505HQR15□T	150	8	100	3.00	550	150

型号 Part NO	标称感量 Inductance (nH)	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
VHF100505HQR18□T	180	8	100	3.50	500	150
VHF100505HQR22□T	220	8	100	3.70	450	100
VHF100505HQR27□T	270	8	100	4.50	400	100
VHF100505HQR33□T	330	6	50	5.00	350	80

VHF1608H Type

□表示感量公差 Represents inductance tolerance:

$L_s < 6.8\text{nH}$, □请选择“S/D”级; $L_s \geq 6.8\text{nH}$, □请选择“J/K”级. For $L_s < 6.8\text{nH}$, □choose “S/D”; $L_s \geq 6.8\text{nH}$, □choose “J/K”.

型号 Part NO	标称感量 Inductance (nH)	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
VHF160808H1N0□T	1.0	8	100	0.05	10000	500
VHF160808H1N2□T	1.2	8	100	0.05	10000	500
VHF160808H1N5□T	1.5	8	100	0.10	6000	500
VHF160808H1N8□T	1.8	8	100	0.10	6000	500
VHF160808H2N0□T	2.0	8	100	0.10	6000	500
VHF160808H2N2□T	2.2	8	100	0.10	6000	500
VHF160808H2N4□T	2.4	8	100	0.12	6000	500
VHF160808H2N7□T	2.7	10	100	0.12	6000	500
VHF160808H3N3□T	3.3	10	100	0.15	6000	500
VHF160808H3N6□T	3.6	10	100	0.16	6000	500
VHF160808H3N9□T	3.9	10	100	0.16	6000	500
VHF160808H4N3□T	4.3	10	100	0.18	6000	500
VHF160808H4N7□T	4.7	10	100	0.20	6000	500
VHF160808H5N1□T	5.1	10	100	0.25	5500	500
VHF160808H5N6□T	5.6	10	100	0.25	5000	500
VHF160808H6N8□T	6.8	10	100	0.30	5000	500
VHF160808H7N5□T	7.5	10	100	0.35	4500	500
VHF160808H8N2□T	8.2	10	100	0.35	4500	500
VHF160808H9N1□T	9.1	10	100	0.40	3500	500
VHF160808H10N□T	10	12	100	0.40	3500	300
VHF160808H12N□T	12	12	100	0.45	3000	300
VHF160808H15N□T	15	12	100	0.50	2300	300
VHF160808H18N□T	18	12	100	0.55	2200	300
VHF160808H22N□T	22	12	100	0.60	2000	300
VHF160808H24N□T	24	12	100	0.60	2000	300
VHF160808H27N□T	27	12	100	0.65	1700	300

型号 Part NO	标称感量 Inductance (nH)	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
VHF160808H33N□T	33	12	100	0.70	1500	300
VHF160808H36N□T	36	12	100	0.70	1400	300
VHF160808H39N□T	39	12	100	0.70	1400	300
VHF160808H47N□T	47	12	100	0.70	1200	300
VHF160808H56N□T	56	12	100	0.75	1100	300
VHF160808H68N□T	68	12	100	0.85	900	300
VHF160808H82N□T	82	8	100	1.00	800	300
VHF160808HR10□T	100	8	100	1.20	700	300
VHF160808HR12□T	120	8	50	1.40	600	200
VHF160808HR15□T	150	8	50	1.60	500	200
VHF160808HR18□T	180	8	50	1.90	400	200
VHF160808HR22□T	220	8	50	2.40	350	200
VHF160808HR27□T	270	8	50	2.60	350	150
VHF160808HR33□T	330	8	50	2.80	350	150
VHF160808HR39□T	390	8	50	3.20	300	150
VHF160808HR43□T	430	8	50	3.40	280	150
VHF160808HR47□T	470	8	50	3.60	250	150

VHF2012H Type

□表示感量公差 Represents inductance tolerance:

Ls<6.8nH, □请选择"S/D"级; Ls≥6.8nH, □请选择"J/K"级. For Ls<6.8nH, □choose "S/D"; Ls≥6.8nH, □choose "J/K".

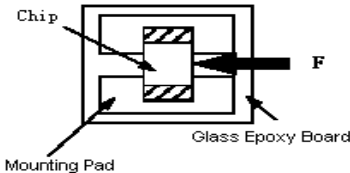
型号 Part NO	标称感量 Inductance (nH)	Q 值 (min)	测试频率 Test frequency(MHz)	直流电阻 DCR (Ω)Max	自谐振频率 SRF(MHZ)min	额定电流 Ir (mA)Max
VHF201209H1N5□T	1.5	10	100	0.10	6000	500
VHF201209H1N8□T	1.8	10	100	0.10	6000	500
VHF201209H2N2□T	2.2	10	100	0.10	6000	500
VHF201209H2N7□T	2.7	12	100	0.10	5500	500
VHF201209H3N3□T	3.3	12	100	0.13	5000	500
VHF201209H3N9□T	3.9	12	100	0.15	4500	500
VHF201209H4N3□T	4.3	12	100	0.20	4000	500
VHF201209H4N7□T	4.7	12	100	0.20	4000	500
VHF201209H5N6□T	5.6	15	100	0.23	3500	500
VHF201209H6N8□T	6.8	15	100	0.25	3000	500
VHF201209H8N2□T	8.2	15	100	0.28	2500	500
VHF201209H10N□T	10	15	100	0.30	2200	500
VHF201209H12N□T	12	15	100	0.35	2000	500

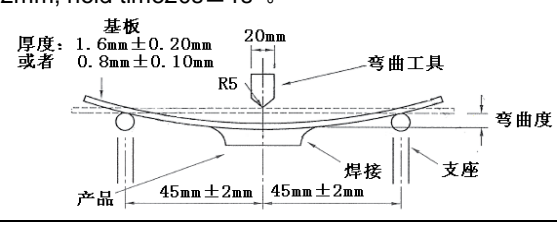
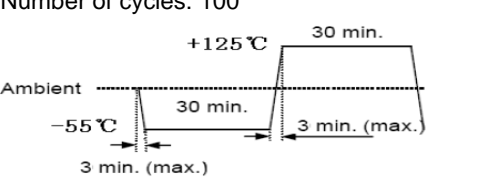
型号 Part NO	标称感量 Inductance (nH)	Q 值 (min)	测试频率 Test frequency(MHz)	直流电阻 DCR (Ω)Max	自谐振频率 SRF(MHZ)min	额定电流 Ir (mA)Max
VHF201209H15N□T	15	15	100	0.40	1800	500
VHF201209H18N□T	18	15	100	0.45	1600	300
VHF201209H22N□T	22	15	100	0.50	1500	300
VHF201209H27NJT	27	15	100	0.55	1400	300
VHF201209H33N□T	33	15	100	0.60	1300	300
VHF201209H39N□T	39	15	100	0.65	1100	300
VHF201209H43N□T	43	18	100	0.70	1000	300
VHF201209H47N□T	47	18	100	0.70	1000	300
VHF201209H56N□T	56	18	100	0.75	900	300
VHF201209H68N□T	68	18	100	0.80	850	300
VHF201209H82N□T	82	18	100	0.90	800	300
VHF201209HR10□T	100	18	100	0.90	700	300
VHF201209HR12□T	120	13	50	0.95	600	300
VHF201209HR15□T	150	13	50	1.20	550	300
VHF201209HR18□T	180	13	50	1.30	500	300
VHF201209HR22□T	220	12	50	1.50	400	300
VHF201209HR27□T	270	12	50	1.80	350	300
VHF201209HR33□T	330	12	50	2.00	300	300
VHF201209HR39□T	390	10	50	2.00	250	300
VHF201209HR47□T	470	10	50	2.00	200	300

◆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	-55℃~+125℃	/
2	可焊性 Solder ability	无可见损伤； 电极面 95% (0402/0603 电极面 75%) 以上覆盖新的焊料。 No mechanical damage. 95% (75% for 0402/0603 series) or more of electrode area shall be coated by new solder.	预热温度:120℃ ~ 150℃ 预热时间: 60s 焊料: (96.5%Sn/3.0%Ag/0.5%Cu) 焊锡 焊锡温度: 245℃±3℃ 浸锡深度:10mm 浸锡时间 :3±0.3s 浸渍到助焊剂约:3 ~ 5 s Preheating temperature:120℃ to 150℃ Preheating time: 60s Solder 96.5%Sn/3.0%Ag/0.5%Cu of the Sn solder. Solder temperature: 245±3℃ Immersion tin depth:10mm

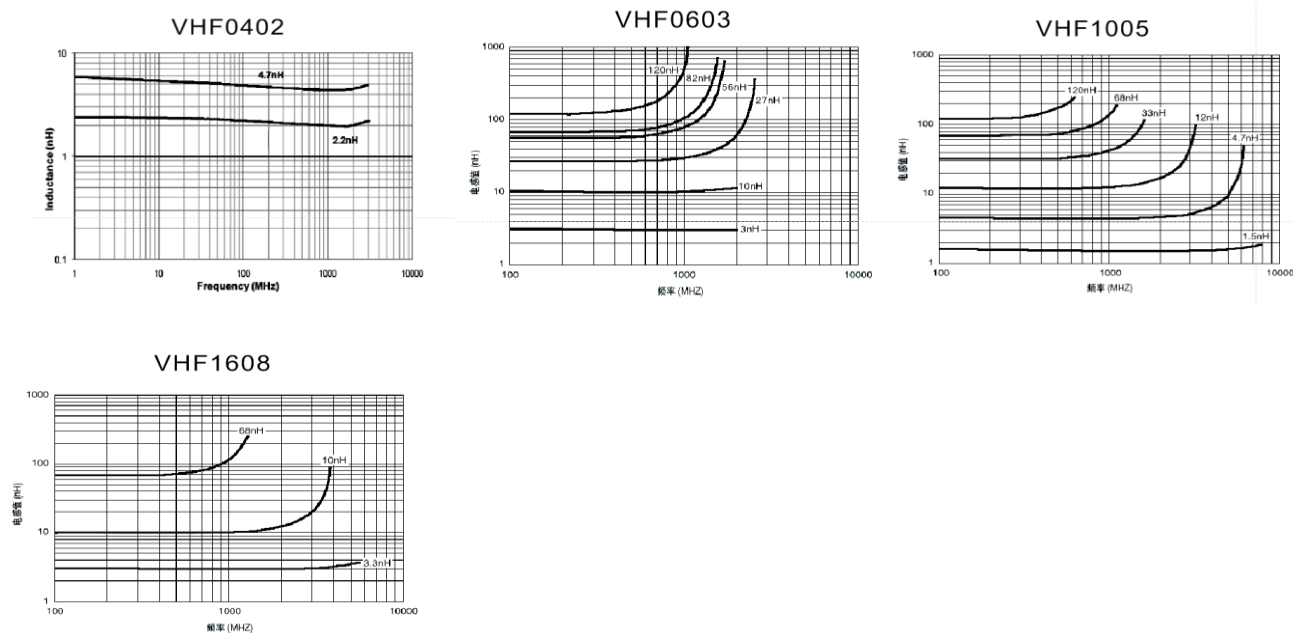
序号 No.	项目 Items	要求 Requirements	试验方法及备注 Test Methods and Remarks
			Duration : 3±0.3s Dip performance to a flux of about:3 ~ 5 s
3	耐焊接热 Resistance to Soldering Heat	无可见机械损伤。 电感量变化率如下： 陶瓷体电感（H/HQ 料）：±10% 品质因素变化率（陶瓷）±20%， No mechanical damage. Inductance : H/HQ : change within ±10% Q value change(ceramic): within ±20%	预热温度：120℃~150℃ 预热时间：60s 焊料：（96.5%Sn/3.0%Ag/0.5%Cu）焊锡 浸锡温度：260℃±5℃ 浸锡深度：10mm 浸锡时间：10±1s 浸渍到助焊剂约：3~5 s Preheating temperature: 120℃ to 150℃ Preheating time: 60s Solder 96.5%Sn/3.0%Ag/0.5%Cu of the Sn solder. Solder temperature: 260℃±5℃ 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：0402 系列为 1N； 0603 系列为 2N； 1005 系列为 5N； 1608 系列为 7N； 2012 系列为 10N； 保持时间：10±1S Applied force: 1N force for 0402series; 2N force for 0603 series; 5N force for 1005 series.; 7N force for 1608; 10N force for 2012. 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%， 品质因素变化率（陶瓷）小于±20%， No mechanical damage. Inductance change: within ±10% Q value change(ceramic): within ±20%	测试温度：-55±2℃ 测试时间：1000 ⁺²⁴ ₀ h Temperature:-55±2℃ Testing time: 1000 ⁺²⁴ ₀ h

序号 No.	项目 Items	要求 Requirements	试验方法及备注 Test Methods and Remarks
6	抗弯强度 Bending strength	无可见机械损伤 No mechanical damage	<p>测试基板:玻璃环氧树脂基板 加压速度为 (1 ± 0.5) mm/s, 弯度:2mm, 保持时间 $20s \pm 1s$ Testing board: glass epoxy-resin substrate For (1 ± 0.5) mm/s compression speed, curvature: 2mm, hold time $20s \pm 1s$.</p> 
7	振动 Vibration	无可见机械损伤, 电感量变化率小于 $\pm 10\%$, 品质因素变化率(陶瓷) 小于 $\pm 20\%$, No mechanical damage. Inductance change: within $\pm 10\%$ Q value change (ceramic): within $\pm 20\%$	<p>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.</p>
8	耐高温 High temperature resistance	无可见机械损伤, 电感量变化率小于 $\pm 10\%$, 品质因素变化率(陶瓷) 小于 $\pm 20\%$, No mechanical damage. Inductance change: within $\pm 10\%$ Q value change (ceramic): within $\pm 20\%$	<p>测试时间: 1000^{+24}_{-0} h 测试温度: $125 \pm 2^\circ\text{C}$ Testing time: 1000^{+24}_{-0} h Temperature: $125 \pm 2^\circ\text{C}$</p>
9	恒定湿热 Static Humidity	无可见机械损伤, 电感量变化率小于 $\pm 10\%$, 品质因素变化率(陶瓷) 小于 $\pm 20\%$, No mechanical damage. Inductance change: within $\pm 10\%$ Q value change (ceramic): within $\pm 20\%$	<p>湿度:90%~95% RH, 温度: $60^\circ\text{C} \pm 2^\circ\text{C}$ 测试时间: 1000^{+24}_{-0} h Humidity: 90% to 95% RH Temperature: $60^\circ\text{C} \pm 2^\circ\text{C}$ Testing time: 1000^{+24}_{-0} h</p>
10	高温负载 High temperature load	无可见机械损伤, 电感量变化率小于 $\pm 10\%$, 品质因素变化率(陶瓷) 小于 $\pm 20\%$, No mechanical damage. Inductance change: within $\pm 10\%$ Q value change (ceramic): within $\pm 20\%$	<p>施加电流: 额定电流 测试时间: 1000^{+24}_{-0} h 测试温度: $125^\circ\text{C} \pm 2^\circ\text{C}$ impose current: Rated current. Testing time: 1000^{+24}_{-0} h Temperature: $125 \pm 2^\circ\text{C}$</p>
11	温度冲击 Temperature Shock	无可见机械损伤, 电感量变化率小于 $\pm 10\%$, 品质因素变化率(陶瓷) 小于 $\pm 20\%$, No mechanical damage. Inductance change: within $\pm 10\%$ Q value change (ceramic): within $\pm 20\%$	<p>温度: -55°C, 30 ± 3 分钟 $+125^\circ\text{C}$, 30 ± 3 分钟 循环次数: 100 Temperature: -55°C for $30 \pm 3\text{min}$ $+125^\circ\text{C}$ for $30 \pm 3\text{min}$ Number of cycles: 100</p> 

序号 No.	项目 Items	要求 Requirements	试验方法及备注 Test Methods and Remarks
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.			

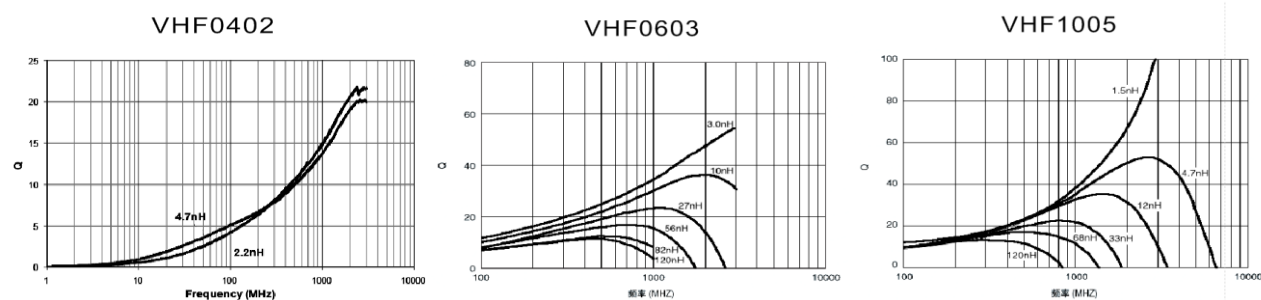
◆感量-频率特性

Inductance Vs. Frequency Characteristics



◆Q 值-频率特性

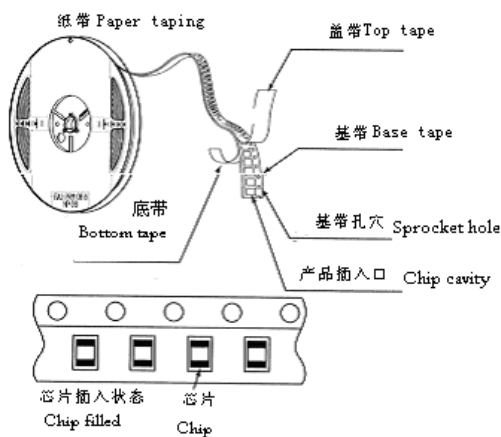
Q Value Vs. Frequency Characteristics



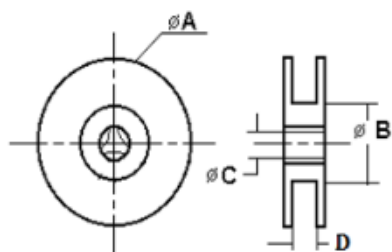
◆包装

Packaging

- 编带图 aping drawings



● 卷盘尺寸 Reel dimensions (Unit: mm)

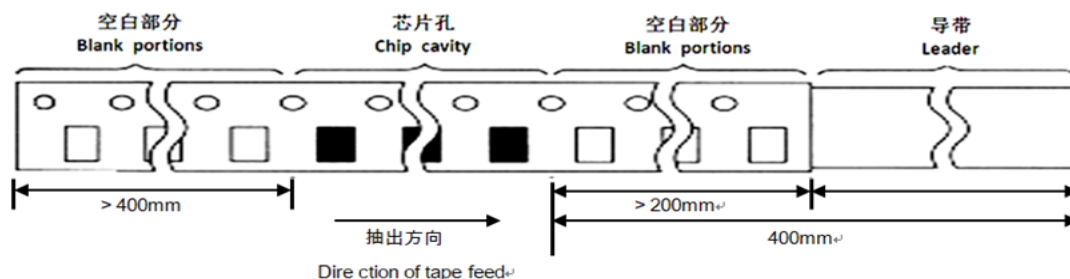


型号 Size	A	B	C	D
7 inch	178±2.0	60±2.0	13.0±1.0	9.5±2.0

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

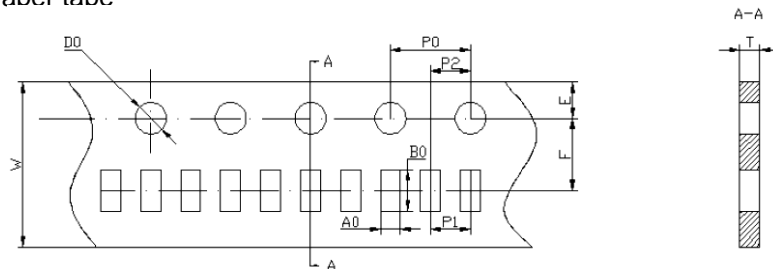
Note: 7 inch is available in 060303, 100505, 160808, 201209, 321609, 322513, 451616 sizes.

● 导带及空格部分 Leader and blank portion



● 编带尺寸 Taping dimensions (Unit: mm)

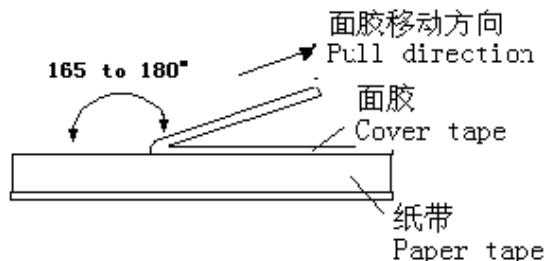
* 纸带 Paper tape



Part NO.	A0	B0	W	F	E	P1	P2	P0	D0	T
040202	0.25±0.03	0.46±0.03	8.00±0.10	3.50±0.05	1.75±0.05	2.00±0.05	2.00±0.05	4.0±0.1	1.50±0.05	0.31±0.03
060303	0.38±0.03	0.68±0.03	8.00±0.10	3.50±0.05	1.75±0.05	2.00±0.05	2.00±0.05	4.00±0.10	1.55±0.05	0.42±0.03

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

* 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)

型号 Size	201209	160808	100505	060303	040202
每卷数量 REEL	4000	4000	10000	15000	15000
每盒数量 BOX	40000	40000	100000	150000	150000
每箱数量 CASE	240000	240000	600000	900000	900000

● 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。

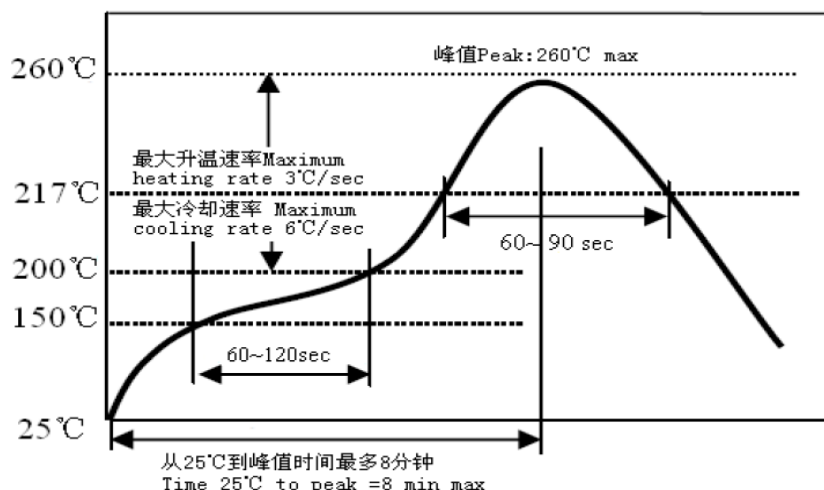
Pre-heating should be in such a way that the temperature difference between solder and ferrite surface is limited to 150℃ max. Also cooling into solvent after soldering should be in such way that the temperature difference is limited to 100℃ max. Un-enough pre-heating may cause cracks on the ferrite,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



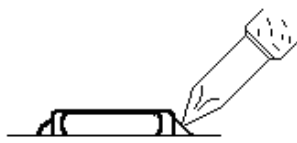
- (1) 预热条件: 150 ~ 200°C / 60 ~ 120 秒; PREHEAT CONDITION: 150 ~ 200°C / 60 ~ 120 SEC
- (2) 允许大于 217°C 时间: 60—90 秒; ALLOWED TIME ABOVE 217°C: 60~90 SEC
- (3) 最大温度: 260 °C; MAX TEMP: 260 °C
- (4) 最高温的最大时间: 10 秒; MAX TIME AT MAX TEMP: 10 SEC
- (5) 焊膏: SN/3.0Ag/0.5Cu; SOLDER PASTE: SN/3.0Ag/0.5Cu
- (6) 回流焊次数: 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℃，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℃ 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: CCl₄（四氯化碳）、HCFC 等。

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

ODS: CCl₄, 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.

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