

MINIATURE CERAMIC SMD OSCILLATOR (7.0 x 5.0 x 1.5mm)

FEATURES:

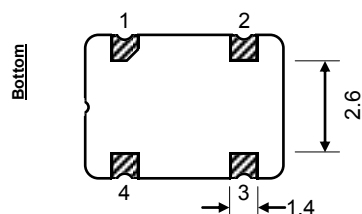
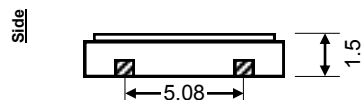
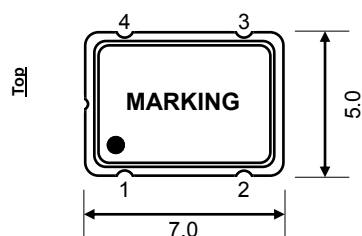
- STANDARD SMD PACKAGE OSCILLATOR
- LOW NOISE / LOW CURRENT
- LOW COST / SHORT LEAD TIME



SPECIFICATION

FREQUENCY RANGE		1.000MHz ~ 165.000MHz	1.000MHz ~ 200.000MHz	1.000MHz ~ 150.000MHz
FREQUENCY STABILITY		$\pm 10\text{ppm} \sim \pm 100\text{ppm}$		
OPERATING TEMPERATURE RANGE		STD: $0^{\circ}\text{C} \sim 70^{\circ}\text{C}$, Option: $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$, $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$ (See P/N guide for other options)		
STORAGE TEMPERATURE RANGE		$-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$		
SUPPLY VOLTAGE $\pm 10\%$		$1.8V_{\text{DC}} \sim 2.5V_{\text{DC}}$	$3.3V_{\text{DC}}$	$5.0V_{\text{DC}}$
SUPPLY CURRENT	$1\text{MHz} \leq f < 25\text{MHz}$	12mA max.	15mA max.	20mA max.
	$25\text{MHz} \leq f < 50\text{MHz}$	15mA max.	20mA max.	30mA max.
	$50\text{MHz} \leq f < 70\text{MHz}$	20mA max.	30mA max.	45mA max.
	$70\text{MHz} \leq f < 125\text{MHz}$	30mA max.	60mA max.	60mA max.
	$125\text{MHz} \leq f$	40mA max.	60mA max.	80mA max.
OUTPUT	LOGIC FAMILY	HCMOS, TTL, CMOS/TTL		
	LOAD	15pF	30pF max. (15pF typ.)	50pF max. (15pF typ.)
	LEVEL LOGIC '1' (V_{OH})	HCMOS: $0.9 \times V_{\text{DD}}$ min. TTL: $2.4V_{\text{DC}}$ min.		
	LEVEL LOGIC '0' (V_{OL})	HCMOS: $0.1 \times V_{\text{DD}}$ max. TTL: $0.4V_{\text{DC}}$ max.		
	SYMMETRY(DUTY CYCLE)	STD: 40% / 60% , Option: 45% / 55%		
	RISE AND FALL TIME (T_r/T_f)	7nS max.	8nS max.	10nS max.
	START-UP TIME	10mS max.		
STAND-BY VOLTAGE	ENABLE (V_{IH})	$0.7 \times V_{\text{DD}} \leq V_{\text{IH}} \leq V_{\text{DD}}$ or N/C		
	DISABLE (V_{IL})	$V_{\text{IL}} \leq 0.3 \times V_{\text{DD}}$		
ENABLE/DISABLE DELAY TIME		10mS max.		
AGING @ $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$		$\pm 3.0\text{ppm} / 1^{\text{st}}$ year max.		
PHASE JITTER RMS (12kHz ~ 20MHz)		1pS max.		

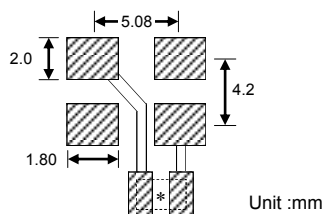
PACKAGE DIMENSIONS



Unit : mm

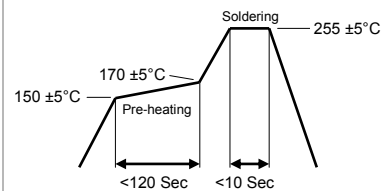
Pin Configuration	
1	N.C. or En/Dis
2	GND
3	Output
4	V_{DD}

SOLDER PATTERN



*0.01μF to 0.1μF bypass capacitor recommended

REFLOW PROFILE



Note: Consult factory for detail

PART NUMBERING GUIDE

TSM75 - H 50 HM 33 S T - 12.000M - TR									
Product series		Output		Stability		Operating Temperature		Tape and Reel	
H: HCMOS T: TTL		00: $\pm 100\text{ppm}$ 50: $\pm 50\text{ppm}$ 25: $\pm 25\text{ppm}$ 15: $\pm 15\text{ppm}$ 10: $\pm 10\text{ppm}$ 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	
								M: MHz	
								T: En/Disable N: N/C	
								Symmetry	
								R: 40/60% 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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