

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.

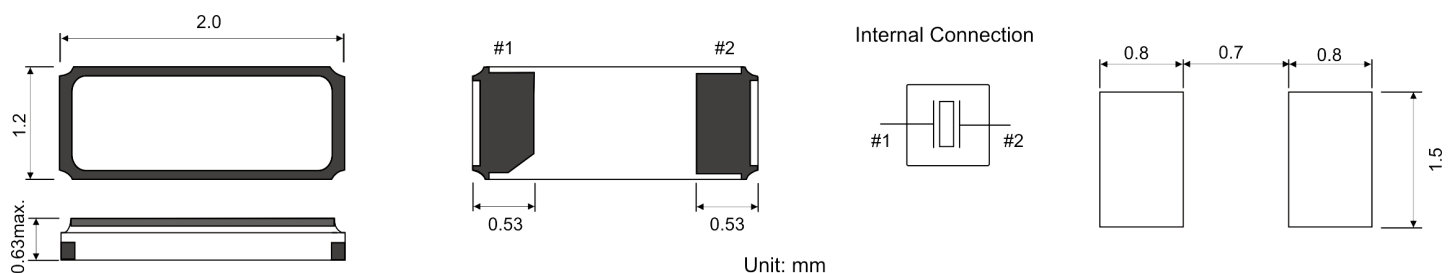


GENERAL DATA

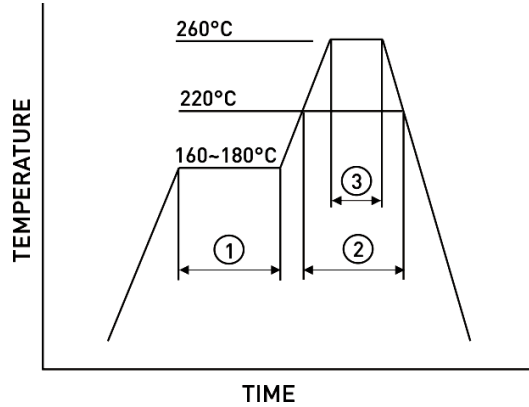
PB FREE / ROHS COMPLIANT

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)
SELECT YOUR REQUIRED CRYSTAL (PRODUCT CONFIGURATOR)	REQUEST CRYSTAL SAMPLES (SAMPLE CONFIGURATOR)

DIMENSIONS

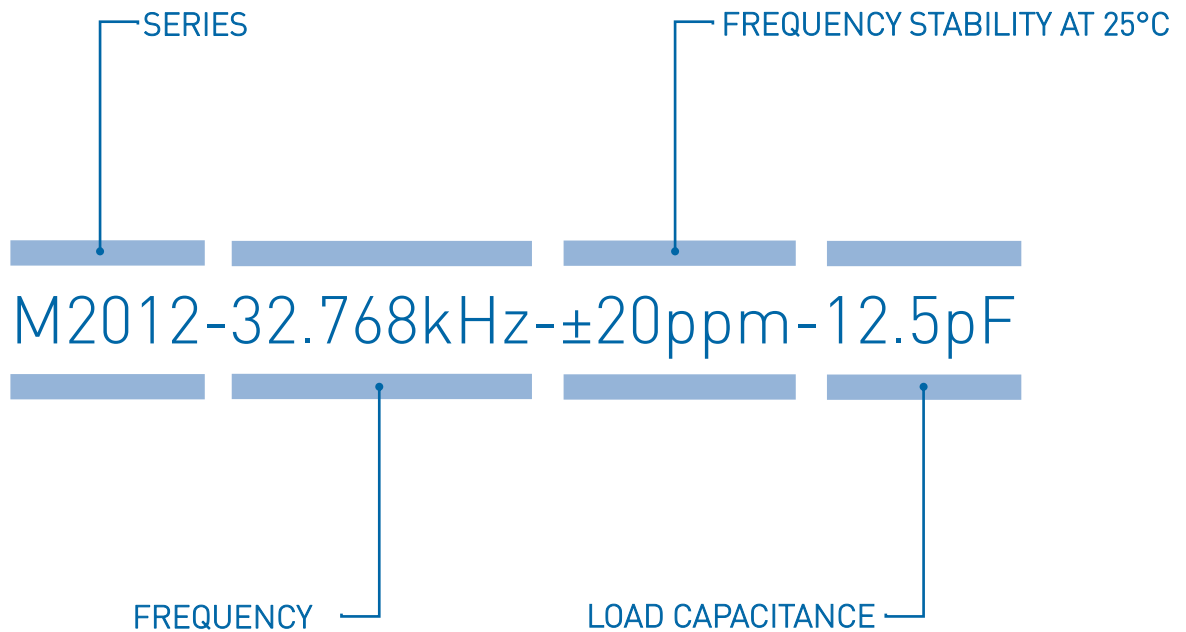


REFLOW SOLDER PROFILE



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.