

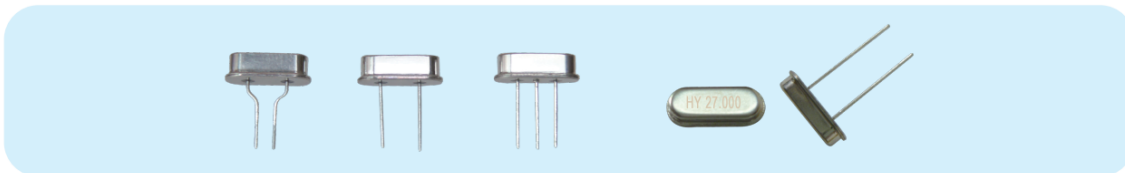


深圳市科电科技有限公司

深圳市宝安区福永镇新田大道10号江氏大厦1206A

TEL: 0755-23077644 0755-27805705

石英晶体谐振器 Crystal Resonator
HC-49S & HC-49SS

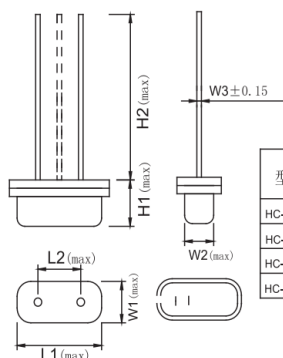


电气参数 ELECTRICAL SPECIFICATIONS

项次 Item	规格 Specification		
频率范围 Frequency Range(MHz)	HC-49S-DIP2	HC-49S-DIP3	HC-49SS-DIP2
	3.200~70.000	3.200~70.000	3.200~70.000
振荡模式 Mode of Oscillation	基频 Fundamental(三次泛音 3rd)		
调整频差 Frequency Tolerance (at 25°C)	±20ppm Standard, (±5ppm, ±10ppm, ±30ppm Available)		
温度频差 Frequency Stability Over Temperature	±20ppm Standard, (±10ppm, ±30ppm Available)		
工作温度 Operating Temperature Range	-20°C~+70°C Standard, -40°C~+85°C Extended		
储存温度 Storage Temperature Range	-40°C~+120°C		
老化率 Aging (at 25°C)	±3ppm/year Max		
负载电容 Load Capacitance	8PF~32PF or Series		
静态电容 Shunt Capacitance	4.0PF Max		
驱动功率 Drive Level	0.01μw~100μw		
回流焊条件 Reflow Conditions	260°C for 5s Max, 2 reflows Max		

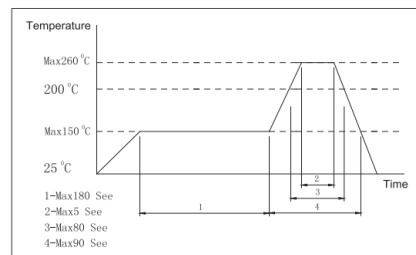
等效电阻 Equivalent Series Resistance				
频段	型号	HC-49S-DIP2	HC-49S-DIP3	HC-49SS-DIP2
3.2MHz ≤ Freq. < 3.5MHz		120~100Ω	120~100Ω	120~100Ω
3.5MHz ≤ Freq. < 5.0MHz		100~80Ω	100~80Ω	100~80Ω
5.0MHz ≤ Freq. < 8.0MHz		80~60Ω	80~60Ω	80~60Ω
8.0MHz ≤ Freq. < 12MHz		60~30Ω	60~30Ω	60~30Ω
12MHz ≤ Freq. < 40MHz		30~25Ω	30~25Ω	30~25Ω
30MHz ≤ Freq. < 70MHz 3RD		80~60Ω	80~60Ω	80~60Ω

外形尺寸 DIMENSIONS(mm)



型号	外形尺寸(mm)						
	L1	L2	W1	W2	W3	H1	H2
HC-49S-DIP2	11.05	4.88	4.5	3.8	0.45	3.5	13.0
HC-49S-DIP3	11.05	4.88	4.5	3.8	0.45	3.5	13.0
HC-49SS-DIP2	11.05	4.88	4.5	3.8	0.45	2.5	13.0
HC-49SSS-DIP2	6.5	2.5	4.0	3.0	0.25	1.7	8.0

回流焊曲线 SODLE REFLOW PROFILE



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石英晶体谐振器 Crystal Resonator
HC-49S-SMD & HC-49SS-SMD



电气参数 ELECTRICAL SPECIFICATIONS

项次 Item	规格 Specification		
	49S-SMD-2PIN	49S-SMD-3PIN	49SS-SMD-2PIN
频率范围 Frequency Range(MHz)	3.200~70.000	3.200~70.000	3.200~70.000
振荡模式 Mode of Oscillation	基频Fundamental(三次泛音 3rd)		
调整频差 Frequency Tolerance (at 25°C)	±20ppm Standard,(±5ppm, ±10ppm, ±30ppm Available)		
温度频差 Frequency Stability Over Temperature	±20ppm Standard,(±10ppm, ±30ppm Available)		
工作温度 Operating Temperature Range	-20°C~+70°C Standard, -40°C~+85°C Extended		
储存温度 Storage Temperature Range	-40°C~+120°C		
老化率 Aging (at 25°C)	±3ppm/year Max		
负载电容 Load Capacitance	8PF~32PF or Series		
静态电容 Shunt Capacitance	4.0PF Max		
驱动功率 Drive Level	0.01μw~100μw		
回流焊条件 Reflow Conditions	260°C for 5s Max, 2 reflows Max		



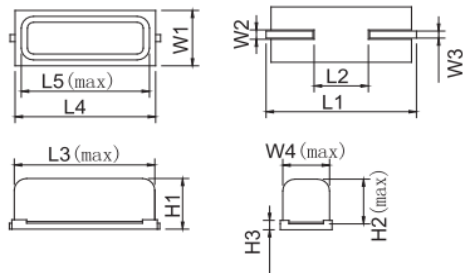
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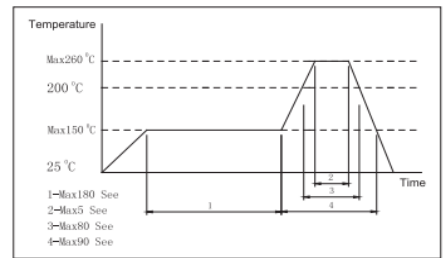
等效电阻 Equivalent Series Resistance			
频段 \ 型号	HC-49S-DIP2	HC-49S-DIP3	HC-49SS-DIP2
3.2MHz ≤ Freq. < 3.5MHz	120~100Ω	120~100Ω	120~100Ω
3.5MHz ≤ Freq. < 5.0MHz	100~80Ω	100~80Ω	100~80Ω
5.0MHz ≤ Freq. < 8.0MHz	80~60Ω	80~60Ω	80~60Ω
8.0MHz ≤ Freq. < 12MHz	60~30Ω	60~30Ω	60~30Ω
12MHz ≤ Freq. < 40MHz	30~25Ω	30~25Ω	30~25Ω
30MHz ≤ Freq. < 70MHz 3RD	80~60Ω	80~60Ω	80~60Ω

外形尺寸 DIMENSIONS(mm)



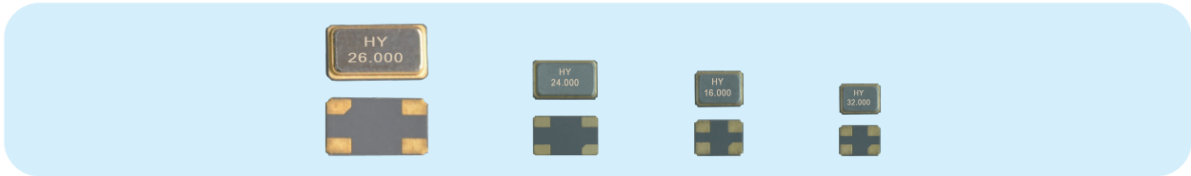
型号	外形尺寸(mm)											
	L1	L2	L3	L4	L5	W1	W2	W3	W4	H1	H2	H3
HC-49S-SMD2	12.5	4.4	10.2	11.4	11.0	4.7	1.1	0.85	3.8	4.0	3.8	0.8
HC-49S-SMD3	12.5	4.4	10.2	11.4	11.0	4.7	1.1	0.85	3.8	4.0	3.8	0.8
HC-49SS-SMD2	12.5	4.4	10.2	11.4	11.0	4.7	1.1	0.85	3.8	3.0	2.8	0.65

回流焊曲线 SODLE REFLOW PROFILE



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石英晶体谐振器 Crystal Resonator SMD-4PIN



电气参数 ELECTRICAL SPECIFICATIONS

项次 Item	规格 Specification			
频率范围 Frequency Range(MHz)	SMD5032	SMD3225	SMD2520	SMD2016
	8.000~54.000	12.000~54.000	16.000~54.000	16.000~54.000
振荡模式 Mode of Oscillation	Fundamental			
调整频差 Frequency Tolerance (at 25°C)	±20ppm Standard, (±5ppm, ±10ppm, ±30ppm Available)			
温度频差 Frequency Stability Over Temperature	±20ppm Standard, (±10ppm, ±30ppm Available)			
工作温度 Operating Temperature Range	-20°C~+70°C Standard, -40°C~+85°C Extended			
储存温度 Storage Temperature Range	-40°C~+120°C			
老化率 Aging (at 25°C)	±3ppm/year Max			
负载电容 Load Capacitance	8PF~32PF or Series			
静态电容 Shunt Capacitance	4.0PF Max			
驱动功率 Drive Level	0.01μw~100μw			
回流焊条件 Reflow Conditions	260°C for 5s Max, 2 reflows Max			



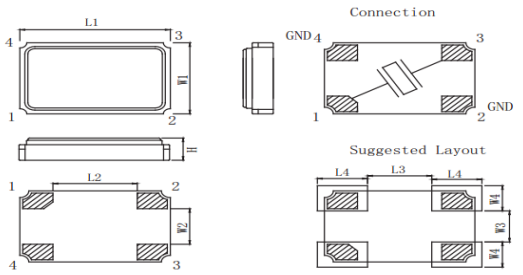
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等效电阻 Equivalent Series Resistance				
频段 \ 型号	SMD5032	SMD3225	SMD2520	SMD2016
8MHz ≤ Freq. < 12MHz	80~60Ω	-	-	-
12MHz ≤ Freq. < 16MHz	60~50Ω	60~50Ω	-	-
16MHz ≤ Freq. < 20MHz	50~40Ω	50~40Ω	80~60Ω	-
20MHz ≤ Freq. < 40MHz	40~30Ω	40~30Ω	60~50Ω	80~60Ω
40MHz ≤ Freq. < 54MHz	30~25Ω	30~25Ω	50~40Ω	100~80Ω

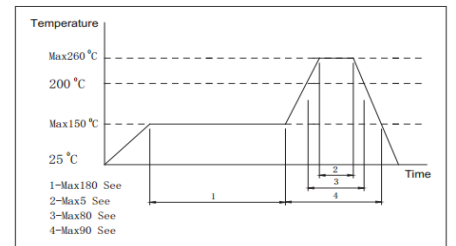
外形尺寸 DIMENSIONS(mm)



Marking #2and#4 are connected to metal cap of top

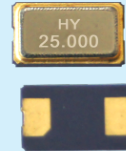
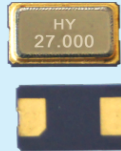
型号	外形尺寸(±0.15mm)								
	L1	L2	L3	L4	W1	W2	W3	W4	H
5032	5.0	3.0	1.2	1.7	3.2	0.9	0.7	1.5	0.9
3225	3.2	1.3	0.8	1.4	2.5	0.7	0.5	1.2	0.7
2520	2.5	0.9	0.6	1.1	2.0	0.6	0.4	1.0	0.5
2016	2.0	0.7	0.5	0.9	1.6	0.5	0.3	0.8	0.5

回流焊曲线 SODLE REFLOW PROFILE



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石英晶体谐振器 Crystal Resonator SMD-2PIN



电气参数 ELECTRICAL SPECIFICATIONS

项次 Item	规格 Specification	
频率范围 Frequency Range(MHz)	SMD6035	SMD5032
	8.000~54.000	8.000~54.000
振荡模式 Mode of Oscillation	Fundamental	
调整频差 Frequency Tolerance (at 25°C)	±20ppm Standard, (±5ppm, ±10ppm, ±30ppm Available)	
温度频差 Frequency Stability Over Temperature	±20ppm Standard, (±10ppm, ±30ppm Available)	
工作温度 Operating Temperature Range	-20°C~+70°C Standard, -40°C~+85°C Extended	
储存温度 Storage Temperature Range	-40°C~+120°C	
老化率 Aging (at 25°C)	±3ppm/year Max	
负载电容 Load Capacitance	8PF~32PF or Series	
静态电容 Shunt Capacitance	5.0PF Max	
驱动功率 Drive Level	0.01μw~100μw	
回流焊条件 Reflow Conditions	260°C for 5s Max, 2 reflows Max	



深圳市科电科技有限公司

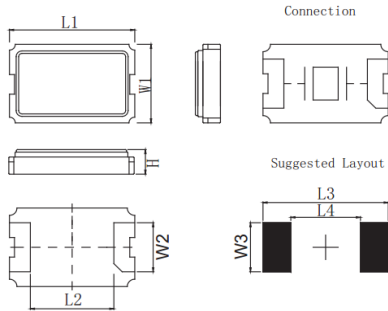
深圳市宝安区福永镇新田大道 10 号江氏大厦 1206A

TEL: 0755-23077644 0755-27805705

等效电阻 Equivalent Series Resistance

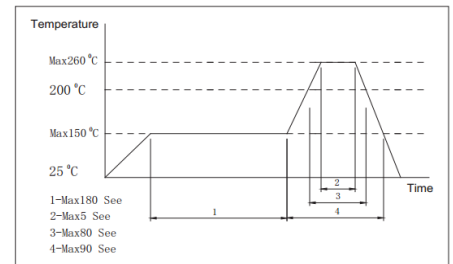
频段 \ 型号	6035	5032
8MHz ≤ Freq. < 12MHz	100 ~ 80Ω	120 ~ 80Ω
12MHz ≤ Freq. < 16MHz	80 ~ 60Ω	80 ~ 60Ω
16MHz ≤ Freq. < 20MHz	60 ~ 40Ω	60 ~ 40Ω
20MHz ≤ Freq. < 40MHz	30 ~ 25Ω	30 ~ 25Ω
40MHz ≤ Freq. < 54MHz	40 ~ 30Ω	40 ~ 30Ω

外形尺寸 DIMENSIONS(mm)



型号	外形尺寸(±0.15mm)							
	L1	L2	L3	L4	W1	W2	W3	H
6035	6.0	3.4	6.2	3.0	6.0	1.8	2.5	1.4
5032	5.0	2.4	5.2	2.5	3.2	1.6	2.0	1.2

回流焊曲线 SODLE REFLOW PROFILE



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石英晶体振荡器 Crystal Oscillator
SMD

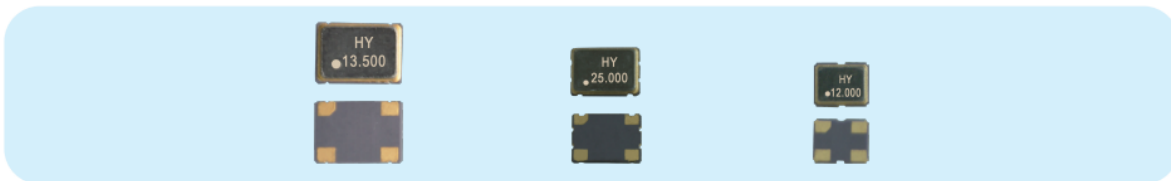




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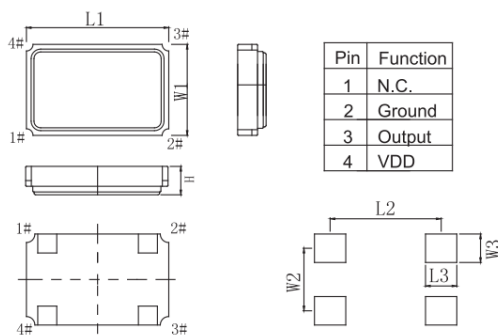
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电气参数 ELECTRICAL SPECIFICATIONS

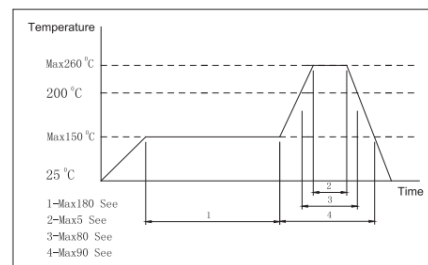
项次 Item		规格 Specification		
参数 Parameter		3.3V	2.5V	1.8V
供给电压 Supply Voltage		3.3V±10%	2.5V±10%	1.8V±10%
频率范围 Frequency Range		1.0~200.0MHz	1.0~166.0MHz	1.0~100.0MHz
频率稳定性 Frequency Stability		±20ppm Standard at 25°C±3°C, ±10ppm~±100ppm available		
供给电流 Supply Current	1.0~30.0 MHz	10mA Max	8mA Max	6mA Max
	30.0~75.0 MHz	15mA Max	10mA Max	8mA Max
	75.0~133.0 MHz	20mA Max	15mA Max	12mA Max
	133.0~166.0 MHz	22mA Max	15mA Max	--
	166.0~200.0 MHz	25mA Max	--	--
工作温度 Operating Temperature		-20°C~+70°C Standard, -40°C~+85°C Available		
储存温度 Storage Temperature		-55°C~+125°C		
占空比 Duty Cycle		45%~55%		
输出电压高 Output High (Logic "1")		90VDD% Min		
输出电压低 Output Low (Logic "0")		10VDD% Max		
启动时间 Start Time		< 10mS		
待机电流 Standby Current		< 15µA		
老化率 Aging (at 25°C)		±3ppm/year Max		

外形尺寸 DIMENSIONS(mm)



型号	外形尺寸(±0.15mm)						
	L1	L2	L3	W1	W2	W3	H
7050	7.0	5.0	2.1	5.0	4.2	2.1	1.8
5032	5.0	2.5	1.2	3.2	2.2	1.2	1.5
3225	3.2	1.8	0.8	2.5	1.6	0.8	1.1

回流焊曲线 SODLE REFLOW PROFILE



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石英晶体谐振器 Crystal Resonator
HC-49SB-DIP & HC-49SB-SMD

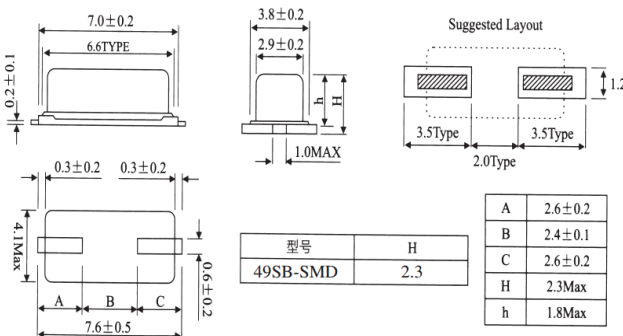


电气参数 ELECTRICAL SPECIFICATIONS

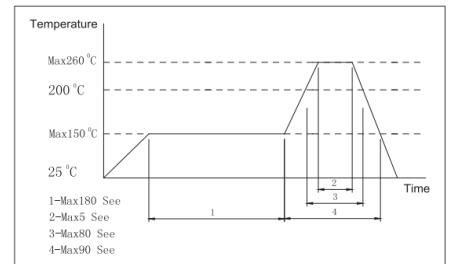
项次 Item	规格 Specification	
频率范围 Frequency Range(MHz)	HC-49SB-DIP2	HC-49SB-SMD-2PIN
	12.000~40.000	12.000~40.000
振荡模式 Mode of Oscillation	Fundamental & Third Overtone	
调整频差 Frequency Tolerance (at 25 °C)	±20ppm Standard,(±5ppm, ±10ppm, ±30ppm Available)	
温度频差 Frequency Stability Over Temperature	±20ppm Standard,(±10ppm, ±30ppm Available)	
工作温度 Operating Temperature Range	-20 °C ~ +70 °C Standard, -40 °C ~ +85 °C Extended	
储存温度 Storage Temperature Range	-40 °C ~ +120 °C	
老化率 Aging (at 25 °C)	±3ppm/year Max	
负载电容 Load Capacitance	8PF~32PF or Series	
静态电容 Shunt Capacitance	4.0PF Max	
驱动功率 Drive Level	0.01µw~100µw	
回流焊条件 Reflow Conditions	260 °C for 5s Max, 2 reflows Max	

等效电阻 Equivalent Series Resistance		
频段	型号	
	HC-49SB-DIP2	HC-49SB-SMD-2PIN
16MHz ≤ Freq. < 40MHz	80~60Ω	80~60Ω

外形尺寸 DIMENSIONS(mm)



回流焊曲线 SODLE REFLOW PROFILE



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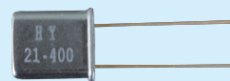
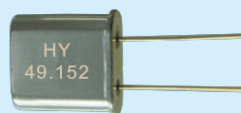
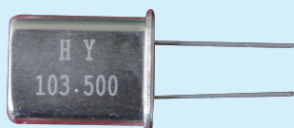


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石英晶体谐振器 Crystal Resonator
HC-49U & HC-49T & UM-1 & UM-5



电气参数 ELECTRICAL SPECIFICATIONS

项次 Item	规格 Specification			
	HC-49U	HC-49T	UM-1	UM-5
频率范围 Frequency Range(MHz)	1.8432~315	10.7~315	10.7~315	10.7~40
振荡模式 Mode of Oscillation	基频 Fundamental(三次泛音 3rd, 五次泛音 5rd, 七次泛音 7rd)			
调整频差 Frequency Tolerance (at 25°C)	±20ppm Standard, (±5ppm, ±10ppm, ±30ppm Available)			
温度频差 Frequency Stability Over Temperature	±20ppm Standard, (±10ppm, ±30ppm Available)			
工作温度 Operating Temperature Range	-20°C~+70°C Standard, -40°C~+85°C Extended			
储存温度 Storage Temperature Range	-40°C~+120°C			
老化率 Aging (at 25°C)	±3ppm/year Max			
负载电容 Load Capacitance	8PF~32PF or Series			
静态电容 Shunt Capacitance	5.0PF Max			
驱动功率 Drive Level	0.01μw~100μw			
回流焊条件 Reflow Conditions	260°C for 5s Max, 2reflows Max			



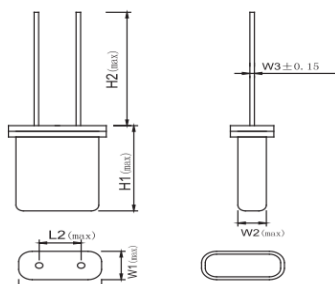
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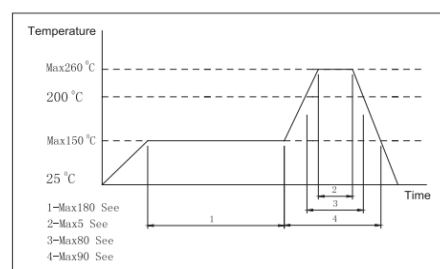
等效电阻 Equivalent Series Resistance				
频段 \ 型号	HC-49U	HC-49T	UM-1	UM-5
1.8432MHz ≤ Freq. < 3.0MHz	300~150Ω	-	-	-
3.0MHz ≤ Freq. < 6.0MHz	150~60Ω	-	-	-
6.0MHz ≤ Freq. < 12.0MHz	60~40Ω	-	-	-
12.0MHz ≤ Freq. < 40MHz	40~25Ω	40~25Ω	40~25Ω	40~25Ω-
30MHz ≤ Freq. < 315MHz 7RD	40~120Ω	40~120Ω	40~120Ω	-

外形尺寸 DIMENSIONS(mm)



型号	外形尺寸 (±0.15mm)						
	L1	L2	W1	W2	W3	H1	H2
HC-49U	11.2	4.88	4.7	3.4	0.45	13.5	12.7
HC-49T	11.2	4.88	4.7	3.4	0.45	11.2	12.7
UM-1	7.0	3.8	3.0	2.2	0.30	8.0	12.7

回流焊曲线 SODLE REFLOW PROFILE



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石英晶体谐振器 Crystal Resonator

32.768KHz AT308 & AT206 & SMD3215 & SMD7015





深圳市科电科技有限公司

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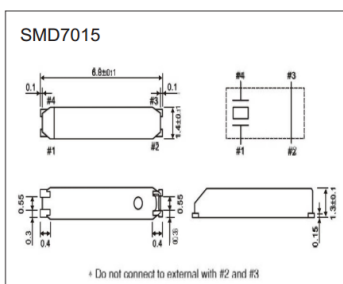
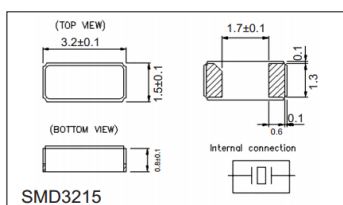
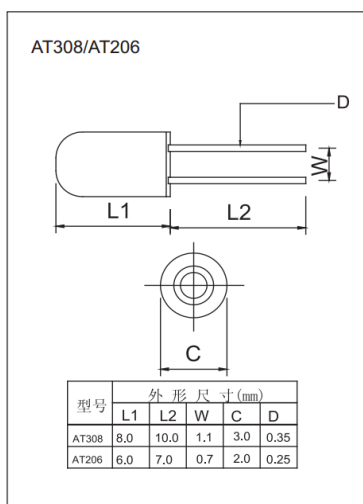
电气参数 ELECTRICAL SPECIFICATIONS

项次 Item	规格 Specification			
频率范围 Frequency Range(KHz)	AT308	AT206	SMD3215	SMD7015
	32.000~150.000	32.000~75.000	32.768	32.768
振荡模式 Mode of Oscillation	Fundamental			
调整频差 Frequency Tolerance (at 25°C)	±20ppm Standard, (±5ppm, ±10ppm, ±30ppm Available)			
温度频差 Frequency Stability Over Temperature	±30ppm Standard, (±20ppm Available)			
工作温度 Operating Temperature Range	-20°C~+70°C Standard, -40°C~+85°C Extended			
储存温度 Storage Temperature Range	-40°C~+120°C			
老化率 Aging (at 25°C)	±3ppm/year Max			
负载电容 Load Capacitance	6PF; 12.5PF; 20PF			
静态电容 Shunt Capacitance	5.0PF Max			
驱动功率 Drive Level	0.01μw~100μw			
回流焊条件 Reflow Conditions	240°C for 5s Max, 2 reflows Max			

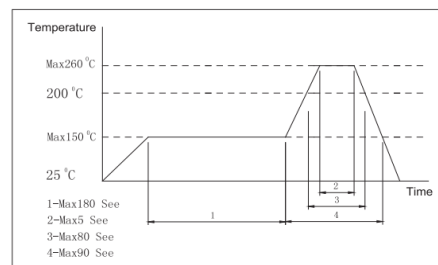
等效电阻 Equivalent Series Resistance

频段 \ 型号	DT308	DT206	HY3215	HY7015
32KHz ≤ Freq. < 150KHz	30~25KΩ	35~30KΩ	-	-
32.768KHz	-	-	70 KΩ	65KΩ

外形尺寸 DIMENSIONS(mm)



回流焊曲线 SODLE REFLOW PROFILE



主要参数除以上指标外，可根据用户要求制作特殊规格的产品
Mostly parameter out above guideline, can produce special specifications products according to your requirement.

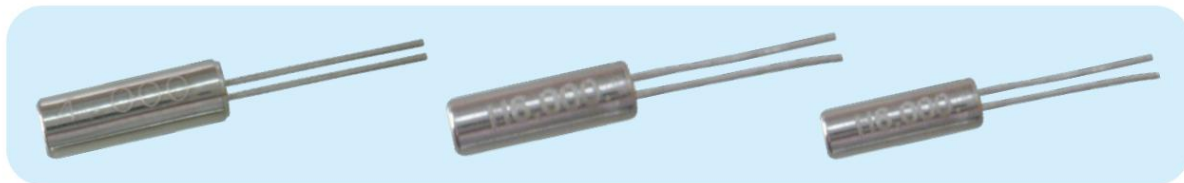


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石英晶体谐振器 Crystal Resonator
AT309 & AT308 & AT206



电气参数 ELECTRICAL SPECIFICATIONS

项次 Item	规格 Specification		
	AT309	AT308	AT206
频率范围 Frequency Range(MHz)	3.579~4.000	4.000~48.000	6.000~36.000
振荡模式 Mode of Oscillation	Fundamental & Third Overtone		
调整频差 Frequency Tolerance (at 25°C)	±20ppm Standard, (±5ppm, ±10ppm, ±30ppm Available)		
温度频差 Frequency Stability Over Temperature	±30ppm Standard, (±20ppm Available)		
工作温度 Operating Temperature Range	-20°C~+70°C Standard, -30°C~+75°C Extended		
储存温度 Storage Temperature Range	-40°C~+120°C		
老化率 Aging (at 25°C)	±3ppm/year Max		
负载电容 Load Capacitance	8PF~32PF or Series		
静态电容 Shunt Capacitance	5.0PF Max		
驱动功率 Drive Level	0.01μw~100μw		
回流焊条件 Reflow Conditions	260°C for 5s Max, 2 reflows Max		



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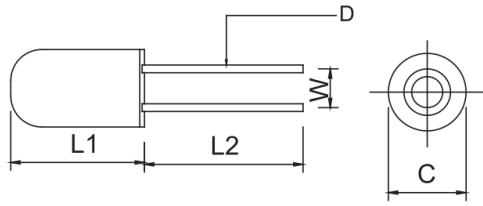
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等效电阻 Equivalent Series Resistance

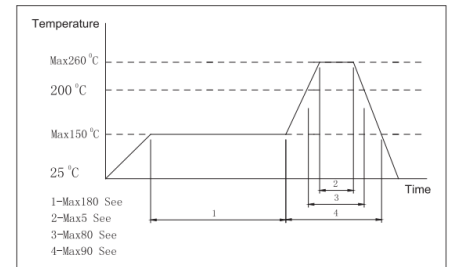
频段 \ 型号	AT309	AT308	AT206
3.579MHz ≤ Freq. < 4.0MHz	200~120Ω	-	-
4.0MHz ≤ Freq. < 6.0MHz	-	120~100Ω	--
6.0MHz ≤ Freq. < 12.0MHz	-	100~60Ω	150~60Ω
12.0MHz ≤ Freq. < 40MHz	-	60~40Ω	60~35Ω

外形尺寸 DIMENSIONS(mm)



型号	外形尺寸(mm)				
	L1	L2	W	C	D
AT309	9.0	10.0	1.1	3.0	0.35
AT308	8.0	10.0	1.1	3.0	0.35
AT206	6.0	7.0	0.7	2.0	0.25

回流焊曲线 SODLE REFLOW PROFILE



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