



Quartz Crystal Series	Features ◆RoHS Compliant ◆Ceramic/metal package	
3225B		

Electrical Specifications

Item	Specifications	Remarks
Nominal Frequency Range	9.800MHz to 66.000MHz	Fund.; AT-Cut
	40.000MHz to 150.000MHz	3 rd O.T.;AT-Cut
Frequency Tolerance	±10ppm(Standard) at 25°C±3°C	Others are offered
Load Capacitance	Fund.: 7pF to 20pF	Please specify
Series Resistance	As ESR table	
Shunt Capacitance	5pF Max	
Drive Level	100µW Max	
Operating Temperature	-20°C to +70°C(Standard)	Others are offered
Storage Temperature	-55°C to +150°C	
Stability vs. Temperature	±10ppm(Standard)	Others are offered
Insulated Resistance	500MΩ	Minimum
Aging	±2ppm/year	Maximum

ESR(Series Resistance)

Frequency(MHz)	Mode	Ohm Max	Frequency(MHz)	Mode	Ohm Max
9.800~11.999	Fund.;AT	200	30.000~66.000	Fund.;AT	40
12.000~19.999	Fund.;AT	80	40.000~100.000	3 rd O.T.;AT	120
20.0001~29.999	Fund.;AT	60	100.001~150.000	3 rd O.T.;AT	90

Stability vs. Temperature

◆ Standard		1	2	3	5	6	7	Remarks
◇ Please specify		±10ppm	±20ppm	±30ppm	±50ppm	±100ppm	±150ppm	
B	-10°C to +60°C	◇				◇		
C	-20°C to +70°C	◆	◇	◇	◇	◇	◇	Standard
D	-40°C to +85°C		◇	◆	◇	◇	◇	
E	-45°C to +125°C			◇	◆	◇	◇	

Ordering Information

Q	R	Type	Pin	XX.XXXX	M	Mode	CL pF	Freq.Tolerance at 25°C	Operating Temp.	Stability Vs.Temp.	Option
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Q:Quartz 32: B:4 Center frequency M: F:Fund.:AT See Table ±10ppm to ±150ppm See Table See Table F:Lead Free
 R:Resonator 3.2*2.5mm 9.8 to 150.0MHz MHz O: 3rd O.T.;AT

Example:QR32B16.0000MFT1C1F

(Crystal,SMD3.2*2.5mm,16.0000MHz,4pins,Fund:AT,12pF, ±10ppm,-20 to +70deg, ±10ppm.T&R,Lead free)

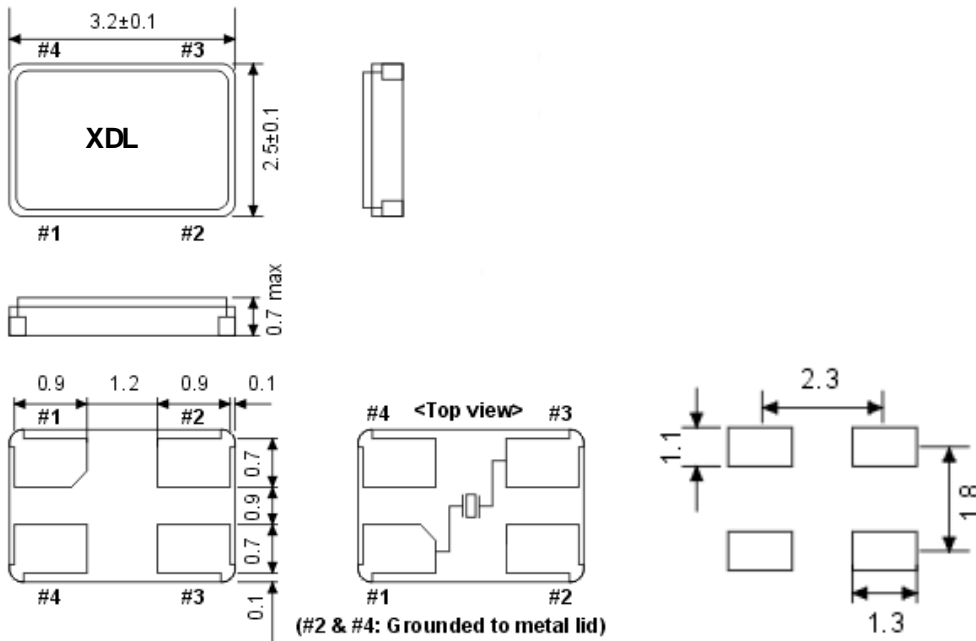
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Load Capacitance Codes

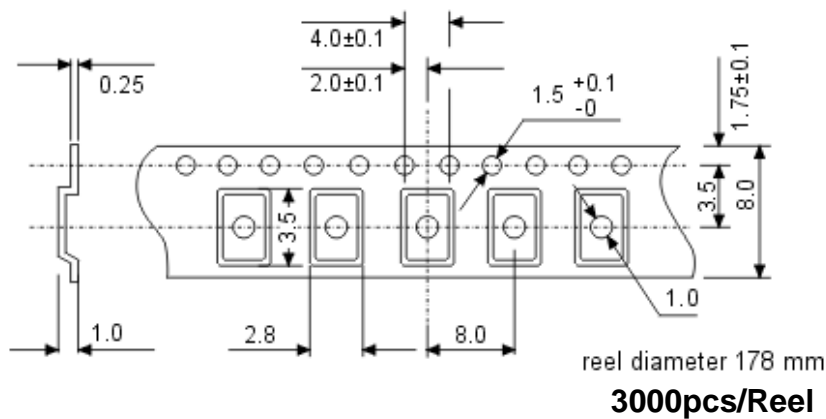
7pF: E	8pF: F	9pF: B	10pF: R
12pF: T	15pF: H	16pF: I	18pF: J
20pF: K	22pF: L	25pF: G	27pF: M
30pF: N	32pF: P	33pF: W	Series: S

Dimensions



Unit:mm

Taping Specification



Reflow Soldering Profile

