

# GSC47K Series

## KHz Quartz Crystal Unit

### Features

- Nominal Frequency 32.768KHz

### Mechanical Data

- 3215 Package
- RoHS Compliant and Halogen Free

### Packages & Pin Assignments

3215	Equivalent Circuit
	

### Ordering and Marking Information

Ordering Information						
Part Number	F	F <sub>tol</sub>	C <sub>L</sub>	ESR	Marking	Reel
	KHz	ppm	pF	Ω		PCS
GSC47K3220F-1250K	32.768	±20	12.5	50K	X□□□□A	3,000
GSC47K3220F-1270K				70K		
GSC47K3220F-0950K			9	50K	X□□□□B	
GSC47K3220F-0970K				70K		
GSC47K3220F-0750K			7	50K	X□□□□C	
GSC47K3220F-0770K				70K		
GSC47K3220F-0650K			6	50K	X□□□□D	
GSC47K3220F-0670K				70K		

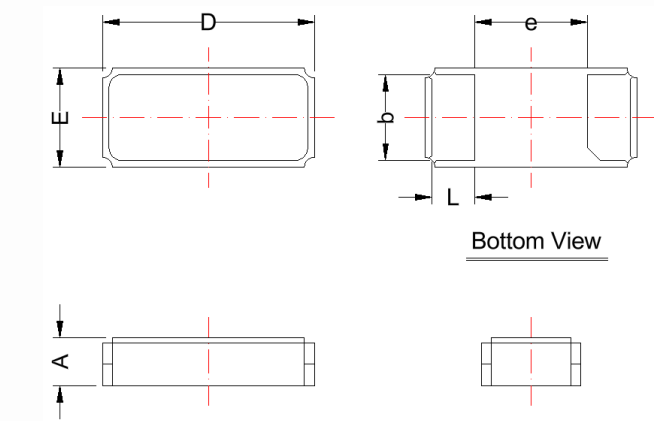
■ Marking □□□□ for GS Code

## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)

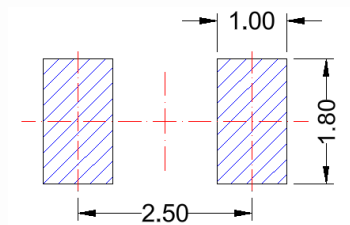
Symbol	Description	Min	Typ	Max	Unit	Note
	Crystal Cut Type	NT				
F	Nominal Frequency		32.768		KHz	
FT	Frequency Tolerance	-20		20	ppm	
K	Parabolic Curvature Constant		-0.04		ppm/°C <sup>2</sup>	
	Aging	-3		3	ppm	Per Year
C <sub>L</sub>	Load Capacitance		12.5		pF	-12xxK
			9			-09xxK
			7			-07xxK
			6			-06xxK
DL	Drive Level		0.1	0.5	μW	
ESR	Equivalent Series Resistance			50	KΩ	-xx50K
				70		-xx70K
C <sub>0</sub>	Shunt Capacitance			1.6	pF	
C <sub>1</sub>	Motional Capacitance			5	fF	
R <sub>INS</sub>	Insulation Resistance	500			MΩ	@ DC100V
T <sub>i</sub>	Turnover Temperature	20	25	30	°C	
T <sub>OPR</sub>	Operation Temperature	-40		85	°C	
T <sub>STG</sub>	Storage Temperature	-55		125	°C	
T <sub>L</sub>	Soldering Temperature			350	°C	t =< 4s

# 3215

## Package Dimension



## Recommended Land Pattern



Unit:mm

Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	---	0.90	---	0.035
b	1.20	1.40	0.047	0.055
D	3.10	3.40	0.122	0.134
E	1.40	1.60	0.055	0.063
e	1.70 TYP		0.067 BSC	
L	0.55	0.75	0.012	0.016





**NOTE:**



Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

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