

µA Current 32.768kHz Oscillators

5 x 3.2mm SMD

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FEATURES

- AT-Cut crystal stability with µA current consumption
- Micro-miniature 5.0 x 3.2mm package
- Frequency 32.768kHz
- Supply voltage: 1.8, 2.5 or 3.3 Volts
- Tristate function for power conservation



DESCRIPTION

HA53 oscillators feature µA supply current but with the stability of an AT-Cut crystal.

APPLICATIONS

- Real Time Clock and similar timing applications.

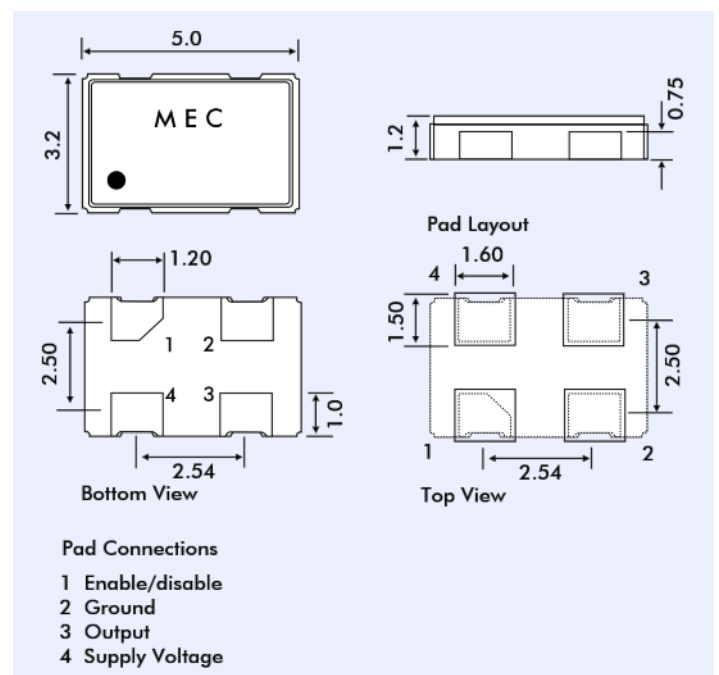
SUPPLY VOLTAGE/CURRENT CONSUMPTION/RISE ANDFALL TIME

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

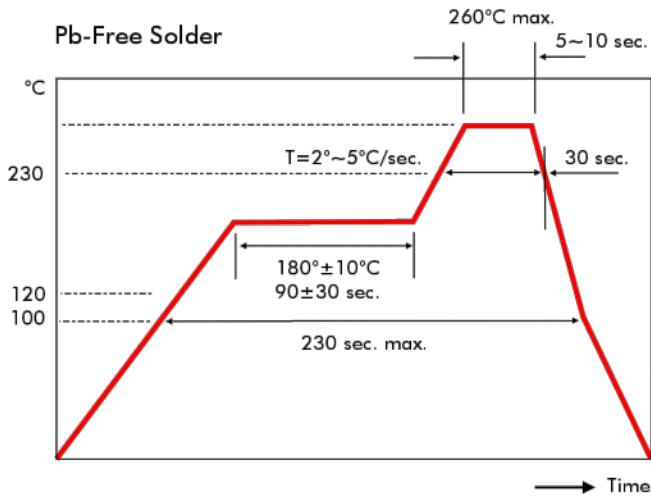


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SOLDER PROFILE



PART NUMBER FORMAT

Example: 3HA53DT-32.768K

Supply Voltage:

3 = 3.3 Volts

25 = 2.5 Volts

18 = 1.8 Volts

Series Designation: HA53

Stability and Temperature Range:

A = ±25ppm over -10° to +70°C

B = ±50ppm over -10° to +70°C

C = ±100ppm over -10° to +70°C

D = ±25ppm over -40° to +85°C

E = ±50ppm over -40° to +85°C

F = ±100ppm over -40° to +85°C

Tristate (Enable/Disable) Function

Nominal Frequency:
(in kHz)

