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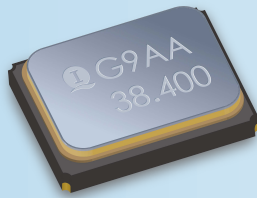
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THR-2016



FEATURES

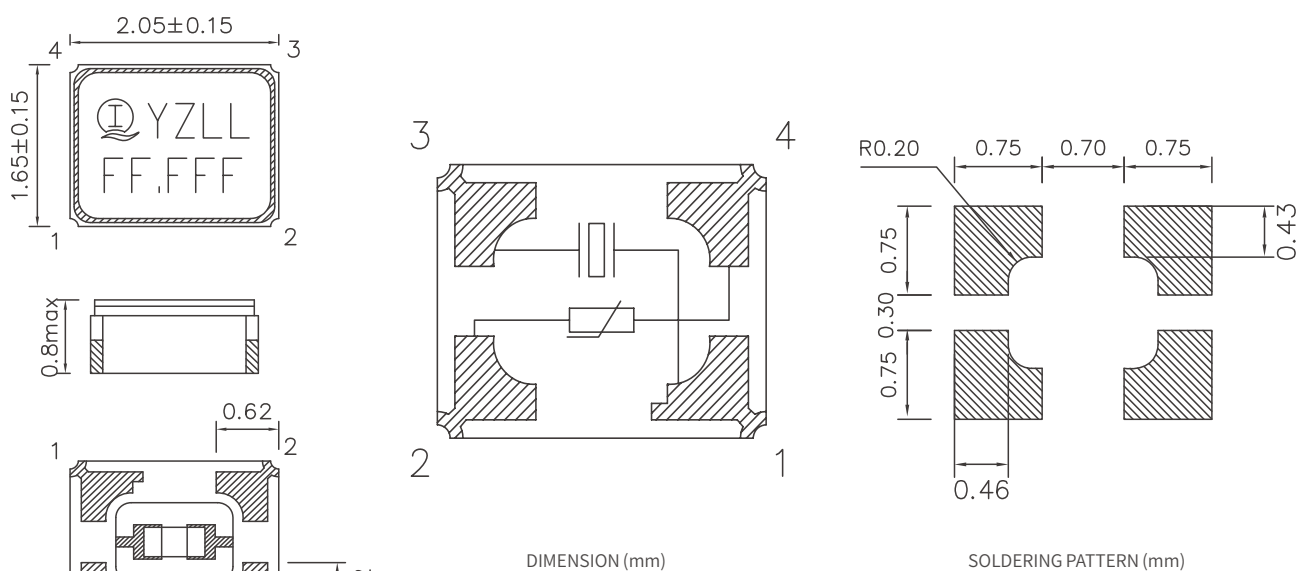
- Surface mount ceramic enclosures
- Ultra-miniature size
- Excellent temperature tracking
- Designed for mobile communication
- RoHS Compliant and Pb Free

Electrical Specifications

Parameters	Symbol	Specifications	
Nominal Frequency Range 标称频率范围	f_0	16 MHz~ 96 MHz	
Frequency Tolerance, $T_a=25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 常温频率偏差	$\Delta f/f$	$\pm 10\text{ppm}$	
Load Capacitance 负载电容	C_L	7pF, 9pF or specify	
Frequency Tolerance over Operating Temperature Range 频率温度特性	$\Delta f/f$	$\pm 10\text{ppm}$ or specify	
Operating Temperature Range 工作温度	T_{OPR}	$-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$, $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$	
Storage Temperature Range 储存温度	T_{STG}	$-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$	
Drive Level 激励功率	DL	100 μW Max.	
Shunt Capacitance 静态电容	C_0	2pF Max.	
Equivalent Series Resistance (ESR) 串联谐振阻抗	ESR	80 Ω	60 Ω
Aging 老化率	Δf_A	$\pm 1\text{ppm/Year}$	
Oscillation Mode 振动模式	OT	Fundamental	
Thermistor Resistance 热敏电阻阻值		100 K $\Omega \pm 1\%$	
Thermistor B-Constant 热敏电阻B常数		4250K $\pm 1\%$	

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions

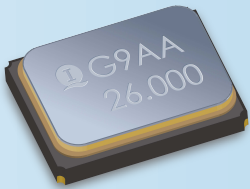


All specifications are subject to change without prior notice. 本公司保留修改规格的权利。

THR-2520

FEATURES

- Surface mount ceramic enclosures
- Miniature size
- Excellent temperature tracking
- Designed for mobile communication
- RoHS Compliant and Pb Free

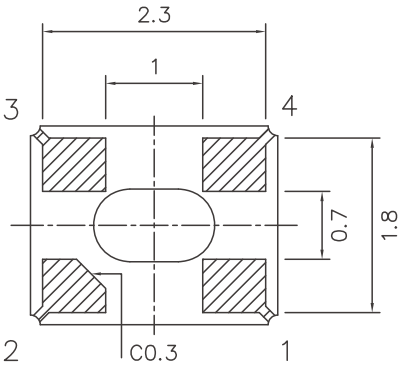
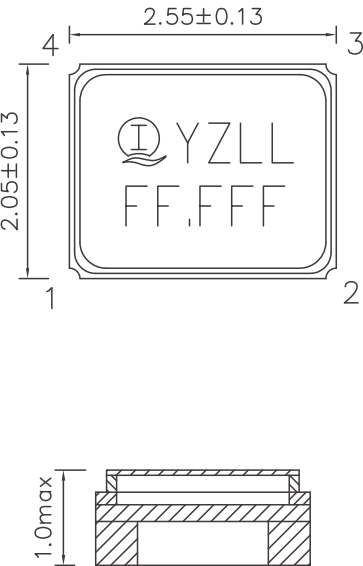


Electrical Specifications

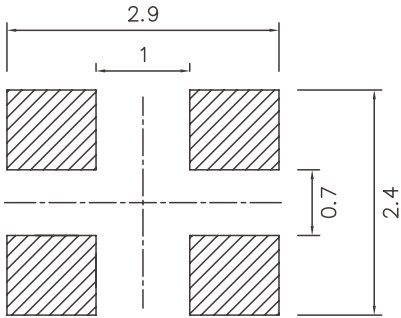
Parameters	Symbol	Specifications	
Nominal Frequency Range 标称频率范围	f_0	16 MHz~ 96 MHz	
Frequency Tolerance, Ta=25°C ± 3°C 常温频率偏差	$\Delta f/f$	±10ppm	
Load Capacitance 负载电容	C_L	7pF, 9pF or specify	
Frequency Tolerance over Operating Temperature Range 频率温度特性	$\Delta f/f$	±10ppm or specify	
Operating Temperature Range 工作温度	T_{OPR}	-30°C ~ +85°C, -40°C ~ +85°C	
Storage Temperature Range 储存温度	T_{STG}	-55°C ~ +125°C	
Drive Level 激励功率	DL	100µW Max.	
Shunt Capacitance 静态电容	C_0	2pF Max.	
Equivalent Series Resistance (ESR) 串联谐振阻抗	ESR	80Ω	60Ω
Aging 老化率	Δf_A	±1ppm/Year	
Oscillation Mode 振动模式	OT	Fundamental	
Thermistor Resistance 热敏电阻阻值		100 KΩ ± 1%	
Thermistor B-Constant 热敏电阻B常数		4250K ± 1%	

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions



DIMENSION (mm)



SOLDERING PATTERN (mm)

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SMCM-2016H



FEATURES

- Ceramic epoxy sealed SMD package
- Ultra-light weight and ultra-miniature size
- Wide frequency range
- Best cost-performance option
- RoHS Compliant and Pb Free

Electrical Specifications

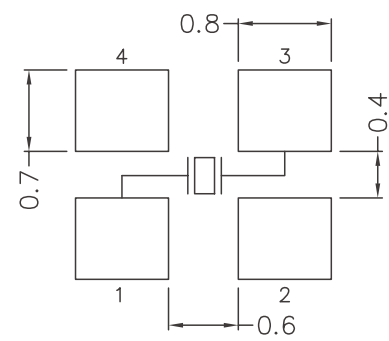
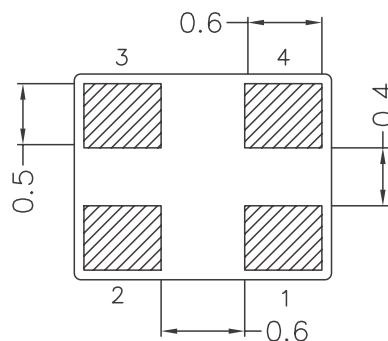
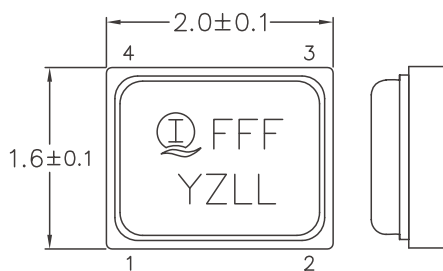
Parameters	Symbol	Specifications
Nominal Frequency Range 标称频率范围	f_0	16.0MHz ~ 54.0MHz
Frequency Tolerance, $T_a=25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 常温频率偏差	$\Delta f/f$	$\pm 10\text{ppm}$, $\pm 20\text{ppm}$
Load Capacitance 负载电容	C_L	6pF to 12pF or specify
Frequency Tolerance over Operating Temperature Range 频率温度特性	$\Delta f/f$	$\pm 20\text{ppm}$, $\pm 30\text{ppm}$ or specify
Operating Temperature Range 工作温度	T_{OPR}	$-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$, $-20^{\circ}\text{C} \sim +85^{\circ}\text{C}$ or specify
Storage Temperature Range 储存温度	T_{STG}	$-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$
Drive Level 激励功率	DL	50 μW Typ.
Shunt Capacitance 静态电容	C_0	2pF Max.
Insulation Resistance 绝缘电阻	IR	500M Ω Min.
Aging 老化率	Δf_A	$\pm 5\text{ppm/Year}$ Max.

Equivalent Series Resistance (ESR) 串联谐振阻抗

Frequency Range	$16 < f_0 \leq 20$	$20 < f_0 \leq 23$	$23 < f_0 \leq 32$	$32 < f_0 \leq 54$
ESR	250 Ω Max.	150 Ω Max.	100 Ω Max.	80 Ω Max.

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions



DIMENSION (mm)

SOLDERING PATTERN (mm)

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SMCM-3225H

FEATURES

- Ceramic epoxy sealed SMD package
- Small size
- Wide frequency range
- Best cost-performance option
- RoHS Compliant and Pb Free



Electrical Specifications

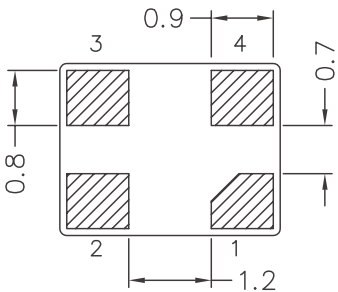
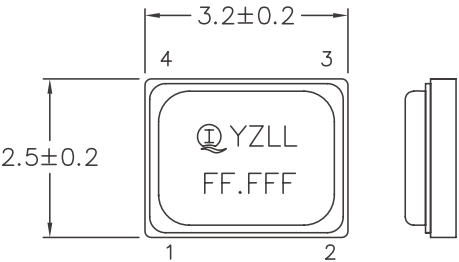
Parameters	Symbol	Specifications
Nominal Frequency Range 标称频率范围	f_0	12.0MHz ~ 54.0MHz
Frequency Tolerance, Ta=25°C ± 3°C 常温频率偏差	$\Delta f/f$	± 10ppm, ± 20ppm
Load Capacitance 负载电容	C_L	10pF or specify
Frequency Tolerance over Operating Temperature Range 频率温度特性	$\Delta f/f$	± 10ppm, ± 20ppm or specify
Operating Temperature Range 工作温度	T_{OPR}	-20°C ~ +70°C, -20°C ~ +85°C or specify
Storage Temperature Range 储存温度	T_{STG}	-55°C ~ +125°C
Drive Level 激励功率	DL	100µW Typ.
Shunt Capacitance 静态电容	C_0	2pF Max.
Insulation Resistance 绝缘电阻	IR	500MΩ Min.
Aging 老化率	Δf_A	± 5ppm/Year Max.

Equivalent Series Resistance (ESR) 串联谐振阻抗

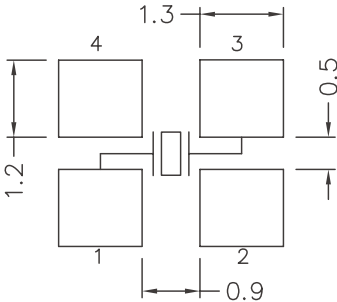
Frequency Range	$12 < f_0 \leq 20$	$20 < f_0 \leq 23$	$23 < f_0 \leq 32$	$32 < f_0 \leq 54$
ESR	120Ω Max.	80Ω Max.	50Ω Max.	40Ω Max.

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions



DIMENSION (mm)



SOLDERING PATTERN (mm)

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SMAC-3225H



FEATURES

- All ceramic epoxy sealed SMD package
- Small size
- Wide frequency range
- Best cost-performance option
- RoHS Compliant and Pb Free

Electrical Specifications

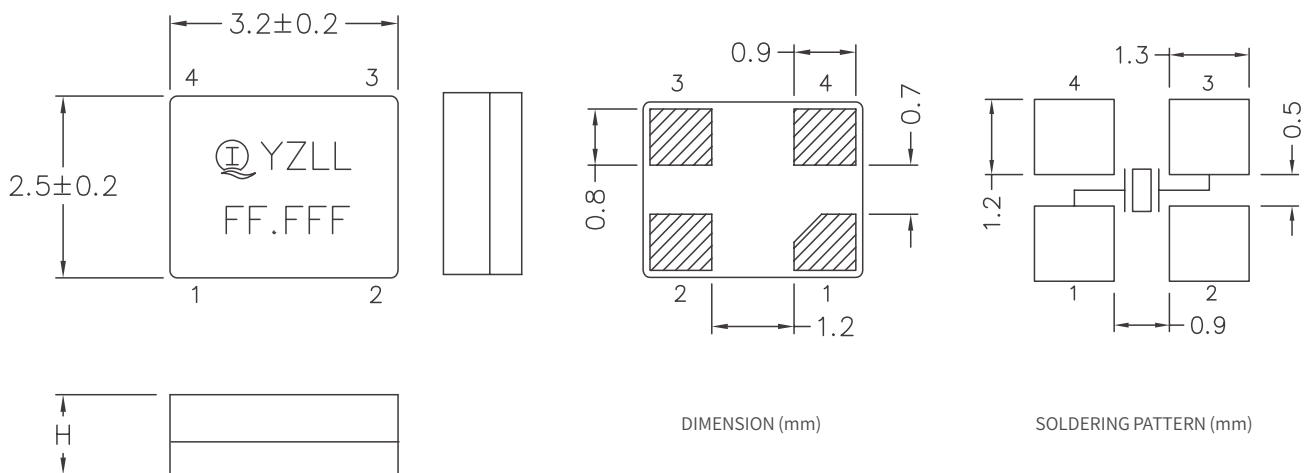
Parameters	Symbol	Specifications
Nominal Frequency Range 标称频率范围	f_0	12.0MHz ~ 54.0MHz
Frequency Tolerance, Ta=25°C ± 3°C 常温频率偏差	$\Delta f/f$	±10ppm, ±20ppm
Load Capacitance 负载电容	C_L	10pF or specify
Frequency Tolerance over Operating Temperature Range 频率温度特性	$\Delta f/f$	±10ppm, ±20ppm or specify
Operating Temperature Range 工作温度	T_{OPR}	-20°C ~ +70°C, -20°C ~ +85°C or specify
Storage Temperature Range 储存温度	T_{STG}	-55°C ~ +125°C
Drive Level 激励功率	DL	100μW Typ.
Shunt Capacitance 静态电容	C_0	2pF Max.
Insulation Resistance 绝缘电阻	IR	500MΩ Min.
Aging 老化率	Δf_A	±5ppm/Year Max.

Equivalent Series Resistance (ESR) 串联谐振阻抗

Frequency Range	$12 < f_0 \leq 20$	$20 < f_0 \leq 23$	$23 < f_0 \leq 32$	$32 < f_0 \leq 54$
ESR	120Ω Max.	80Ω Max.	50Ω Max.	40Ω Max.

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions



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SMAC-5032H

FEATURES

- All ceramic epoxy sealed SMD package
- Wide frequency range
- 2/4 pads version available
- RoHS Compliant and Pb Free



Electrical Specifications

Parameters	Symbol	Specifications
Nominal Frequency Range 标称频率范围	f_0	8.0MHz ~ 32.0MHz
Frequency Tolerance, Ta=25°C ± 3°C 常温频率偏差	$\Delta f/f$	±20ppm, ±30ppm
Load Capacitance 负载电容	C_L	18pF or specify
Frequency Tolerance over Operating Temperature Range 频率温度特性	$\Delta f/f$	±20ppm, ±30ppm or specify
Operating Temperature Range 工作温度	T_{OPR}	-20°C ~ +70°C, -20°C ~ +85°C or specify
Storage Temperature Range 储存温度	T_{STG}	-55°C ~ +125°C
Drive Level 激励功率	DL	100μW Typ.
Shunt Capacitance 静态电容	C_0	7pF Max.
Insulation Resistance 绝缘电阻	IR	500MΩ Min.
Aging 老化率	Δf_A	±5ppm/Year Max.

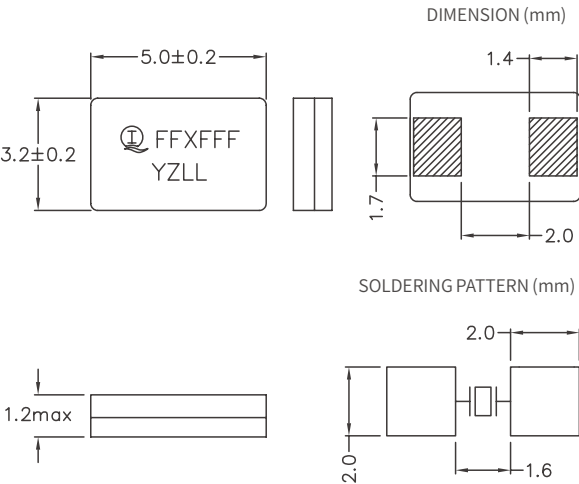
Equivalent Series Resistance (ESR) 串联谐振阻抗

Frequency Range	$8 < f_0 \leq 10$	$10 < f_0 \leq 12$	$12 < f_0 \leq 16$	$16 < f_0 \leq 32$
ESR	100Ω Max.	80Ω Max.	60Ω Max.	30Ω Max.

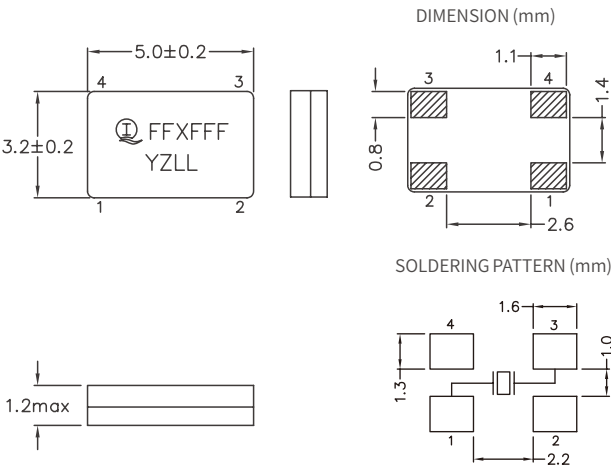
Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions

SMAC - 5032H (2 pads)



SMAC - 5032H (4 pads)



All specifications are subject to change without prior notice. 本公司保留修改规格的权利。



SMAC-7050H



FEATURES

- All ceramic epoxy sealed SMD package
- 2/4 pads version available
- Self-Material supply
- RoHS Compliant and Pb Free

Electrical Specifications

Parameters	Symbol	Specifications
Nominal Frequency Range 标称频率范围	f_0	6.0MHz ~ 28.224MHz
Frequency Tolerance, Ta=25°C ± 3°C 常温频率偏差	$\Delta f/f$	±20ppm, ±30ppm
Load Capacitance 负载电容	C_L	18pF or specify
Frequency Tolerance over Operating Temperature Range 频率温度特性	$\Delta f/f$	±20ppm, ±30ppm or specify
Operating Temperature Range 工作温度	T_{OPR}	-20°C ~ +70°C, -20°C ~ +85°C or specify
Storage Temperature Range 储存温度	T_{STG}	-55°C ~ +125°C
Drive Level 激励功率	DL	100μW Typ.
Shunt Capacitance 静态电容	C_0	7pF Max.
Insulation Resistance 绝缘电阻	IR	500MΩ Min.
Aging 老化率	Δf_A	±5ppm/Year Max.

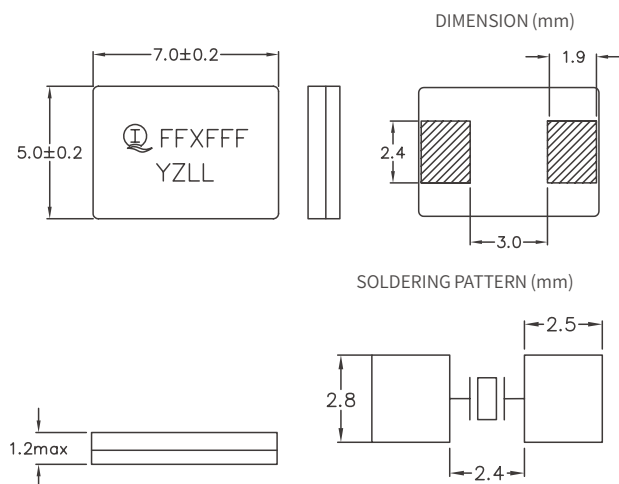
Equivalent Series Resistance (ESR) 串联谐振阻抗

Frequency Range	$6 < f_0 \leq 8$	$8 < f_0 \leq 12$	$12 < f_0 \leq 25$
ESR	80Ω Max.	60Ω Max.	50Ω Max.

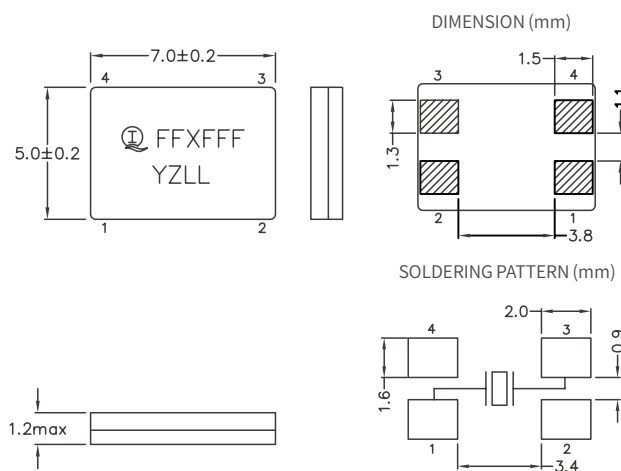
Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions

SMAC - 7050H (2 pads)



SMAC - 7050H (4 pads)



All specifications are subject to change without prior notice. 本公司保留修改规格的权利。

SMAC-1045H

FEATURES

- All ceramic epoxy sealed SMD package
- 2/4 pads version available
- Smallest and thinnest package for low frequency
- RoHS Compliant and Pb Free



Electrical Specifications

Parameters	Symbol	Specifications
Nominal Frequency Range 标称频率范围	f_0	3.5MHz ~ 8.0MHz
Frequency Tolerance, Ta=25°C ± 3°C 常温频率偏差	$\Delta f/f$	±20ppm, ±30ppm
Load Capacitance 负载电容	C_L	18pF or specify
Frequency Tolerance over Operating Temperature Range 频率温度特性	$\Delta f/f$	±20ppm, ±30ppm or specify
Operating Temperature Range 工作温度	T_{OPR}	-20°C ~ +70°C, -20°C ~ +85°C or specify
Storage Temperature Range 储存温度	T_{STG}	-55°C ~ +125°C
Drive Level 激励功率	DL	100μW Typ.
Shunt Capacitance 静态电容	C_0	7pF Max.
Insulation Resistance 绝缘电阻	IR	500MΩ Min.
Aging 老化率	Δf_A	±5ppm/Year Max.

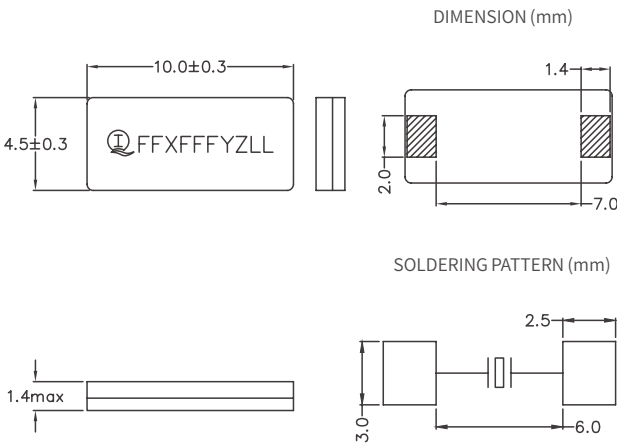
Equivalent Series Resistance (ESR) 串联谐振阻抗

Frequency Range	$3.5 < f_0 \leq 6.0\text{MHz}$	$6.0 < f_0 \leq 8.0\text{MHz}$
ESR	120Ω Max.	80Ω Max.

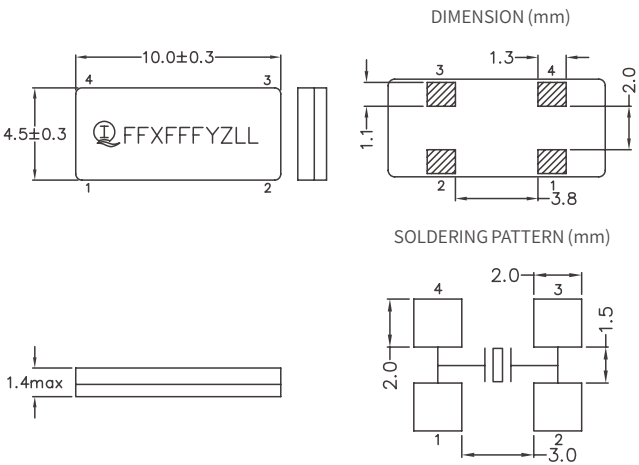
Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions

SMAC - 1045H (2 pads)



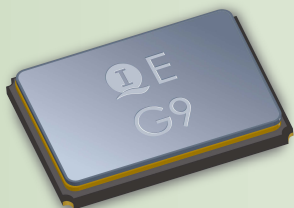
SMAC - 1045H (4 pads)



All specifications are subject to change without prior notice. 本公司保留修改规格的权利。



SMCE-1612



FEATURES

- Surface mount ceramic enclosures
- High reliability seam welded package
- Ultra-light weight and ultra-miniature size
- Wide frequency range
- RoHS Compliant and Pb Free

Electrical Specifications

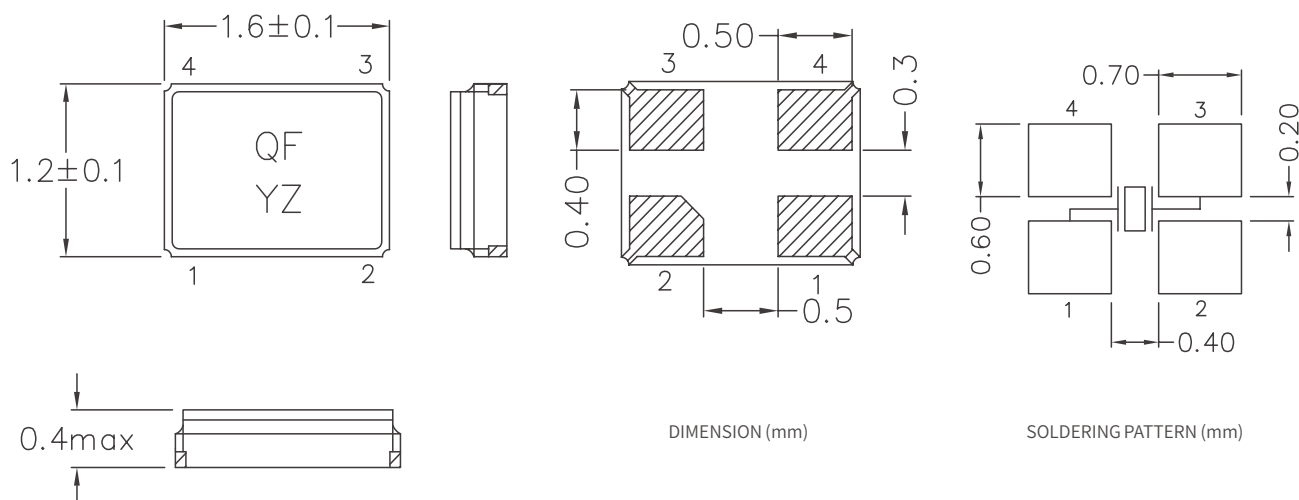
Parameters	Symbol	Specifications
Nominal Frequency Range 标称频率范围	f_0	24.0MHz ~ 100.0MHz
Frequency Tolerance, $T_a=25^\circ\text{C} \pm 3^\circ\text{C}$ 常温频率偏差	$\Delta f/f$	$\pm 10\text{ppm}$, $\pm 20\text{ppm}$
Load Capacitance 负载电容	C_L	6pF or specify
Frequency Tolerance over Operating Temperature Range 频率温度特性	$\Delta f/f$	$\pm 10\text{ppm}$, $\pm 20\text{ppm}$ or specify
Operating Temperature Range 工作温度	T_{OPR}	$-20^\circ\text{C} \sim +70^\circ\text{C}$, $-40^\circ\text{C} \sim +85^\circ\text{C}$, $-40^\circ\text{C} \sim +125^\circ\text{C}$ or specify
Storage Temperature Range 储存温度	T_{STG}	$-55^\circ\text{C} \sim +125^\circ\text{C}$
Drive Level 激励功率	DL	50 μW Typ.
Shunt Capacitance 静态电容	C_0	2pF Max.
Insulation Resistance 绝缘电阻	IR	500M Ω Min.
Aging 老化率	Δf_A	$\pm 3\text{ppm/Year}$ Max.

Equivalent Series Resistance (ESR) 串联谐振阻抗

Frequency Range	$24 < f_0 \leq 30$	$30 < f_0 \leq 60$
ESR	150 Ω Max.	100 Ω Max.

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions

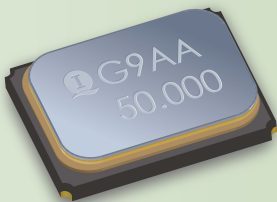


All specifications are subject to change without prior notice. 本公司保留修改规格的权利。

SMCE-2016

FEATURES

- Surface mount ceramic enclosures
- High reliability seam welded package
- Ultra-light weight and ultra-miniature size
- Conforms to AEC-Q200 (Optional)
- Wide frequency range
- RoHS Compliant and Pb Free



Electrical Specifications

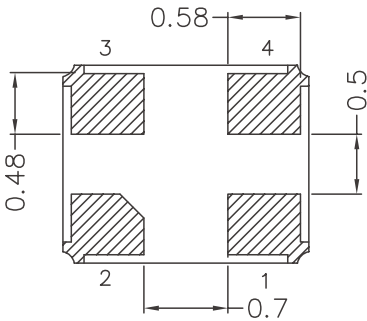
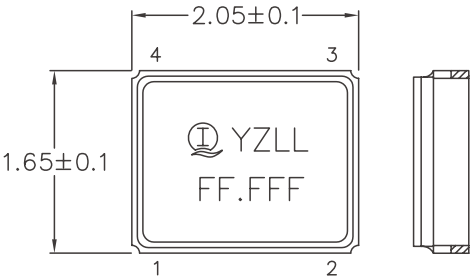
Parameters	Symbol	Specifications
Nominal Frequency Range 标称频率范围	f_0	16.0MHz ~ 96.0MHz
Frequency Tolerance, $T_a=25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 常温频率偏差	$\Delta f/f$	$\pm 10\text{ppm}$, $\pm 20\text{ppm}$
Load Capacitance 负载电容	C_L	10pF or specify
Frequency Tolerance over Operating Temperature Range 频率温度特性	$\Delta f/f$	$\pm 10\text{ppm}$, $\pm 20\text{ppm}$, $\pm 50\text{ppm}$ or specify
Operating Temperature Range 工作温度	T_{OPR}	$-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$, $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$, $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$ or specify
Storage Temperature Range 储存温度	T_{STG}	$-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$
Drive Level 激励功率	DL	50 μW Typ.
Shunt Capacitance 静态电容	C_0	2pF Max.
Insulation Resistance 绝缘电阻	IR	500M Ω Min.
Aging 老化率	Δf_A	$\pm 3\text{ppm/Year}$ Max.

Equivalent Series Resistance (ESR) 串联谐振阻抗

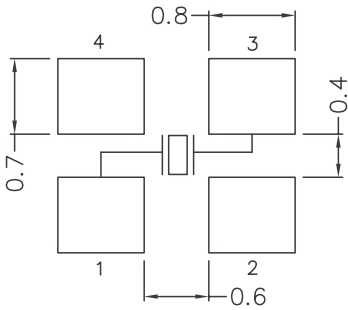
Frequency Range	$16 < f_0 \leq 20$	$20 < f_0 \leq 24$	$24 < f_0 \leq 32$	$32 < f_0 \leq 60$
ESR	200 Ω Max.	150 Ω Max.	100 Ω Max.	80 Ω Max.

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions



DIMENSION (mm)



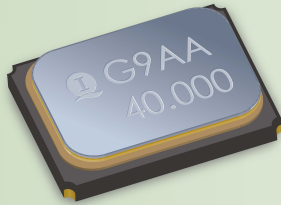
SOLDERING PATTERN (mm)



All specifications are subject to change without prior notice. 本公司保留修改规格的权利。



SMCE-2520



FEATURES

- Surface mount ceramic enclosures
- High reliability seam welded package
- Conforms to AEC-Q200 (Optional)
- Wide frequency range
- RoHS Compliant and Pb Free

Electrical Specifications

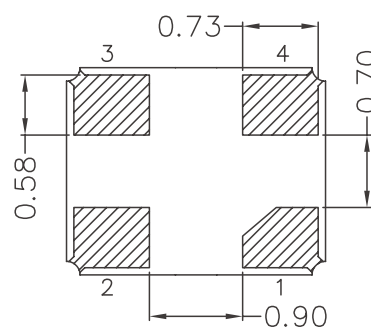
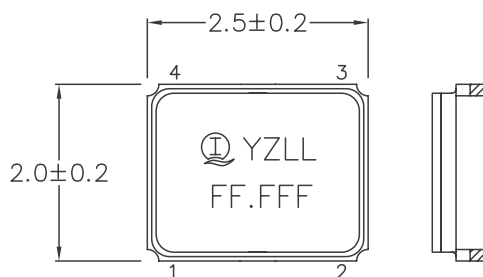
Parameters	Symbol	Specifications
Nominal Frequency Range 标称频率范围	f_0	12.0MHz ~ 125.0MHz
Frequency Tolerance, $T_a=25^\circ\text{C} \pm 3^\circ\text{C}$ 常温频率偏差	$\Delta f/f$	$\pm 10\text{ppm}$, $\pm 20\text{ppm}$
Load Capacitance 负载电容	C_L	10pF or specify
Frequency Tolerance over Operating Temperature Range 频率温度特性	$\Delta f/f$	$\pm 10\text{ppm}$, $\pm 20\text{ppm}$, $\pm 50\text{ppm}$ or specify
Operating Temperature Range 工作温度	T_{OPR}	$-20^\circ\text{C} \sim +70^\circ\text{C}$, $-40^\circ\text{C} \sim +85^\circ\text{C}$, $-40^\circ\text{C} \sim +125^\circ\text{C}$ or specify
Storage Temperature Range 储存温度	T_{STG}	$-55^\circ\text{C} \sim +125^\circ\text{C}$
Drive Level 激励功率	DL	100 μW Typ.
Shunt Capacitance 静态电容	C_0	2pF Max.
Insulation Resistance 绝缘电阻	IR	500M Ω Min.
Aging 老化率	Δf_A	$\pm 3\text{ppm/Year}$ Max.

Equivalent Series Resistance (ESR) 串联谐振阻抗

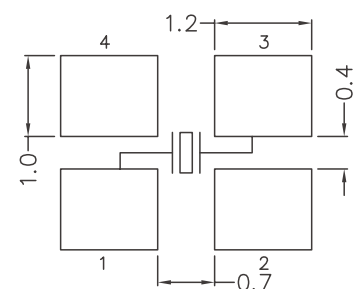
Frequency Range	$12 < f_0 \leq 16$	$16 < f_0 \leq 23$	$24 < f_0 \leq 60$	$60 < f_0 \leq 125$
ESR	120 Ω Max.	100 Ω Max.	60 Ω Max.	80~100 Ω Max.

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

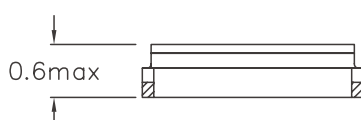
Dimensions



DIMENSION (mm)



SOLDERING PATTERN (mm)

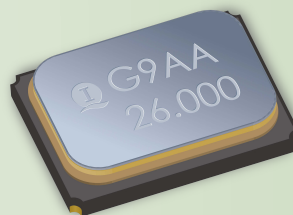


All specifications are subject to change without prior notice. 本公司保留修改规格的权利。

SMCE-3225

FEATURES

- Surface mount ceramic enclosures
- High reliability seam welded package
- Conforms to AEC-Q200 (Optional)
- Wide frequency range
- RoHS Compliant and Pb Free



Electrical Specifications

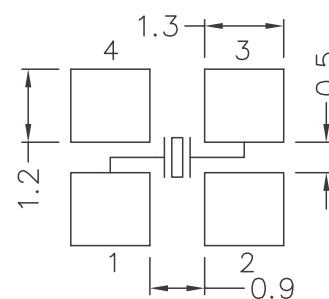
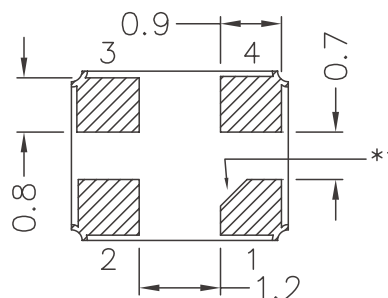
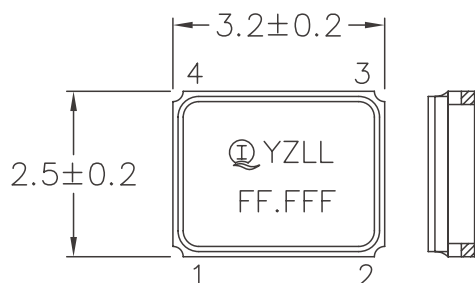
Parameters		Symbol	Specifications
Nominal Frequency Range 标称频率范围		f_0	8MHz ~ 156.25MHz
Frequency Tolerance, Ta=25°C ± 3°C 常温频率偏差		$\Delta f/f$	±10ppm, ±20ppm
Load Capacitance 负载电容		C_L	10pF or specify
Frequency Tolerance over Operating Temperature Range 频率温度特性		$\Delta f/f$	±10ppm, ±20ppm, ±50ppm or specify
Operating Temperature Range 工作温度		T_{OPR}	-20°C ~ +70°C, -40°C ~ +85°C, -40°C ~ +125°C or specify
Storage Temperature Range 储存温度		T_{STG}	-55°C ~ +125°C
Drive Level 激励功率		DL	100μW Typ.
Shunt Capacitance 静态电容		C_0	2pF Max.
Insulation Resistance 绝缘电阻		IR	500MΩ Min.
Aging 老化率		Δf_s	±3ppm/Year Max.

Equivalent Series Resistance (ESR) 串联谐振阻抗

Frequency Range	$10 \leq f_0 < 12$	$12 \leq f_0 < 16$	$16 < f_0 \leq 20$	$20 < f_0 \leq 40$	$40 < f_0 \leq 60$	$60 < f_0 \leq 156.25$
ESR	350Ω Max.	100Ω Max.	80Ω Max.	40Ω Max.	30Ω Max.	80~100Ω Max.

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions



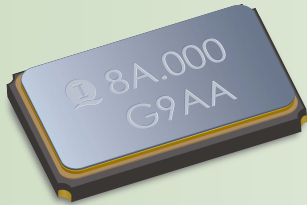
DIMENSION (mm)

SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。



SMCE-5032



FEATURES

- Surface mount ceramic enclosures
- High reliability seam welded package
- Conforms to AEC-Q200 (Optional)
- Wide frequency range
- RoHS Compliant and Pb Free

Electrical Specifications

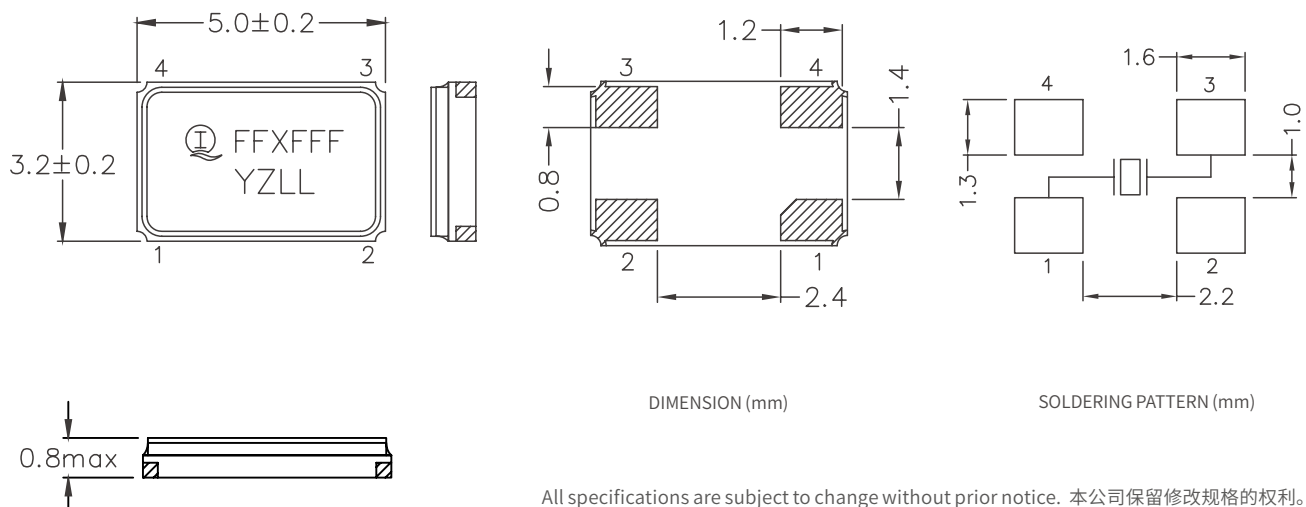
Parameters	Symbol	Specifications
Nominal Frequency Range 标称频率范围	f_0	8.0MHz ~ 156.25MHz
Frequency Tolerance, $T_a=25^\circ\text{C} \pm 3^\circ\text{C}$ 常温频率偏差	$\Delta f/f$	$\pm 10\text{ppm}$, $\pm 20\text{ppm}$
Load Capacitance 负载电容	C_L	18pF or specify
Frequency Tolerance over Operating Temperature Range 频率温度特性	$\Delta f/f$	$\pm 10\text{ppm}$, $\pm 20\text{ppm}$, $\pm 50\text{ppm}$ or specify
Operating Temperature Range 工作温度	T_{OPR}	$-20^\circ\text{C} \sim +70^\circ\text{C}$, $-40^\circ\text{C} \sim +85^\circ\text{C}$, $-40^\circ\text{C} \sim +125^\circ\text{C}$ or specify
Storage Temperature Range 储存温度	T_{STG}	$-55^\circ\text{C} \sim +125^\circ\text{C}$
Drive Level 激励功率	DL	100 μW Typ.
Shunt Capacitance 静态电容	C_0	7pF Max.
Insulation Resistance 绝缘电阻	IR	500M Ω Min.
Aging 老化率	Δf_A	$\pm 3\text{ppm/Year}$ Max.

Equivalent Series Resistance (ESR) 串联谐振阻抗

Frequency Range	$8 < f_0 \leq 16$	$16 < f_0 \leq 25$	$25 < f_0 \leq 30$	$30 < f_0 \leq 54$	$54 < f_0 \leq 156.25$
ESR	80 Ω Max.	50 Ω Max.	40 Ω Max.	35 Ω Max.	80~100 Ω Max.

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions

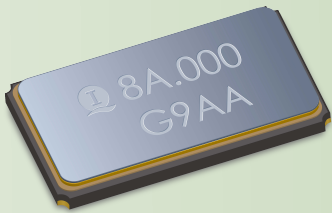


All specifications are subject to change without prior notice. 本公司保留修改规格的权利。

SMCE-6035

FEATURES

- Surface mount ceramic enclosures
- High reliability seam welded package
- Conforms to AEC-Q200 (Optional)
- Wide frequency range
- RoHS Compliant and Pb Free



Electrical Specifications

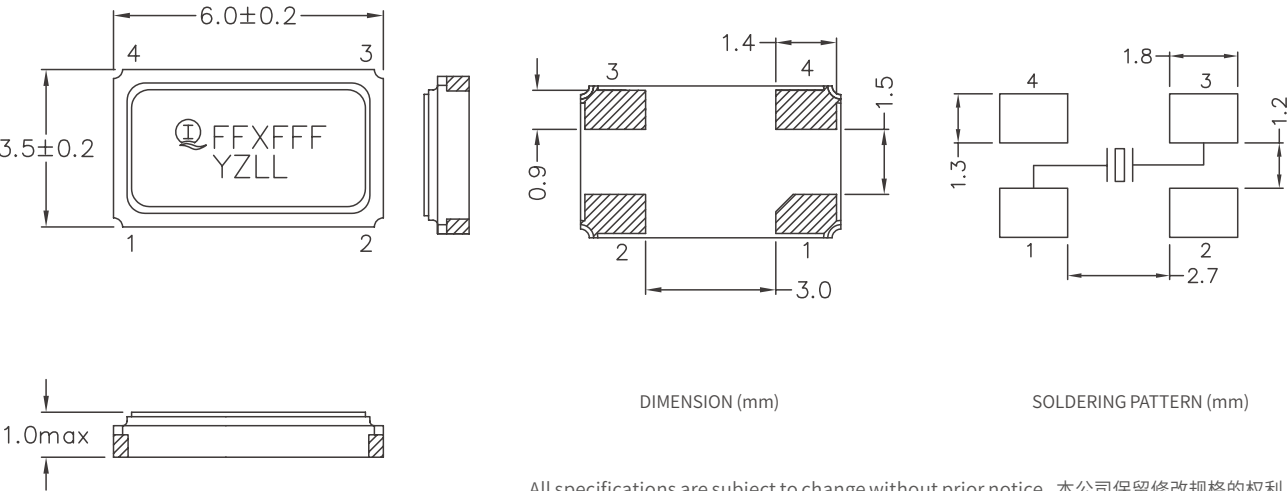
Parameters	Symbol	Specifications
Nominal Frequency Range 标称频率范围	f_0	8.0MHz ~ 50.0MHz (Fundamental) 40.0MHz ~ 80.0MHz (3.O.T)
Frequency Tolerance, Ta=25°C ± 3°C 常温频率偏差	$\Delta f/f$	±10ppm, ±30ppm
Load Capacitance 负载电容	C_L	18pF or specify
Frequency Tolerance over Operating Temperature Range 频率温度特性	$\Delta f/f$	±10ppm, ±20ppm, ±50ppm or specify
Operating Temperature Range 工作温度	T_{OPR}	-20°C ~ +70°C, -40°C ~ +85°C, -40°C ~ +125°C or specify
Storage Temperature Range 储存温度	T_{STG}	-55°C ~ +125°C
Drive Level 激励功率	DL	100µW Typ.
Shunt Capacitance 静态电容	C_0	7pF Max.
Insulation Resistance 绝缘电阻	IR	500MΩ Min.
Aging 老化率	Δf_A	±3ppm/Year Max.

Equivalent Series Resistance (ESR) 串联谐振阻抗

Frequency Range	$8 < f_0 \leq 12$	$12 < f_0 \leq 16$	$16 < f_0 \leq 25$	$25 < f_0 \leq 30$	$30 < f_0 \leq 50$	$40 < f_0 \leq 80$ (3.O.T)
ESR	80Ω Max.	60Ω Max.	50Ω Max.	35Ω Max.	25Ω Max.	80~100Ω Max.

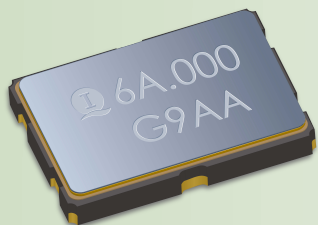
Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions





SMCE-7050



FEATURES

- Surface mount ceramic enclosures
- High reliability seam welded package
- Conforms to AEC-Q200 (Optional)
- Wide frequency range
- RoHS Compliant and Pb Free

Electrical Specifications

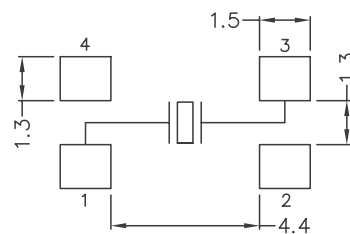
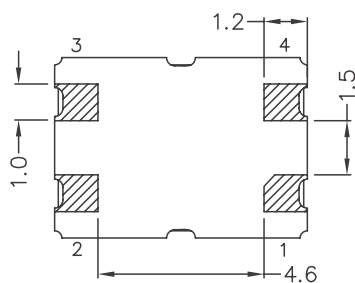
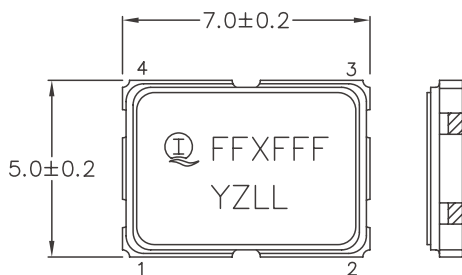
Parameters	Symbol	Specifications
Nominal Frequency Range 标称频率范围	f_0	6.0MHz ~ 156.25MHz
Frequency Tolerance, $T_a=25^\circ\text{C} \pm 3^\circ\text{C}$ 常温频率偏差	$\Delta f/f$	$\pm 10\text{ppm}$, $\pm 20\text{ppm}$
Load Capacitance 负载电容	C_L	18pF or specify
Frequency Tolerance over Operating Temperature Range 频率温度特性	$\Delta f/f$	$\pm 10\text{ppm}$, $\pm 20\text{ppm}$, $\pm 50\text{ppm}$ or specify
Operating Temperature Range 工作温度	T_{OPR}	$-20^\circ\text{C} \sim +70^\circ\text{C}$, $-40^\circ\text{C} \sim +85^\circ\text{C}$, $-40^\circ\text{C} \sim +125^\circ\text{C}$ or specify
Storage Temperature Range 储存温度	T_{STG}	$-55^\circ\text{C} \sim +125^\circ\text{C}$
Drive Level 激励功率	DL	100 μW Typ.
Shunt Capacitance 静态电容	C_0	7pF Max.
Insulation Resistance 绝缘电阻	IR	500M Ω Min.
Aging 老化率	Δf_A	$\pm 3\text{ppm/Year}$ Max.

Equivalent Series Resistance (ESR) 串联谐振阻抗

Frequency Range	$6 < f_0 \leq 8$	$8 < f_0 \leq 16$	$16 < f_0 \leq 30$	$30 < f_0 \leq 40$	$40 < f_0 \leq 156.25$
ESR	100 Ω Max.	80 Ω Max.	50 Ω Max.	100 Ω Max.	80~100 Ω Max.

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions



DIMENSION (mm)

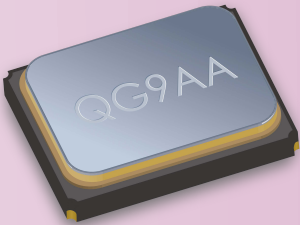
SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。

SMLF-1610

FEATURES

- Ultra-miniature size
- Surface Mount with Ceramic Package
- Reflow solderable
- Suitable for IoT and wearable devices
- RoHS Compliant and Pb Free

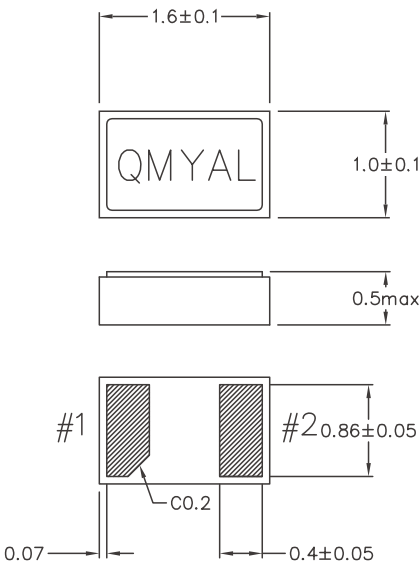


Electrical Specifications

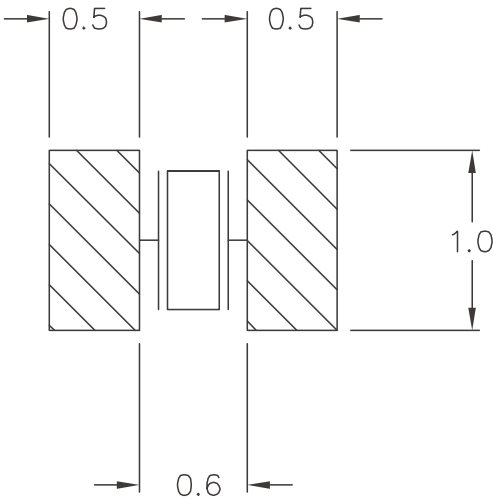
Parameters	Symbol	Specifications
Nominal Frequency 标称频率	f_0	32.768KHz
Frequency Tolerance, Ta=25°C ± 3°C 常温频率偏差	$\Delta f/f$	±20ppm
Load Capacitance 负载电容	C_L	12.5pF or specify
Temperature Coefficient 温度系数	$\Delta f/f$	-0.034±0.006ppm/°C2
Operating Temperature Range 工作温度范围	T_{OPR}	-20°C ~ +70°C, -40°C ~ +85°C
Storage Temperature Range 储存温度范围	T_{STG}	-55°C ~ +125°C
Drive Level 激励功率	DL	0.5μW Max.
Equivalent Series Resistance (ESR) 串联谐振阻抗	R_1	90KΩ Max.
Insulation Resistance 绝缘阻抗	IR	500MΩ Min.
Aging 老化率	Δf_A	±5ppm/Year Max.

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions



DIMENSION (mm)

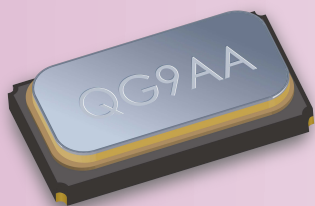


SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。



SMLF-2012



FEATURES

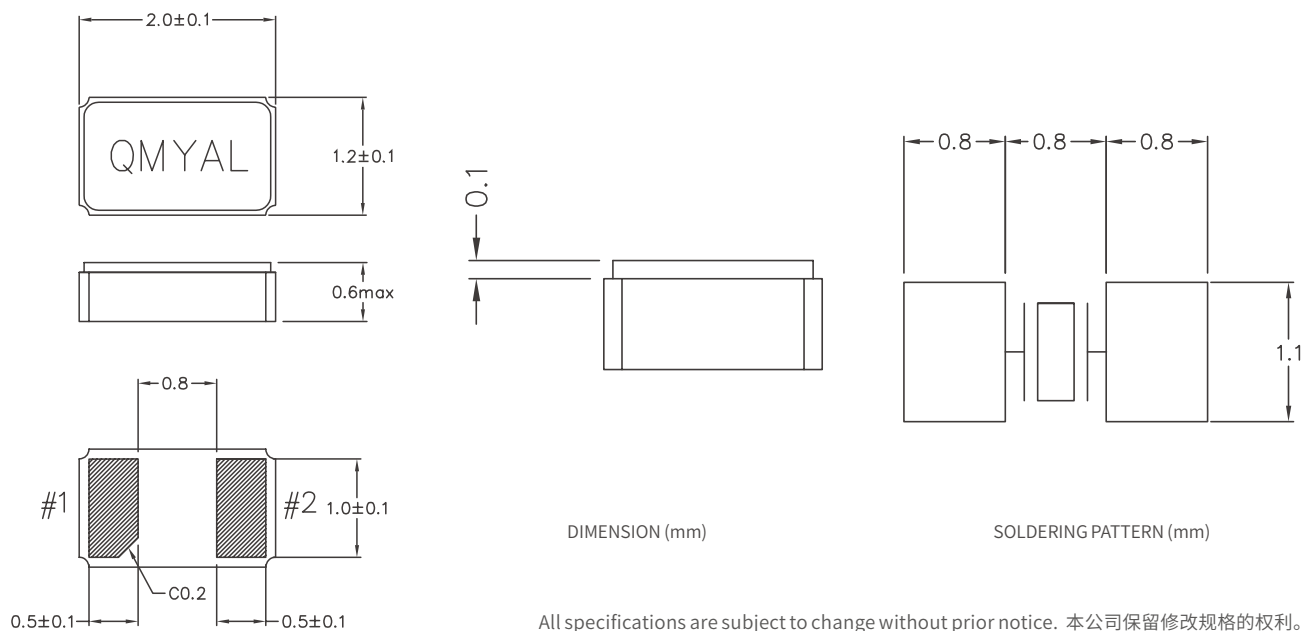
- Miniature size
- Surface Mount with Ceramic Package
- Reflow solderable
- Suitable for IoT and wearable devices
- RoHS Compliant and Pb Free

Electrical Specifications

Parameters	Symbol	Specifications
Nominal Frequency 标称频率	f_0	32.768KHz
Frequency Tolerance, Ta=25°C ± 3°C 常温频率偏差	$\Delta f/f$	±20ppm
Load Capacitance 负载电容	C_L	12.5pF or specify
Temperature Coefficient 温度系数	$\Delta f/f$	-0.034 ± 0.006ppm/°C2
Operating Temperature Range 工作温度范围	T_{OPR}	-20°C ~ +70°C, -40°C ~ +85°C
Storage Temperature Range 储存温度范围	T_{STG}	-55°C ~ +125°C
Drive Level 激励功率	DL	0.5μW Max.
Equivalent Series Resistance (ESR) 串联谐振阻抗	R_1	90KΩ Max.
Insulation Resistance 绝缘阻抗	IR	500MΩ Min.
Aging 老化率	Δf_A	±5ppm/Year Max.

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

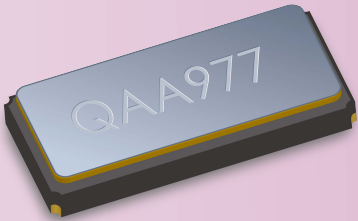
Dimensions



SMLF-3215

FEATURES

- Small size
- Surface Mount with Ceramic Package
- Reflow solderable
- Suitable for IoT and wearable devices
- RoHS Compliant and Pb Free

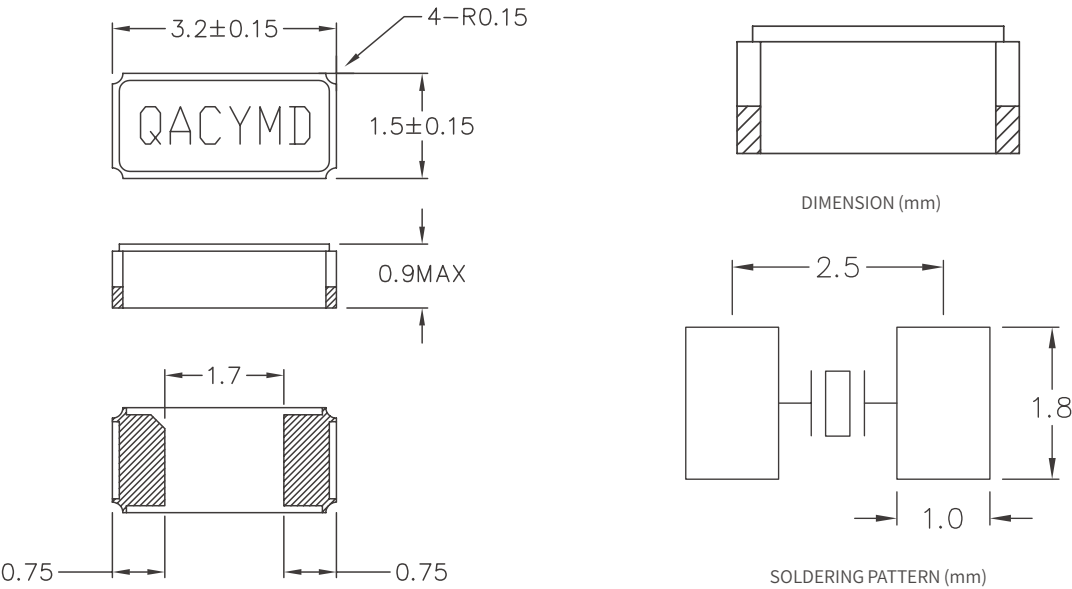


Electrical Specifications

Parameters	Symbol	Specifications
Nominal Frequency 标称频率	f_0	32.768KHz
Frequency Tolerance, Ta=25°C ± 3°C 常温频率偏差	$\Delta f/f$	±20ppm
Load Capacitance 负载电容	C_L	12.5pF or specify
Temperature Coefficient 温度系数	$\Delta f/f$	-0.034±0.006ppm/°C2
Operating Temperature Range 工作温度范围	T_{OPR}	-20°C ~ +70°C, -40°C ~ +85°C
Storage Temperature Range 储存温度范围	T_{STG}	-55°C ~ +125°C
Drive Level 激励功率	DL	0.5μW Max.
Equivalent Series Resistance (ESR) 串联谐振阻抗	R_1	70KΩ Max.
Insulation Resistance 绝缘阻抗	IR	500MΩ Min.
Aging 老化率	Δf_A	±5ppm/Year Max.

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

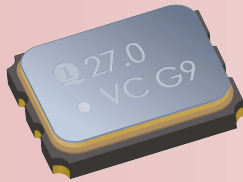
Dimensions



All specifications are subject to change without prior notice. 本公司保留修改规格的权利。



VCXO 3225 (VC800 SERIES)



FEATURES

- Small size
- 6 Pads enclosure available
- Wide pulling range
- Pick and place assembly
- High reliability seam welded package
- RoHS Compliant and Pb Free

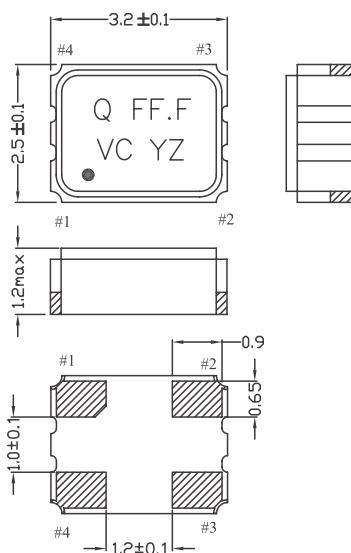
Electrical Specifications

Parameters		Specifications	
Output Waveform 输出波形		CMOS	
Frequency Range 频率范围		2.0MHz ~ 66.0MHz	
Supply Voltage Range (Vdd) 工作电压范围		2.8V	3.3V
Overall Frequency Stability 总频率偏差		$\pm 25\text{ppm}$, $\pm 50\text{ppm}$ or specify	
Operating Temperature Range 工作温度范围		$-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$, $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$	
Current Consumption (Idd) 消耗电流		10mA Typ.	
Rise & Fall Time 上/下沿时间		5ns Typ.	
Output Symmetry 输出对称性		45% ~ 55%	
Output Voltage 输出电压	V_{OH}	90% VDD	
	V_{OL}	10% VDD	
Output Load 输出负载		15pF	
Control Voltage Range 控制电压范围		$1.4\text{V} \pm 1.4\text{V}$	$1.65\text{V} \pm 1.65\text{V}$
Absolute Pulling Range 绝对牵引范围		$\pm 100\text{ppm}$ or specify	
Modulation Bandwidth (BW) 调制带宽		20KHz Typ.	
Start-up Time 起动时间		10ms Max.	
Storage Temperature Range 储存温度范围		$-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$	

** Inclusive of initial frequency tolerance at 25°C , operating temperature range, supply voltage change, load variation and 1st year aging.
包括在常温频率偏差, 工作温度范围的频率偏差, 首年老化率, 工作电压及负载变化造成的频率偏差。

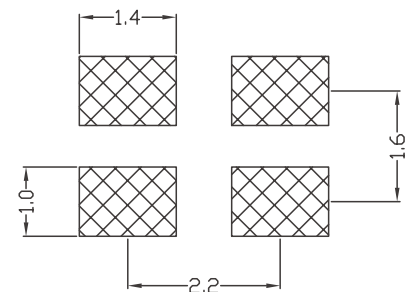
Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions



PIN	CONNECTION
1	VCON
2	GROUND
3	OUTPUT
4	VDD

DIMENSION (mm)



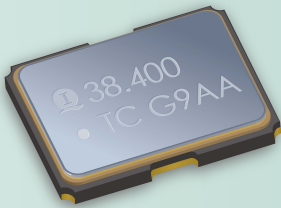
SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。

TCXO 2016 (TC950 SERIES)

FEATURES

- Ultra-miniature size
- High reliability seam welded package
- Pick and place assembly
- Voltage Control applicable
- Low supply voltage version available
- RoHS Compliant and Pb Free

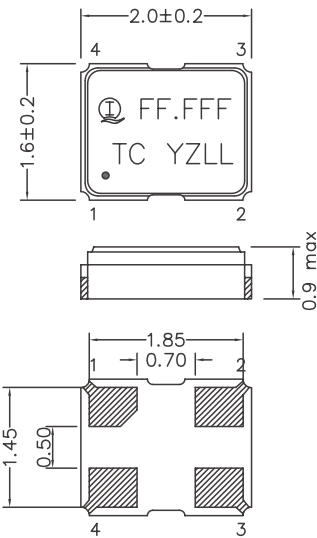


Electrical Specifications

Parameters		Specifications
Output Waveform 输出波形		Clipped Sine
Frequency Range 频率范围		9.5MHz ~ 70MHz
Supply Voltage Range (Vdd) 工作电压范围		1.8V ~ 3.3V
Operating Temperature Range 工作温度范围		-20°C ~ +70°C, -40°C ~ +85°C
Frequency Stability 频率偏差		
vs. Room Temp. (25°C ± 3°C) 相对常温		±1.0ppm, ±2.0ppm
vs. Operating Temp. 相对工作温度		±0.5ppm, ±1.0ppm, ±2.0ppm
vs. Voltage Change (±5%) 相对电压变化		±0.2ppm Max.
vs. Load Change (±5%) 相对负载变化		±0.2ppm Max.
vs. Aging (First Year) 相对首年老化率		±1ppm
Current Consumption (Idd) 消耗电流		2mA Max.
Output Voltage 输出电压	Vp-p	0.8V Min.
Output Load 输出负载		10k Ω// 10pF
Pullability 牵引范围 (for VCTCXO)		±9~±15ppm Typ.
Control Voltage Range 控制电压范围 (for VCTCXO)		0.90V±0.60V, 1.4V±1V
Phase Noise @ 1kHz Offset		-130dBc/Hz Typ.
Start-up Time 起动时间		3ms Max.
Storage Temperature Range 储存温度范围		-40°C ~ +85°C

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

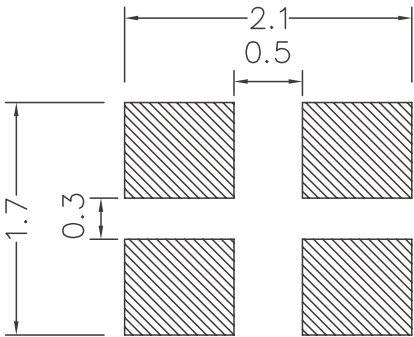
Dimensions



PIN CONNECTION

P/N	FUNCTION
1	VC or Ground
2	Ground
3	Output
4	VDD

DIMENSION (mm)

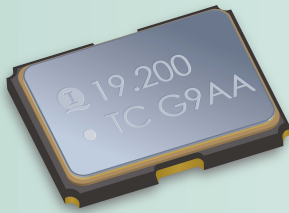


SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。



TCXO 2520 (TC900 SERIES)



FEATURES

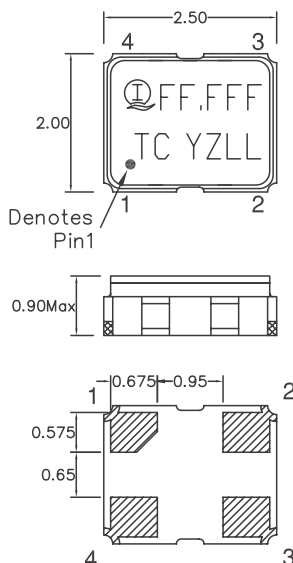
- Miniature size
- High reliability seam welded package
- Pick and place assembly
- Voltage Control applicable
- Low supply voltage version available
- RoHS Compliant and Pb Free

Electrical Specifications

Parameters		Specifications
Output Waveform 输出波形		Clipped Sine
Frequency Range 频率范围		9.5MHz ~ 70MHz
Supply Voltage Range (Vdd) 工作电压范围		1.8V ~ 3.3V
Operating Temperature Range 工作温度范围		-20°C ~ +70°C, -40°C ~ +85°C
Frequency Stability 频率偏差		
vs. Room Temp. (25°C ± 3°C) 相对常温		±1.0ppm, ±1.5ppm, ±2.0ppm
vs. Operating Temp. 相对工作温度		±0.5ppm, ±1.0ppm, ±1.5ppm, ±2.0ppm
vs. Voltage Change (±5%) 相对电压变化		±0.2ppm Max.
vs. Load Change (±5%) 相对负载变化		±0.2ppm Max.
vs. Aging (First Year) 相对首年老化率		±1ppm
Current Consumption (Idd) 消耗电流		2mA Max.
Output Voltage 输出电压	Vp-p	0.8V Min.
Output Load 输出负载		10kΩ // 10pF
Pullability 牵引范围 (for VCTCXO)		±9 ~ ±15ppm Typ.
Control Voltage Range 控制电压范围 (for VCTCXO)		0.90V ± 0.60V, 1.4V ± 1V
Phase Noise @ 1kHz Offset		-130dBc/Hz Typ.
Start-up Time 起动时间		3ms Max.
Storage Temperature Range 储存温度范围		-40°C ~ +85°C

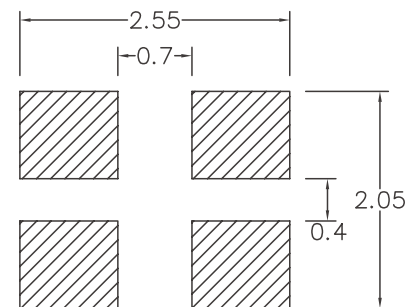
Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions



PIN CONNECTION

P/N	FUNCTION
1	Ground Recommended
2	Ground
3	Output
4	Vcc



DIMENSION (mm)

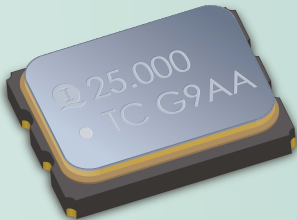
SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。

TCXO 3225 (TC800 SERIES)

FEATURES

- Small size
- High reliability seam welded package
- Pick and place assembly
- Voltage Control applicable
- Low supply voltage version available
- RoHS Compliant and Pb Free

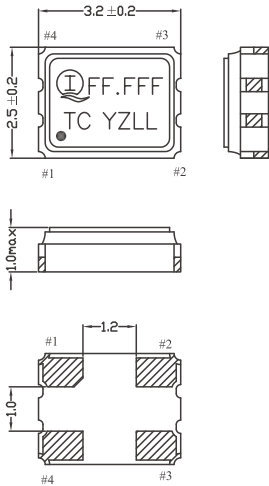


Electrical Specifications

Parameters		Specifications
Output Waveform 输出波形		Clipped Sine
Frequency Range 频率范围		9.5MHz ~ 66MHz
Supply Voltage Range (Vdd) 工作电压范围		1.8V ~ 3.3V
Operating Temperature Range 工作温度范围		-20°C ~ +70°C, -40°C ~ +85°C
Frequency Stability 频率偏差		
vs. Room Temp. (25°C ± 3°C) 相对常温		±1.0ppm, ±2.0ppm
vs. Operating Temp. 相对工作温度		±0.5ppm, ±1.0ppm, ±2.0ppm
vs. Voltage Change (±5%) 相对电压变化		±0.2ppm Max.
vs. Load Change (±5%) 相对负载变化		±0.2ppm Max.
vs. Aging (First Year) 相对首年老化率		±1ppm
Current Consumption (Idd) 消耗电流		2mA Max.
Output Voltage 输出电压	Vp-p	0.8V Min.
Output Load 输出负载		10kΩ // 10pF
Pullability 牵引范围 (for VCTCXO)		±9~±15ppm Typ.
Control Voltage Range 控制电压范围 (for VCTCXO)		0.90V±0.60V, 1.4V±1V
Phase Noise @ 1kHz Offset		-130dBc/Hz Typ.
Start-up Time 起动时间		3ms Max.
Storage Temperature Range 储存温度范围		-40°C ~ +85°C

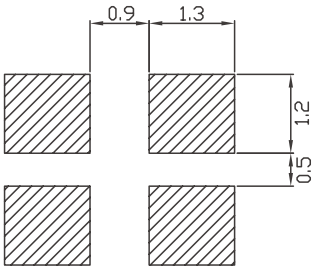
Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

Dimensions



PIN	CONNECTION
#1	N.C
#2	GROUND
#3	OUTPUT
#4	VDD

DIMENSION (mm)



SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。



HXO 7050 (186 SERIES)



FEATURES

- Double Packaging of Excellent performance
- Design for differential output
- Suitable for 5G Network terminal
- High Reliability and stability
- Highly customized
- RoHS Compliant and Pb Free

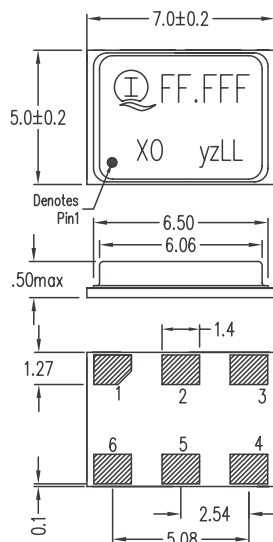
Electrical Specifications

Parameters		Specifications	
Frequency Range 频率范围		50MHz~200MHz	
Output Waveform 输出波型		LVPECL	LVDS
Supply Voltage Range (Vdd) 工作电压范围		2.5V ~ 3.3V	
Overall Frequency Stability 总频率偏差		$\pm 25\text{ppm}$, $\pm 30\text{ppm}$, $\pm 50\text{ppm}$ or specify	
Operating Temperature Range 工作温度范围		$-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$, $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$	
Current Consumption (Idd) 消耗电流		100mA Max.	
Rise & Fall Time 上/下沿时间		1.5ns Max.	
Output Symmetry 输出对称性		45% ~ 55%	
Output Voltage 输出电压	V_{OH}	Vdd-1.025V Min.	1.4V Typ.
	V_{OL}	Vdd-1.62V Max.	1.1V Typ.
Output Load 输出负载		50 Ω	100 Ω
Start-up Time 起动时间		10ms Max.	
Storage Temperature Range 储存温度范围		$-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$	

** Inclusive of initial frequency tolerance at 25°C, operating temperature range, supply voltage change, load variation and 1st year aging.
包括在常温频率偏差, 工作温度范围的频率偏差, 首年老化率, 工作电压及负载变化造成的频率偏差。

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

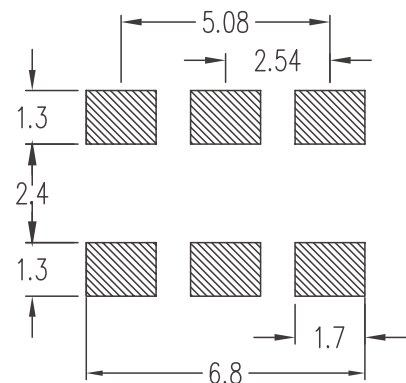
Dimensions



PIN CONNECTION

P/N	1861
1	Enable/Disable
2	NC
3	GND
4	Output
5	Output
6	VDD

DIMENSION (mm)



SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。

HXO 5032 (178 SERIES)

FEATURES

- Double Packaging of Excellent performance
- Design for differential output
- Suitable for 5G Network terminal
- High Reliability and stability
- Highly customized
- RoHS Compliant and Pb Free

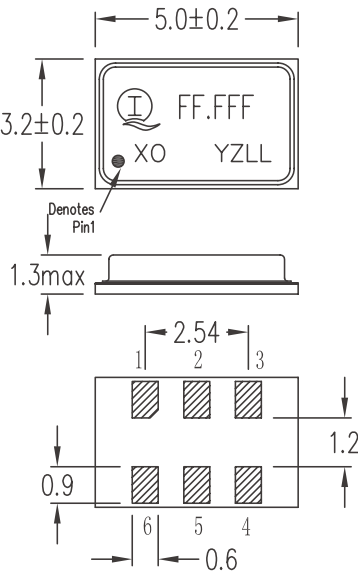


Electrical Specifications

Parameters		Specifications	
Frequency Range 频率范围		50MHz~200MHz	
Output Waveform 输出波型		LVPECL	LVDS
Supply Voltage Range (Vdd) 工作电压范围		2.5V ~ 3.3V	
Overall Frequency Stability 总频率偏差		$\pm 25\text{ppm}$, $\pm 30\text{ppm}$, $\pm 50\text{ppm}$ or specify	
Operating Temperature Range 工作温度范围		$-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$, $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$	
Current Consumption (Idd) 消耗电流		100mA Max.	
Rise & Fall Time 上/下沿时间		1.5ns Max.	
Output Symmetry 输出对称性		45% ~ 55%	
Output Voltage 输出电压	V_{OH}	Vdd-1.025V Min.	1.4V Typ.
	V_{OL}	Vdd-1.62V Max.	1.1V Typ.
Output Load 输出负载		50 Ω	100 Ω
Start-up Time 起动时间		10ms Max.	
Storage Temperature Range 储存温度范围		$-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$	

** Inclusive of initial frequency tolerance at 25°C, operating temperature range, supply voltage change, load variation and 1st year aging.
包括在常温频率偏差，工作温度范围的频率偏差，首年老化率，工作电压及负载变化造成的频率偏差。
Please consult our sales representatives for other specifications. 如对其他规格查询，请与我司销售人员联系。

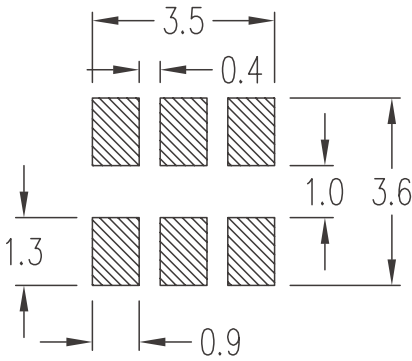
Dimensions



PIN CONNECTION

P/N	1781
1	Enable/Disable
2	NC
3	GND
4	Output
5	Output
6	VDD

DIMENSION (mm)

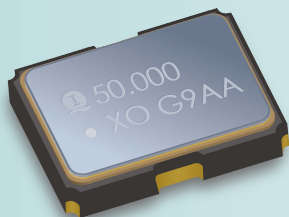


SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。



SPXO 2016 (168-B SERIES)



FEATURES

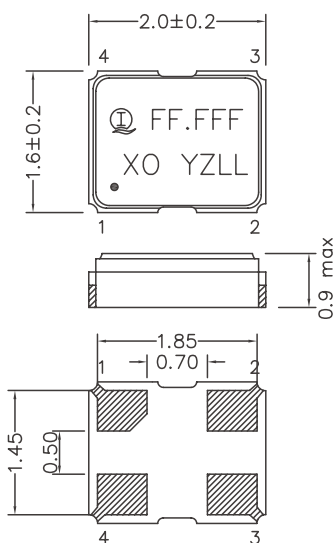
- Ultra-miniature size
- Low phase noise version available
- Suitable for wearable and handheld devices
- RoHS Compliant and Pb Free

Electrical Specifications

Parameters		Specifications		
Output Waveform 输出波型		CMOS		
Frequency Range 频率范围		32.768KHz	1MHz ~ 80MHz	80MHz ~ 160MHz
Supply Voltage Range (Vdd) 工作电压范围		1.0V ~ 3.3V		
Overall Frequency Stability 总频率偏差		$\pm 25\text{ppm}$, $\pm 30\text{ppm}$, $\pm 50\text{ppm}$ or specify		
Operating Temperature Range 工作温度范围		$-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$, $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$, $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$		
Current Consumption (Idd) 消耗电流		100uA Max.	10mA Max.	
Rise & Fall Time 上/下沿时间		20ns Max.	8ns Max.	3ns Max.
Output Symmetry 输出对称性		45% ~ 55%		
Output Voltage 输出电压	V_{OH}	90% VDD		
	V_{OL}	10% VDD		
Output Load 输出负载		15pF		
Start-up Time 起动时间		10ms Max.		
Storage Temperature Range 储存温度范围		$-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$		

** Inclusive of initial frequency tolerance at 25°C, operating temperature range, supply voltage change, load variation and 1st year aging.
包括在常温频率偏差, 工作温度范围的频率偏差, 首年老化率, 工作电压及负载变化造成的频率偏差。
Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

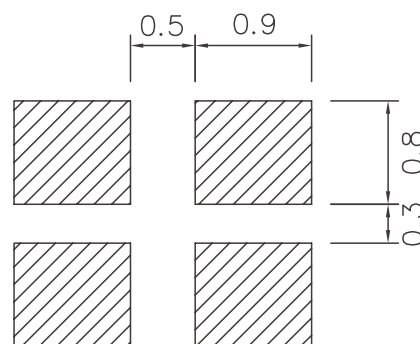
Dimensions



PIN CONNECTION

P/N	1681
1	Enable/Disable
2	GND
3	Output
4	VDD

DIMENSION (mm)



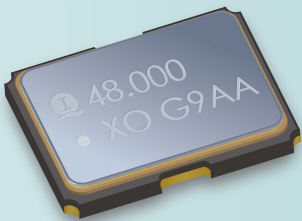
SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。

SPXO 2520 (165-B SERIES)

FEATURES

- Miniature size
- Low phase noise version available
- Suitable for wearable and handheld devices
- RoHS Compliant and Pb Free

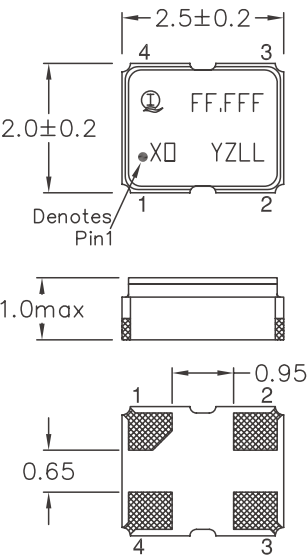


Electrical Specifications

Parameters		Specifications		
Output Waveform 输出波形		CMOS		
Frequency Range 频率范围		32.768KHz	1MHz~80MHz	80MHz~160MHz
Supply Voltage Range (Vdd) 工作电压范围		1.0V~5V		
Overall Frequency Stability 总频率偏差		±25ppm, ±30ppm, ±50ppm or specify		
Operating Temperature Range 工作温度范围		-20°C~+70°C, -40°C~+85°C, -40°C~+125°C		
Current Consumption (Idd) 消耗电流		100uA Max.	10mA Max.	
Rise & Fall Time 上/下沿时间		20ns Max.	8ns Max.	3ns Max.
Output Symmetry 输出对称性		45%~55%		
Output Voltage 输出电压	V _{OH}	90% VDD		
	V _{OL}	10% VDD		
Output Load 输出负载		15pF		
Start-up Time 起动时间		10ms Max.		
Storage Temperature Range 储存温度范围		-55°C~+125°C		

** Inclusive of initial frequency tolerance at 25°C, operating temperature range, supply voltage change, load variation and 1st year aging.
包括在常温频率偏差, 工作温度范围的频率偏差, 首年老化率, 工作电压及负载变化造成的频率偏差。
Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

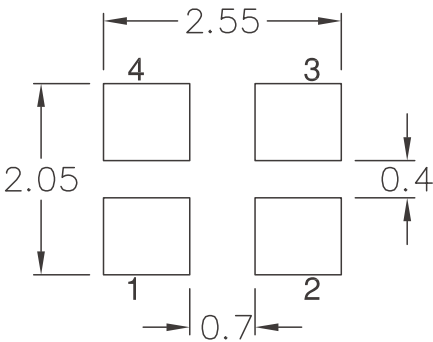
Dimensions



PIN CONNECTION

P/N	1651
1	Enable/Disable
2	GND
3	Output
4	VDD

DIMENSION (mm)

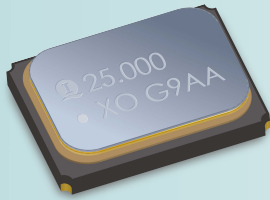


SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。



SPXO 3225 (163-B SERIES)



FEATURES

- Small size
- Low phase noise version available
- Low current consumption version available
- Conforms to AEC-Q100 (Optional)
- RoHS Compliant and Pb Free

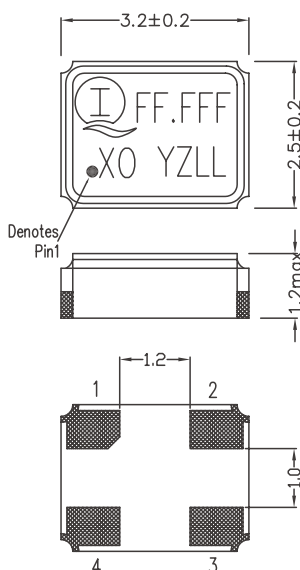
Electrical Specifications

Parameters		Specifications		
Output Waveform 输出波型		CMOS		
Frequency Range 频率范围		32.768KHz	1MHz~50MHz	50MHz~160MHz
Supply Voltage Range (Vdd) 工作电压范围		1.0V ~ 5V		
Overall Frequency Stability 总频率偏差		$\pm 25\text{ppm}$, $\pm 30\text{ppm}$, $\pm 50\text{ppm}$ or specify		
Operating Temperature Range 工作温度范围		$-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$, $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$, $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$		
Current Consumption (Idd) 消耗电流		100uA Max.	10mA Max.	
Rise & Fall Time 上/下沿时间		20ns Max.	8ns Max.	3ns Max.
Output Symmetry 输出对称性		45% ~ 55%		
Output Voltage 输出电压	V_{OH}	90% VDD		
	V_{OL}	10% VDD		
Output Load 输出负载		15pF		
Start-up Time 起动时间		10ms Max.		
Storage Temperature Range 储存温度范围		$-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$		

** Inclusive of initial frequency tolerance at 25°C, operating temperature range, supply voltage change, load variation and 1st year aging.
包括在常温频率偏差, 工作温度范围的频率偏差, 首年老化率, 工作电压及负载变化造成的频率偏差。

Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

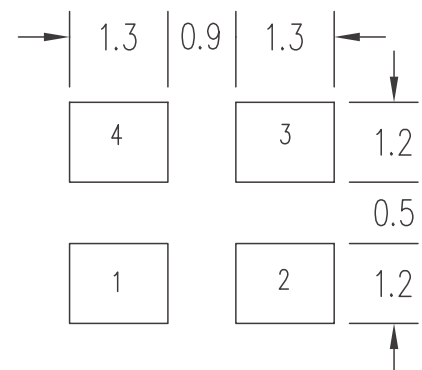
Dimensions



PIN CONNECTION

P/N	1631
1	Enable/Disable
2	GND
3	Output
4	VDD

DIMENSION (mm)



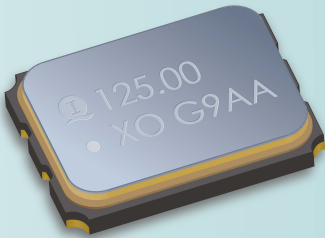
SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。

SPXO 3225 (163-E SERIES)

FEATURES

- Small size
- Excellent low phase noise and jitter
- Suitable for 5G Network terminal
- High Reliability and stability
- RoHS Compliant and Pb Free

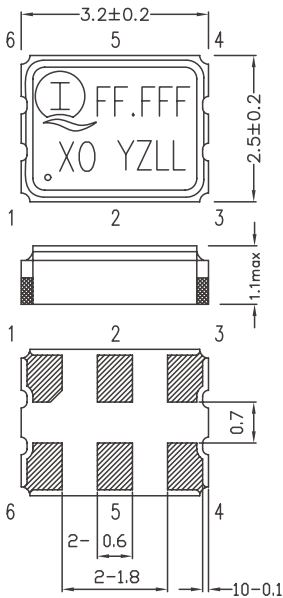


Electrical Specifications

Parameters		Specifications
Output Waveform 输出波型		LVPECL
Frequency Range 频率范围		20MHz ~ 200MHz
Supply Voltage Range (Vdd) 工作电压范围		2.5V ~ 3.3V
Overall Frequency Stability 总频率偏差		±25ppm, ±30ppm or specify
Operating Temperature Range 工作温度范围		-20°C ~ +70°C, -40°C ~ +85°C
Current Consumption (Idd) 消耗电流		100mA Max.
Rise & Fall Time 上/下沿时间		1.5ns Max.
Output Symmetry 输出对称性		45% ~ 55%
Output Voltage 输出电压	V _{OH}	Vdd-1.025V Min. Vdd-0.88V Max.
	V _{OL}	Vdd-1.81V Min. Vdd-1.62V Max.
Output Load 输出负载		50Ω to Vdd-2.0V
Start-up Time 起动时间		10ms Max.
Storage Temperature Range 储存温度范围		-55°C ~ +125°C

** Inclusive of initial frequency tolerance at 25°C, operating temperature range, supply voltage change, load variation and 1st year aging.
包括在常温频率偏差, 工作温度范围的频率偏差, 首年老化率, 工作电压及负载变化造成的频率偏差。
Please consult our sales representatives for other specifications. 如对其他规格查询, 请与我司销售人员联系。

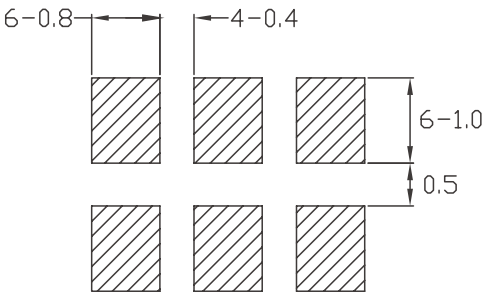
Dimensions



PIN CONNECTION

P/N	1631 LVPECL
1	Enable/Disable
2	N/C
3	GND
4	OUT
5	OUTN
6	VDD

DIMENSION (mm)

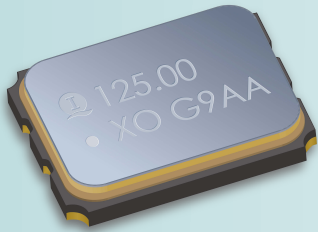


SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。



SPXO 3225 (163-F SERIES)



FEATURES

- Small size
- Excellent low phase noise and jitter
- Suitable for 5G Network terminal
- High Reliability and stability
- RoHS Compliant and Pb Free

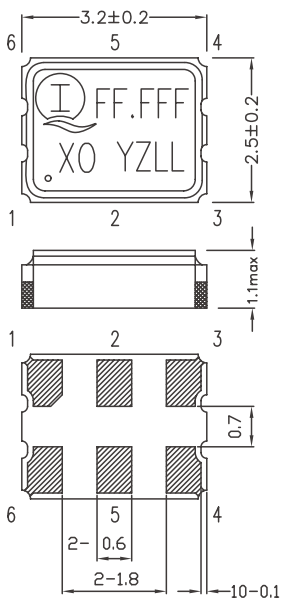
Electrical Specifications

Parameters		Specifications
Output Waveform 输出波型		LVDS
Frequency Range 频率范围		20MHz ~ 200MHz
Supply Voltage Range (Vdd) 工作电压范围		2.5V ~ 3.3V
Overall Frequency Stability 总频率偏差		±25ppm, ±30ppm or specify
Operating Temperature Range 工作温度范围		-20°C ~ +70°C, -40°C ~ +85°C
Current Consumption (Idd) 消耗电流		100mA Max.
Rise & Fall Time 上/下沿时间		1.5ns Max.
Output Symmetry 输出对称性		45% ~ 55%
Output Voltage 输出电压	V _{OH}	1.4V Typ.
	V _{OL}	1.1V Typ.
Output Load 输出负载		100Ω
Start-up Time 启动时间		10ms Max.
Storage Temperature Range 储存温度范围		-55°C ~ +125°C

** Inclusive of initial frequency tolerance at 25°C, operating temperature range, supply voltage change, load variation and 1st year aging.
包括在常温频率偏差, 工作温度范围的频率偏差, 首年老化率, 工作电压及负载变化造成的频率偏差。

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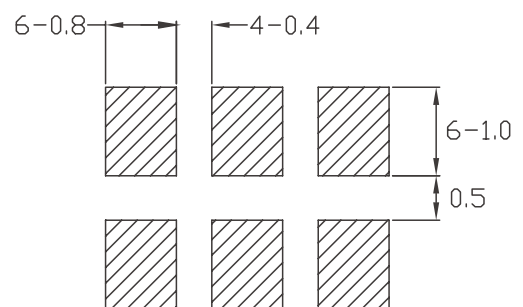
Dimensions



PIN CONNECTION

P/N	1631
1	Enable/Disable
2	N/C
3	GND
4	OUT
5	OUTN
6	VDD

DIMENSION (mm)



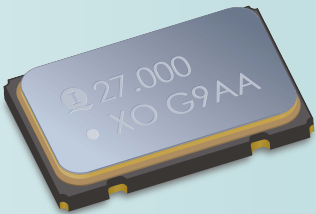
SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。

SPXO 5032 (160-B SERIES)

FEATURES

- High reliability seam welded package
- Low phase noise version available
- Low current consumption version available
- Conforms to AEC-Q100 (Optional)
- RoHS Compliant and Pb Free



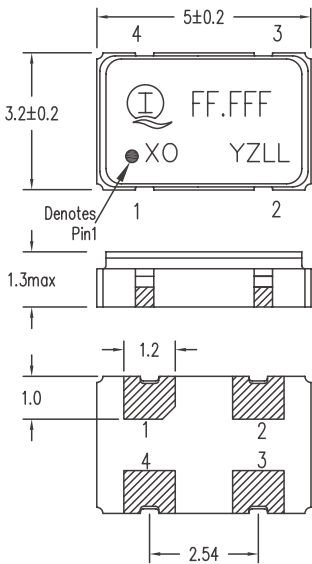
Electrical Specifications

Parameters		Specifications		
Output Waveform 输出波形		CMOS		
Frequency Range 频率范围		32.768KHz	1MHz ~50MHz	50MHz ~ 160MHz
Supply Voltage Range (Vdd) 工作电压范围		1.0V ~ 5V		
Overall Frequency Stability 总频率偏差		$\pm 25\text{ppm}$, $\pm 30\text{ppm}$, $\pm 50\text{ppm}$ or specify		
Operating Temperature Range 工作温度范围		$-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$, $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$, $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$		
Current Consumption (Idd) 消耗电流		100uA Max.	10mA Max.	
Rise & Fall Time 上/下沿时间		20ns Max.	8ns Max.	3ns Max.
Output Symmetry 输出对称性		45% ~ 55%		
Output Voltage 输出电压	V _{OH}	90% VDD		
	V _{OL}	10% VDD		
Output Load 输出负载		15pF		
Start-up Time 启动时间		10ms Max.		
Storage Temperature Range 储存温度范围		$-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$		

** Inclusive of initial frequency tolerance at 25°C, operating temperature range, supply voltage change, load variation and 1st year aging.
包括在常温频率偏差, 工作温度范围的频率偏差, 首年老化率, 工作电压及负载变化造成的频率偏差。

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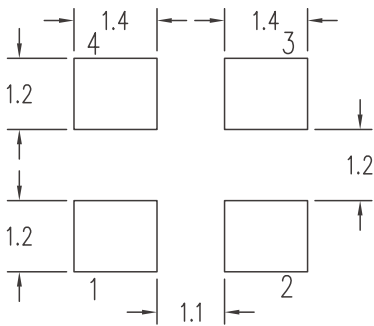
Dimensions



PIN CONNECTION

P/N	1601
1	Enable/Disable
2	GND
3	Output
4	VDD

DIMENSION (mm)

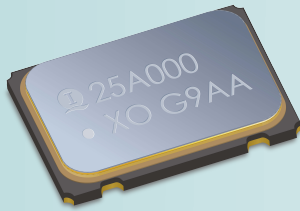


SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。



SPXO 7050 (149-B SERIES)



FEATURES

- High reliability seam welded package
- Low phase noise version available
- Low current consumption version available
- Conforms to AEC-Q100 (Optional)
- RoHS Compliant and Pb Free

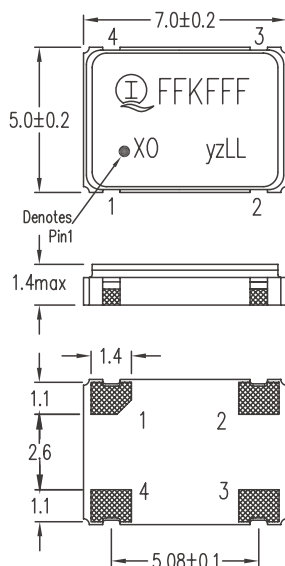
Electrical Specifications

Parameters		Specifications		
Output Waveform 输出波型		CMOS		
Frequency Range 频率范围		32.768KHz	1MHz ~ 50MHz	50MHz ~ 160MHz
Supply Voltage Range (Vdd) 工作电压范围		1.0V ~ 5V		
Overall Frequency Stability 总频率偏差		$\pm 25\text{ppm}$, $\pm 30\text{ppm}$, $\pm 50\text{ppm}$ or specify		
Operating Temperature Range 工作温度范围		$-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$, $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$, $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$		
Current Consumption (Idd) 消耗电流		100uA Max.	10mA Max.	
Rise & Fall Time 上/下沿时间		20ns Max.	8ns Max.	3ns Max.
Output Symmetry 输出对称性		45% ~ 55%		
Output Voltage 输出电压	V_{OH}	90% VDD		
	V_{OL}	10% VDD		
Output Load 输出负载		15pF		
Start-up Time 起动时间		10ms Max.		
Storage Temperature Range 储存温度范围		$-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$		

** Inclusive of initial frequency tolerance at 25°C, operating temperature range, supply voltage change, load variation and 1st year aging.
包括在常温频率偏差, 工作温度范围的频率偏差, 首年老化率, 工作电压及负载变化造成的频率偏差。

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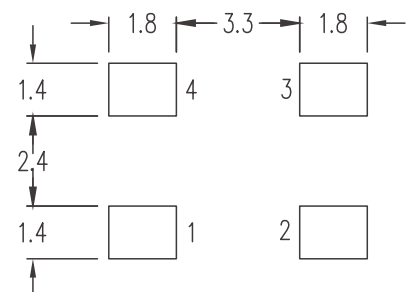
Dimensions



PIN CONNECTION

P/N	1491
1	Enable/Disable
2	GND
3	Output
4	VDD

DIMENSION (mm)



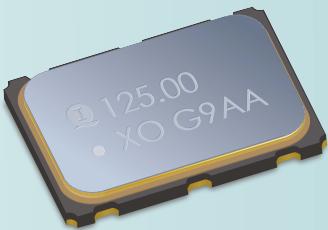
SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。

SPXO 7050 (149-E SERIES)

FEATURES

- High reliability seam welded package
- Excellent low phase noise and jitter
- Suitable for 5G Network terminal
- High Reliability and stability
- RoHS Compliant and Pb Free



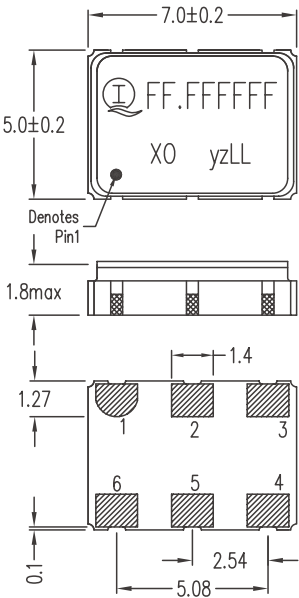
Electrical Specifications

Parameters		Specifications
Output Waveform 输出波形		LVPECL
Frequency Range 频率范围		20MHz ~ 200MHz
Supply Voltage Range (Vdd) 工作电压范围		2.5V ~ 3.3V
Overall Frequency Stability 总频率偏差		±25ppm, ±30ppm or specify
Operating Temperature Range 工作温度范围		-20°C ~ +70°C, -40°C ~ +85°C
Current Consumption (Idd) 消耗电流		100mA Max.
Rise & Fall Time 上/下沿时间		1.5ns Max.
Output Symmetry 输出对称性		45% ~ 55%
Output Voltage 输出电压	V _{OH}	Vdd-1.025V Min. Vdd-0.88V Max.
	V _{OL}	Vdd-1.81V Min. Vdd-1.62V Max.
Output Load 输出负载		50Ω to Vdd-2.0V
Start-up Time 起动时间		10ms Max.
Storage Temperature Range 储存温度范围		-55°C ~ +125°C

** Inclusive of initial frequency tolerance at 25°C, operating temperature range, supply voltage change, load variation and 1st year aging.
包括在常温频率偏差, 工作温度范围的频率偏差, 首年老化率, 工作电压及负载变化造成的频率偏差。

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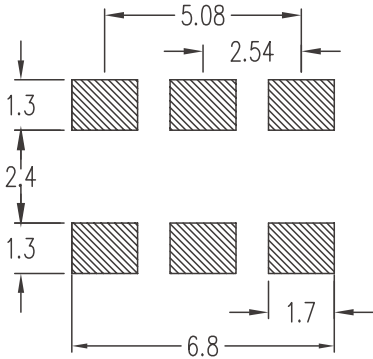
Dimensions



PIN CONNECTION

P/N	1491
1	Enable/Disable
2	NC
3	GND
4	Output
5	Output
6	VDD

DIMENSION (mm)

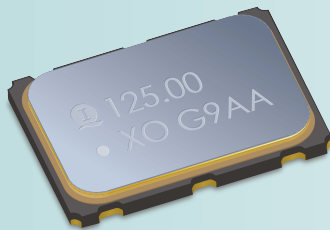


SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。



SPXO 7050 (149-F SERIES)



FEATURES

- High reliability seam welded package
- Excellent low phase noise and jitter
- Suitable for 5G Network terminal
- High Reliability and stability
- RoHS Compliant and Pb Free

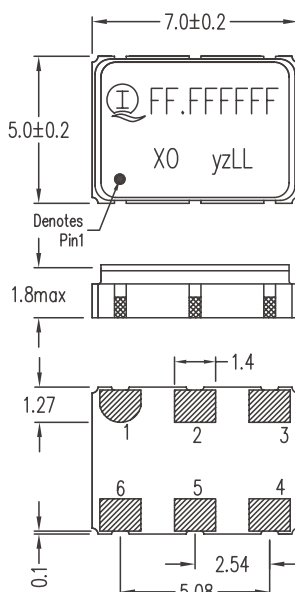
Electrical Specifications

Parameters		Specifications
Output Waveform 输出波型		LVDS
Frequency Range 频率范围		20MHz ~ 200MHz
Supply Voltage Range (Vdd) 工作电压范围		2.5V ~ 3.3V
Overall Frequency Stability 总频率偏差		±25ppm, ±30ppm or specify
Operating Temperature Range 工作温度范围		-20°C ~ +70°C, -40°C ~ +85°C
Current Consumption (Idd) 消耗电流		100mA Max.
Rise & Fall Time 上/下沿时间		1.5ns Max.
Output Symmetry 输出对称性		45% ~ 55%
Output Voltage 输出电压	V _{OH}	1.4V Typ.
	V _{OL}	1.1V Typ.
Output Load 输出负载		100Ω
Start-up Time 启动时间		10ms Max.
Storage Temperature Range 储存温度范围		-55°C ~ +125°C

** Inclusive of initial frequency tolerance at 25°C, operating temperature range, supply voltage change, load variation and 1st year aging.
包括在常温频率偏差, 工作温度范围的频率偏差, 首年老化率, 工作电压及负载变化造成的频率偏差。

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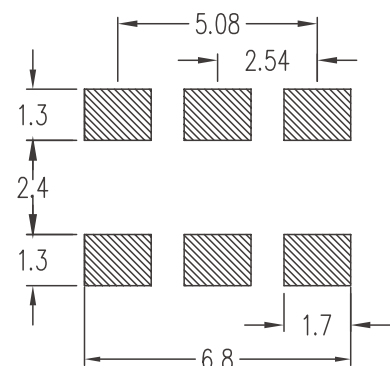
Dimensions



PIN CONNECTION

P/N	1491
1	Enable/Disable
2	NC
3	GND
4	Output
5	Output
6	VDD

DIMENSION (mm)



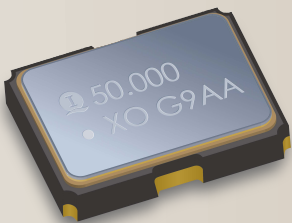
SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。

SPXO 2016 (168-P SERIES)

FEATURES

- Ultra Miniature size
- Wide Frequency Range
- High precision application
- Short lead time and high flexibility
- RoHS Compliant and Pb Free

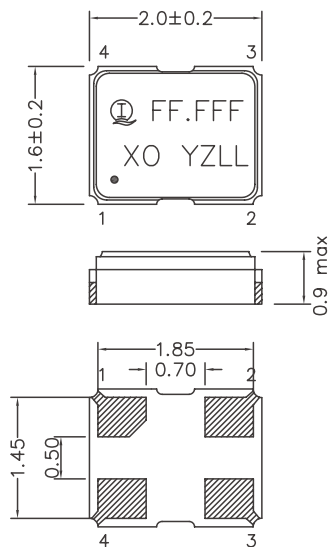


Electrical Specifications

Parameters		Specifications
Output Waveform 输出波型		CMOS
Frequency Range 频率范围		1MHz ~ 200MHz
Supply Voltage Range (Vdd) 工作电压范围		1.8V ~ 3.3V
Overall Frequency Stability 总频率偏差		±25ppm, ±30ppm or specify
Operating Temperature Range 工作温度范围		-20°C ~ +70°C, -40°C ~ +85°C
Current Consumption (Idd) 消耗电流		20mA Typ.
Rise & Fall Time 上/下沿时间		1.5ns Typ.
Output Symmetry 输出对称性		45% ~ 55%
Output Voltage 输出电压	V _{OH}	90% VDD
	V _{OL}	10% VDD
Output Load 输出负载		15pF
Start-up Time 启动时间		10ms Max.
Storage Temperature Range 储存温度范围		-55°C ~ +125°C

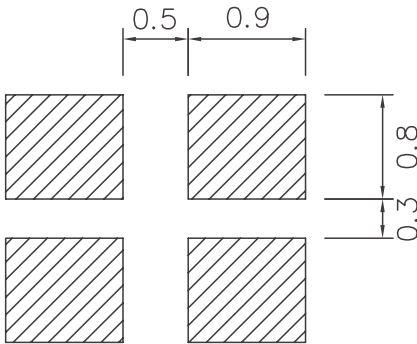
** Inclusive of initial frequency tolerance at 25°C, operating temperature range, supply voltage change, load variation and 1st year aging.
包括在常温频率偏差, 工作温度范围的频率偏差, 首年老化率, 工作电压及负载变化造成的频率偏差。
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Dimensions



P/N	1681
1	Enable/Disable
2	GND
3	Output
4	VDD

DIMENSION (mm)

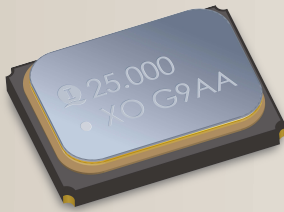


SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。



SPXO 3225 (163-P SERIES)



FEATURES

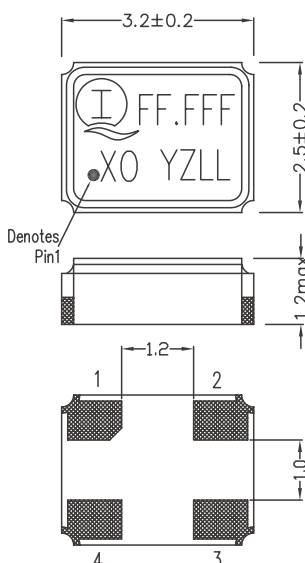
- Small size
- Wide Frequency Range
- High precision application
- Short lead time and high flexibility
- RoHS Compliant and Pb Free

Electrical Specifications

Parameters		Specifications
Output Waveform 输出波型		CMOS
Frequency Range 频率范围		1MHz ~ 200MHz
Supply Voltage Range (Vdd) 工作电压范围		1.8V ~ 3.3V
Overall Frequency Stability 总频率偏差		±25ppm, ±30ppm or specify
Operating Temperature Range 工作温度范围		-20°C ~ +70°C, -40°C ~ +85°C
Current Consumption (Idd) 消耗电流		20mA Typ.
Rise & Fall Time 上/下沿时间		1.5ns Typ.
Output Symmetry 输出对称性		45% ~ 55%
Output Voltage 输出电压	V _{OH}	90% VDD
	V _{OL}	10% VDD
Output Load 输出负载		15pF
Start-up Time 启动时间		10ms Max.
Storage Temperature Range 储存温度范围		-55°C ~ +125°C

** Inclusive of initial frequency tolerance at 25°C, operating temperature range, supply voltage change, load variation and 1st year aging.
包括在常温频率偏差, 工作温度范围的频率偏差, 首年老化率, 工作电压及负载变化造成的频率偏差。
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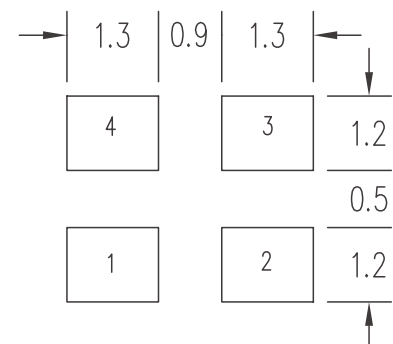
Dimensions



PIN CONNECTION

P/N	1631
1	Enable/Disable
2	GND
3	Output
4	VDD

DIMENSION (mm)



SOLDERING PATTERN (mm)

All specifications are subject to change without prior notice. 本公司保留修改规格的权利。