

CERAMIC SMD TYPE

SCO-22

- External Dimensions : 2.5 × 2.0 mm
- 0.9 V to 5.0 V Operating Supply Voltage Range
- High Stability with AT-Cut crystal
- CMOS Output
- Tri-state Function Available

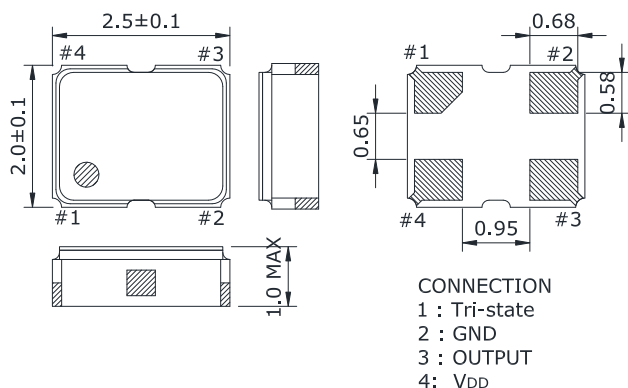


■ ELECTRICAL SPECIFICATIONS

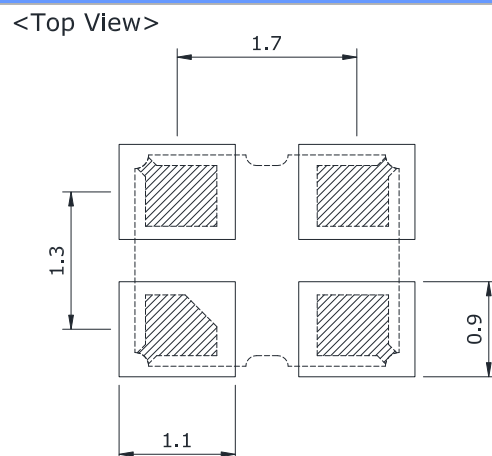
ITEM	Value	Remarks
Output Logic Type	CMOS	CMOS XO
Frequency Range*	1.000 ~ 50 MHz (0.9 V _{DC} ~ 1.5 V _{DC}) 1.000 ~ 60 MHz (1.8 V _{DC} ~ 5.0 V _{DC})	
Supply Voltage(V _{DD})	0.9, 1.2, 1.5, 1.8, 2.5, 3.3 & 5.0 V _{DC} ±5 %	
Operating Temperature Range	0 to +70 °C, -20 to +70 °C, -40 to +85 °C	
Storage Temperature Range	-55 to +125 °C	
Frequency Stability	±20 ppm, ±25 ppm, ±50 ppm, ±100 ppm Max.	Over operating temperature range
Input Current	10(0.9~1.8V), 15(2.5V), 25(3.3V, 5.0V)	mA Max.
Output Voltage Logic High(V _{OH})	90 % of V _{DD} Min.	
Output Voltage Logic Low(V _{OL})	10 % of V _{DD} Max.	
Rise / Fall Time	10 ns Max.	Measured over 10 % to 90 % of waveform
Duty Cycle	45 to 55 %, 40 to 60 %	Measured at 50 % of waveform
Start-up Time	10 ms Max.	
Output Load Condition(CMOS)	15 pF Max.	
Output Enable Function (V _{IH} and V _{IL})	70 % of V _{DD} Min. to Enable Output 30 % of V _{DD} Max. to Disable Output	High Impedance
RMS Phase Jitter	1 ps Max.	BW : 12 kHz to 20 MHz
Frequency Aging	±3 ppm Max.	25°C, First year

* Please contact us about developed standard frequencies

■ MECHANICAL DIMENSIONS (mm)



■ LAND PATTERN (mm)

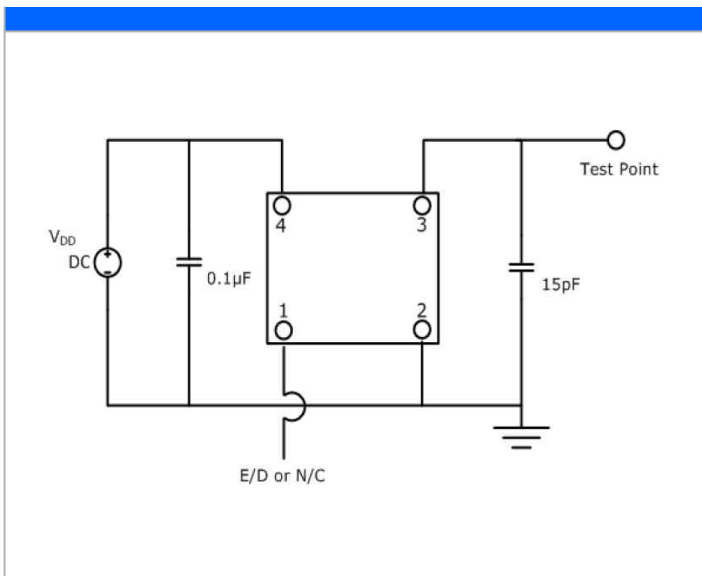


■ PART NUMBERING GUIDE

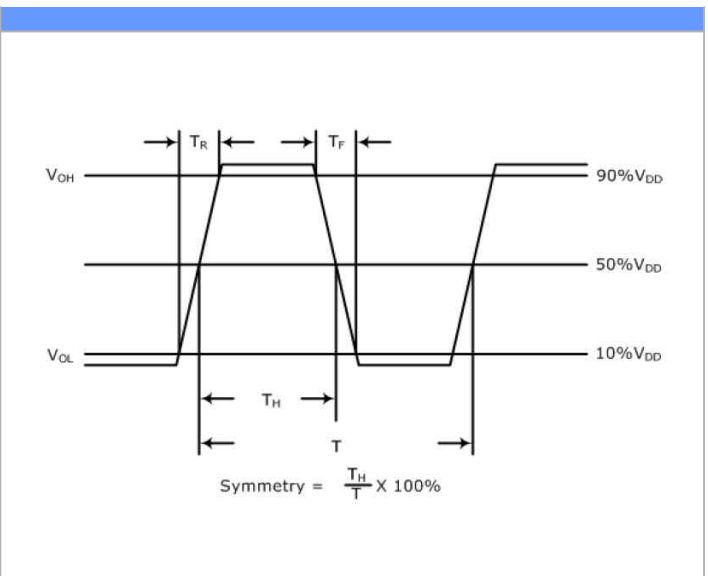
SCO - 223 50 B D S R - 27.000M

<p>SUPPLY VOLTAGE(V_{DD}) 5: 5.0 V, 3 : 3.3 V, 2 : 2.5 V 18: 1.8 V, 15 : 1.5 V, 12 : 1.2 V 9: 0.9 V</p> <p>FREQUENCY STABILITY 20 : ±20 ppm , 25 : ±25 ppm 50 : ±50 ppm , BLANK : ±100 ppm</p> <p>OPERATING TEMPERAURE RANGE A : -40 to 85 °C, B : -20 to 70 °C BLANK : 0 to 70 °C</p> <p>DUTY CYCLE D : 45/55, E : 40/60</p>	<p>FREQUENCY M : MHz</p> <p>PACKAGE OPTION R : TAPE AND REEL BLANK : BULK</p> <p>PIN 1 CONNECTION S : TRI-STATE, E/D BLANK : NO CONNECTION</p>
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■ TEST CIRCUIT (CMOS)



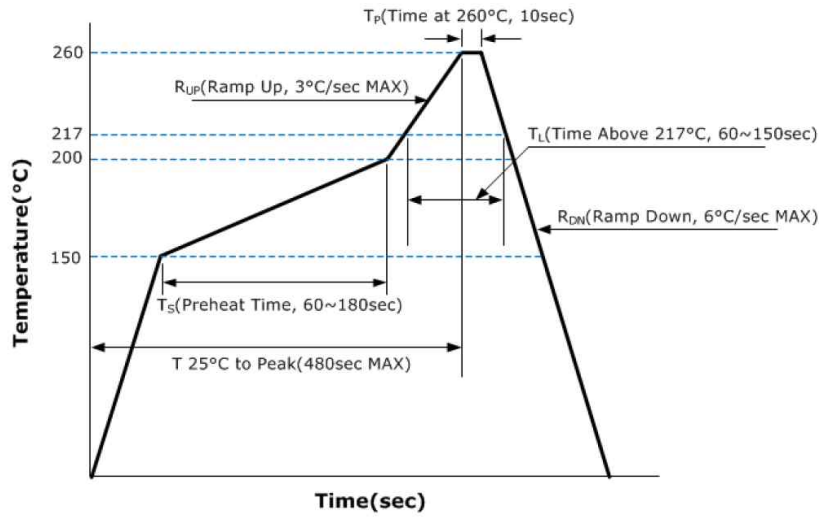
■ WAVEFORM (CMOS)



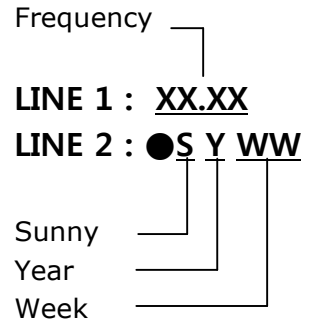
■ ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

Temperature Cycling	MIL-STD-883, Method 1010, Condition B
Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Vibration	MIL-STD-883, Method 2007, Condition A
Moisture Resistance	MIL-STD-883, Method 1004
Moisture Sensitivity	J-STD-020, MSL 1
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition K
Solderability	MIL-STD-883, Method 2003

REFLOW PROFILE

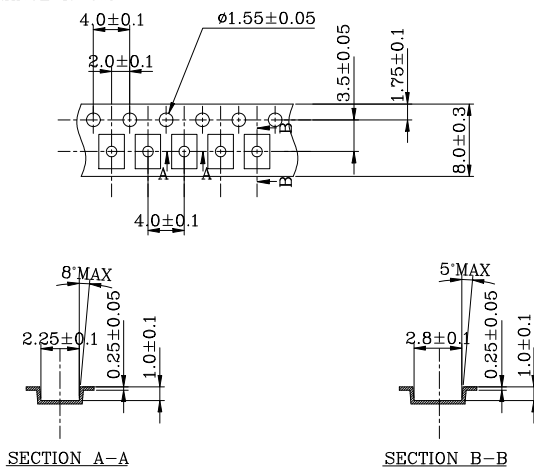


MARKING GUIDE

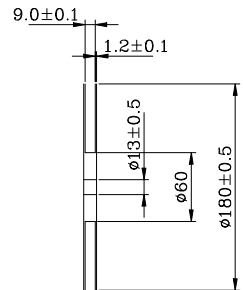
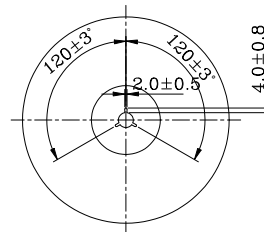


TAPE AND REEL DIMENSIONS

MAT'L : P.S
 COLOR : BLACK
 REFERENCE R=0.2



MAT'L : P.S
 COLOR : BLACK



NOTE

- 1. COVER TAPE : 5.4mm(WIDTH)X0.06mm(t) MAT'L : PET
- 2. COLOR : WHITE