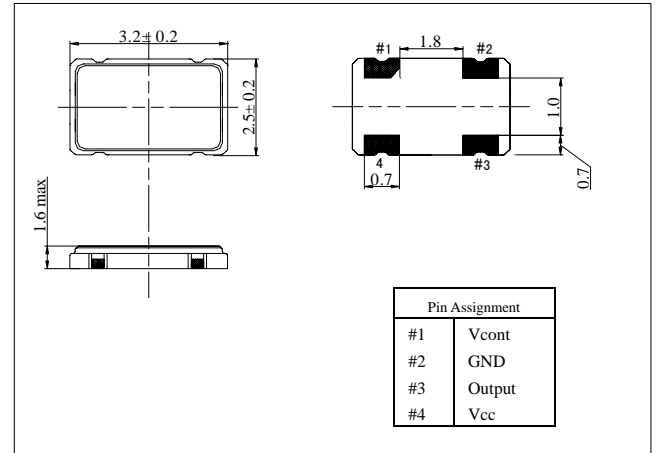
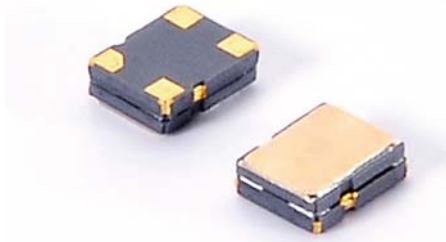
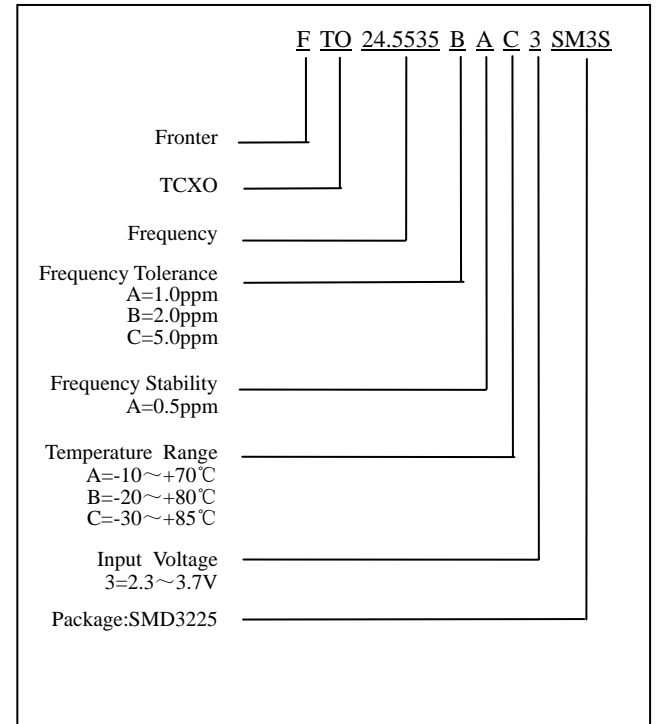
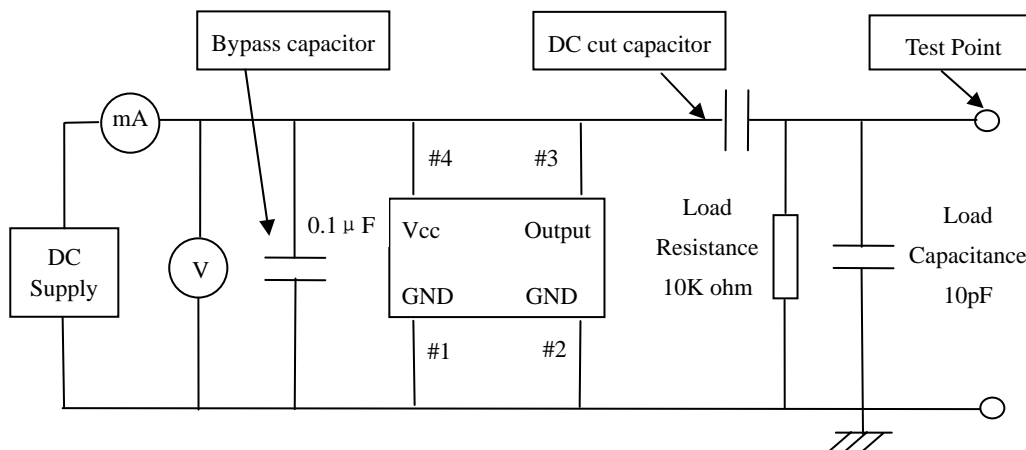


FTO321S TYPE
★ DIMENSIONS (Unit: mm) 外形尺寸

★ PARAMETERS 技术参数

PARAMETER	参数	SPECIFICATION 规格	CONDITION 条件
Frequency Range	频率范围	16.3676MHz /16.369MHz /24.5535MHz	
Supply voltage	工作电压	2.3~3.7V	
Output Waveform	输出波形	Clipped Sine Wave	
Output Level	输出幅度	0.8 V _{p-p}	
Input Current	输入电流	1.5 mA Max	
Operating Temp. Range	工作温度范围	-30~+85°C	
Storage Temp. Range:	储存温度范围	-40~+85°C	
Frequency Stability	频率稳定度		
vs. Temperature	vs.温度	±0.5ppm Max	Referenced to the mid point between min. and max. frequency
vs. Supply Voltage	vs.工作电压	±0.1ppm Max	V _{cc} ±5%
vs. Load	vs.负载	±0.2ppm Max	10K Ω //10pF±10%
vs. Aging	vs.老化	±1.0ppm Max	1 Year
Frequency Tolerance	频率偏差	±2.0ppm Max	25°C, After Reflow
Frequency Slope		±0.1ppm/°C	-20~+70°C
Phase Noise	相位噪声		
		-50 dBc/Hz Max	1 Hz offset
		-80 dBc/Hz Max	10 Hz offset
		-105 dBc/Hz Max	100 Hz offset
		-125 dBc/Hz Max	1K Hz offset
		-140 dBc/Hz Max	10K Hz offset


★ TEST CIRCUIT 测试原理图


VCTCXO

压控温补振荡器



4 Pad Version 3.2x2.5 mm

- ±2.5 ppm stability
- Ultra-miniature package
- Clipped sine wave
- Low power consumption
- Reflow soldering temperature: 260°C max



RoHS compliant

★ PARAMETERS 技术参数

PARAMETERS	参数	SPECIFICATION 规格	
Frequency Range	频率范围	10.0~40.0MHz	
Supply Voltage	工作电压	1.8V、2.5V、2.8V、3.3V	
Supply Current	输入电流	10MHz≤F0≤26MHz: 2.0mA max 26MHz<F0≤40MHz: 2.5mA max	
Frequency Tolerance	调整频差	±0.5ppm、±1.0ppm、±2.0ppm	
Frequency Stability	频率稳定性	Vs Temperature (ref. to +25°C)	±1.5~ ±2.5ppm
		Vs Supply voltage change (±5%)	±0.2ppm
		Vs Load change (±10%)	±0.2ppm
		Vs Aging (1 st Year ,25±2°C)	±1.0ppm
Operating Temp. Range	工作温度范围	-30~+85°C	
Storage Temp. Range	储存温度范围	-55~+125°C	
Voltage Control Range	压控范围	±5.0ppm min	
Output Waveform:	输出波形	Clipped Sine Wave	
Output Level:	输出电平	0.8 Vp-p Min (Clipped Sine Wave)	
Output Load	输出负载	10K Ω //10pF	
Symmetry	占空比	45% ~ 55% typ. at 0.5×Vdc	
Start-up Time	起振时间	2.0mS max	
Phase Noise	相位噪声	-115 dBc/Hz max @100Hz offset	
		-135 dBc/Hz max @1KHz offset	
		-148 dBc/Hz max @10KHz offset	

⊙ All specification subject change without notice. 规格变化，恕不另行通知。

★ DIMENSIONS & LAND PATTERN LAYOUT (Unit: mm) 外形尺寸

Pin	Connection
1	Vcon
2	GND
3	Output
4	V _{DC}

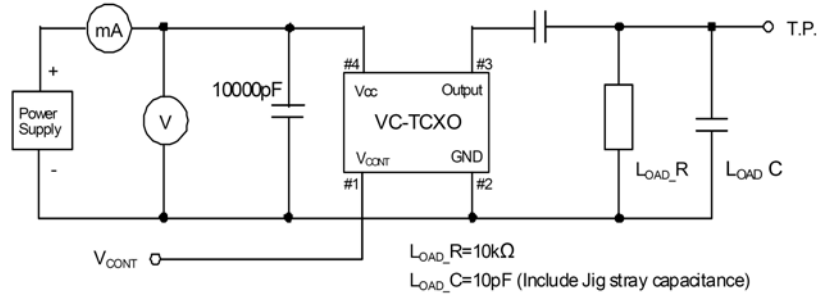
Recommended land Pattern

★ PART NUMBER GUIDE 部件号示例 e.g. FVTO26.000ACC2.8SM3 (*SM3=3.2×2.5 SMD TYPE)

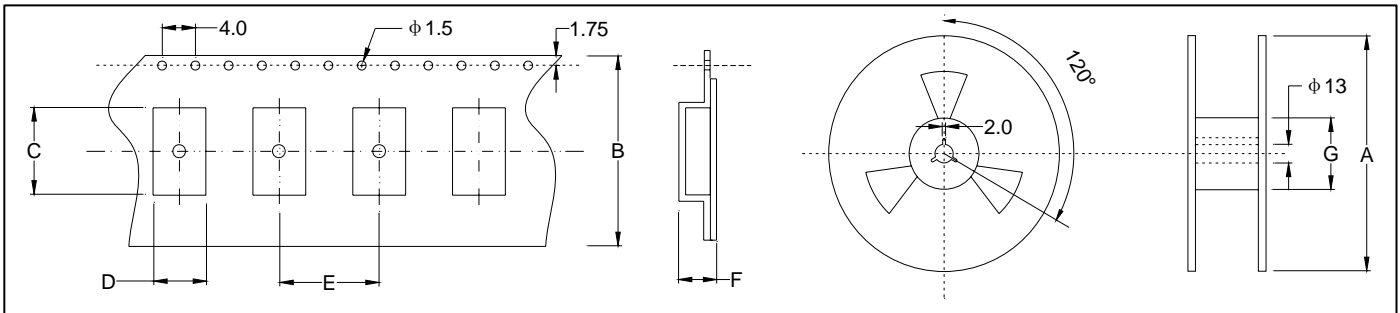
	VCTCXO 压控温补振荡器	Frequency 频率	Frequency Tolerance 调整频差	Frequency Stability 频率稳定度	Operating Temp. 工作温度	Supply voltage 工作电压	Package 盒型
F	VTO	26.000	A	C	C	2.8	SM3

Definition	Description	Definition	Description
Frequency Stability 频率稳定度	A: $\pm 1.5\text{ppm}$	Operating Temp. 工作温度	A: $-10\sim+70^{\circ}\text{C}$
	B: $\pm 2.0\text{ppm}$		B: $-20\sim+80^{\circ}\text{C}$
	C: $\pm 2.5\text{ppm}$		C: $-30\sim+85^{\circ}\text{C}$
	D: Customer specified		D: Customer specified

★ TEST CIRCUIT 测试原理图

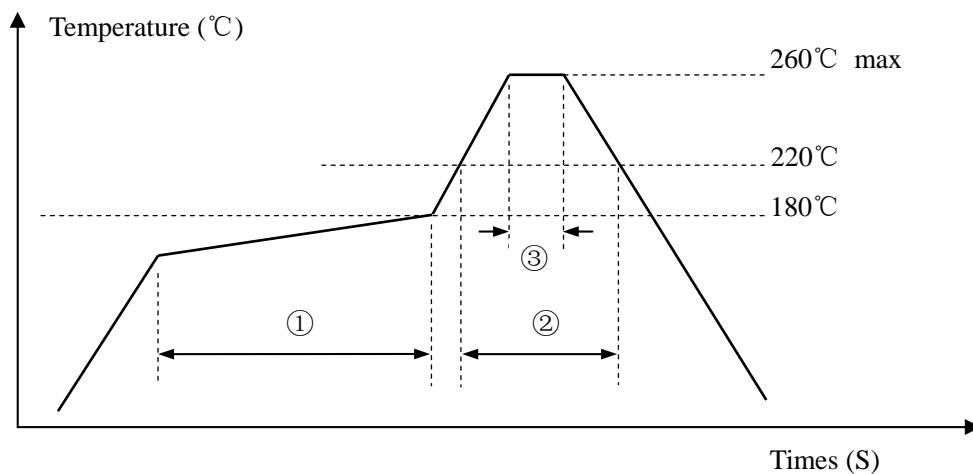


★ TAPING SPECIFICATION (Unit: mm) 编带规格



	A	B	C	D	E	F	G
OSC-SMD3225	178 ± 2.0	8.0 ± 0.3	3.55 ± 0.10	2.80 ± 0.10	4.0 ± 0.1	1.4 ± 0.1	60.5 ± 1.0
3000 pcs per reel							

★ REFLOW SOLDERING PROFILE 回流焊特性



Pb free reflow A	①	Preheat	160~180°C	120sec. max
	②	Primary heat	220°C	60sec. max
	③	Peak	260°C	10sec. max.

VCTCXO

压控温补振荡器



4 Pad Version 5.0x3.2 mm

- ±2.5 ppm stability
- Clipped sine wave
- Low power consumption
- Reflow soldering temperature: 260°C max



RoHS compliant

★ PARAMETERS 技术参数

PARAMETERS	参数	SPECIFICATION 规格	
Frequency Range	频率范围	10.0~40.0MHz	
Supply Voltage	工作电压	1.8V、2.5V、2.8V、3.3V	
Supply Current	输入电流	10MHz≤F0<15MHz: 1.5mA max 15MHz≤F0<26MHz: 2.0mA max 26MHz≤F0≤40MHz: 2.5mA max	
Frequency Tolerance	调整频差	±0.5ppm、±1.0ppm、±2.0ppm	
Frequency Stability	频率稳定性	Vs Temperature (ref. to +25°C)	±1.5~±2.5ppm
		Vs Supply voltage change (±5%)	±0.2ppm
		Vs Load change (±10%)	±0.2ppm
		Vs Aging (1 st Year ,25±2°C)	±1.0ppm
Operating Temp. Range	工作温度范围	-30~+85°C	
Storage Temp. Range	储存温度范围	-55~+125°C	
Voltage Control Range	压控范围	±5.0ppm min	
Output Waveform:	输出波形	Clipped Sine Wave	
Output Level:	输出电平	0.8 Vp-p Min (Clipped Sine Wave)	
Output Load	输出负载	10K Ω //10pF	
Symmetry	占空比	45% ~ 55% typ. at 0.5×Vdc	
Start-up Time	起振时间	2.0mS max	
Phase Noise	相位噪声	-115 dBc/Hz max @100Hz offset	
		-135 dBc/Hz max @1KHz offset	
		-148 dBc/Hz max @10KHz offset	

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★ DIMENSIONS & LAND PATTERN LAYOUT (Unit: mm) 外形尺寸

Pin	Connection
1	Vcon
2	GND
3	Output
4	Vbc

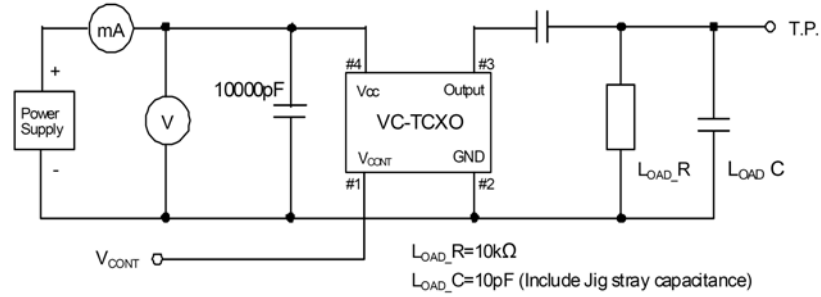
Recommended land Pattern

★ PART NUMBER GUIDE 部件号示例 e.g. FVTO26.000ACC2.8SM5 (*SM5=5.0×3.2 SMD TYPE)

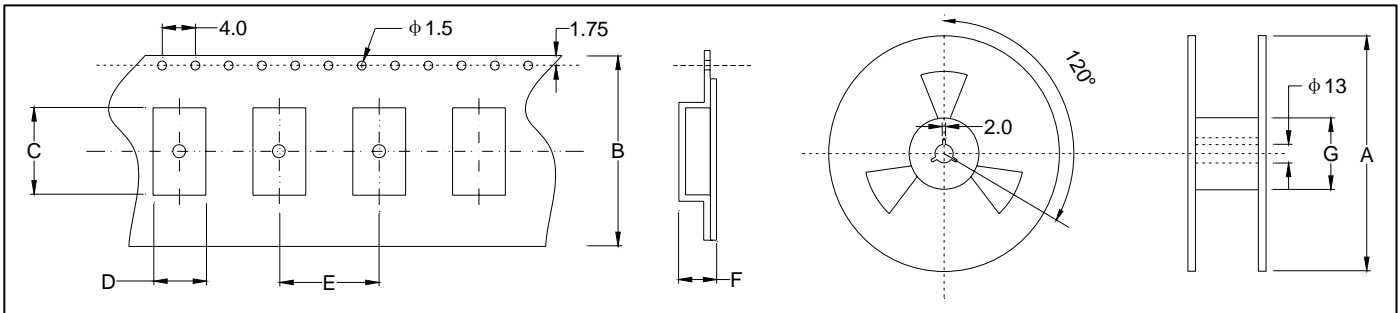
	VCTCXO 压控温补振荡器	Frequency 频率	Frequency Tolerance 调整频差	Frequency Stability 频率稳定度	Operating Temp. 工作温度	Supply voltage 工作电压	Package 盒型
F	VTO	26.000	A	C	C	2.8	SM5

Definition	Description	Definition	Description
Frequency Stability 频率稳定度	A: $\pm 1.5\text{ppm}$	Operating Temp. 工作温度	A: $-10\sim+70^{\circ}\text{C}$
	B: $\pm 2.0\text{ppm}$		B: $-20\sim+80^{\circ}\text{C}$
	C: $\pm 2.5\text{ppm}$		C: $-30\sim+85^{\circ}\text{C}$
	D: Customer specified		D: Customer specified

★ TEST CIRCUIT 测试原理图

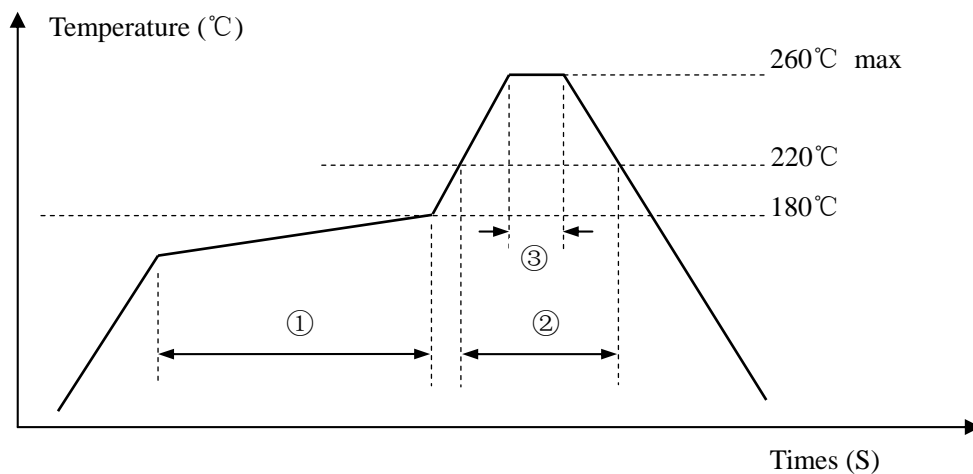


★ TAPING SPECIFICATION (Unit: mm) 编带规格



	A	B	C	D	E	F	G
OSC-SMD3225	178 ± 2.0	12.0 ± 0.3	5.40 ± 0.10	3.60 ± 0.10	8.0 ± 0.1	1.4 ± 0.1	60.5 ± 1.0
1000 pcs per reel							

★ REFLOW SOLDERING PROFILE 回流焊特性



Pb free reflow A	①	Preheat	160~180°C	120sec. max
	②	Primary heat	220°C	60sec. max
	③	Peak	260°C	10sec. max.