# MHz Range Crystal unit

## FA-238

 Product name
 FA-238
 48.000000
 MHz 20.0 +30.0-30.0

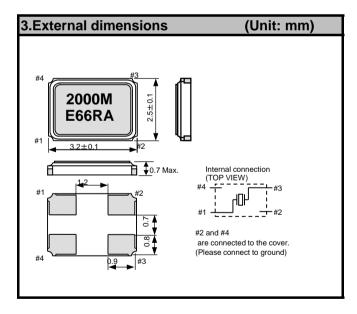
 Product Number / Ordering code
 Q22FA23800244xx

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	

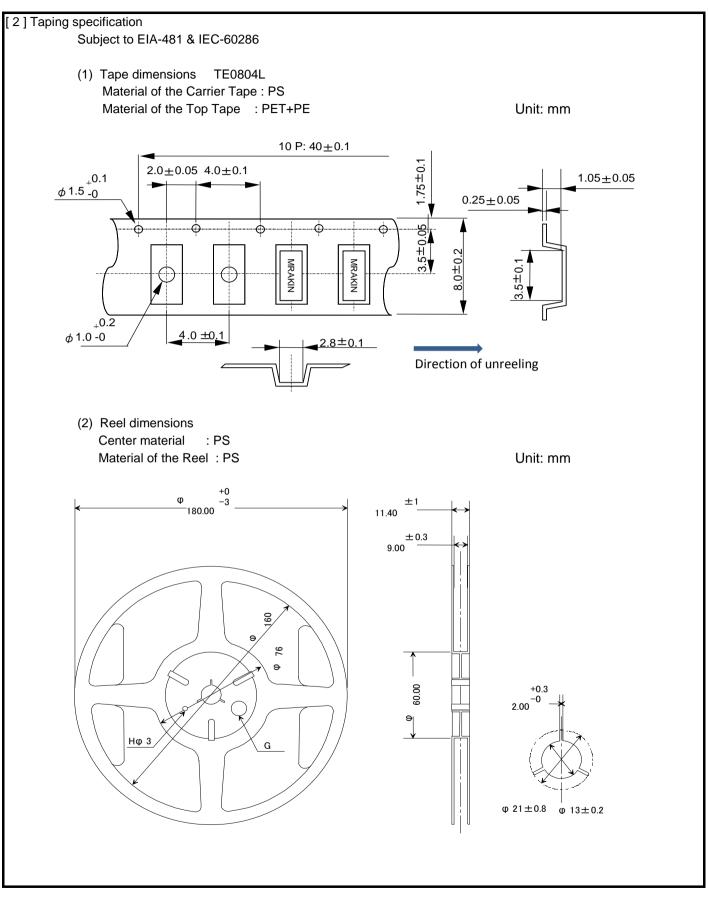
2.Specifications(characteristic	cs)					
Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions / Remarks
Nominal frequency	f_nom		48.000000	_	MHz	Fundamental
Frequency tolerance	f_tol	-30	-	+30	x 10- <sup>6</sup>	@+25°C
Frequency Stability over temperature	f_tem	-30	-	+30	x 10 <sup>-6</sup>	-20ºC to +70ºC
Operating temperature	T_use	-20	-	+70	°C	
Level of drive	DL	10	100	200	μW	
Load capacitance	CL		20	_	pF	
Motional resistance (ESR)	R1	-	-	40	Ω	
Motional capacitance	C1	-	4.31	-	fF	
Motional inductance	L1	-	2.55	-	mH	
Shunt capacitance	C0	-	1.43	-	pF	
Frequency aging	f_age	-5	_	+5	x10 <sup>-6</sup> /yea	@+25°C, First year



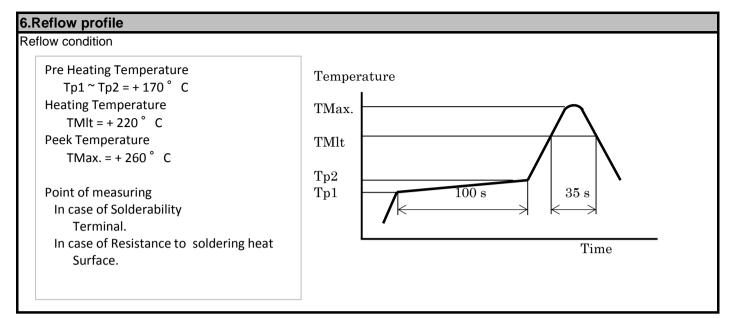
4.Footprint(Recommended)	(Unit: mm)

5.Packing	informati	ion		
[1]Product	number la	st 2 digits code (xx) description		The recommended code is "17"
	Q22FA23	800244xx		
	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

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- / Traffic control equipment
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