

Product name TSX-3225 48.000000 MHz 12.0 +20.0-20.0

Product Number / Ordering code X1E0000211117xx

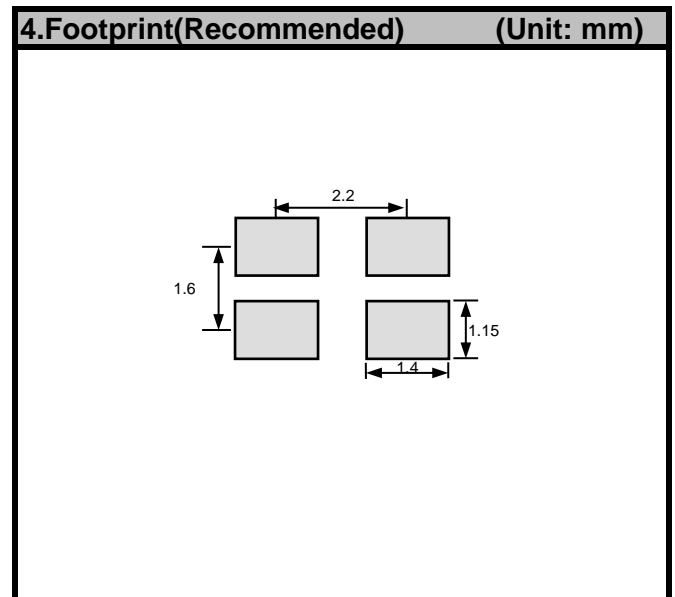
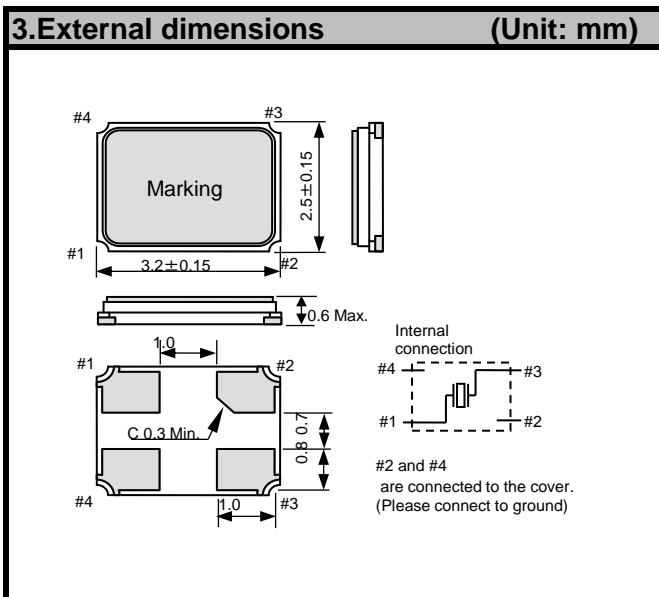
Please refer to the 5.Packing information about xx (last 2 digits)

Pb free / Complies with EU RoHS directive

Reference weight Typ. 17 mg

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

2.Specifications(characteristics)						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions / Remarks
Nominal frequency	f_nom	-	48.000000	-	MHz	Fundamental
Frequency tolerance	f_tol	-20	-	+20	x 10 ⁻⁶	@+25°C
Frequency Stability over temperature	f_tem	-35	-	+35	x 10 ⁻⁶	-40°C to +105°C
Operating temperature	T_use	-40	-	+105	°C	
Level of drive	DL	10	100	200	µW	
Load capacitance	CL	-	12	-	pF	
Motional resistance (ESR)	R1	-	-	40	Ω	
Motional capacitance	C1	-	7.32	-	fF	
Motional inductance	L1	-	1.50	-	mH	
Shunt capacitance	C0	-	2.07	-	pF	
Frequency aging	f_age	-2	-	+2	x10 ⁻⁶ /yea	@+25°C, First year



5.Packing information

[1]Product number last 2 digits code (xx) description The recommended code is "17"

X1E0000211117xx

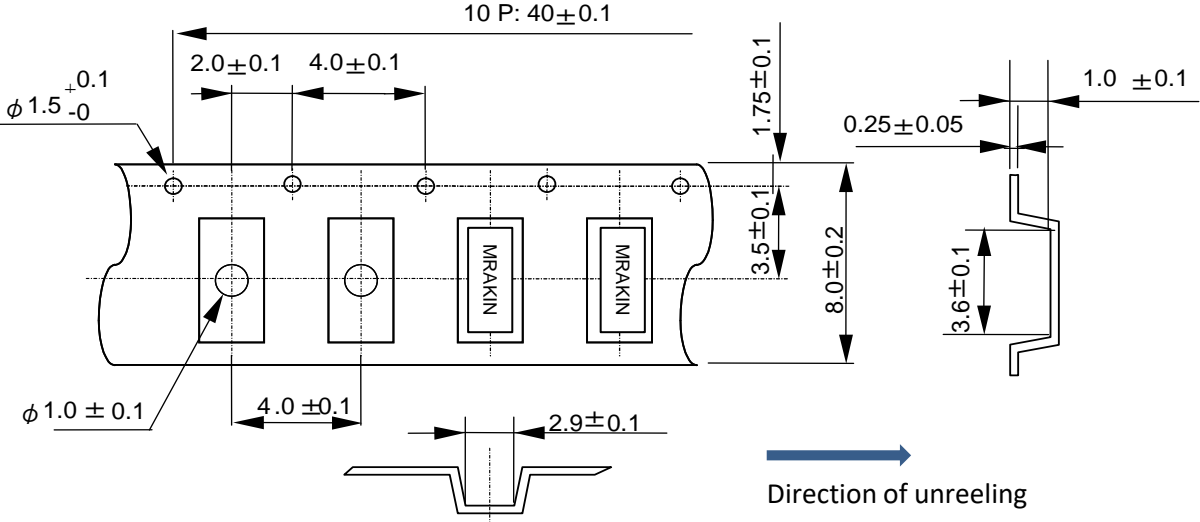
Code	Condition	Code	Condition
01	Any Q'ty vinyl bag(Tape cut)	00	2000pcs / Reel
11	Any Q'ty / Reel	16	3000pcs / Reel
12	250pcs / Reel	17	4000pcs / Reel
14	1000pcs / Reel		

[2] Taping specification

Subject to EIA-481 & IEC-60286

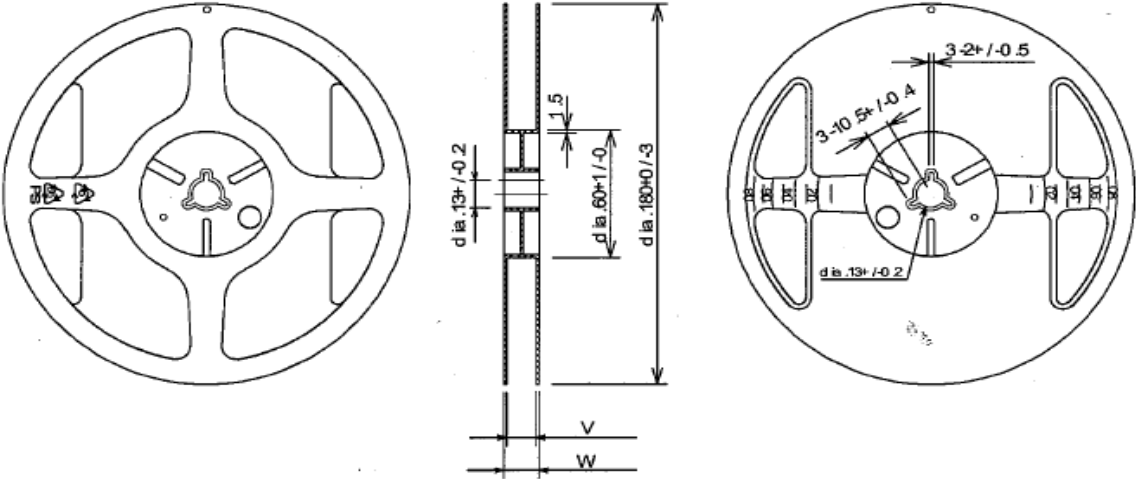
- (1) Tape dimensions TE0804L
- Material of the Carrier Tape : PS
- Material of the Top Tape : PET+PE

Unit: mm



- (2) Reel dimensions
- Center material : PS
- Material of the Reel : PS

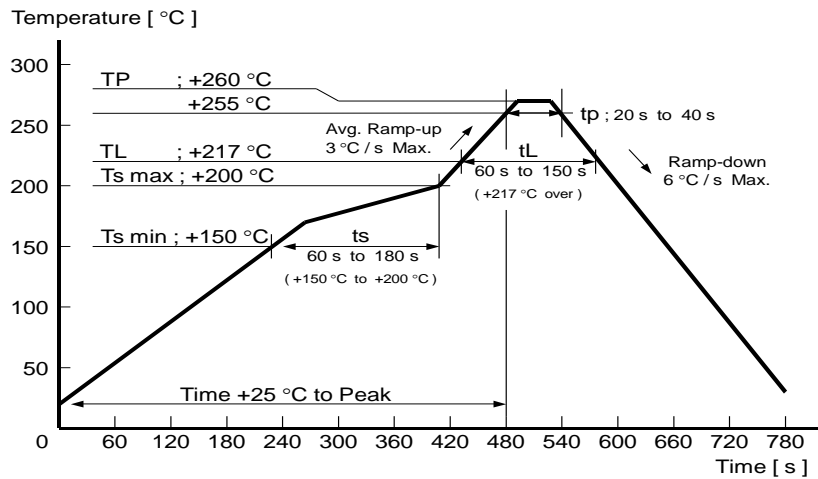
Unit: mm



V(mm)	W(mm)
9.0±0.3	11.4±1

6.Reflow profile

Reflow condition (Follow of JEDEC STD-020D.01)



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