

SPECIFICATION FOR APPROVAL

CUSTOMER : _____

PRODUCT TYPE : SMD GLASS SEALING X'TAL 3.2*2.5

NOMINAL FREQ. : 32.000000MHz

TXC P/N : 7V32000035

REVISION : S2

CUSTOMER P/N : _____

PM / SALES : _____

DATE : _____

CUSTOMER SIGNATURE & Date

- (1) TXC requires one copy returned with signature and title of authorized individual that signifies acceptance of the attached specifications.
- (2) Orders received and accepted by TXC after return of signed copy of specification will be produced per these specifications.
- (3) Any changes to these specifications must be agreed upon by both parties and new revision of the Product Specification Sheet will be issued.
- (4) Any issuance of purchase order prior to consigning back the Approval page of "Specification Sheets" from customers will be regarded as the agreement on the contents of these specifications.

Attachment: Product Specification Sheet

1
2
3
4
5

RoHS Compliant

■ ELECTRICAL SPECIFICATIONS

Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurement and tests are as follow:

Ambient temperature : $25\pm 5^{\circ}\text{C}$
Relative humidity : 40%~70%

If there is any doubt about the results, measurement shall be made within the following limits:

Ambient temperature : $25\pm 3^{\circ}\text{C}$
Relative humidity : 40%~70%

Measure equipment

Electrical characteristics measured by HP E5100A or equivalent.

Crystal cutting type

The crystal is using AT CUT (thickness shear mode).

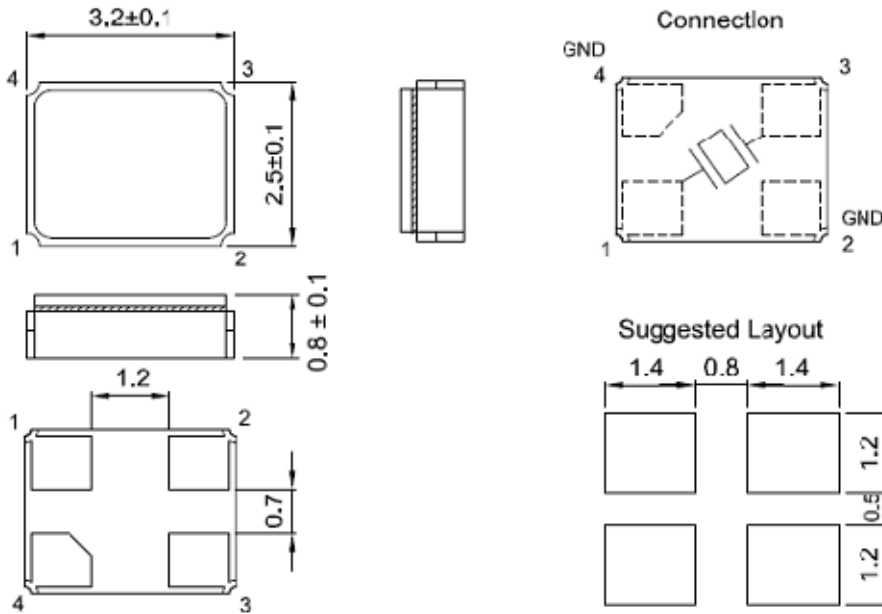
Unit Weight:

0.018±0.001 g/pcs

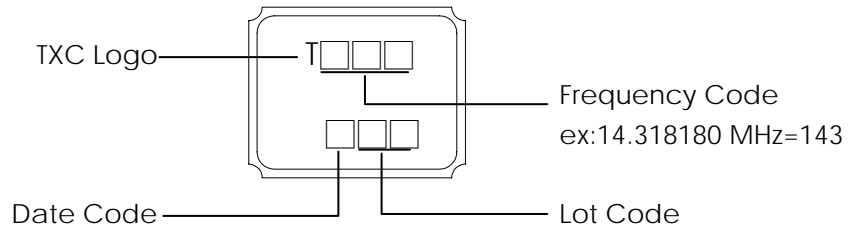
	Parameters	SYM.	Electrical Spec.				Notes
			MIN	TYPE	MAX	UNITS	
1	Nominal Frequency	FL	32.000000			MHz	-
2	Oscillation Mode	-	Fundamental			-	-
3	Load Capacitance	CL	12			pF	-
4	Frequency Tolerance	-	±10			ppm	at $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
5	Series Resonant Resistance	Rr	-	-	50	Ω	-
6	Operating Temperature Range	-	-20	~	70	$^{\circ}\text{C}$	-
7	Frequency Tolerance	-	±10			ppm	Over Operating Temp. Range (Reference 25°C)
8	Drive Level	DL	-	50	-	μW	-
9	Shunt Capacitance	C0	-	-	-	pF	-
10	Aging	-	±2			ppm	1st Year
11	Insulation Resistance	-	500	-	-	M Ω	at DC 100V
12	Storage Temperature Range	-	-40	~	85	$^{\circ}\text{C}$	-

■ DIMENSIONS

UNIT:mm



■ MARKING



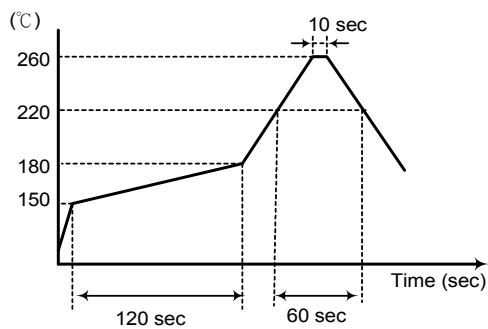
Date Code

YEAR					MONTH											
					JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2001	2005	2009	2013	2017	A	B	C	D	E	F	G	H	J	K	L	M
2002	2006	2010	2014	2018	N	P	Q	R	S	T	U	V	W	X	Y	Z
2003	2007	2011	2015	2019	a	b	c	d	e	f	g	h	j	k	l	m
2004	2008	2012	2016	2020	n	p	q	r	s	t	u	v	w	x	y	z

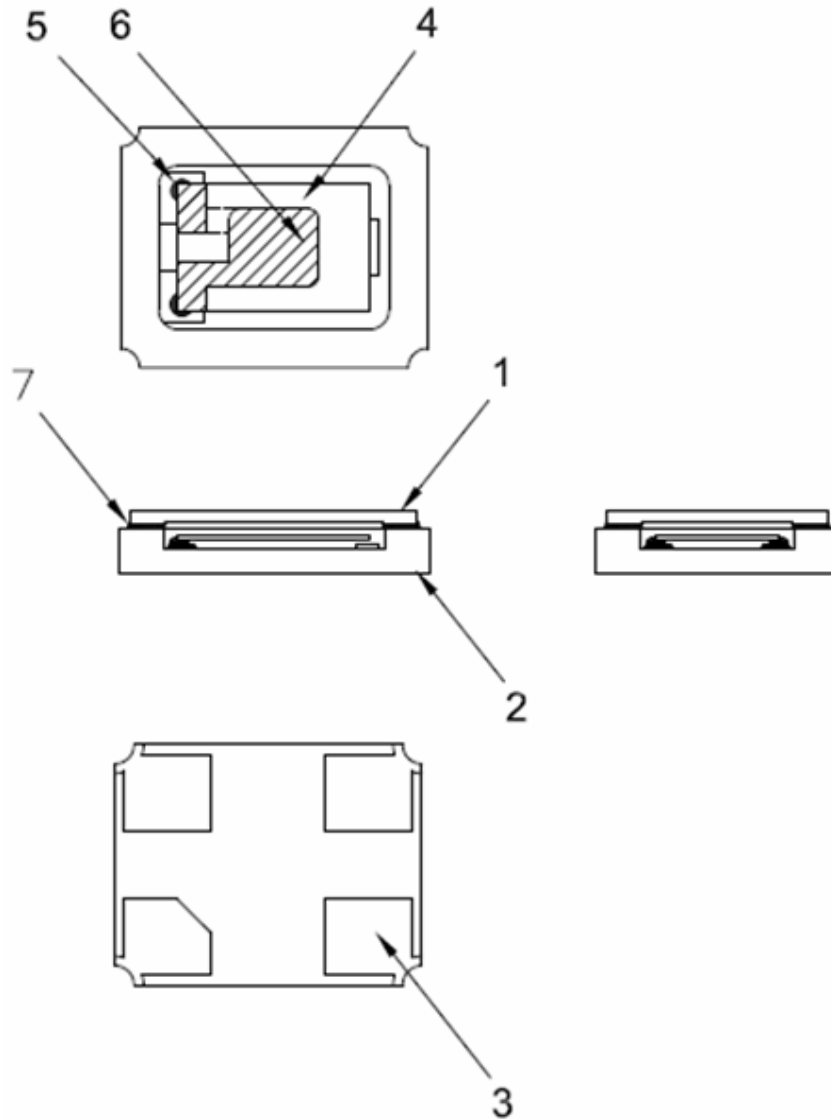
This date code will be cycled every four years

■ SUGGESTED REFLOW PROFILE

Total time : 200 sec. Max.
Solder melting point :220 °C

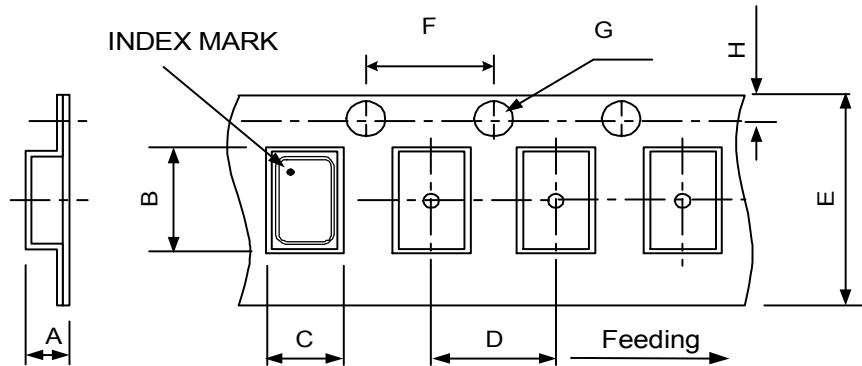


■ STRUCTURE ILLUSTRATION



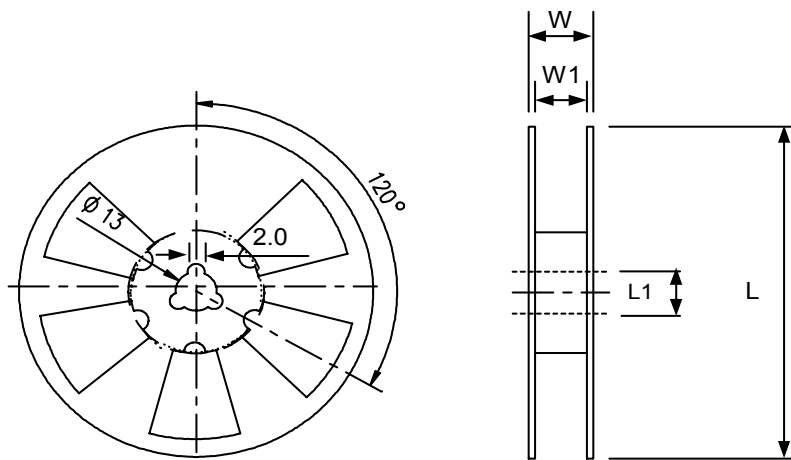
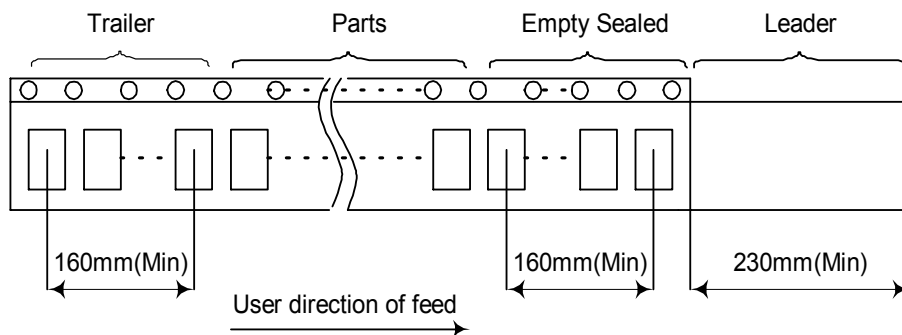
NO	COMPONENTS	MATERIALS	QTY	FINISH/SPECIFICATIONS
1	Cap	Ceramic	1	Color black
2	Package	Ceramic	1	Color black
3	PAD	Au	4	Tungsten metalize + Ni plating + Au plating
4	Crystal blank	SiO ₂	1	-
5	Conductive adhesive	Ag	4	Silicon resin
6	Electrode	Ag + Cr	2	-
7	Glass	-	-	-

■ PACKING : (EIA-481-2)



DIMENSIONS	A	B	C	D	E	F	G	H	(UNIT : mm)
	1.40	3.40	2.70	4.00	8.00	4.00	1.50	1.75	

REMARK :



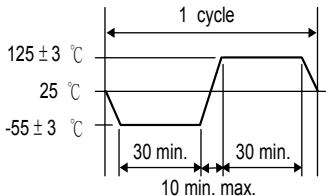
DIMENSIONS	L	L1	W	W1	pcs / Reel (UNIT : mm)
	178	13	11.5	8	Standard Reel Quantity is 3,000 pcs per reel

■ RELIABILITY SPECIFICATIONS

1. Mechanical Endurance

No.	Test Item	Test Methods	CRITIREA	REF.DOC
1.1	Drop Test	100 cm height, 3 times on concrete floor.	$\Delta F/F < +/- 5\text{ppm}$ $\Delta Cl < +/- 5 \text{ Ohm}$	JIS C6701
1.2	Mechanical Shock	Device are shocked to half sine wave (1000 G) three mutually perpendicular axes each 3 times. 0.5m sec. duration time	$\Delta F/F < +/- 5\text{ppm}$ $\Delta Cl < +/- 5 \text{ Ohm}$	MIL-STD-202F
1.3	Vibration	Frequency range 10 ~ 2000 Hz Amplitude 1.52 mm/20G Sweep time 20 minute Perpendicular axes each test time 4 hours (Total test time 12 hours)	$\Delta F/F < +/- 5\text{ppm}$ $\Delta Cl < +/- 5 \text{ Ohm}$	MIL-STD-883E
1.4	Solder ability	Temperature 240 °C ± 5°C Immersing depth 0.5 mm minimum Immersion time 5 ± 1 seconds Flux Rosin resin methyl alcohol solvent (1 : 4)	Check by Microscope At Least 95% Coated	MIL-STD-883E

2. Environmental Endurance

No.	Test Item	Test Methods	CRITIREA	REF. DOC
2.1	Resistance To Soldering Heat	Pre-heat temperature 125 °C Pre-heat time 60 ~ 120 sec. Test temperature 260 ± 5 °C Test time 10 ± 1 sec. Times 3	$\Delta F/F < +/- 5\text{ppm}$ $\Delta Cl < +/- 5 \text{ Ohm}$	MIL-STD-202F
2.2	High Temp. Storage	+ 125 °C ± 3 °C for 500 ± 12 hours	$\Delta F/F < +/- 5\text{ppm}$ $\Delta Cl < +/- 5 \text{ Ohm}$	MIL-STD-883E
2.3	Low Temp. Storage	- 40 °C ± 3 °C for 500 ± 12 hours	$\Delta F/F < +/- 5\text{ppm}$ $\Delta Cl < +/- 5 \text{ Ohm}$	
2.4	Thermal Shock	Total 100 cycles of the following temperature cycle 	$\Delta F/F < +/- 5\text{ppm}$ $\Delta Cl < +/- 5 \text{ Ohm}$	MIL-STD-883E
2.5	High Temp & Humidity	85°C ± 3°C, RH 85%, 500Hrs	$\Delta F/F < +/- 5\text{ppm}$ $\Delta Cl < +/- 5 \text{ Ohm}$	JIS C5023