

MINIATURE SMD HCMOS/TTL OSCILLATOR (5.0 x 3.2 x 1.3mm)

FEATURES:

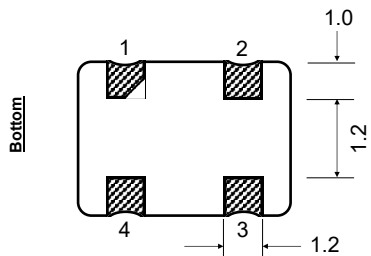
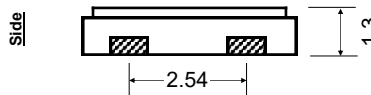
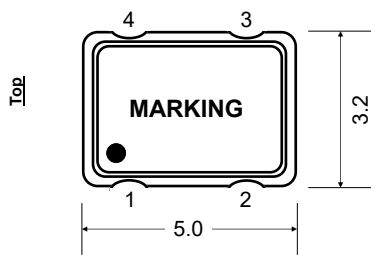
- WIDE FREQUENCY RANGE
- LOW VOLTAGE / LOW CURRENT
- LOW COST



■ SPECIFICATION

FREQUENCY RANGE	312KHz ~ 60MHz	25KHz ~ 165MHz	25KHz ~ 220MHz	25KHz ~ 160MHz
FREQUENCY STABILITY	±10ppm ~ ±100ppm			
OPERATING TEMPERATURE RANGE	STD: 0°C ~ 70°C, Option: -40°C ~ 85°C (See P/N guide for other options)			
STORAGE TEMPERATURE RANGE	-55°C ~ 125°C			
SUPPLY VOLTAGE ±10%	1.0V _{DC}	1.8V _{DC}	2.5~3.3V _{DC}	5.0V _{DC}
SUPPLY CURRENT	4mA max.	25mA max.	40mA max.	35mA max.
OUTPUT	LOGIC FAMILY	HCMOS, TTL, CMOS/TTL		
	LOAD	15pF typ. (30pF, 50pF available)		
	LEVEL LOGIC '1' (V_{OH})	HCMOS: 0.9 x V _{DD} min. TTL: 2.4V _{DC} min.		
	LEVEL LOGIC '0' (V_{OL})	HCMOS: 0.1 x V _{DD} max. TTL: 0.4V _{DC} max.		
	SYMMETRY (DUTY CYCLE)	40% / 60% @ 1/2V _{DD} level, Option: 45% / 55%		
	RISE AND FALL TIME (Tr/Tf)	1.0nS typ. , 8.0nS max.		
	START-UP TIME	10mS max.		
STAND-BY VOLTAGE	ENABLE (ViH)	0.7 x V _{DD} ≤ ViH ≤ V _{DD} or N/C		
	DISABLE (ViL)	ViL ≤ 0.3 x V _{DD}		
ENABLE / DISABLE DELAY TIME	10mS max.			
AGING @ 25°C ± 3°C	±3.0ppm / 1 st year max.			
PHASE JITTER RMS (12kHz ~ 20MHz)	1.0pS max.			

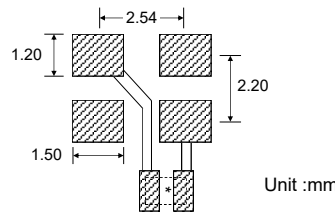
■ PACKAGE DIMENSIONS



Unit : mm

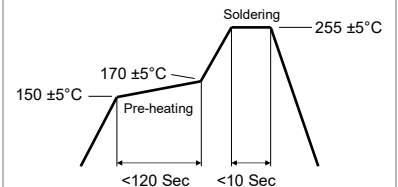
Pin Configuration	
1	En/Dis
2	GND
3	Output
4	V _{DD}

■ SOLDER PATTERN



*0.01µF to 0.1µF bypass capacitor recommended

■ REFLOW PROFILE



Note: Consult factory for detail

■ PART NUMBERING GUIDE

TSM53 - H 50 HM 33 S T - 12.000M - TR

Output
H: HCMOS
T: TTL

Stability
00: ± 100ppm
50: ± 50ppm
25: ± 25ppm
15: ± 15ppm
10: ± 10ppm
XX: Two digit for stability

Operating Temperature
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

Supply Voltage
10: 1.0 Volt
18: 1.8 Volt
25: 2.5 Volt
33: 3.3 Volt
50: 5.0 Volt

Options
Q : AEC-Q200
TR: 1000/reel
Blank: Cut tape

Frequency
K: kHz
M: MHz

Tristate
T: En/Disable
N: N/C

Symmetry
R: 40/60%
S: 45/55%

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