



TAI-SAW TECHNOLOGY CO., LTD.

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

Issued Date: 5/6/2003 (REV. NO: 2)

Product Name: SMD 3.5x6 24.5535MHz Crystal Unit

TST Parts No.: TZ0129A

Customer Parts No. : _____

Company: _____

Division: _____

Approved by : _____

Date: _____

Checked by: _____ Kelly Huang

Approval by: _____ TF Yang

Date: _____ 5/6/2003



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SMD 3.5x6 24.5535MHz Crystal Unit

MODEL NO.: TZ0129A

REV. NO.: 2

Features:

- Surface Mount Seam Weld Package
- Excellent Aging
- Excellent Frequency Perturbation and Stability over temperature
- Excellent Short Term Stability

RoHS Compliant
Lead free
Lead-free soldering

Description and Applications:

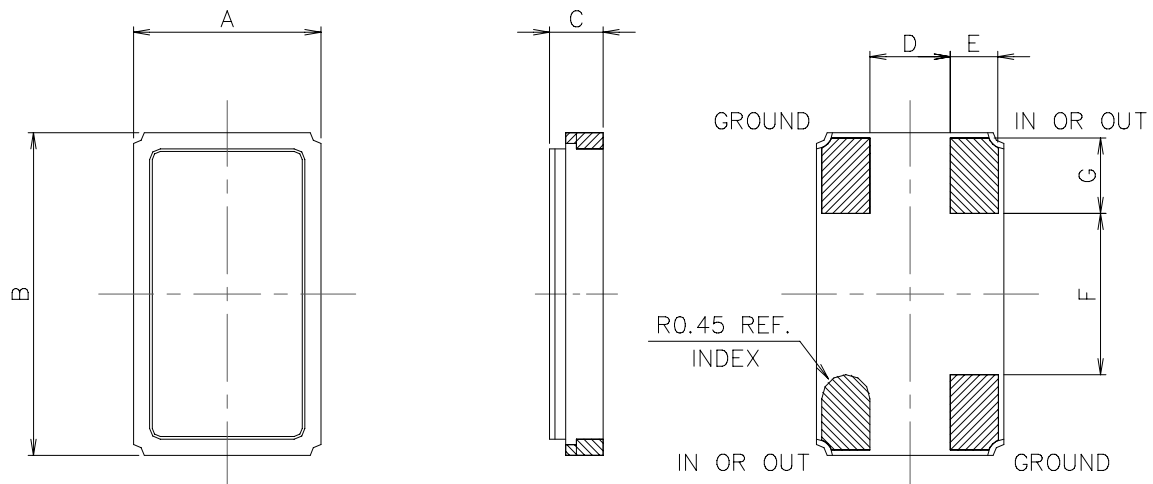
Surface mount 3.5mmx6.0mm AT-cut quartz crystal unit for the SiRF GPS products.

Electrical Specifications:

TZ0129A	Specification
Nominal Frequency	24.553500 MHz
Mode of Oscillation	Fundamental
Storage Temperature Range	-40°C to +85°C
Operating Temperature Range	-40°C to +85°C
Frequency Stability over Operating Temperature	+/-15 ppm
Static Temperature Hysteresis (@25 deg C)	+/- 0.4 ppm
Frequency Perturbations	+/-0.5 ppm
Drive Level	20 uW nominal
Frequency Make Tolerance	±15 ppm @ 25°C +/- 3°C
Equivalent Series Resistance (ESR)	20 Ω max.
Short Term Stability (Root Allan Variance for 1 second Tau)	1.0 ppb max
Shunt Capacitance (Co)	7 pF max
Load Capacitance (CL)	32 pF
Pullability Sensitivity	5.0 ppm/pF+/-20% @ Load 32pF

Drive Level Dependence (Delta R)	0.6 ohms max (20 drive level points: 0.001,0.005, 0.01,0.05,0.1,0.5,1,20,50,100,100,50,20,1,0.5,0.1 ,0.05,0.01,0.005,0.001 uW) differences between same drive level point
Long Term Stability (Aging)	±1.0 ppm/year @25°C
Marking	Laser marking

Mechanical Dimensions (mm):

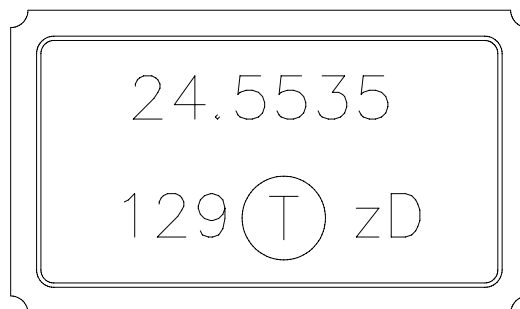


UNIT \ ITEM	A	B	C	D	E	F	G
MM	3.5 ±0.13	6.0 ±0.13	1.0 ±0.16	1.5 ±0.13	0.9 REF.	3.0 ±0.13	1.4 REF.

Marking:

First Line: Frequency (24.5535)

Second Line: TST PN (129)+TST Logo+Crystal Family+Date code

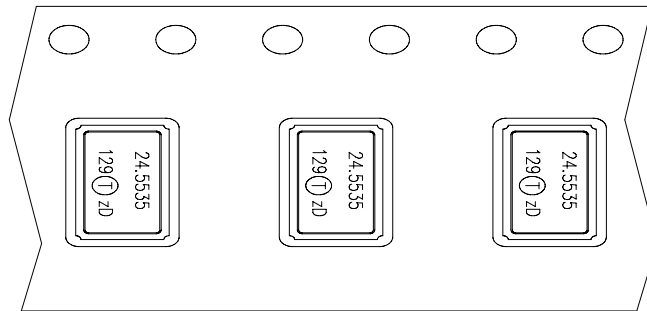


Product Code Table

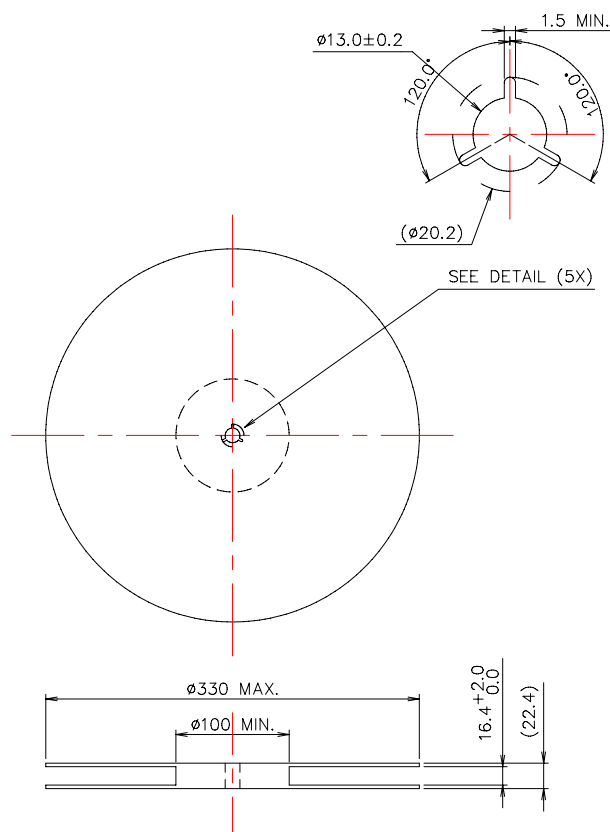
Year	2001 2005	2002 2006	2003 2007	2004 2008
Product Code	Z	z	<u>Z</u>	<u>z</u>

Date Code Table

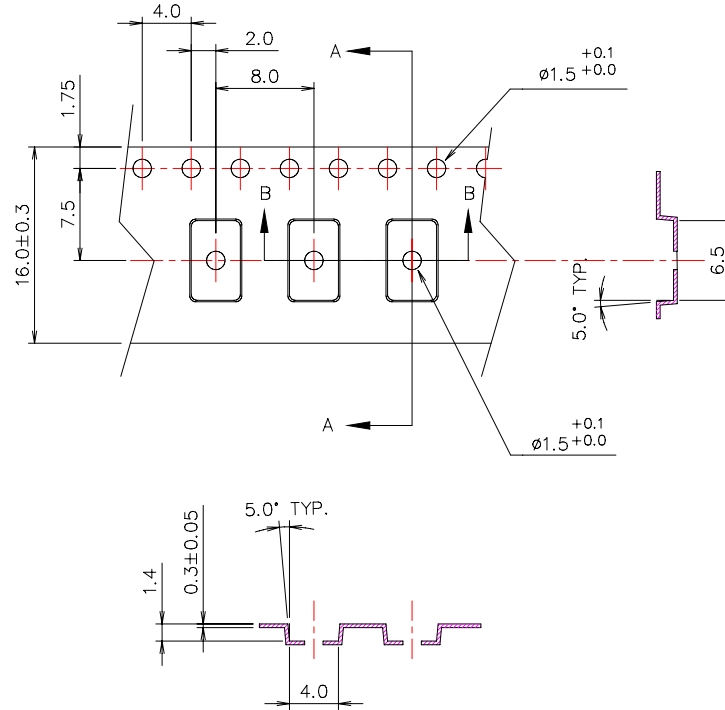
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A	B	C	D	E	F	G	H	I	J	K	L	M
WK14	WK15	WK16	WK17	WK18	WK19	WK20	WK21	WK22	WK23	WK24	WK25	WK26
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
WK27	WK28	WK29	WK30	WK31	WK32	WK33	WK34	WK35	WK36	WK37	WK38	WK39
a	b	c	d	e	f	g	h	i	j	k	l	m
WK40	WK41	WK42	WK43	WK44	WK45	WK46	WK47	WK48	WK49	WK50	WK51	WK52
n	o	p	q	r	s	t	u	v	w	x	y	z



Reel Dimensions (mm):



Tape Dimensions (mm):



Reflow Profile:

1. Preheating shall be fixed at 140 ~ 160 °C for 60 ~ 90 seconds.
2. Ascending time to preheating temperature 150 °C shall be 30 seconds min.
3. Heating shall be fixed at 200 °C for 50 ~ 60 seconds and at 230±10 °C peak.

