

ABS07-120-32.768kHz-T; TUNING FORK CRYSTAL

32.768kHz SMD; ESR OPTIMIZED CRYSTAL

ABS07



RoHS
Compliant

3.2 x 1.5 x 0.9 mm

Moisture Sensitivity Level (MSL) – This product is Hermetically Sealed and not Moisture Sensitive - MSL = N/A: Not Applicable

► FEATURES:

- Guaranteed ESR of 60kΩ Maximum for Low Power Designs
- 0.9mm height ideal for high density circuit boards
- Seam sealed ceramic package offers excellent environmental & heat resistance
- Extended Operating temperature of -40°C to +85°C for industrial applications

► APPLICATIONS:

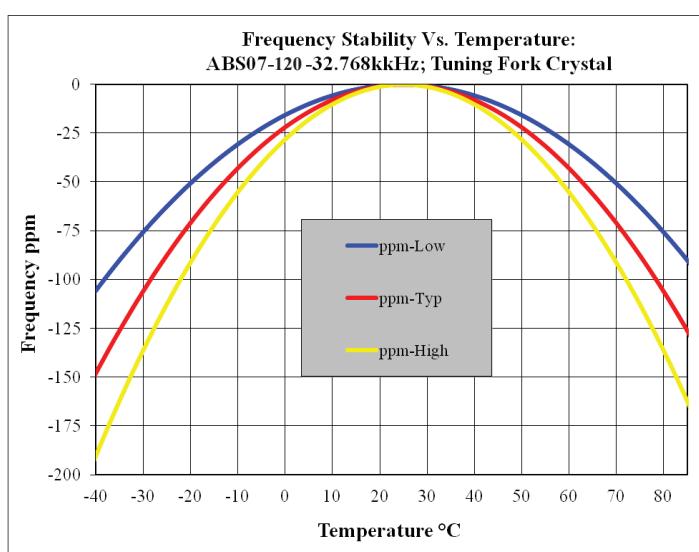
- Power sensitive designs requiring Low ESR Crystal, such as ST-Micro MCU STM32L based solutions
- Communication & measurement equipment
- Commercial, Consumer & Industrial applications
- Wireless communications
- PDA and Smartphone

► STANDARD SPECIFICATIONS

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency		32.768		kHz	
Operation Mode		Tuning Fork – AT Cut			
Operating Temperature	-40		+85	°C	
Storage Temperature	-55		+125	°C	
Frequency Tolerance @+25°C	-20		+20	ppm	Tested at 0.1uW
Temperature Coefficient:	-0.045	-0.035	-0.025	ppm/T ²	
Turn-over temperature:	+20	+25	+30	°C	
Equivalent series resistance (R1)		55	60	kΩ	
Shunt capacitance (C0)		1.20		pF	
Motional capacitance (Cm)	3.0	3.7	4.4	fF	
Load capacitance (CL)		6.0		pF	
Drive Level		0.1	0.5	μW	
Q value	13000				
Aging@25°C±3°C	-3		3	ppm	First year
Insulation Resistance	500			MΩ	@ 100Vdc ± 15V

► PART IDENTIFICATION: ABS07-120-32.768 kHz-T

► FREQUENCY VARIATION OVER OPERATING TEMPERATURE; RELATIVE TO MEASURED FREQUENCY AT 25°C



Temp °C	(ppm) Low	(ppm) Typ	(ppm) High
-40	-105.63	-147.88	-190.13
-35	-90.00	-126.00	-162.00
-30	-75.63	-105.88	-136.13
-25	-62.50	-87.50	-112.50
-20	-50.63	-70.88	-91.13
-15	-40.00	-56.00	-72.00
-10	-30.63	-42.88	-55.13
-5	-22.50	-31.50	-40.50
0	-15.63	-21.88	-28.13
5	-10.00	-14.00	-18.00
10	-5.63	-7.88	-10.13
15	-2.50	-3.50	-4.50
20	-0.63	-0.88	-1.13
25	0.00	0.00	0.00
30	-0.63	-0.88	-1.13
35	-2.50	-3.50	-4.50
40	-5.63	-7.88	-10.13
45	-10.00	-14.00	-18.00
50	-15.63	-21.88	-28.13
55	-22.50	-31.50	-40.50
60	-30.63	-42.88	-55.13
65	-40.00	-56.00	-72.00
70	-50.63	-70.88	-91.13
75	-62.50	-87.50	-112.50
80	-75.63	-105.88	-136.13
85	-90.00	-126.00	-162.00

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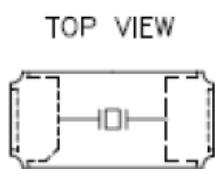
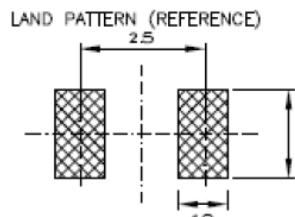
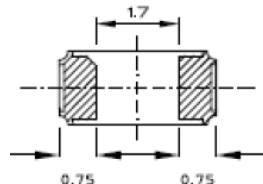
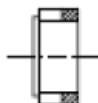
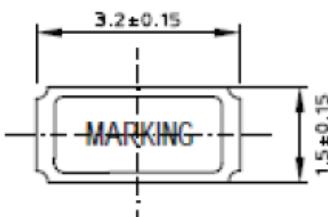


RoHS
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3.2 x 1.5 x 0.9 mm

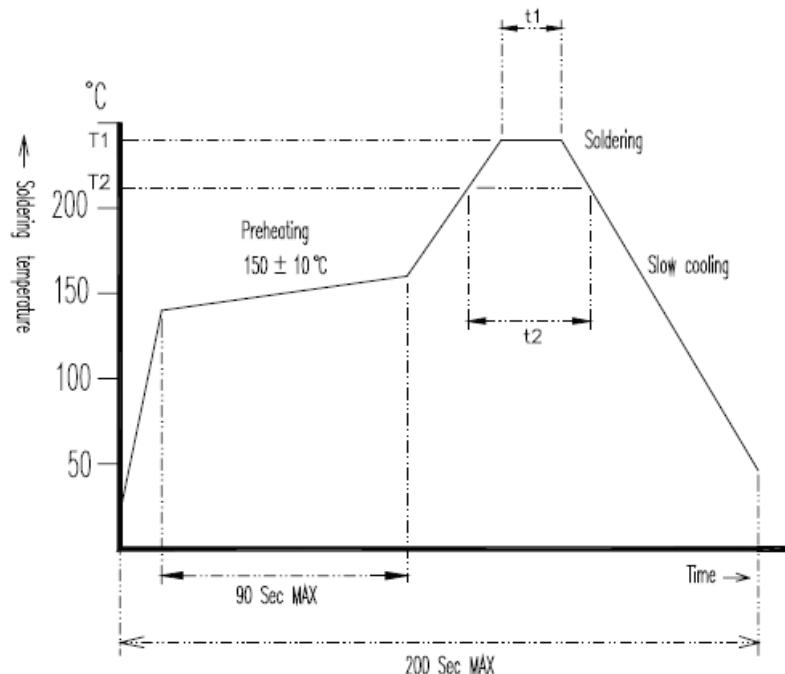
OUTLINE DRAWING:



Note #3: Due to material availability, the outline and finish color of the component lid may vary. This variation in no way affects the electrical performance of the product.

All dimensions are in mm

REFLOW PROFILE:



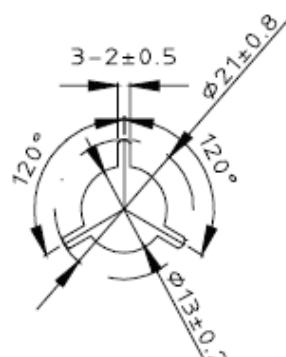
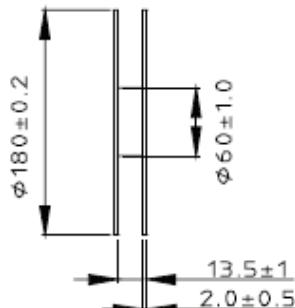
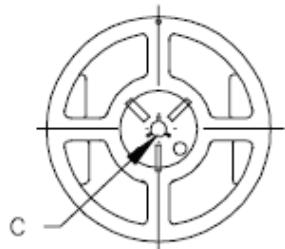
Application \ Temperature Time	T1 / t1	T2 / t2
Lead Free	260 ± 5°C / 10-seconds Max.	225 Min / 60 Seconds Max.



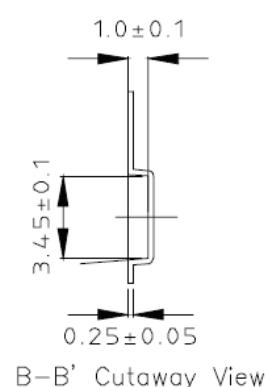
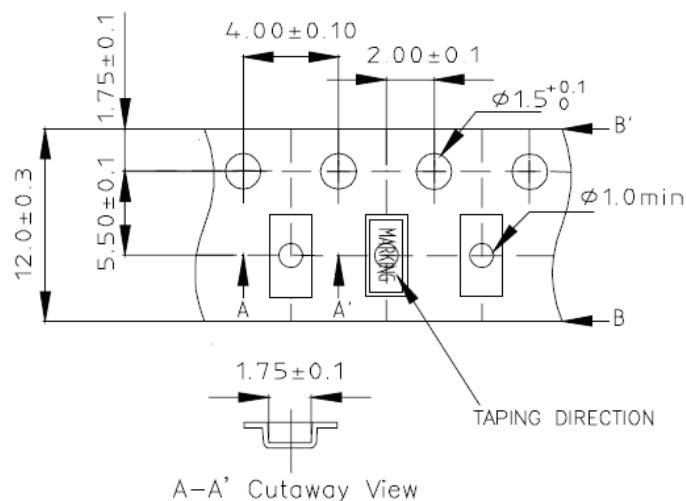
TAPE & REEL:

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

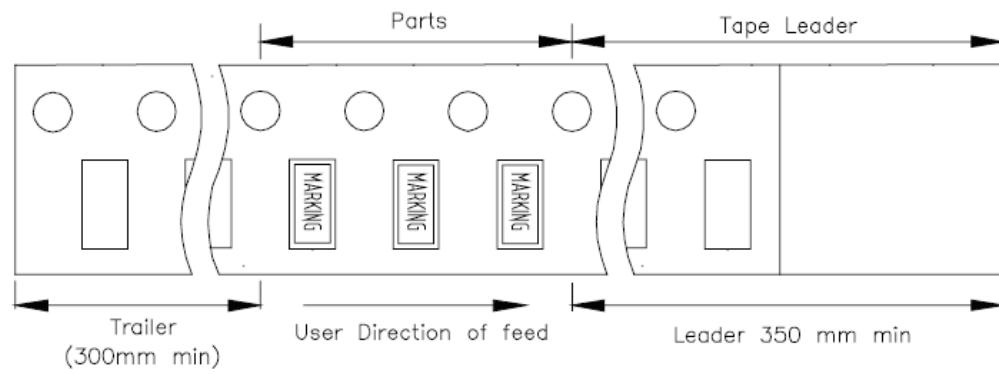
REEL : 3000PCS



C.ENLARGE



B-B' Cutaway View



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