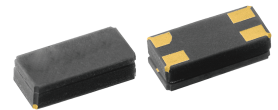


# 32.768kHz LOW POWER SMD CRYTAL OSCILLATOR



3.2 x 1.5 x 1.0mm

## ASH7KW



ESD Sensitive



RoHS/RoHS II Compliant

Moisture Sensitivity Level (MSL) – Level 1

### FEATURES:

- Ultra-miniature size 3.2x1.5x1.0mm [max.]
- Low Voltage Operation (Min:1.2V)
- Low Current Consumption
- Operating temperature : -40 to +85 °C; -40 to +125 °C
- VDD controls the output amplitude

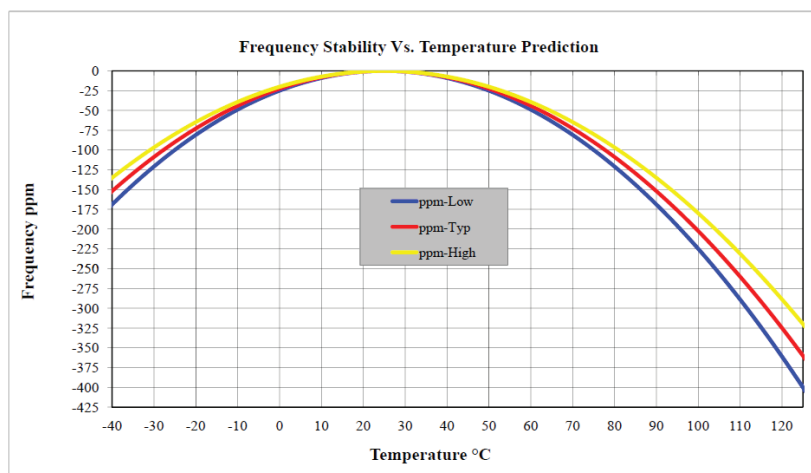
### APPLICATIONS:

- Factory Automation
- PC Server
- W-LAN/GPS Chipset
- General purpose clock generator for digital systems
- Clock drivers for Real Time Clocks
- Timekeeping in network servers and computers
- Electricity, gas and water metering
- Portable field communication
- Mobile phone
- Clock & Data recovery
- CCD clock for VTR camera
- Computers and peripherals
- Portable MP3 players & games

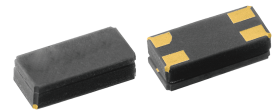
### STANDARD SPECIFICATIONS

Parameters	Minimum	Typical	Maximum	Units	Notes
Output Frequency	32.768			kHz	
Operating Temperature	-40		+85	°C	Option "L"
	-40		+125		Option "H"
Storage Temperature	-55		+125	°C	
Turnover Temperature	+20	+25	+30	°C	
Frequency Tolerance	-20		+20	ppm	
Temperature Coefficient	-0.035±10%			ppm/C <sup>2</sup>	
Supply Voltage Range (V <sub>dd</sub> )	1.2		5.5	V	
Current Consumption		0.3	0.5	µA	V <sub>dd</sub> =3.0V, $\overline{OE}$ (output disabled)
Current Consumption		1.8		µA	Load=15pF, V <sub>dd</sub> =3.0V, OE
Output Load (CMOS)			15	pF	
Output Voltage	V <sub>OH</sub>	V <sub>dd</sub> -0.4		V	I <sub>OH</sub> = -1mA
	V <sub>OL</sub>		GND+0.4		I <sub>OL</sub> = 1mA
CLKOE Pin Function	"1" (VIH≥0.8*Vdd) or Open: Oscillation "0" (VIL<0.2*Vdd) : Output disabled				
Aging@+25	-3.0		+3.0	ppm	First year
Duty Cycle	40		60	%	
Voltage Coefficient	-1.5		+1.5	ppm/V	
Start-up Time			0.5	s	
Output Rise Time			70.0	ns	Load=10pF, 10% to 90%
Output Fall Time			70.0	ns	Load=10pF, 10% to 90%

### TYPICAL FREQUENCY TEMPERATURE CHARACTERISTICS:



# 32.768kHz LOW POWER SMD CRYTAL OSCILLATOR



3.2 x 1.5 x 1.0mm

**ASH7KW**

RoHS/RoHS II Compliant

## PART IDENTIFICATIONS:

ASH7KW-32.768kHz-□-□

### Operating Temp.

L: -40°C ~ +85°C

H: -40°C ~ +125°C

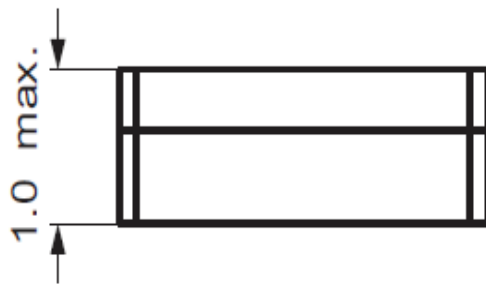
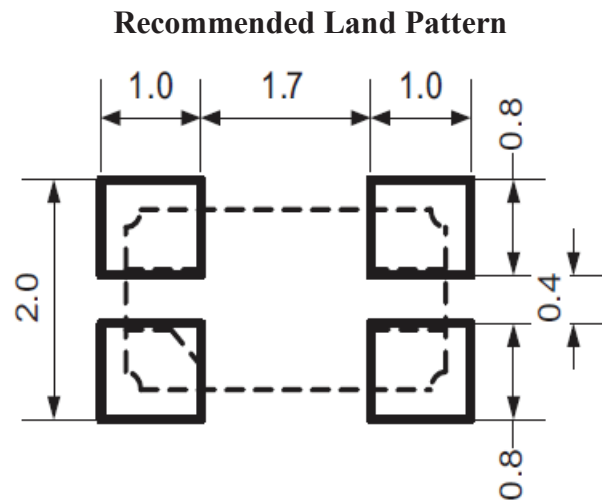
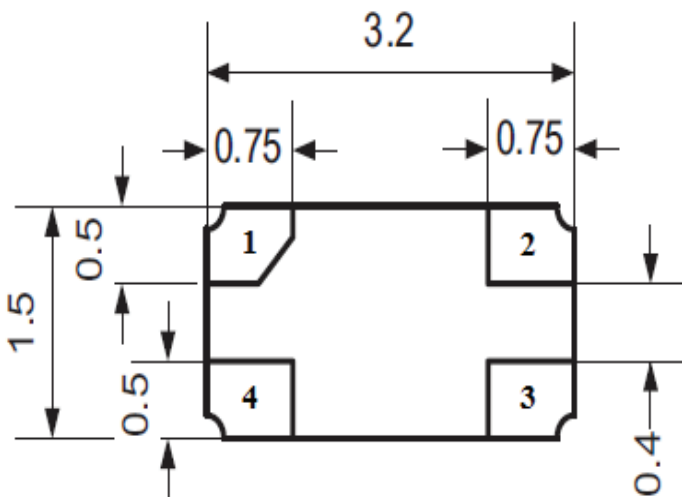
### Packaging

Blank: Bulk

T: 1000pcs/Reel

T3: 3000pcs/Reel

## OUTLINE DIMENSIONS:



Pin No.	Function
1	Output
2	GND
3	OE
4	Vdd

**Note: Due to material availability, the component cover may vary (ceramic or metal). This variation in no way affects the electrical performance of the product.**

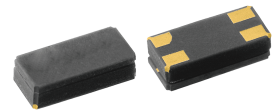
Dimensions: mm

All Dimensions are typical values.

# 32.768kHz LOW POWER SMD CRYTAL OSCILLATOR

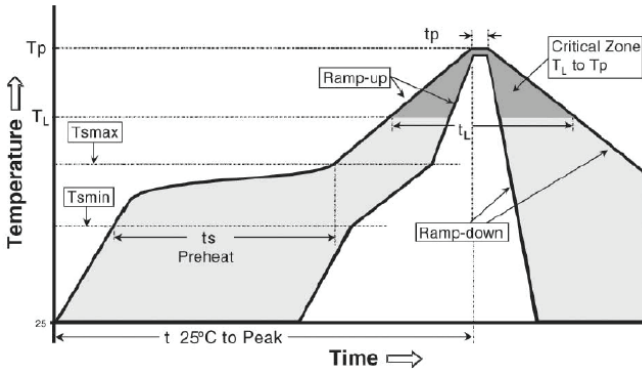
ASH7KW

 RoHS/RoHS II Compliant



3.2 x 1.5 x 1.0mm

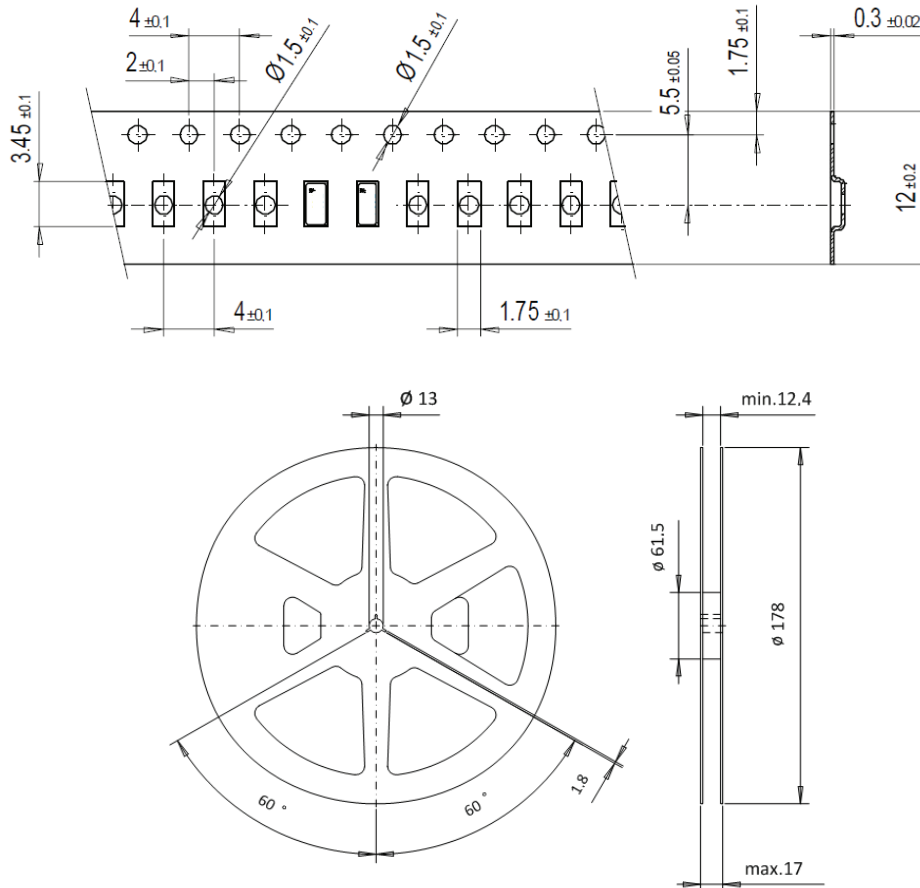
## REFLOW PROFILE:



Temperature Range	Symbol	Condition	Unit
Average Ramp up Rate	(T <sub>Smax</sub> to T <sub>p</sub> )	3°C/second max	°C/s
Ramp Down Rate	T <sub>cool</sub>	6°C/second max	°C/s
Time 25°C at Peak Temperature	T <sub>to-peak</sub>	8 minutes max	m
<b>Preheat</b>			
Temperature Min	T <sub>Smin</sub>	150	°C
Temperature Max.	T <sub>Smax</sub>	200	°C
Time T <sub>Smin</sub> to T <sub>Smax</sub>	T <sub>s</sub>	60-180	Sec
<b>Soldering above Liquidus</b>			
Temperature Liquidus	T <sub>L</sub>	217	°C
Time above Liquidus	t <sub>L</sub>	60-150	Sec
<b>Peak Temperature</b>			
Peak Temperature	T <sub>p</sub>	260	°C
Time within 5°C of Peak Temperature	t <sub>p</sub>	20-40	Sec

## TAPE & REEL:

T= Tape and reel (1,000pcs/reel)  
T3= Tape and reel (3,000pcs/reel)



Dimensions: mm

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Revised:07.07.2021

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