

**TB15SMX**

**32.768 kHz SURFACE MOUNT CRYSTAL**

**FEATURES**

5.0 x 1.5 mm cylindrical



- ▶ Miniature SMD package
- ▶ Formed leads for low cost SMD type
- ▶ Applications : RealTime Clock , Wireless applications , ....

Item	Symbol	Specification
Nominal Frequency	Fo	32.768 kHz / 30.0 - 100.0 kHz*
Cut		XY-cut
Operating temperature Range	To	-40° to +85°C
Frequency Tolerance at 25°C	$\Delta f/F$	$\pm 20$ ppm standard ( see options )
Temperature coefficient	$\beta$	-0.040 ppm/°C <sup>2</sup> max
Load Capacitance	CL	12.5 pF standard ( see options )
Equivalent Series Resistance	ESR	60 k $\Omega$ max.
Quality Factor	Q	60000 typ.
Shunt Capacitance	Co	1.00 pF typ.
Insulation Resistance	Ri	500 M $\Omega$ min. ( at 100Vdc )
Drive Level	DL	1.0 $\mu$ W typ.
Aging	$\Delta f/F$	$\pm 3$ ppm max (at 25°C, first year)
Packing Unit		3000pcs / reel
Soldering Condition		260°C , 10 sec x2 max

\*Need to contact us for the available frequency.

**OPTIONS & ORDERING INFORMATION**

TB15SMX		32.768 kHz
	Freq. Tolerance	Load Capacitance
	<b>10</b> = $\pm 10$ ppm	<b>12.5</b> = 12.5 pF
	<b>20</b> = $\pm 20$ ppm	<b>10</b> = 10.0 pF
	<b>30</b> = $\pm 30$ ppm	<b>9</b> = 9.0 pF
		<b>7</b> = 7.0 pF
		<b>6</b> = 6.0 pF

## OUTLINE DIMENSIONS (MM)

