

µA Current 32.768kHz Oscillators

3.2 x 2.5mm SMD

Page 1 of 2

FEATURES

- AT-Cut crystal stability with µA current consumption
- Micro-miniature 3.2 x 2.5mm package
- Frequency 32.768kHz
- Supply voltage: 1.8, 2.5 or 3.3 Volts
- Tristate function for power conservation



APPLICATIONS

- Real Time Clock and similar timing applications.

DESCRIPTION

HA32 oscillators feature µA supply current but with the stability of an AT-Cut crystal.

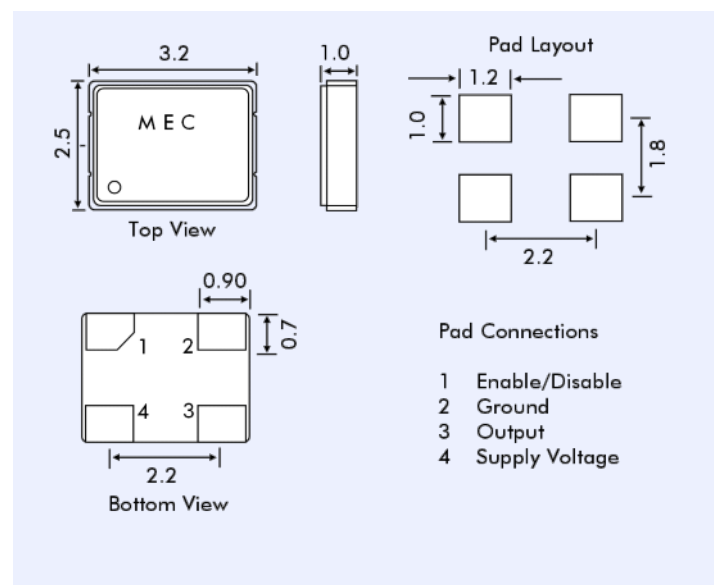
SUPPLY VOLTAGE/CURRENT CONSUMPTION/RISE ANDFALL TIME

Supply Voltage	+1.8VDC±5% Code = '18'	+2.5VDC±5% Code = '25'	+3.3VDC±5% Code = '3'
Current Consumption	65µA typ., 80µA max.	70µA typ., 90µA max.	75µA typ., 100µA max.
Logic HIGH '1' (90%Vdd min.)	1.62V min.	2.25V min.	2.97V min.
Logic LOW '0' (90% Vdd max.)	0.18V max.	0.25V max.	0.33V max.
Rise Time/Fall Time	7ns max.	7ns max.	10ns max.
Available Frequency Range	32.768kHz 14.0 to 100.0kHz	32.768kHz 12.0 to 100.0kHz	32.768kHz 10.0 to 100.0kHz

GENERAL SPECIFICATION

Operating Temperature Range	Commercial: -10° to +70°C Industrial: -40° to +85°C
Frequency Stability:	From ±20ppm over -40° to +85°C. <i>See Part Number Format table.</i>
Supply Voltage vs. Freq. Sensitivity:	±1.0ppm (maximum)
Output Load:	15pF max.
Duty Cycle:	50% ±5%
Start-up Time:	0.8ms typ., 5ms max.
Storage Temperature Range:	-55° to +150°C
Ageing:	±3ppm max. for first year.
Enable/Disable:	Output is high impedance when "0" is applied to pad/pin 1. Enable time is 1ms max. Disable 0.1µs max.
RoHS Status:	RoHS Compliant

OUTLINES & DIMENSIONS

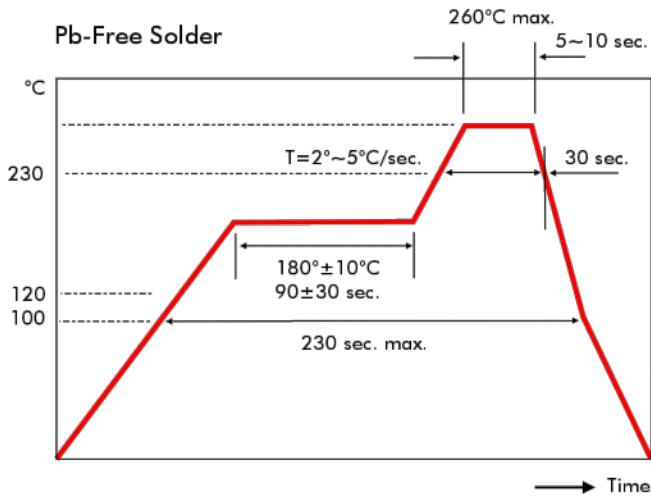


µA Current 32.768kHz Oscillators

3.2 x 2.5mm SMD

Page 2 of 2

SOLDER PROFILE



PART NUMBER FORMAT

Example: 3HA32DT-32.768K 3 HA32 DT - 32.768K

Supply Voltage:

3 = 3.3 Volts

25 = 2.5 Volts

18 = 1.8 Volts

Series Designation: HA32

Stability and Temperature Range:

A = $\pm 25\text{ppm}$ over -10° to $+70^{\circ}\text{C}$

B = $\pm 50\text{ppm}$ over -10° to $+70^{\circ}\text{C}$

C = $\pm 100\text{ppm}$ over -10° to $+70^{\circ}\text{C}$

D = $\pm 25\text{ppm}$ over -40° to $+85^{\circ}\text{C}$

E = $\pm 50\text{ppm}$ over -40° to $+85^{\circ}\text{C}$

F = $\pm 100\text{ppm}$ over -40° to $+85^{\circ}\text{C}$

Tristate (Enable/Disable) Function

Nominal Frequency:
(in kHz)