



# SPECIFICATION

**KSE-7U24000MAF143ZA3**

## Crystal Resonators

### SMD Seam 3.2×2.5×0.7mm 7U Series

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#### FEATURE

- Reliable seam sealed ceramic package.
- Wide operating temperature range.
- Superior performance and stringent reliability in harsh environment.
- Application: TPMS, ECM, ABS and sensor modules.
- Compact size.
- RoHS Compliant / Pb Free.

#### ELECTRICAL SPECIFICATIONS

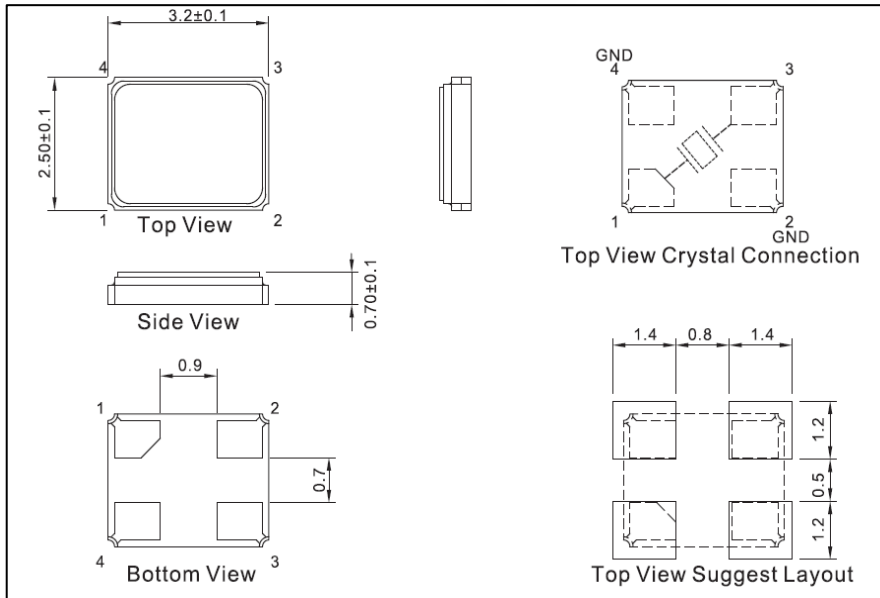
Nominal Frequency	24.000MHz
Mode	AT/Fundamental
Frequency Tolerance (at 25°C)	±10ppm
Frequency Stability Over Operating Temperature Characteristics	±30ppm
Operating Temperature Range	-40°C to +85°C
Storage Temperature Range	-55°C to +125°C
Shunt Capacitance (C0)	3.0 PF Max
Driver Level (DL)	100µW Typical
Load Capacitance(CL)	16PF
Equivalent Series Resistance(ESR)	60Ω Max
Aging @25°C first year (Max)	±3ppm/year

REMARK: SPECIFICATIONS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE,  
PLEASE CONFIRM WITH OUR SALES ENGINEER.

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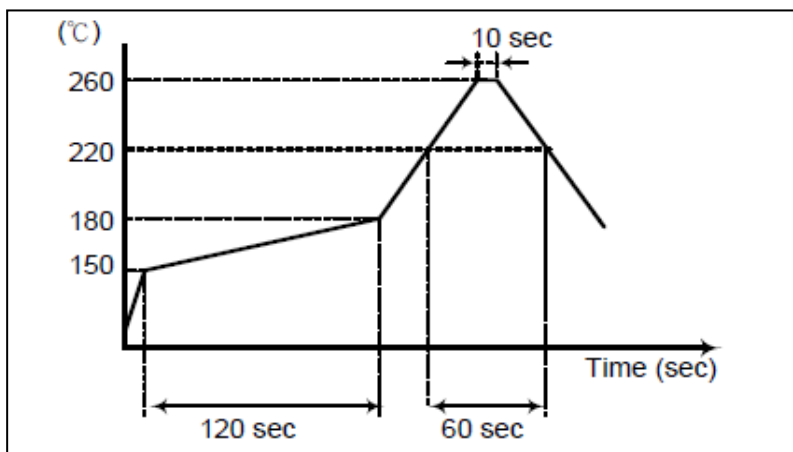
### DIMENSION (Unit: mm)



### MARK



### REFLOW CONDITION



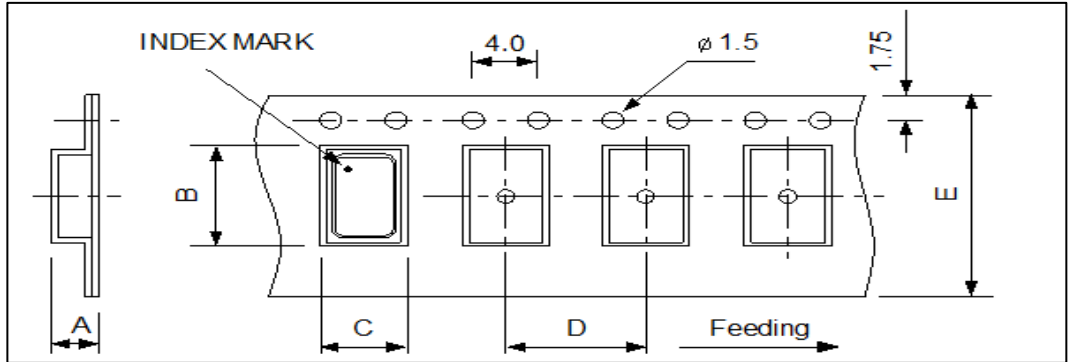
The reflow temperature profile may vary depending on the product model, specifications and frequency range. Refer to the individual product specifications for details

*The design, manufacturing process, and specifications of this device are subject to change without notice.*

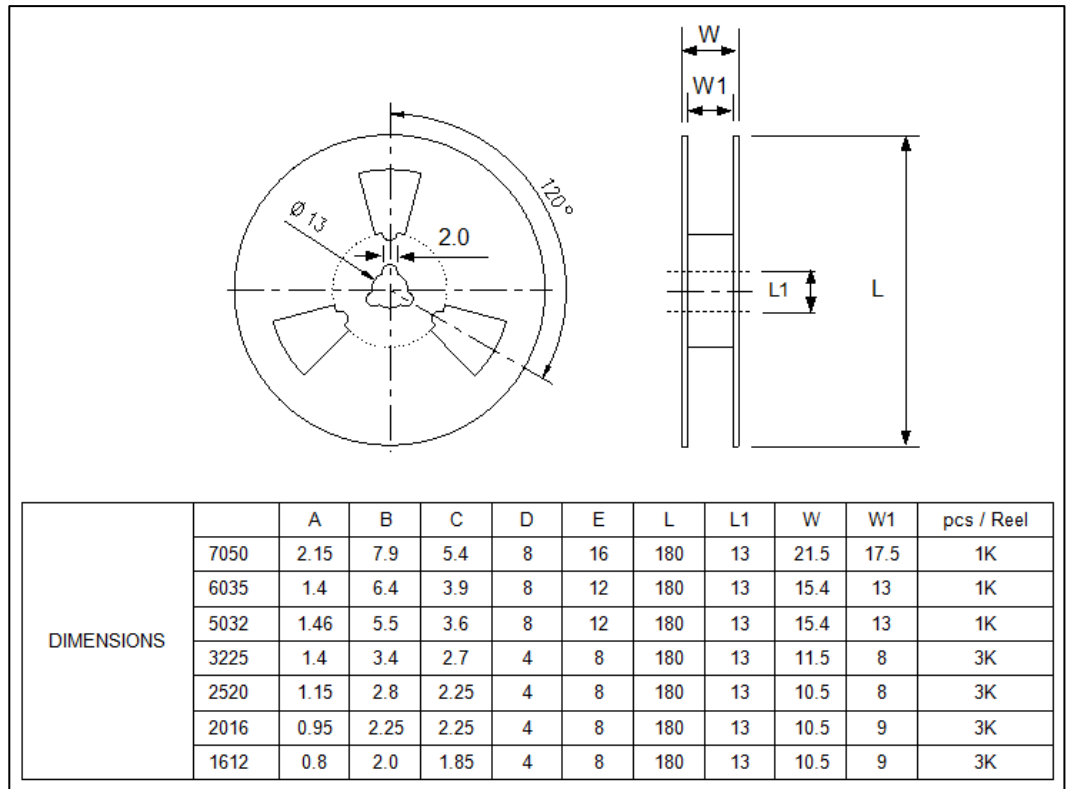
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### CARRIER TYPE



### REEL



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### RELIABILITY TEST SPECIFICATIONS

Test item	Equipment	Condition	Specification
1.SOLDERABILITY TEST	SK-REL001、RC-328A	TP:260℃ TsMax: 200℃ TsMin: 150℃ 2 time 	MIL-STD-883E Method 2003.7
2. HERMETICITY TEST	HELIOT-306S	Pressurized 0.4~0.5Mpa ethanol sealed tank for 10 minutes	MIL-STD-883E Method 1014.10
3. VIBRATION TEST	HG-V4、 S&A 250B	Enable Crystal(10g) from 10-55-10Hz,X、 Y、 Z horizontal,1 Minute vibration/time, 1time/ 2 hours.	MIL-STD-883E Method 2007.3
4. MECHANICAL SHOCK	HPC-200、 S&A 250B	Enable Crystal 50G(490m/s <sup>2</sup> ) time=11 ms speed=3.4 m/s half sine wave oscillation	JIS C6701
5. DROP TEST	HARD BOARD.S&A250B	75cm High,3 times on hard board	MIL-STD-202F Method 213B
6. HIGH&LOW TEMP STORAGE TEST(Static test)	H-PTH-80CK & HM101-3ABN, S&A 350B/250B	High temperature: 125℃±2℃,1000hr; Low temperature:-40℃±3℃,1000hrs	MIL-STD883C, METHOD 1011.8
7. TEMP &HUM CYCLING TEST	H-PTH-80CK CHAMBE, S&A 350B/250B	Temperature:-10℃±2℃~65℃±2℃,Humidity:93±3%,1 cycle need 24 hrs. 5cycles.	MIL-STD-883E Method 1005.8
8. HIGH TEM. & HUM.STORAGE TEST	H-PTH-80CK CHAMBE, S&A350B/250B	Temperature:85℃±2, Humidity:85+3,-2%,Store 96 hrs	JIS C6701
9. AGING TEST	H-PTH-80CK CHAMBE, S&A350B/250	Temperature:85℃±2, Store 1000 hrs	JIS C5023

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