

32.768kHz CMOS CERAMIC SMD CRYSTAL OSCILLATOR



3.2 x 2.5 x 0.9 mm

ASHEK SERIES

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



RoHS Compliant

- FEATURES:
- Ultra low uA current consumption with CMOS output
  - Miniature ceramic package (3.2 x 2.5 x 0.9mm)
  - Operating Temp -40°C to +85°C
  - Start up time less than 1 sec with supply voltage 1.5 to 5.0V
  - Tri-state function
  - Pb-free reflow capable
- APPLICATIONS:
- 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
Frequency Range		-----	32.768	-----	kHz	
Operating Temperature		-20	-----	+70	°C	See options
Storage Temperature		-55	-----	+125	°C	
Frequency Tolerance @ +25°C		-15	+5	+25	ppm	
Frequency Stability		-90	-----	+10	ppm	- 20 to + 70 °C; referenced to frequency measured @ +25°C See options
Supply Voltage (Vdd)		3.135	3.3	3.465	V	Standard
		4.75	5.0	5.25		Option 2
		2.66	2.8	2.94		Option 3
		1.71	1.8	1.89		Option 4
		1.425	1.5	1.575		Option 5
Supply Current (I <sub>dd</sub> )		-----	0.9	1.5	uA	no load, Vdd=+ 3.3V
		-----	1.8	2.5		no load, Vdd=+ 5.0V
		-----	0.8	1.5		no load, Vdd=+ 2.8V
		-----	0.6	1.5		no load, Vdd=+ 1.8V
		-----	0.5	1.5		no load, Vdd=+ 1.5V
Output Load		-----	-----	15	pF	CMOS
Output Voltage	V <sub>OH</sub>	Vdd-0.4	-----	-----	V	
	V <sub>OL</sub>	-----	-----	0.4		
Tri-state function		"1" (VIH≥0.9*Vdd or open) : Oscillation "0" (VIH<0.8V) : Hi Z				
Aging		-5.0	-----	+5.0	ppm	@+25°C First year
Symmetry @1/2Vdd		40	50	60	%	Standard
Start-up Time		-----	-----	1	s	0.9*Vdd @ +25°C
Rise/Fall Time (Tr/Tf)		-----	-----	200	ns	

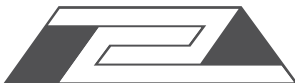
STANDARD SPECIFICATIONS:

ASHEK □ -32.768kHz - □ - □

Supply Voltage
Blank: 3.3V
2: 5.0V
3: 2.8V
4: 1.8V
5: 1.5V

Frequency Temp Characteristics
Blank: -20°C to +70°C / -90 to +10 ppm
L: -40°C to +85°C / -140 to +10 ppm

Packaging
Blank: Bulk
T: Tape and Reel (1kpcs)
T3: Tape and Reel (3kpcs)



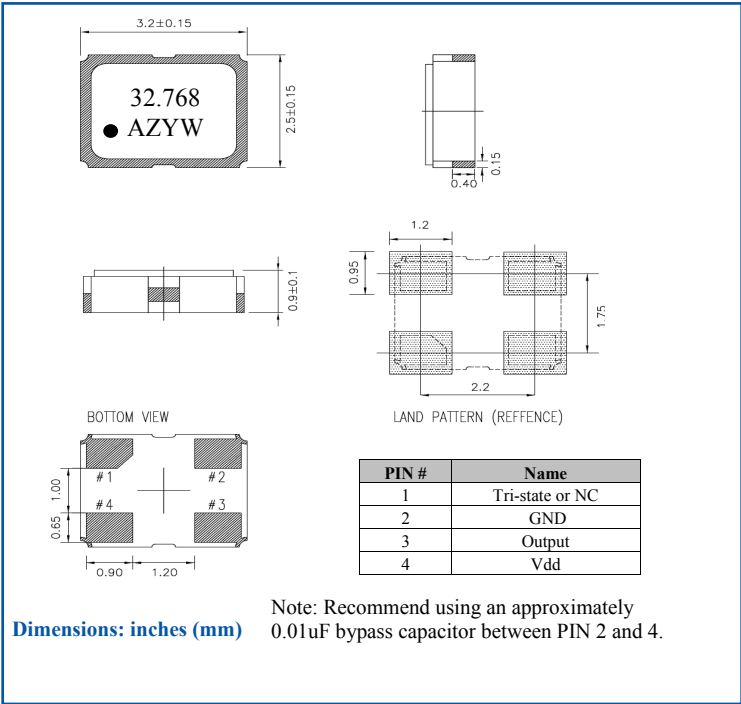
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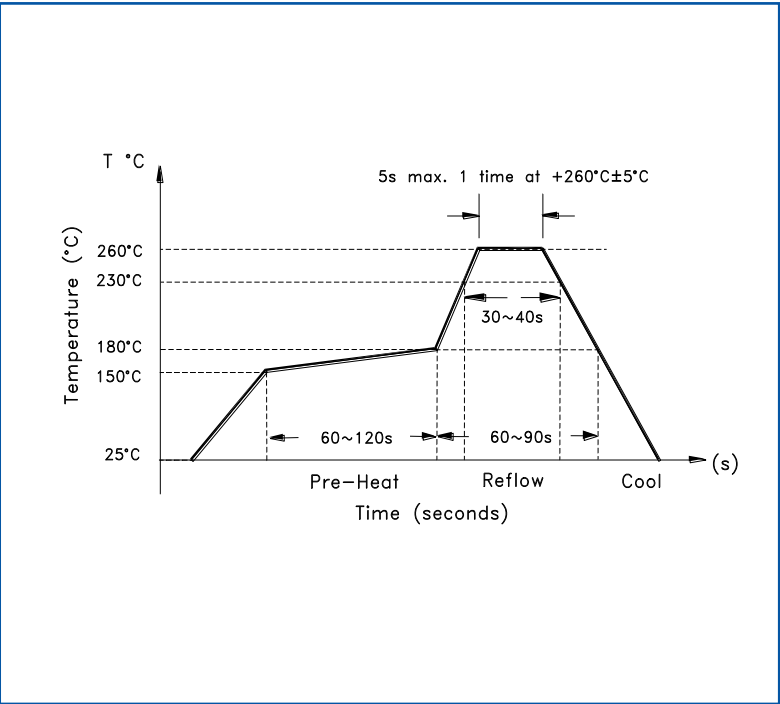


3.2 x 2.5 x 0.9 mm

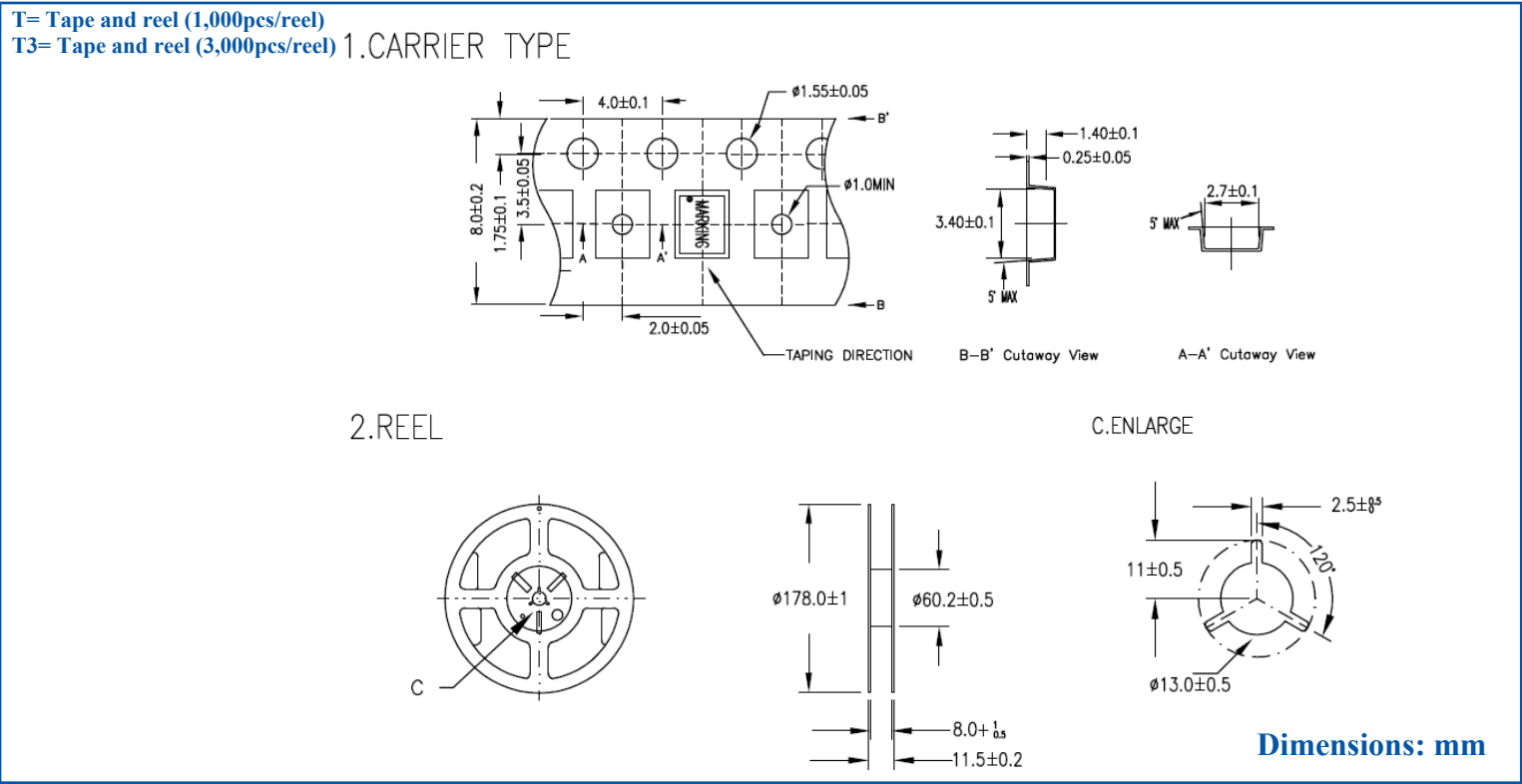
OUTLINE DRAWING:



REFLOW PROFILE:



TAPE & REEL:



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