



# TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,  
Taoyuan, 324, Taiwan, R.O.C.

TEL: 886-3-4690038 FAX: 886-3-4697532

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## Product Specifications Approval Sheet

Product Description: OCXO SMD 25.4mmx22mm 10MHz

TST Part No.: TP0019A

Customer Part No.: \_\_\_\_\_

Customer signature required
Company: _____
Division: _____
Approved by : _____
Date: _____

Checked by: \_\_\_\_\_ Ginger Huang *Ginger Huang*

Approved by: \_\_\_\_\_ Kelly Huang *Kelly Huang*

Date: \_\_\_\_\_ 07/28/2011

1. Customer signed back is required before TST can proceed with sample build and receive orders.
2. Orders received without customer signed back will be regarded as agreement on the specifications.
3. Any specifications changes must be approved upon by both parties and a new revision of specifications shall be released to reflect the changes.



**TAI-SAW TECHNOLOGY CO., LTD.**  
**25.4x22 10MHz OCXO**

MODEL NO.: TP0019A

REV. NO.: 1.0

**Revise:**

Rev.	Rev. Page	Rev. Account	Date	Ref. No.	Reviser
1	N/A	Initial release	07/28/11'	N/A	Ginger Huang



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## 25.4x22 10MHz OCXO

MODEL NO.: TP0019A

REV. NO: 1.0

Characteristics	Values	Unit	Note
Nominal Frequency	10	MHz	±200ppb @25° C, Vc=1.5V

### Temperature Range

Characteristics	Min.	Nom.	Max.	Unit	Note
Operating G1	-40		85	°C	
Storage	-50		95	°C	

### Power - Consumption

Characteristics	Min.	Nom.	Max.	Unit	Note
Power Supply	4.75	5	5.25	V	
Max values at steady state			180	mA	At 25°C
Max values during Warm-up			600	mA	<3 minutes at 25°C

### Frequency Control

Characteristics	Min.	Nom.	Max.	Unit	Note
Frequency tuning range	0.7		1.5	ppm	
Voltage Control	0		3	V	
Input impedance	100			KΩ	
Linearity			10	%	Slope Positive
Reference Voltage	2.8	3	3.2	V	

### Output Signal

#### HCMOS

Characteristics	Min.	Nom.	Max.	Unit	Note
Level	VOH	2.7		Volt	
	VOL		0.3	Volt	
Rise/Fall time			10	ns	
Duty cycle	40		60	%	
Load		15		pF	10K ohm

### Frequency Stability

Characteristics	Min.	Nom.	Max.	Unit	Note
VS Temperature Range G1			50	±ppb	Refer to freq at 25°C
VS Power Supply variation			5	±ppb	Vcc ±5%
VS Load variation			5	±ppb	Load ±5%

### Aging

Characteristics	Values				Unit	Note
	1 day	1 month	1 Year	10 Y'rs		
Medium/Long Term Stability	1		100		±ppb	After continuous operating for 30days at 25°C, daily fluctuation<3ppb
Warm Up	3 mn		<100		±ppb	Refer to 1H on @25°C

**Phase Noise**

Characteristics	Values						Unit	Note
	1 Hz	10 Hz	100Hz	1KHz	10 KHz	100KHz		
Static Conditions		-120	-135	-150	-150	-150	dBc/Hz	Phase jitter(RMS) <1.00 E -11
Short-term Stability	0.1s~10s			After 1 Hr power on				
	1.00E-11							

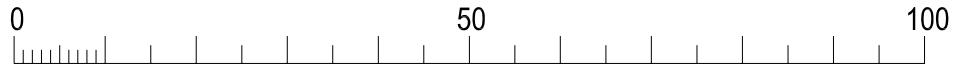
**Mechanical & Environmental Conditions**

Characteristics	Conditions
Shocks	IEC 68-2-27 Test Ea:30g/11 ms
Sine Vibrations	IEC 68-2-06 Test Fc:5g/10 to 500Hz

**Package - Pin Out**

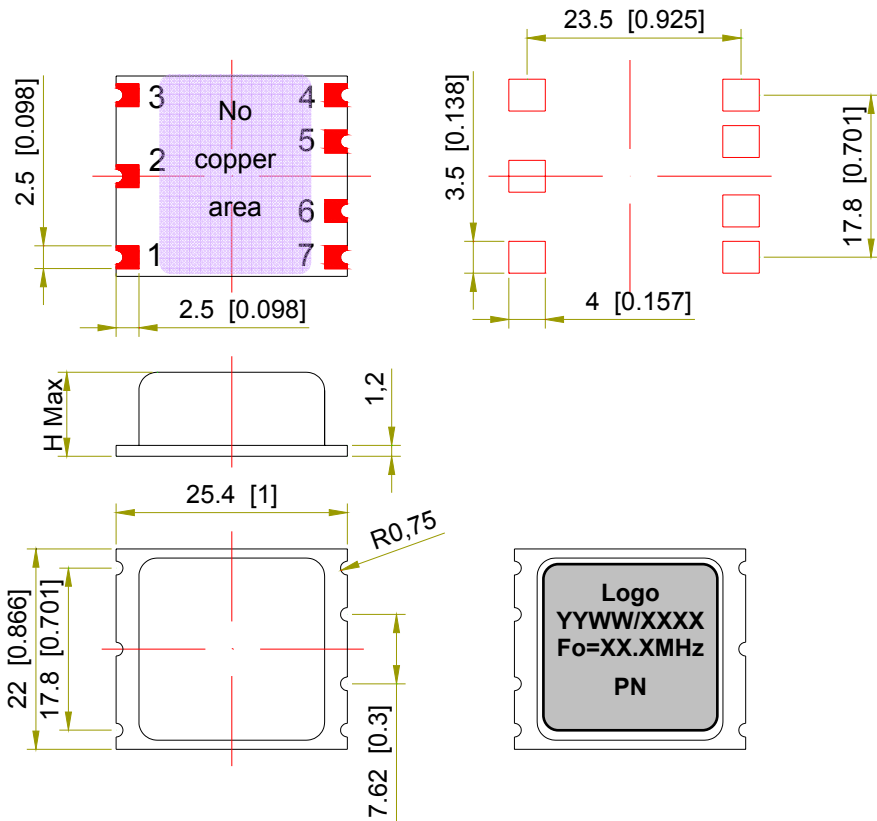
Package Ref.	942	drawing Unit: mm
Maximum package height	14.0mm	
Pin Out	Pin 1: Vctrl Pin 2: Vref out Pin 3: Vcc Pin 4: RF out Pin 5: N.C. Pin 6: N.C. Pin 7: Ground	

**Mechanical drawing Package Ref. 942**

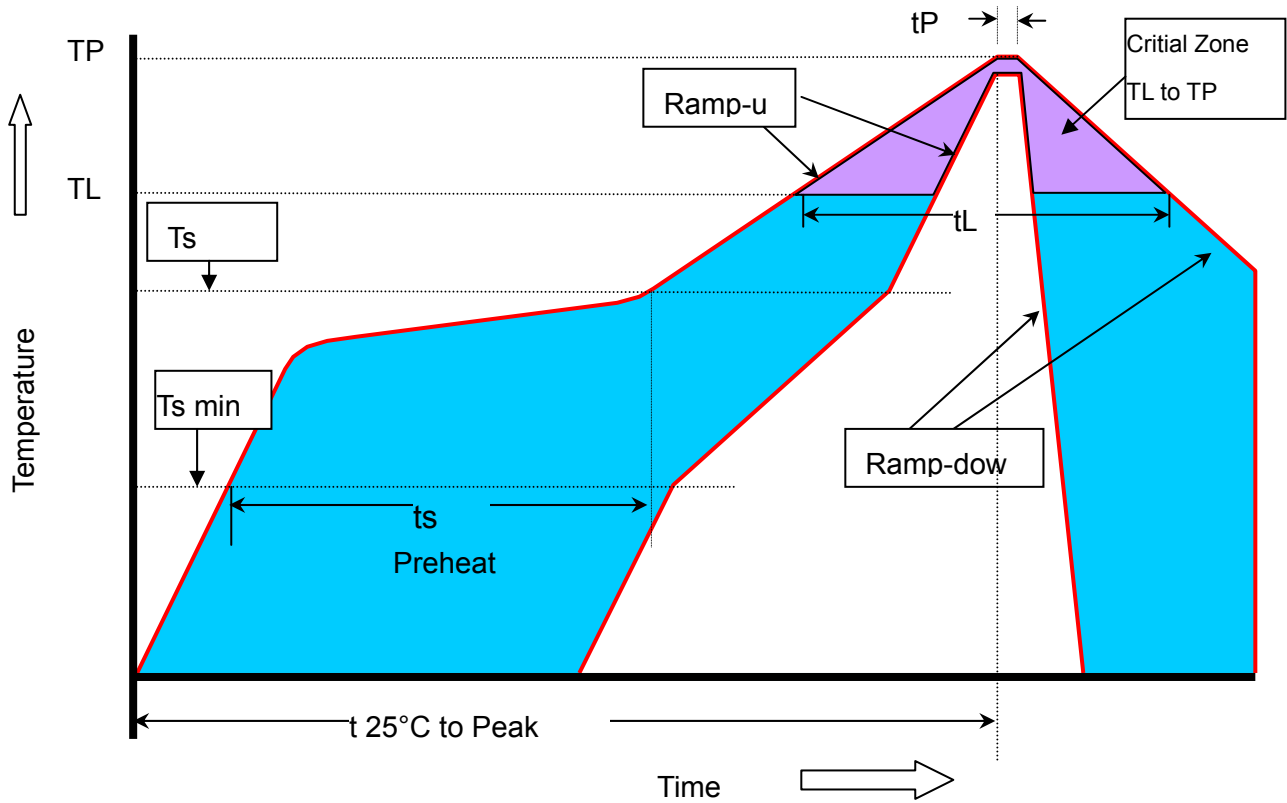


BOTTOM VIEW

SUGGESTED PAD



**Recommended Reflow Profile:**



Profile Feature	Sn-Pb Assembly	Pb-Free Assembly
Average ramp-up rate ( $T_L$ to $T_P$ )	3°C/second max.	3°C/second max.
Preheat -Temperature Min Tsmin)	120°C	140°C
-Temperature Min Tsmax)	180°C	210°C
-Time (min to max) ( $t_s$ )	30-120 seconds	30-120 seconds
Tsmax to $T_L$ - Ramp-up Rate	3°C/second max.	3°C/second max.
Time maintained above		
- Temperature ( $T_L$ )	180°C	220°C
- Time ( $t_L$ )	30-120 seconds	30-120 seconds
Peak Temperature ( $T_P$ )	max 235°C min 200°C	max 245°C min 230°C
Time 25°C to Peak Temperature	360s max.	480s max.
Time within 5°C of actual Peak Temperature ( $t_P$ )	20-40 seconds	20-40 seconds
Ramp-down Rate	6°C/second max.	6°C/second max.