

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

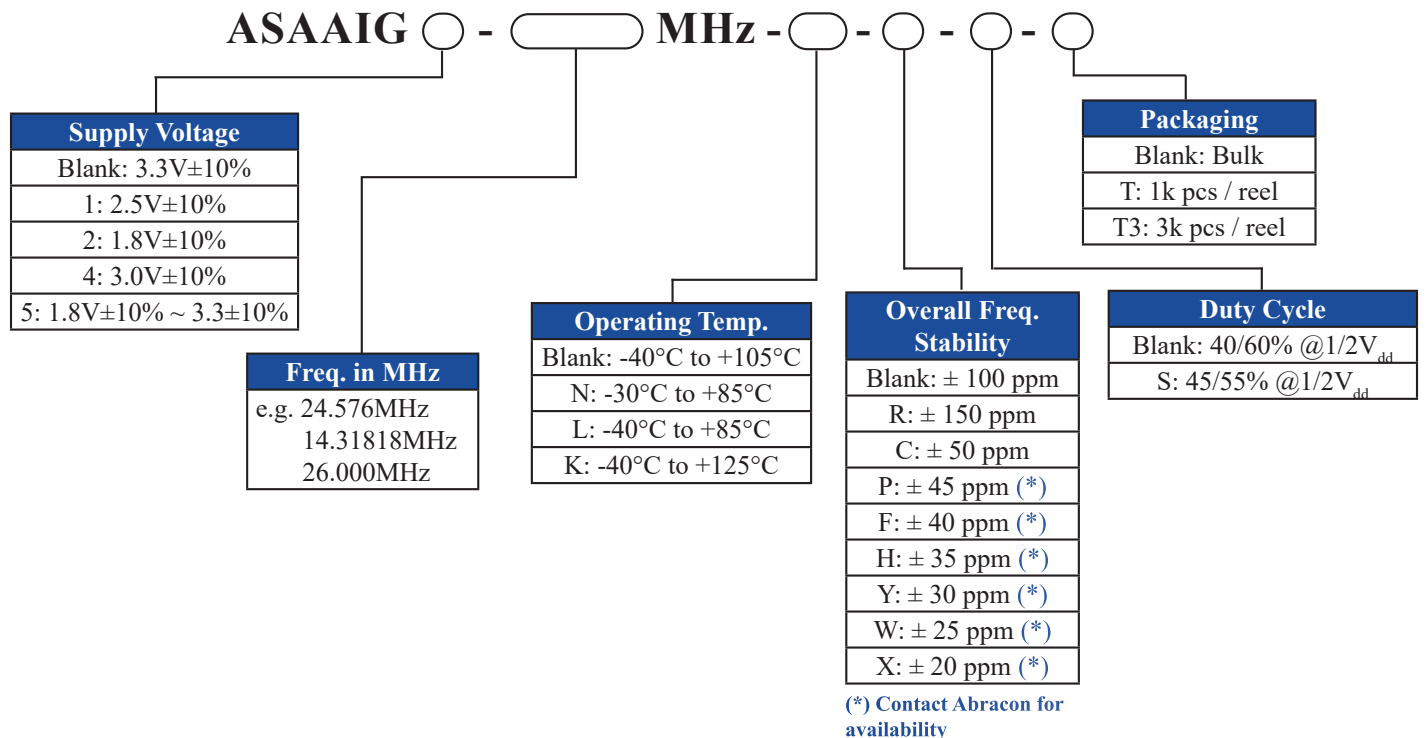
Features

- 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		2.0	5.0	mA	1.25MHz ≤ F ≤ 20 MHz
			4.0	10.0		20 MHz < F ≤ 50 MHz
			6.0	15.0		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*V _{dd}			V	
	V _{OL}			0.1*V _{dd}		
Tri-state function		“1” (VIH≥0.7*Vdd) or Open: Oscillation; “0” (VIH<0.3*Vdd): No oscillation/Hi Z				
Aging		-2.0		+2.0	ppm	@25°C± 3°C First year
Symmetry @1/2V _{dd}		40	50	60	%	Option “blank”
		45	50	55		Option “S”
Start-up Time			2.0	5.0	ms	
Rise/Fall Time (Tr/Tf)				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

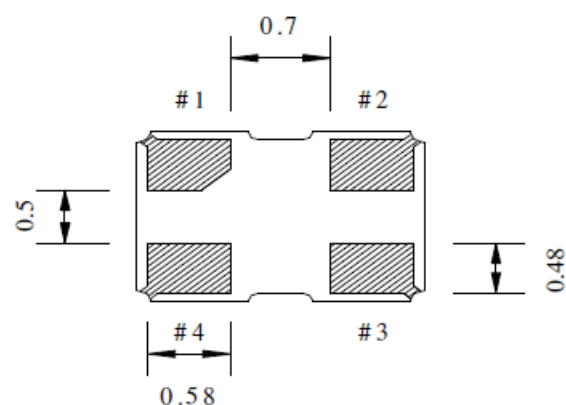
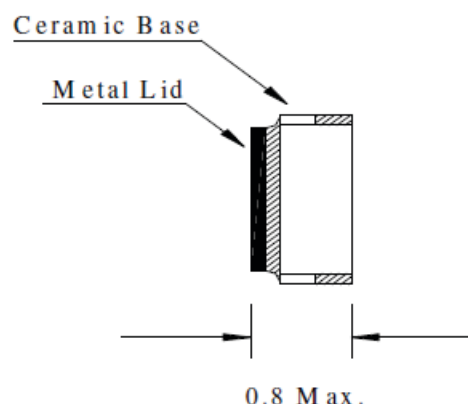
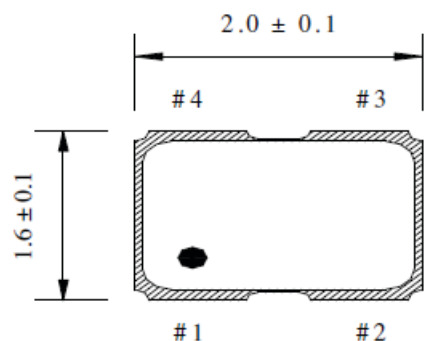


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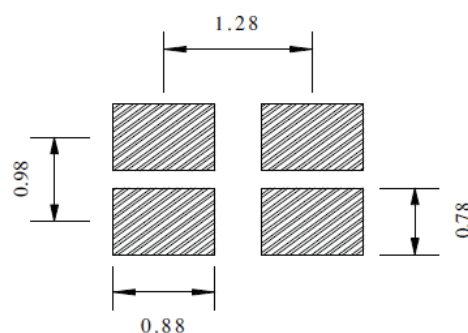


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Mechanical Dimensions



Recommended Land Pattern



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

Dimensions: mm

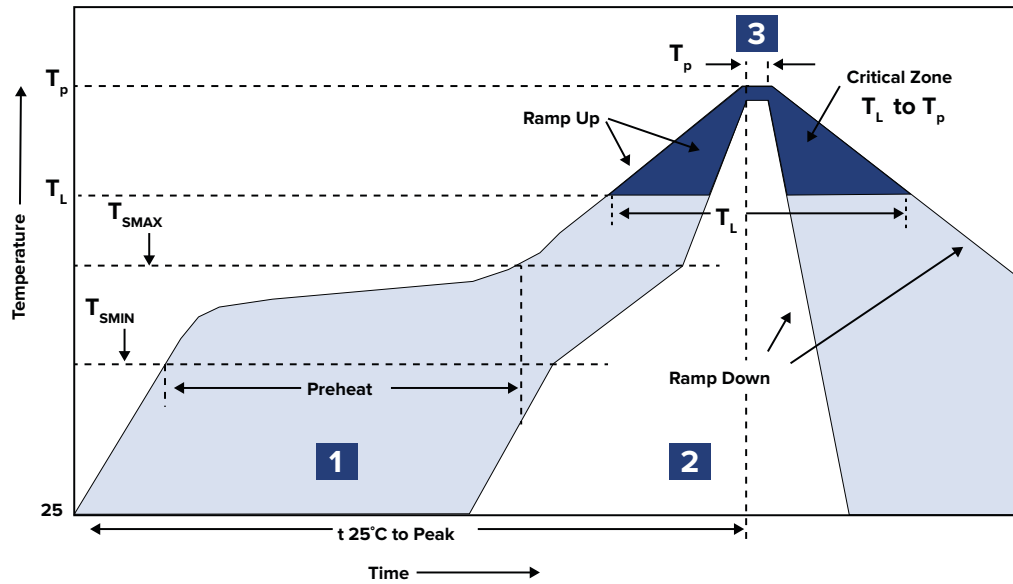


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Reflow Profile



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



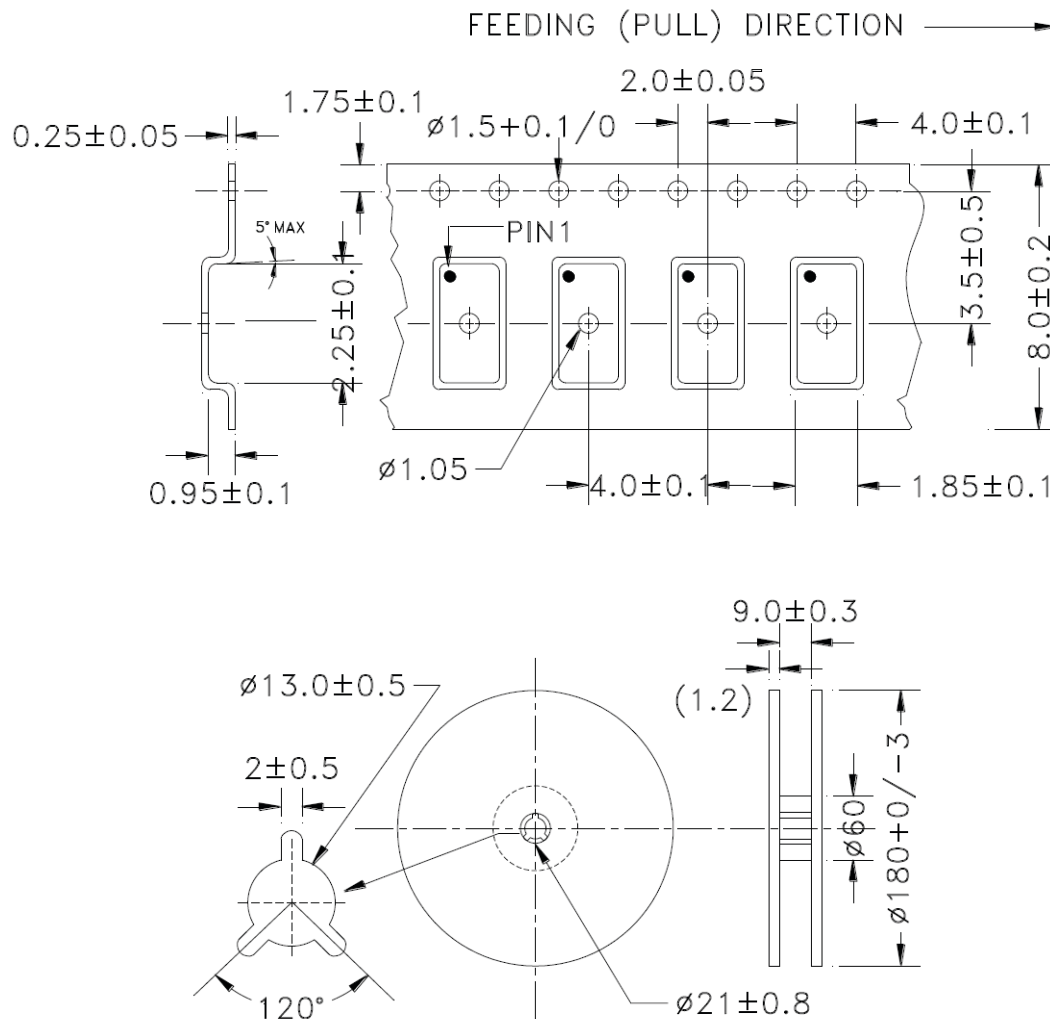
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Packaging

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



Dimensions: mm

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