

Description

The ABS06AIG series is an automotive grade AEC-Q200 tuning fork 32.768kHz quartz crystal offered in a 2.05mm x 1.2mm x 0.6mm two-pad SMD package. The ABS06AIG series offers an industry standard frequency accuracy at +25°C±3°C (±20ppm), an operating temperature range of -40°C to +125°C, and load capacitance (CL) options that are commonly integrated into commercial and industrial end applications such as communication equipment, measuring equipment, and wireless devices.



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
- [REACH/RoHS II Compliant](#) | [MSL Level N/A](#)

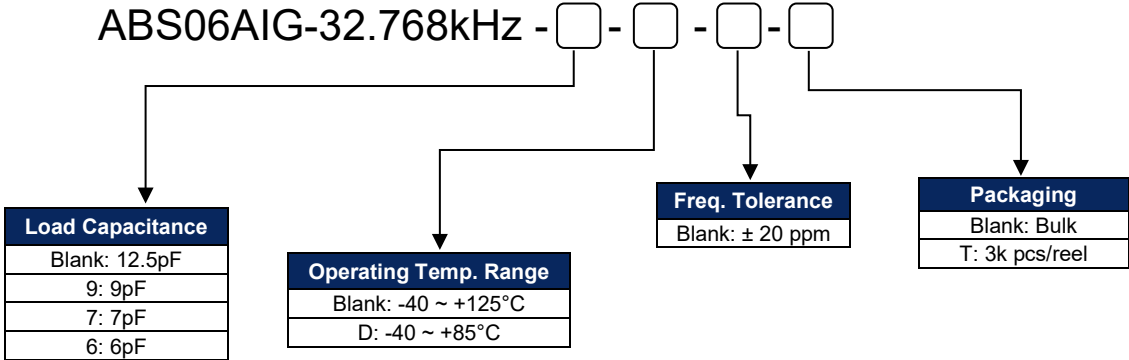
Typical Applications

- 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

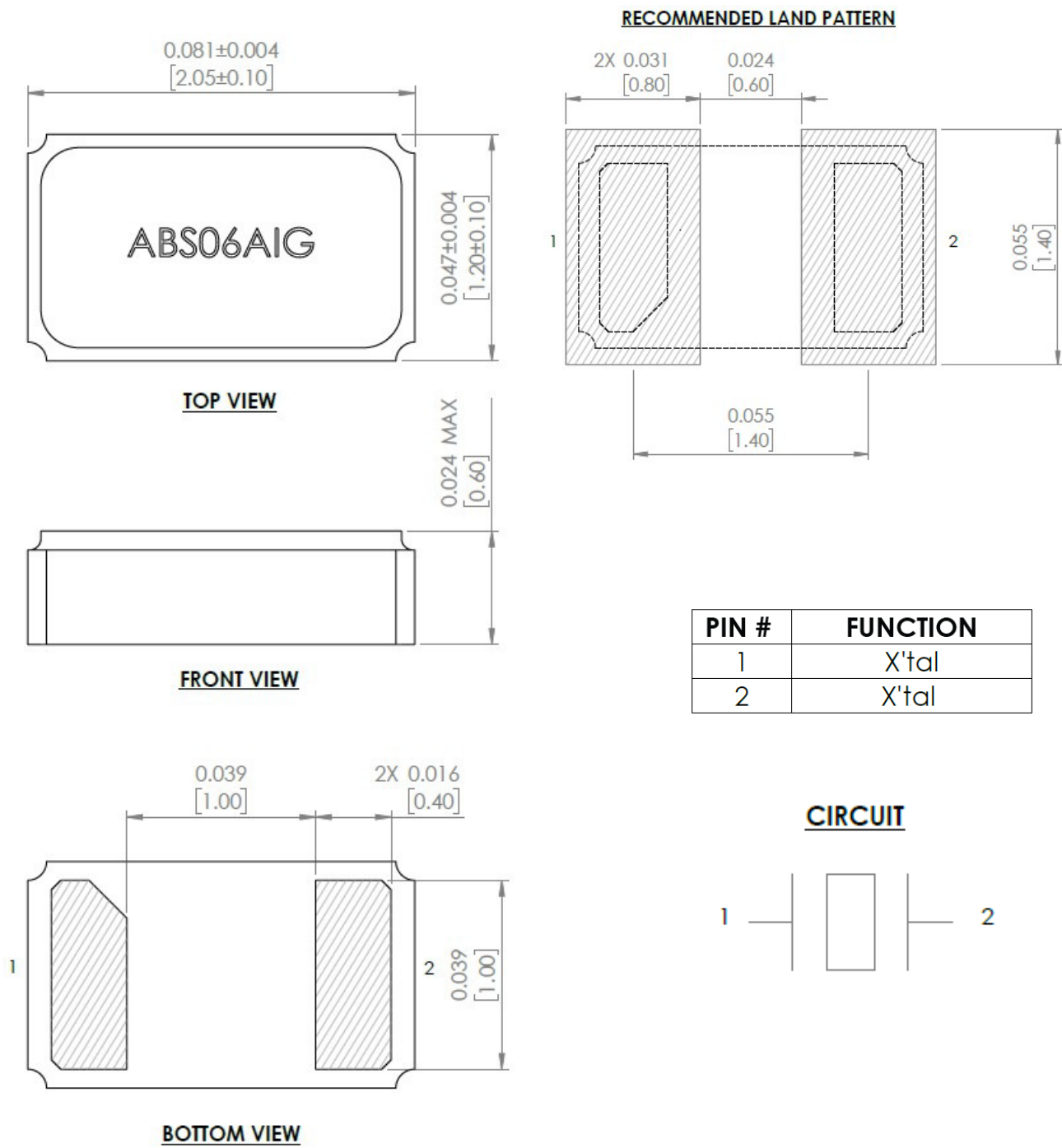
Electrical Specifications

Parameters	Min.	Typ.	Max.	Units	Notes
Frequency	32.768			kHz	
Operation Mode	Flexural Mode (Tuning Fork)				
Operating Temperature Range	-40		+125	°C	Option "blank"; See options
Storage Temperature Range	-55		+125	°C	
Frequency Tolerance @ +25°C±3°C	-20		+20	ppm	
Temperature Coefficient	-0.041	-0.036	-0.031	ppm/C ²	
Turn-over Temperature	+20	+25	+30	°C	
Equivalent Series Resistance (R1)			90	kΩ	@ -40°C to 85°C
			90	kΩ	@ -40°C to 125°C
Shunt capacitance (C0)			1.4	pF	
Load Capacitance (CL)		12.5		pF	See options
Drive Level		0.1	0.5	μW	
Aging	-3		+3	ppm	@25°C± 3°C First year
Insulation Resistance	200			MΩ	@ 100Vdc ± 15V

Part Identification



Mechanical Dimensions



Dimensions: inches [mm]

Reflow Profile [JEDEC J-STD-020D-1]

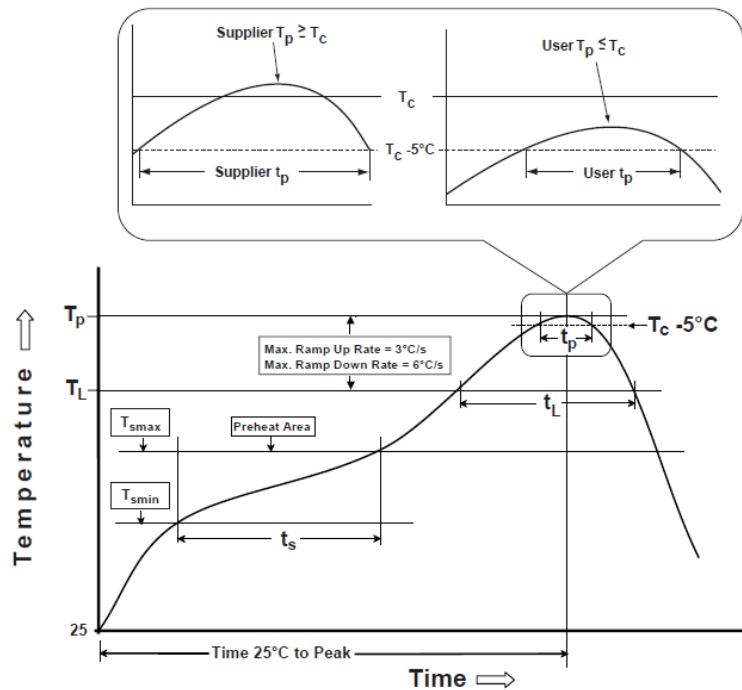


Table 1

SnPb Eutectic Process
Classification Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2

Pb-Free Process
Classification Temperatures (T_c)

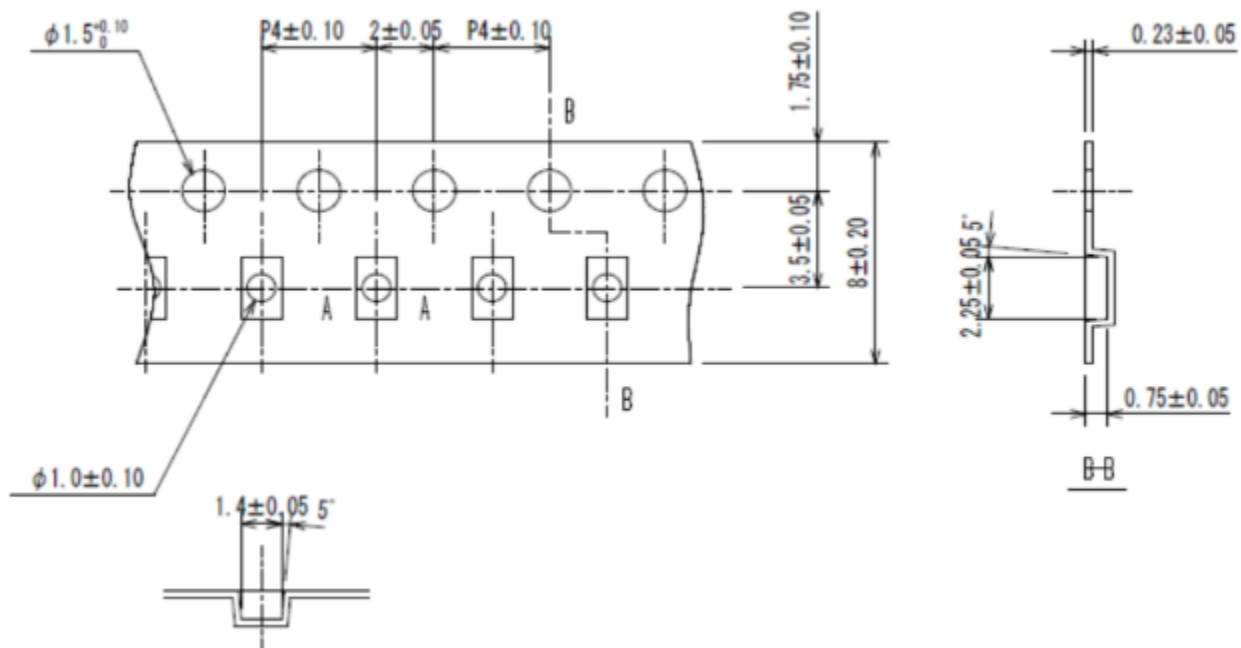
Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T_{smin})	100°C	150°C
Temperature maximum (T_{smax})	150°C	200°C
Time (T_{smin} to T_{smax}) (t_s)	60 - 120 sec.	60 - 120 sec.
Average ramp-up rate (T_{smax} to T_p)	3°C/sec. max	3°C/sec. max
Liquidous temperature (T_L)	183°C	217°C
Time at liquidous (t_L)	60 - 150 sec.	60 - 150 sec.
Peak package body temperature (T_p)*	see Table 1	see Table 2
Time (t_p)** within 5°C of the specified classification temperature (T_c)	20 sec.	30 sec.
Ramp-down rate (T_p to T_{smax})	6°C/sec. max	6°C/sec. max
Time 25°C to peak temperature	6 min. max	8 min. max
Reflow cycles	2 max	2 max

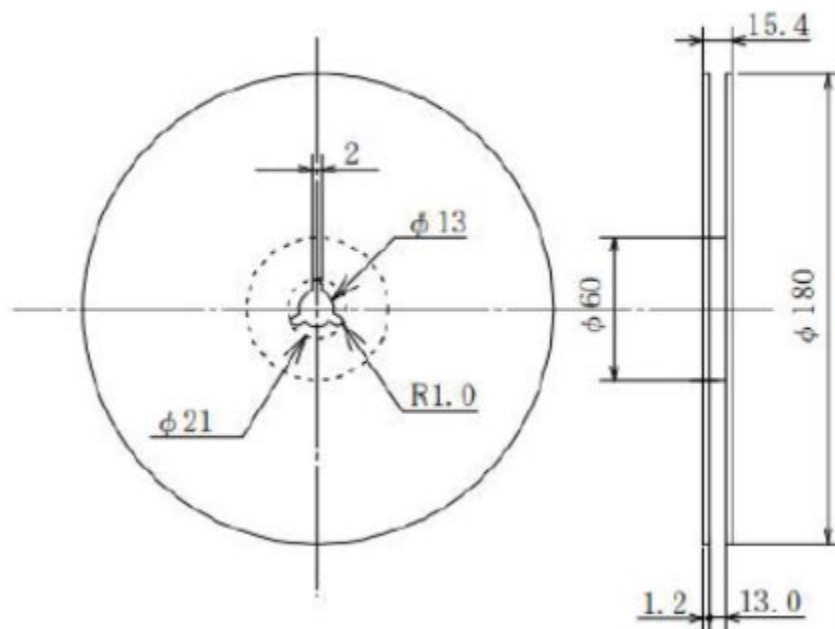
*Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.**Tolerance for time at peak profile temperature (t_p) is defined as supplier minimum and a user maximum.

Packaging

T: Tape and reel (3,000pcs/reel)

**Dimensions: mm**

Packaging *continued*



Dimensions: mm