# MHz Range Crystal unit

## FA-238

 Product name
 FA-238
 30.000000
 MHz 30.0 +30.0-30.0

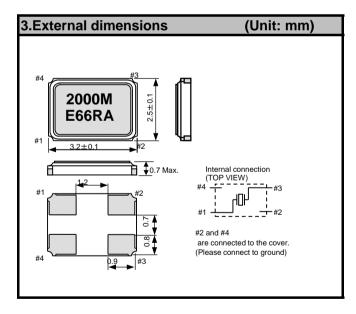
 Product Number / Ordering code
 Q22FA23801631xx

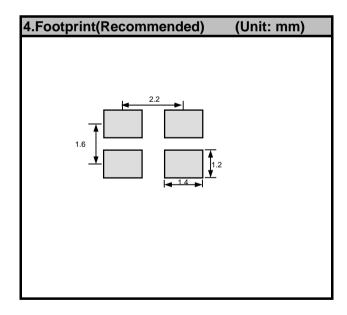
Please refer to the 5.Packing information about xx (last 2 digits)

Pb free / Complies with EU RoHS directive

1.Absolute maximum ratings						
Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions / Remarks
Storage temperature	T_stg	-40	-	+125	°C	Storage as single product
Operating temperature	T_use	-40	-	+105	°C	

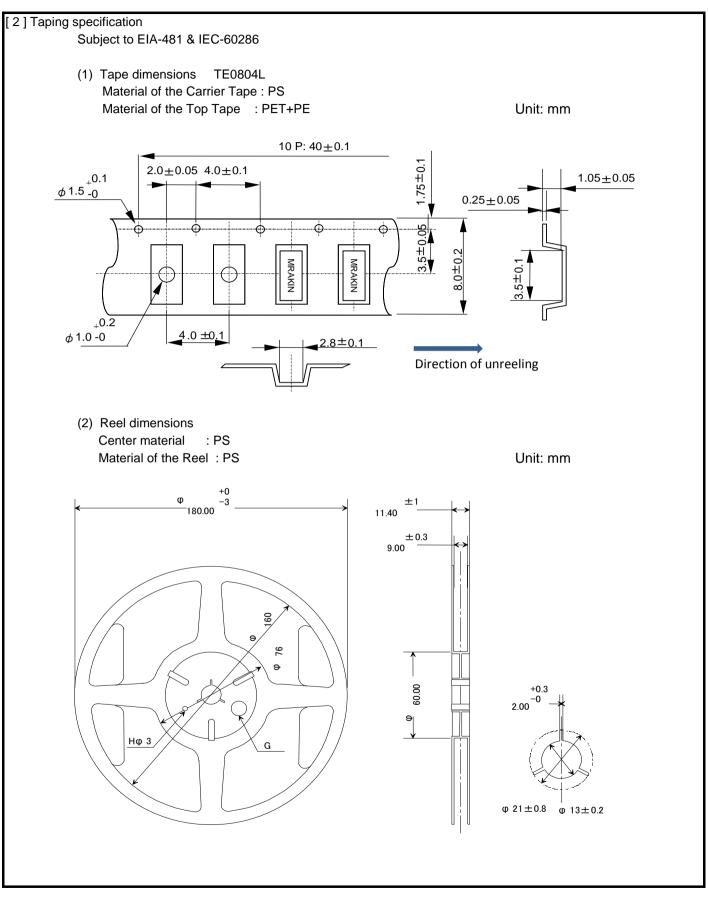
2.Specifications(characteristic	cs)					
Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions / Remarks
Nominal frequency	f_nom		30.000000	_	MHz	Fundamental
Frequency tolerance	f_tol	-30	-	+30	x 10- <sup>6</sup>	@+25°C
Frequency Stability over temperature	f_tem	-30	-	+30	x 10 <sup>-6</sup>	-20ºC to +70ºC
Operating temperature	T_use	-20	-	+70	°C	
Level of drive	DL	10	100	200	μW	
Load capacitance	CL		30	—	pF	
Motional resistance (ESR)	R1	-	-	40	Ω	
Motional capacitance	C1	-	3.50	-	fF	
Motional inductance	L1	-	8.05	-	mH	
Shunt capacitance	C0	-	1.08	-	pF	
Frequency aging	f_age	-5	_	+5	x10 <sup>-6</sup> /yea	@+25°C, First year



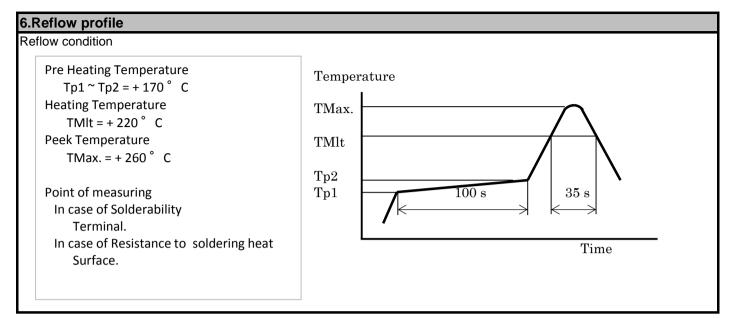


[1]Product	number la	st 2 digits code (xx) description		The recommended code is "17"
	Q22FA23	801631xx		
	Code	Condition	Code	Condition
	01	Any Q'ty vinyl bag(Tape cut)	14	1000pcs / Reel
	11	Any Q'ty / Reel	15	2000pcs / Reel
	12	250pcs / Reel	00	3000pcs / Reel
	13	500pcs / Reel	17	4000pcs / Reel

## SEIKO EPSON CORPORATION



## SEIKO EPSON CORPORATION



#### 7.Notice

- This material is subject to change without notice.
- Any part of this material may not be reproduced or duplicated in any form or any means without the written permission of Seiko Epson.
- The information about applied data, circuitry, software, usage, etc. written in this material is intended for reference only.
  - Seiko Epson does not assume any liability for the occurrence of customer damage or infringing on any patent or copyright of a third party.
  - This material does not authorize the licensing for any patent or intellectual copyrights.
- When exporting the products or technology described in this material, you should comply with the applicable export control laws and regulations and follow the procedures required by such laws and regulations.
- You are requested not to use the products (and any technical information furnished, if any) for the development and/or manufacture of weapon of mass destruction or for other military purposes. You are also requested that you

would not make the products available to any third party who may use the products for such prohibited purposes.

• These products are intended for general use in electronic equipment. When using them in specific applications that require

extremely high reliability, such as the applications stated below, you must obtain permission from Seiko Epson in advance.

- / Space equipment (artificial satellites, rockets, etc.)
- / Transportation vehicles and related (automobiles, aircraft, trains, vessels, etc.)
- / Medical instruments to sustain life
- / Submarine transmitters
- / Power stations and related
- / Fire work equipment and security equipment
- / Traffic control equipment
- / And others requiring equivalent reliability.

· All brands or product names mentioned herein are trademarks and/or registered trademarks of their respective.

#### Contact us

http://www5.epsondevice.com/en/contact/