

MINIATURE SMD REAL TIME CLOCK OSCILLATOR (6.5 x 4.0 x 2.0mm)

FEATURES:

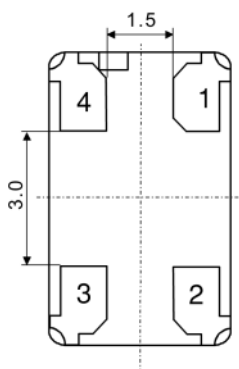
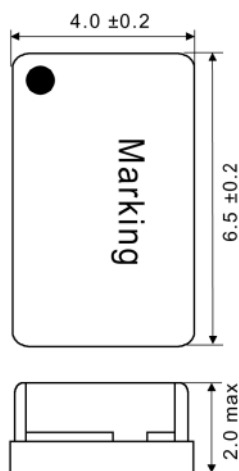
- HCMOS OUTPUT @ 32.768kHz
- LOW VOLTAGE
- LOW CURRENT



■ SPECIFICATION

FREQUENCY		32.768kHz
FREQUENCY TOLERANCE @ 25°C		±30ppm max.
FREQUENCY STABILITY		±20ppm ~ ±100ppm
OPERATING TEMPERATURE RANGE		STD: -10°C ~ 60°C (See P/N guide for other options)
STORAGE TEMPERATURE RANGE		-55°C ~ 125°C
SUPPLY VOLTAGE ±10%		1.8V _{DC} ~ 5.0V _{DC}
SUPPLY CURRENT		3.0µA typ. 5.0µA max. (V _{DD} = 3.3V without load)
OUTPUT	LOGIC FAMILY	HCMOS
	LOAD	15pF max.
	LEVEL LOGIC '1' (V _{OH})	0.9 x V _{DD} min.
	LEVEL LOGIC '0' (V _{OL})	0.1 x V _{DD} max.
	SYMMETRY(DUTY CYCLE)	45% / 55% @ 1/2 V _{DD} level
	RISE AND FALL TIME (Tr/Tf)	100nS typ., 200nS max.
	START-UP TIME	500mS max. (V _{DD} = 3.3V @ 25°C)
STAND-BY VOLTAGE	ENABLE (V _{IH})	0.7 x V _{DD} ≤ V _{IH} ≤ V _{DD} or N/C
	DISABLE (V _{IL})	V _{IL} ≤ 0.3 x V _{DD}
STAND-BY CURRENT		1.7µA max. (V _{DD} = 3.3V & Pin#1= V _{IL})
ENABLE DELAY TIME		150nS max.
DISABLE DELAY TIME		500mS max.
AGING @ +25°C ±3°C		±5.0ppm / 1 st year max.
PHASE JITTER RMS (12kHz ~ 20MHz)		1pS max.

■ PACKAGE DIMENSIONS

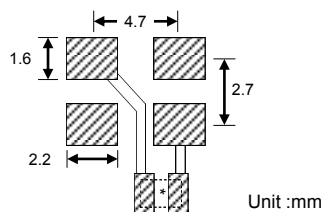


Unit : mm

Pin Configuration		
1	Disable	Enable
2	GND	
3	Z*	Output
4	V _{DD}	

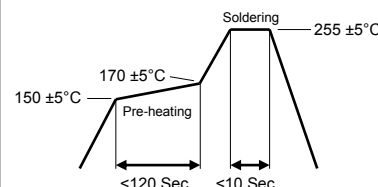
*Z: high impedance

■ SOLDER PATTERN



*0.01µF to 0.1µF bypass capacitor recommended

■ REFLOW PROFILE



Note: Consult factory for detail

■ PART NUMBERING GUIDE

TSL64 - H 60 HM 33 S T - 32.768K - TR									
Product series		Output		Stability		Operating Temperature		Tape and Reel	
H: HCMOS		00: ± 100ppm 50: ± 50ppm 30: ± 30ppm 25: ± 25ppm 20: ± 20ppm XX: Two digit for Stability		A: -55 F: -20 M: 70 S: 100 B: -50 G: -10 N: 75 T: 105 C: -40 H: 0 P: 80 U: 125 D: -35 J: 50 Q: 85 X: custom E: -30 K: 60 R: 90		TR: 1000/reel Blank: Cut tape		Frequency	
								Tristate	
								K: kHz	
								T: En/Disable	
								Symmetry	
								S: 45/55%	
								Supply Voltage	
								18: 1.8 Volt	
								25: 2.5 Volt	
								33: 3.3 Volt	
								50: 5.0 Volt	

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