

SMD WATCH CRYSTAL 32.768 kHz

SERIES M2012 STANDARD (2 pad housing 2.0x1.2mm)

FEATURES

- + Smallest available low cost watch crystal
- + Ultra low profile
- + Standard operating temperature range of -40/+85°C
- + Excellent clock generator for CPU's, Wireless, Mobile Comm., etc.



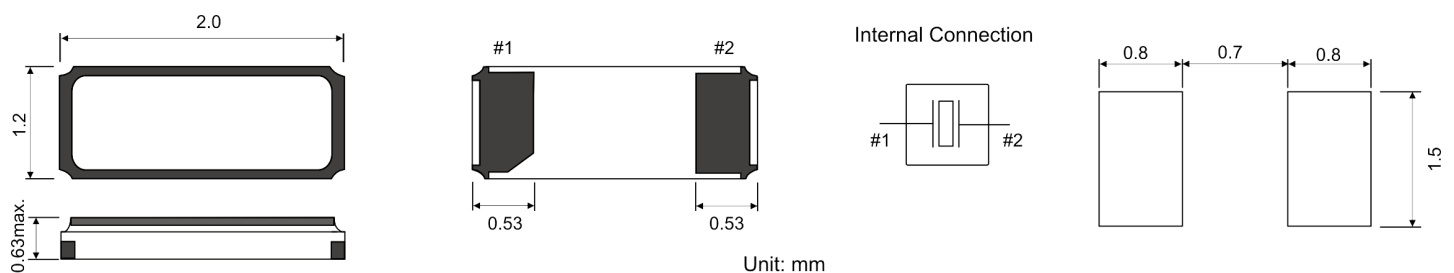
GENERAL DATA

PB FREE / ROHS-2 2011/65/EU COMPLIANT

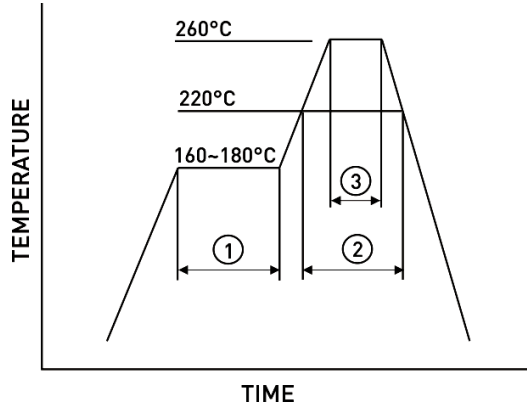
PARAMETERS	PRODUCT FEATURES AND CONDITIONS
SMD-CRYSTAL SERIES	M2012
NUMBER OF SOLDER PADS	2
FREQUENCY RANGE	32.768 kHz
FREQUENCY TOLERANCES AT 25°C	±20 ppm (standard) / ±10 ppm ~ ±100 ppm (option)
LOAD CAPACITANCE (C _L)	12.5 pF (standard) 4, 6, 7 or 9 pF available on request
WORKING TEMPERATURE RANGE	-40/+85°C
RESONANCE RESISTANCE	60 kΩ typ. / 80 kΩ max.
SHUNT CAPACITANCE (C _s)	1.3 pF typ.
TURNOVER TEMPERATURE	+25°C ±5°C
PARABOLIC COEFFICIENT	-0.04 ppm/°C ² max.
DRIVE LEVEL	0.1 μW typical (0.5 μW max.)
AGING	±3 ppm max. per year
INSULATION RESISTANCE	>500 MΩ DC/100V ±10%
STORAGE TEMPERATURE	-40°/+85°C
DELIVERY FORM	Tape and Reel (3.000 pcs per reel)

OTHER PARAMETERS ARE AVAILABLE ON REQUEST / CREATE HERE YOUR SPECIFICATION

DIMENSIONS

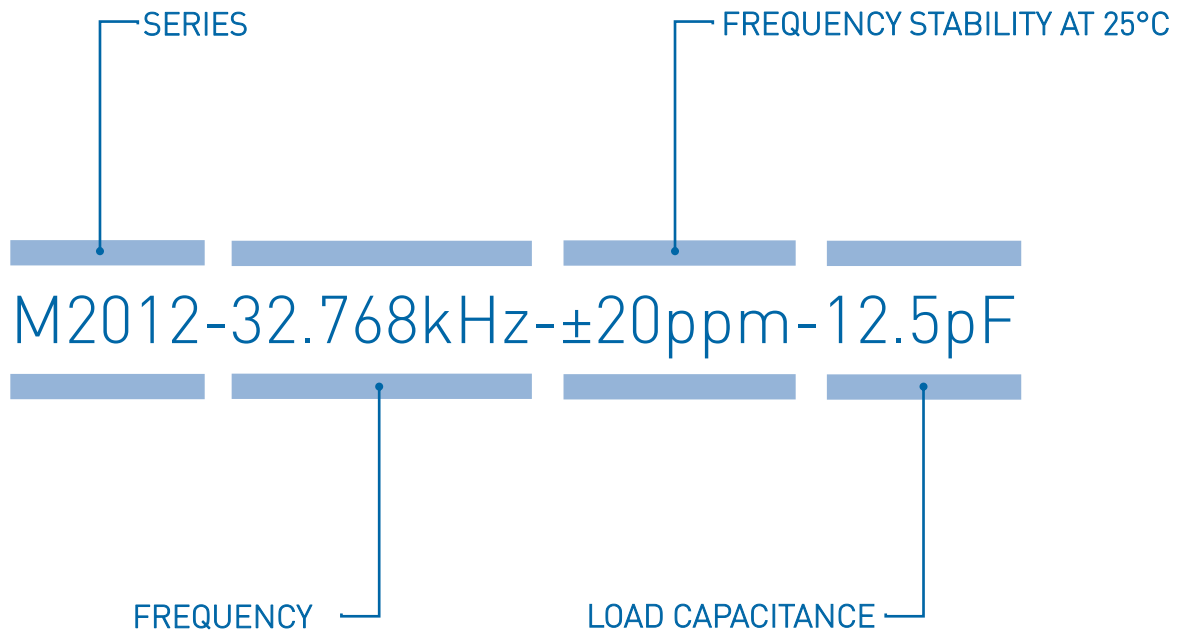


REFLOW SOLDER PROFILE



①	Preheat	160~180°C	120sec.
②	Primery heat	220°C	60sec.
③	Peak	260°C	10sec. max.

ORDERING INFORMATION



EXAMPLE: M2012-32.768kHz-±20ppm-12.5pF

PLEASE INDICATE YOUR REQUIRED PARAMETERS



REVISION HISTORY^[1]

REVISION	RELEASE DATE	AMENDMENTS SUMMARY
01	June 2017	<ul style="list-style-type: none"> + Revised load capacitance + Revised resonance resistance + Revised shunt capacitance + Revised drive level + Revised reflow soldering profile + Revised tape and reel options
+ 02	January 2018	<ul style="list-style-type: none"> + Added typical resonance resistance + Added extra load capacitance values: 4,6 pF + Revised dimensions

Note:

1. Based on Datasheet version from June 2017/SPEC 01/REV.01



PREMIUM QUALITY BY PETERMANN-TECHNIK



OUR COMPANY IS CERTIFIED ACCORDING TO ISO 9001:2015 IN OCTOBER 2016 BY THE DMSZ CERTIFIKATION GMBH.

THIS IS FOR YOU TO ENSURE THAT THE PRINCIPLES OF QUALITY MANAGEMENT ARE FULLY IMPLEMENTED IN OUR QUALITY MANAGEMENT SYSTEM AND QUALITY CONTROL METHODS ALSO DOMINATE OUR QUALITY STANDARDS.

© PETERMANN-TECHNIK GmbH 2018. The information contained herein is subject to change at any time without notice. PETERMANN-TECHNIK owns all rights, title and interest to the intellectual property related to PETERMANN-TECHNIK's products, including any software, firmware, copyright, patent, or trademark. The sale of PETERMANN-TECHNIK products does not convey or imply any license under patent or other rights. PETERMANN-TECHNIK retains the copyright and trademark rights in all documents, catalogs and plans supplied pursuant to or ancillary to the sale of products or services by PETERMANN-TECHNIK. Unless otherwise agreed to in writing by PETERMANN-TECHNIK, any reproduction, modification, translation, compilation, or representation of this material shall be strictly prohibited.