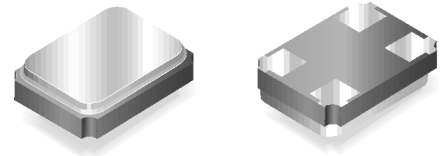


# HE-MCC-32 MINIATURE CERAMIC SURFACE MOUNT CRYSTAL



The HE-MCC-32 is the most compact all ceramic surface mount crystal in the industry, with a package size of only 3.2 x 2.5 x 0.7mm. This crystal is offered with a wide frequency range from 13 MHz up to 48 MHz, fundamental operating mode, ability to withstand IR or vapor phase reflow soldering processes, and stabilities as tight as  $\pm 15$  PPM over  $-30^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  (selected frequencies), making the HE-MCC-32 ideal for very space limited applications.



## ELECTRICAL SPECIFICATIONS

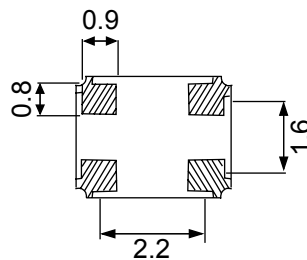
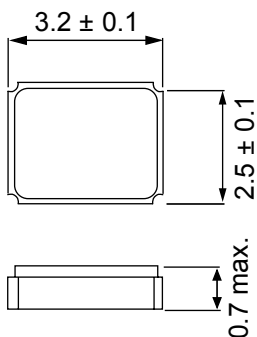
PARAMETERS	CONDITIONS	MINIMUM	STANDARD	MAXIMUM	UNIT
FREQUENCY RANGE		12.000		55.000	MHz
FREQ. TOLERANCE	at 25 °C	$\pm 10$	$\pm 50^*$		PPM
FREQ. STABILITY (reference @ 25°C)	-10 °C to +60 °C	$\pm 10$	$\pm 50^*$		PPM
OPERATING TEMPERATURE		-10 °C to +60 °C // -40 °C to +85 °C Optional			°C
STORAGE TEMPERATURE		-40 °C to +85 °C // -55 °C to +125 °C Optional			°C
SHUNT CAPACITANCE ( $C_0$ )				5.0	pF
LOAD CAPACITANCE ( $C_L$ )	To be specified	6.0	18.0		pF
DRIVE LEVEL	12.800 - 80.000 MHz		0.1		mW
AGING CHARACTERISTICS			$\pm 5$ PPM max. @ 25 °C per year		

\* Tight tolerances optional - please specify

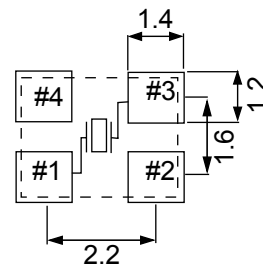
## EQUIVALENT SERIES RESISTANCE

Frequency Range (MHz)	OSC. Mode	Max. ESR ( $\Omega$ )	Frequency Range (MHz)	OSC Mode	Max. ESR ( $\Omega$ )
16.00 MHz	AT Fund	100	27.00 MHz	AT Fund	80
24.00 MHz	AT Fund	80	32.00 MHz	AT Fund	60

## MECHANICAL DRAWING



Recommended Solder Pad Layout



Unit : mm