

CRYSTAL UNITS

ASK



CZ Series Ceramic SMD Crystal

- Ultra miniature and lightweight SMD crystal resonator.
- Tight tolerance / stability.
- Bluetooth, WIFI, GPS, ISM...



PART NUMBER GUIDE

CZ-25 - 16.0 - 15 - 2D - 8

PACKAGE TYPE

CZ-32 : SMD - 3.2X2.5x0.8mm
CZ-25 : SMD - 2.5X2.0x0.55mm
CZ-20 : SMD - 2.0X1.6x0.5mm

FREQUENCY

12.000MHz~80.000MHz (CZ-32, CZ-25)
 16.000MHz~80.000MHz (CZ-20)

LOAD CAPACITANCE

8.0 : 8,0pF

TABLE 1

FREQUENCY TOLERANCE AT 25°C

15 : ±15ppm

ELECTRICAL SPECIFICATIONS

MODEL	CZ-25
Frequency Range (Fundamental)	16.0MHz (Fundamental)
Operating Temperature Range	-10°C to +70°C
Storage Temperature Range	-55°C to +125°C
Frequency Tolerance (at 25°C)	±15ppm
Frequency Stability over Operating Temperature Range	±15ppm
Circuit	250B
Load Capacitance (CL)	8.0pF
Drive Level	50µW Typ. 100µW Max.
Electrostatic Capacitance	3.0pF Max.
ESR	100 ohms Max
Insulation Resistance	More than 500 Mohms at DC100V
Aging (at 25°C)	±2ppm/year Max

* : Available

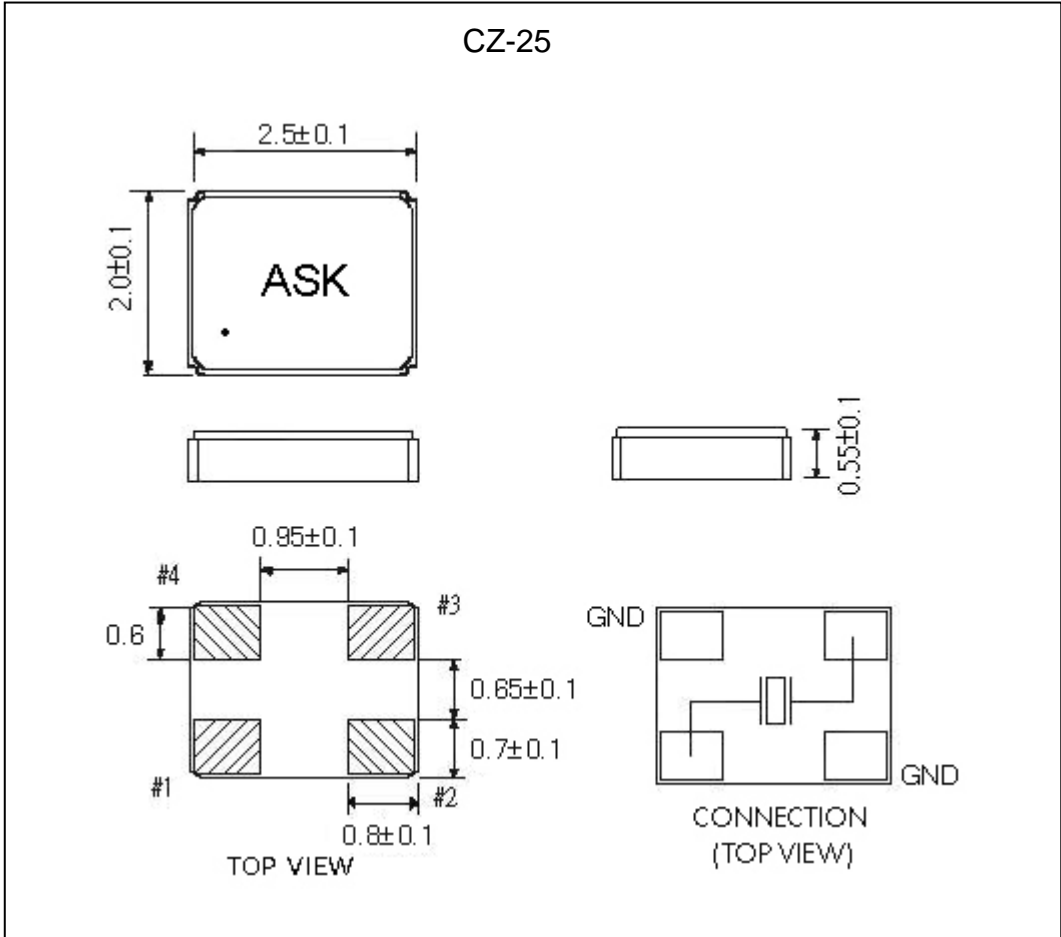
TABLE 1

FREQUENCY STABILITY VS. TEMPERATURE RANGE							
Stability Temp		±10	±15	±20	±30	±50	±100
		1	2	3	4	5	6
-10~+60°C	A			*	*	*	*
-20~+60°C	B	*	*	*	*	*	*
0~+70°C	C	*	*	*	*	*	*
-10~+70°C	D	*	*	*	*	*	*
-20~+70°C	E	*	*	*	*	*	*
-30~+85°C	F	*	*	*	*	*	*
-40~+90°C	G			*	*	*	*

MARKING

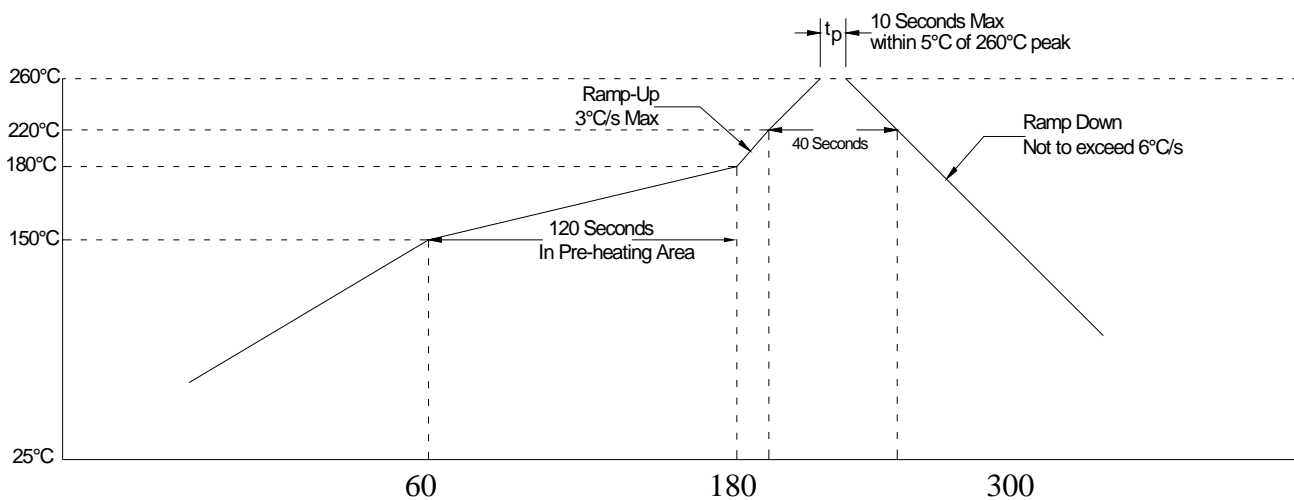
16.0

MECHANICAL DIMENSION



SPECIFICATION OF CRYSTAL

Soldering reflow



RoHS compliance - Reflow soldering temperature : 260°C max.

Pb-free compliance

Component and Assembly Pb content shall be less than 0.1% by weight of the device (in accordance with IPC/EIA J-STD-006) and shall not be intentionally introduced.

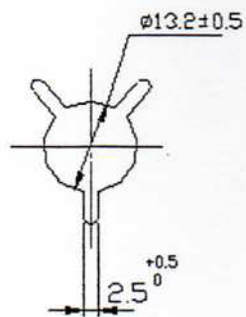
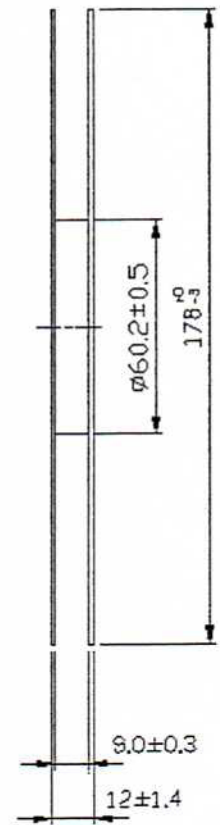
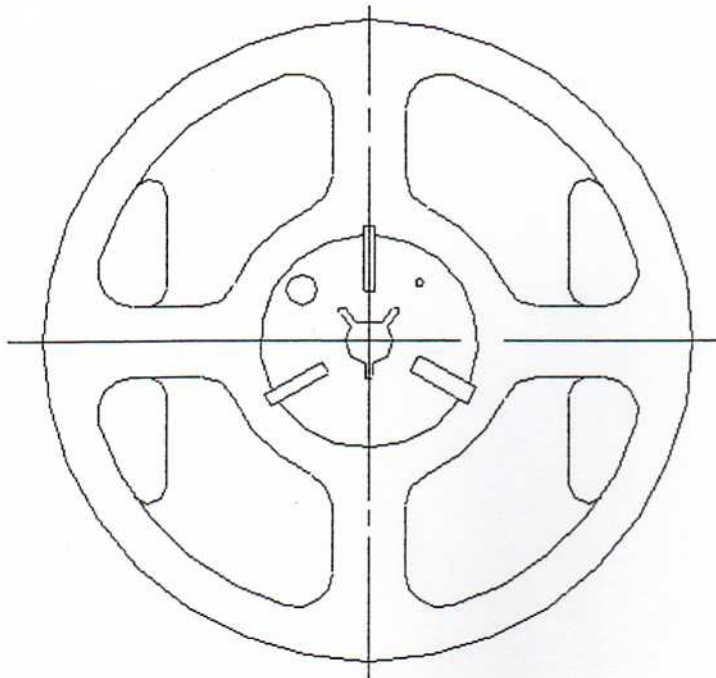
Product Information

For a product to be **RoHS** compliant, it must satisfy several conditions:

- Contain no more than the specified limits of the target hazardous substances set out in the RoHS Directive
- Able to withstand Pb-free 260°C solder reflow profile below
- External packaging and terminations are Pb-free
- Internal PCB, components, solders, and terminations are Pb-free

MECHANICAL DIMENSION

Reel



Unit:mm

Q'ty : 2500/pcs/Reel

SPECIFICATION OF CRYSTAL

Reliability Test (applicable to OSC and SMD type X'tal)

Test Items	Test Condition	Specification	
		General OSC (Note:1)	General X' tal (Note:2)
1. Gross Leak Test	FC-40 125°C/30sec	No continuous bubble	
2. Fine Leak Test	Bombing of He 5kg/cm ² for 2 hours	Less than 1*10 ⁻⁸ atm.c.c./sec, Helium	
3. Drop Test	Free dropped a. ~19.999MHz(Fund.) → 100 cm height b. 20~29.999MHz(Fund.) → 50 cm height c. 30~ MHz(Fund.) → 20 cm height on a hard wooden board for 3 times (board is thickness more than 30 mm)	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
4. Vibration Test	Freq. range: 10~55Hz Peak to peak amplitude:1.5mm Peak acceleration:10 G 3 direction(X,Y,Z) , each 60min.	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
5. Resistance to Soldering Test	a. IR Reflow furnace with the condition 2 times. Peak temp. 260±3°C , 10sec(Min.)	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec. For SMD OSC only	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
	b. Dip terminals in a 260±5°C solder bath for 5±0.5 sec.	At least 90% of each dipped area shall be covered by fresh solder. For DIP OSC only.	NA
6. Bending Test	Bending cycle : 1 cycle 0° -> 45° -> 0° -> 45° -> 0°	$\Delta F \leq \pm 5\text{PPM}$, Duty within spec. For DIP OSC only.	NA
7. Share Test	Weight : 10N, Test duration : 10±1 sec	$\Delta F \leq \pm 5\text{PPM}$, Duty within spec. For SMD OSC only.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
8. Low Temp. Exposure Test	-40±3°C , 240±12 hrs	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
9. Aging Test	125±3°C , 240±12hrs	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
10. High Temp. & Humidity Test	+85°C±5°C & 85%±5% R.H. , 240±12 hrs	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
11. Temperature Cycling Test	-40±3°C/15±3min ~ +85±3°C/15±3min 15cycles	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$

Note:1 → For communication application the spec. demanded " $\Delta F \leq \pm 5\text{ PPM}$, Duty within spec." .

Note:2 → For communication application the spec. demanded " $\Delta F \leq \pm 5\text{ PPM}$, $\Delta \text{C.I.} \leq \pm 5\text{ ohms}$ " .