



TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,
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Product Specifications Approval Sheet

Product Description: OCXO PTH 36.2mmx27.2mm 20MHz

TST Part No.: TP0011A

Customer Part No.: _____

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

Checked by: _____ Ginger Huang *Ginger Huang*

Approved by: _____ Kelly Huang *Kelly*

Date: _____ 02/23/2012

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.
36.2x27.2 20MHz OCXO

MODEL NO.: TP0011A

REV. NO.: 1.0

Revise:

Rev.	Rev. Page	Rev. Account	Date	Ref. No.	Reviser
1	N/A	Initial release	02/23/12'	N/A	Ginger Huang



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36.2x27.2 20MHz OCXO

MODEL NO.: TP0011A

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Characteristics	Values	Unit	Note
Nominal Frequency	20	MHz	Tolerance ± 50 ppb max @ 25°C $\pm 2^\circ\text{C}$ Vctrl=2.5V

Temperature Range

Characteristics	Min.	Nom.	Max.	Unit	Note
Operating G1	0		70	°C	
Operating G2	-20		75	°C	
Operatable	-40		75	°C	
Storage	-40		85	°C	

Power - Consumption

Characteristics	Min.	Nom.	Max.	Unit	Note
Power Supply	11.4	12	12.6	V	Vcc $\pm 5\%$
Max values at steady state			120	mA	AT 25°C
Max values during Warm-up			400	mA	

Frequency control

Characteristics	Min.	Nom.	Max.	Unit	Note
Frequency pulling range	0.4		0.8	\pm ppm	Referred to Fnom
Voltage Control	0	2.5	5	V	Positive Slope
Linearity			10	%	
Reference Voltage	6.65	7	7.35	V	

Output Signal

HCMOS

Characteristics	Min.	Nom.	Max.	Unit	Note
Level	VOH	2.7		Volt	
	VOL		0.3	Volt	
Rise/Fall time			5	ns	
Duty cycle	40		60	%	
Load1		15		pF	10K ohm

Frequency Stability

Characteristics	Min.	Nom.	Max.	Unit	Note
VS Temperature Range G1			4	\pm ppb	Refer to freq at 25°C
VS Temperature Range G2			10	\pm ppb	Refer to freq at 25°C
VS Power Supply variation			0.5	\pm ppb	Vcc $\pm 5\%$ Static
VS Load variation			0.5	\pm ppb	Load $\pm 5\%$

Aging

Characteristics	Values			Unit	Note
	1 day	1 year	10Years		
Medium/Long Term Stability	0.5	50	300	±ppb	After continuous operating for 1 month at 25°C
	3 mn				
Warm Up	30mn			2 H'r	After 24hours turn off
Rretrace	20			24h	

Phase Noise

Characteristics	Values						Unit	Note
	1 Hz	10 Hz	100Hz	1 KHz	10 KHz	100KHz		
Static Conditions		-110	-130	-140	-150		dBc/Hz	
	1ms	100ms	1s	10s	After 1 hour power on			
Short-term Stability			1.0E-11					

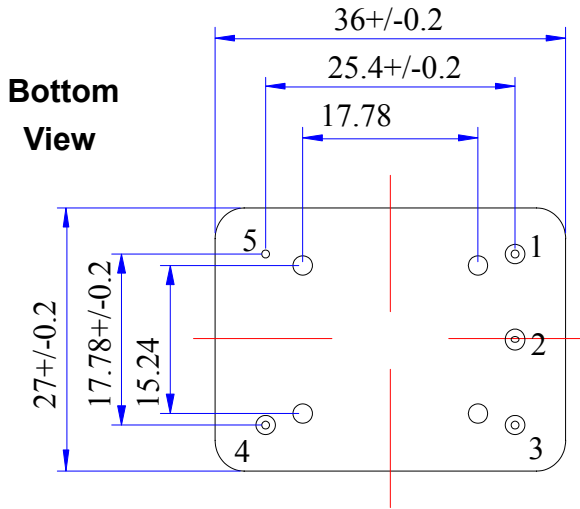
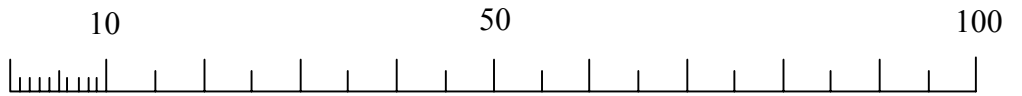
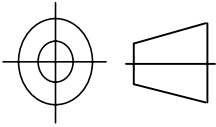
Mechanical Conditions

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

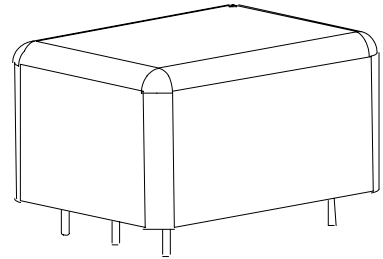
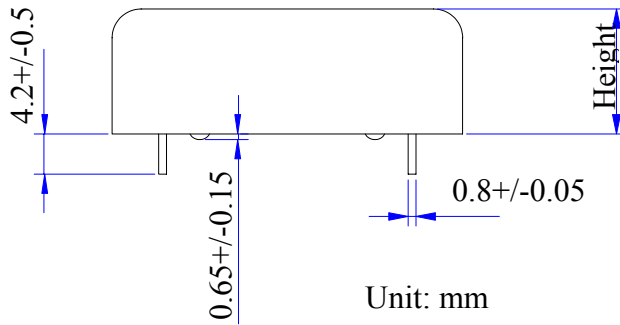
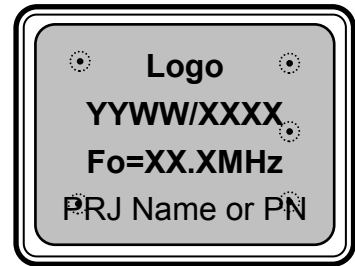
Package - Pin Out

Package Ref.	45	drawing Unit: mm
Maximum package height	12.7mm	
Pin Out	Pin 1: Vctrl Pin 2: Vref Pin 3: Vcc Pin 4: RF Output Pin 5: Case GND	

Mechanical drawing Package Ref. 45

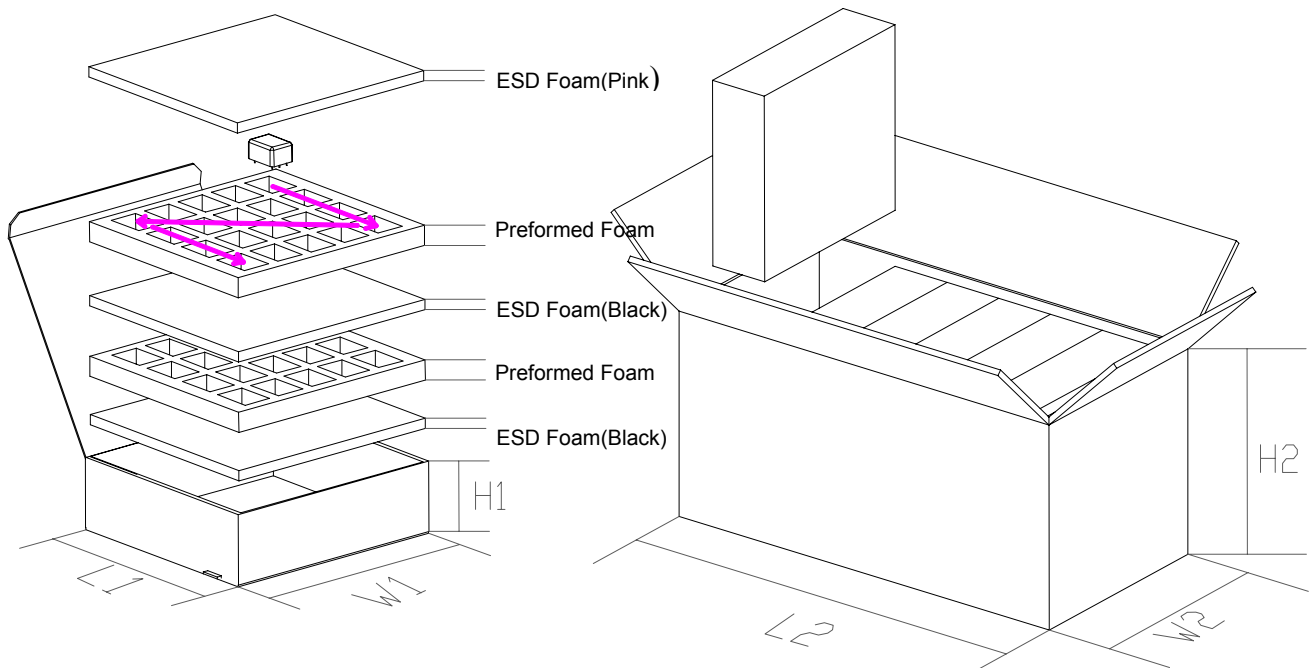


Label

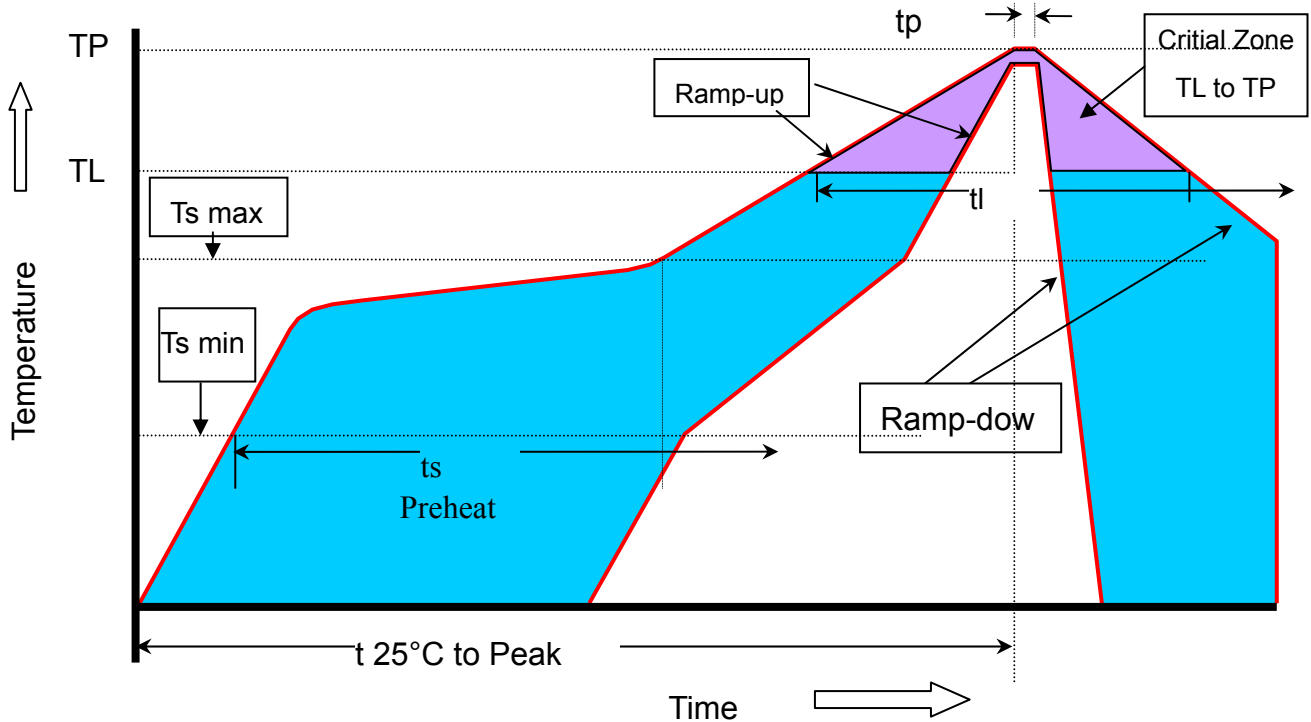


Unit: mm

Packing Style



Internal Carton Box			External Carton Box		
L1	W1	H1	L2	W2	H2
220mm	235mm	70mm	500mm	250mm	250mm
40 pcs OCXOs/Unit			6 Internal Boxes/Unit		



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 T_{smin} -Temperature Min T_{smax} -Time (min to max) (t_s)	120°C 180°C 30-120 seconds	140°C 210°C 30-120 seconds
T_{smax} to T_L - Ramp-up Rate	3°C/second max.	3°C/second max.
Time maintained above - Temperature (T_L) - Time (t_L)	180°C 30-120 seconds	220°C 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.