

Automotive & Industrial Grade Miniature SMD Crystal Oscillator



ASAAIG



2.0 x 1.6 x 0.8mm
RoHS/RoHS II Compliant
 MSL = N/A: Not Applicable

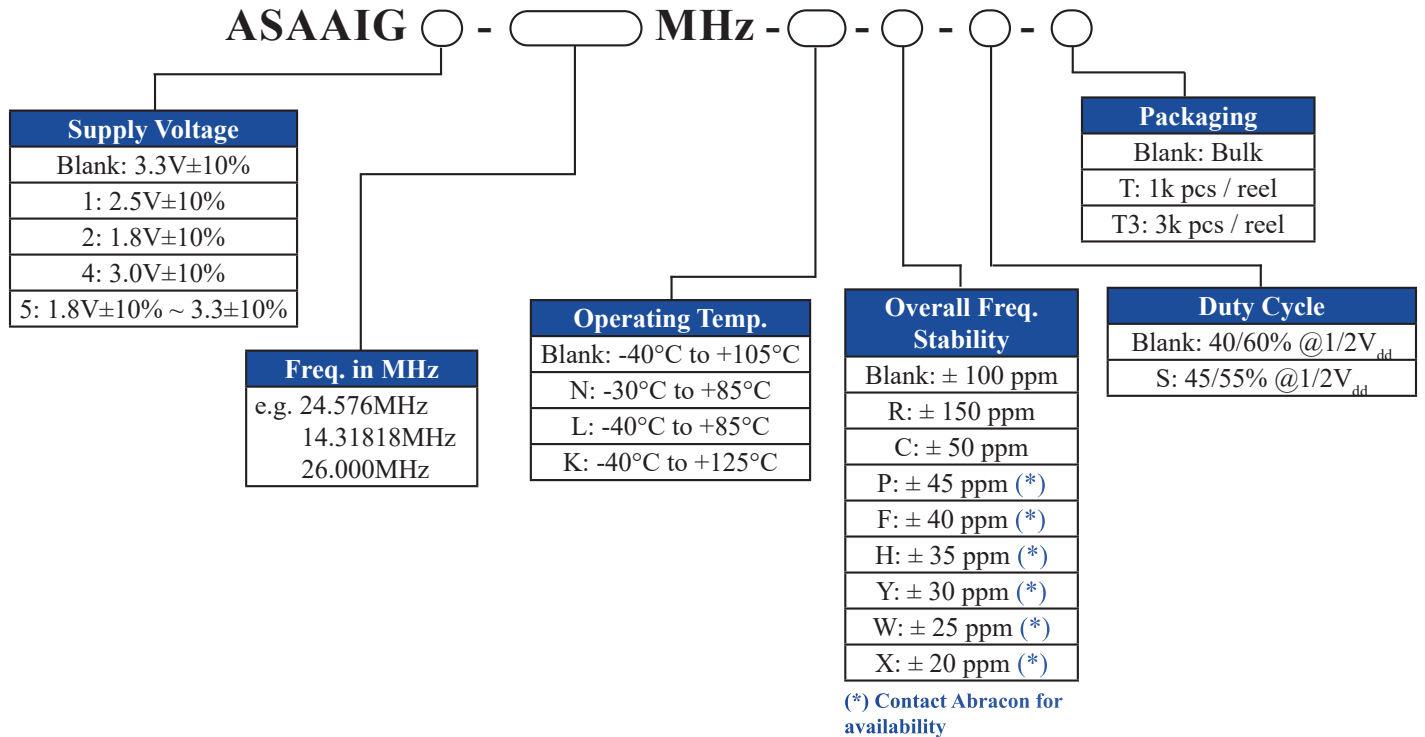
Features

- AEC-Q200 Qualified
- Automotive Grade 1: -40°C to +125°C
- TS16949 Production Line Certified
- PPAP Available Upon Request
- Hermetically Seam-sealed Ceramic Package
- RoHS/RoHS II Compliant and Pb free

Applications

- Infotainment Systems
- Keyless Entry & Startup
- GPS & Navigation
- Comfort control
- ADAS (Advanced Driver Assistance Systems)
- Vehicle to Vehicle Communication
- LiDAR (Light Detection and Ranging)
- In-vehicle Networking
- Powertrain & Drive Control
- Power Control & Conversion
- Industrial Control & Automation

Part Identification (left blank if standard)





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Electrical Specifications

Parameters		Min.	Typ.	Max.	Unit	Notes		
Frequency Range		1.25		100	MHz			
Operating Temperature Range		-40		+105	°C	Option "blank"; See options		
		-40		+125		Option "K"; See options		
Storage Temperature		-55		+125	°C	Option "K, blank, L, N"		
Overall Frequency Stability [Note 1]		-50		+50	ppm	Option "C"; See options		
		-100		+100		Option "blank"; See options		
		-150		+150		Option "R"; See options		
Supply Voltage (V_{dd})		+1.62	+1.8 ~ +3.3	+3.63	V	Option "5"		
		+2.97	+3.3	+3.63		Option "blank"		
		+2.70	+3.0	+3.30		Option "4"		
		+2.25	+2.5	+2.75		Option "1"		
		+1.62	+1.8	+1.98		Option "2"		
Supply Current (I_{dd}) into 15pF Load		$V_{dd} = 3.3$ V			mA	1.25MHz ≤ F ≤ 20 MHz		
						2.0	5.0	20 MHz < F ≤ 50 MHz
						4.0	10.0	50 MHz < F ≤ 100 MHz
		$V_{dd} = 3.0$ V				2.0	5.0	1.25MHz ≤ F ≤ 20 MHz
						3.5	10.0	20 MHz < F ≤ 50 MHz
						5.0	15.0	50 MHz < F ≤ 100 MHz
		$V_{dd} = 2.5$ V				2.0	5.0	1.25MHz ≤ F ≤ 20 MHz
						3.0	10.0	20 MHz < F ≤ 50 MHz
						4.5	15.0	50 MHz < F ≤ 100 MHz
		$V_{dd} = 1.8$ V				1.5	5.0	1.25MHz ≤ F ≤ 20 MHz
						2.5	5.0	20 MHz < F ≤ 50 MHz
						3.5	10.0	50 MHz < F ≤ 100 MHz
Disable Current				10.0	μA			
Output Load				15	pF	CMOS		
Output Voltage		V_{OH}	$0.9 \cdot V_{dd}$		V			
		V_{OL}		$0.1 \cdot V_{dd}$				
Tri-state function		"1" ($V_{IH} \geq 0.7 \cdot V_{dd}$) or Open: Oscillation; "0" ($V_{IH} < 0.3 \cdot V_{dd}$): No oscillation/Hi Z						
Aging		-2.0		+2.0	ppm	@25°C ± 3°C First year		
Symmetry @ $1/2 V_{dd}$		40	50	60	%	Option "blank"		
		45	50	55		Option "S"		
Start-up Time			2.0	5.0	ms			
Rise/Fall Time (T_r/T_f)				10.0	ns			
RMS Phase Jitter @ +25°C (10 - 39MHz: 12kHz to 5MHz) (>39MHz: 12kHz to 20MHz)			0.5	< 1.0	ps			

Note 1: Inclusive of initial tolerance at time of shipment, changes in supply voltage, load, temperature and 1st year

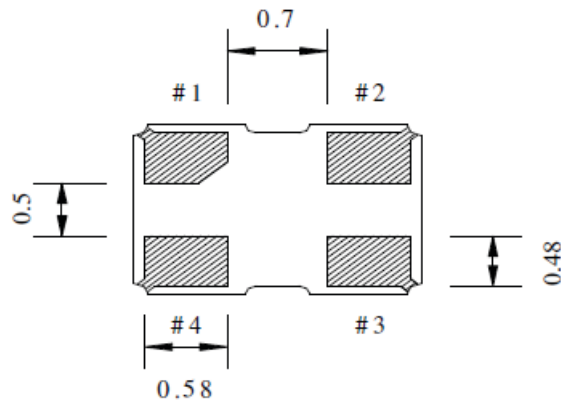
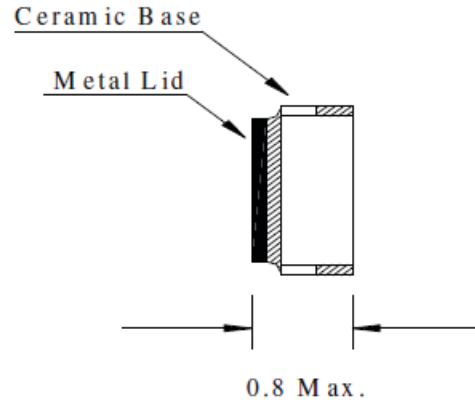
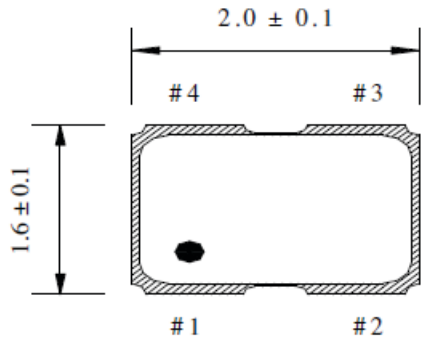


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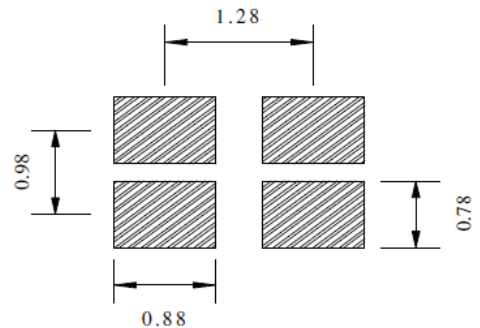


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Mechanical Dimensions



Recommended Land Pattern



Pin #	Function
1	Tri-state
2	GND
3	Output
4	V _{dd}

Dimensions: mm

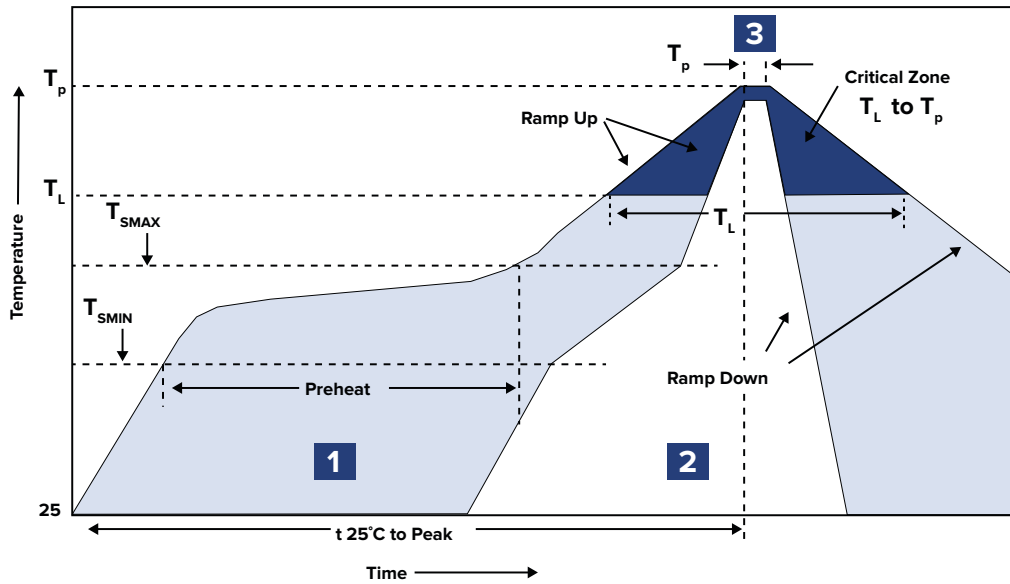


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Reflow Profile



Zone	Description	Temperature	Time
1	Preheat / Soak	$T_{SMIN} \sim T_{SMAX}$ 150°C ~ 180°C	60 ~ 120 sec.
2	Reflow	T_L 230°C	30 ~ 40 sec.
3	Peak heat	T_P 260°C±5°C	5 sec. MAX



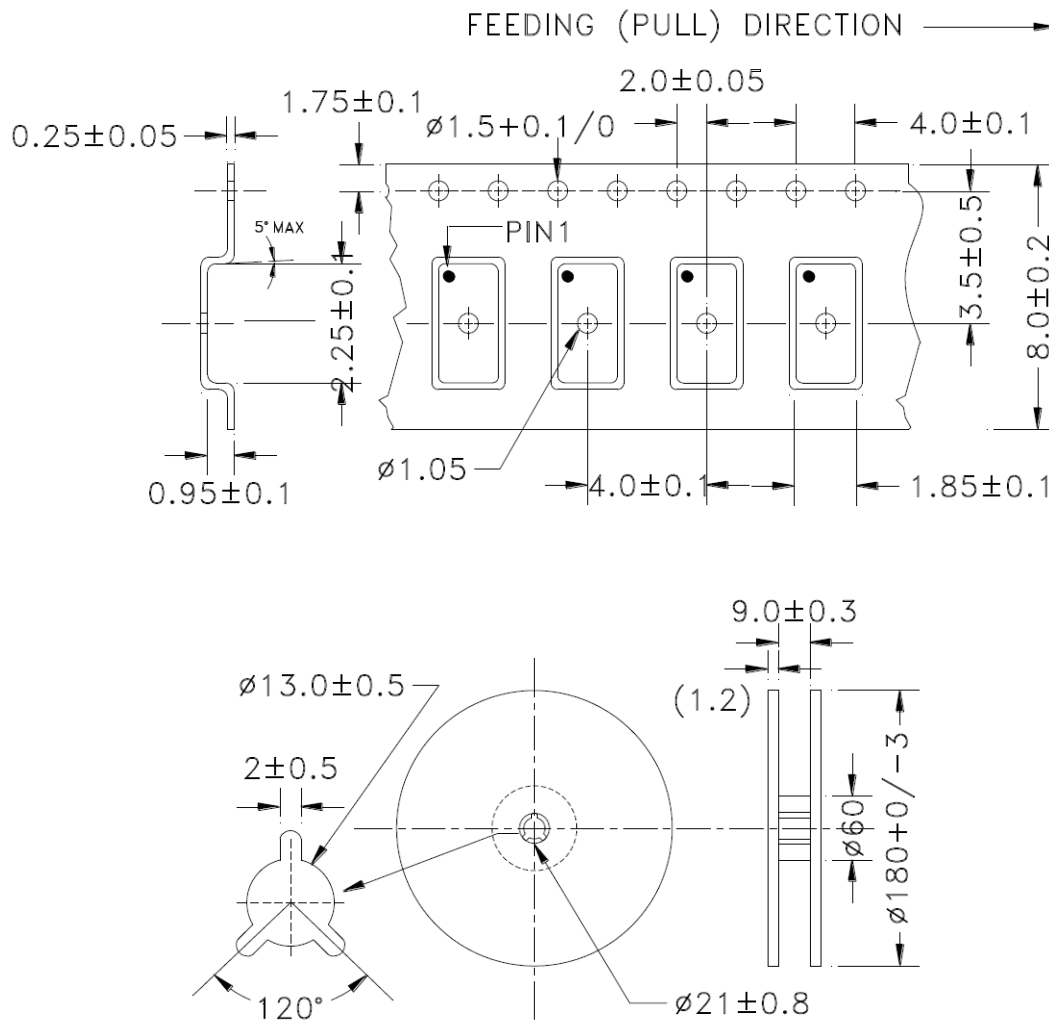
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Packaging

Tape and Reel:
 T: 1,000pcs/reel
 T3: 3,000pcs/reel



Dimensions: mm

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