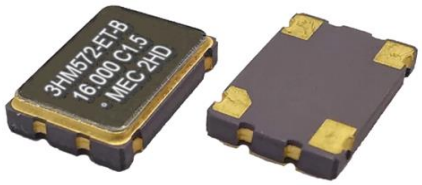
EMI Reduction Spread Spectrum Clock Oscillators [Programmable Quick Turn]

QUIKXO MERCURY QUICK - TURN Oscillators

HM _ B	B group	SMD	CMOS	2.5 V / 3.3 V	Min. 3.0 MHz	Max. 200 MHz

- Reduces electromagnetic Interference (EMI) by approx. 12 dB to 18 dB .
- Drop-In Replacement for Conventional Oscillators
- No Need to Re-Spin the Board or Solder Pad Layout
- Operates with a +2.5V or 3.3V Supply Voltage
- 5.0 x 3.2 , 7.0 x 5.0 and 11.4 x 9.6 mm package size



General specifications of all available packages , at Ta=+25°C , CL=15pF

Group	B group		
Available Packages	**HM53** (5.0 * 3.2 * 1.2 mm)	**HM572** (7.0 * 5.0 * 1.4 mm)	**HM43** (11.4 * 9.6 * 3.0 mm)
Output Waveform	CMOS (square wave)		
Supply Voltage (V_{DD})	+ 2.5 V ± 10%		+ 3.3 V ± 10%
Frequency Range	3.0 MHz ~ 166 MHz		3.0 MHz ~ 200 MHz
Output Logic High " 1 "	2.25 V (min.)		2.97 V (min.)
Output Logic Low " 0 "	0.25 V (max.)		0.33 V (max.)

Spread Type	Spread Percentage EMI Reduction Rate			
Center Spread (" C ")	± 0.125 % (C0.125) to ± 2.0 % (C2.0) in ± 0.125 % steps			
Down Spread (" D ")	- 0.25 % (D0.25) to - 4.0 % (D4.0) in 0.25 % steps			
Frequency Stability Codes (exclude modulation)	Frequency Stability over Operating Temperature Range	± 25 ppm	± 50 ppm	± 100 ppm
	Commercial (-10°C to +70°C)	*A*	*B*	*C*
	Industrial (-40°C to +85°C)	*D*	*E*	*F*
Modulation Carrier Freq. (Dither rate)	30 KHz (min.) ; 40.0 KHz (max.) Frequency dependent. Call for details.			
Current Consumption	3 MHz ~ 100 MHz : 20 mA (max.)		101 MHz ~ 200 MHz : 30 mA (max.)	
Rise Time / Fall Time	5.0 nsec (max.) , 10% ↔ 90% waveform			
Output Load	15 pF			
Start-up Time	3.0 msec. (typ.) ; 5 msec. (max.)			
Duty Cycle	50% ± 10%			
Aging at Ta = +25°C	± 5 ppm per year (max.)			
Storage Temperature	-55°C to + 125°C			
Output Enable / Disable Function	Enable	70% (min.) of V_{DD} to Enable Output.		
	Disable	30% (max.) of V_{DD} to Disable Output.		
	Output enable /disable time: 100 nsec. (max.)			

EMI Reduction Spread Spectrum Clock Oscillators

Part Number Format and Example

[1]	[2]	-	[3]	[4]	-	[5]	[6]	-	[7]
Supply Voltage	Holder Type		Frequency Stability	OE Function		Center Frequency	Group Type		Spread type Percentage

Examples	(1)	3	HM572	-	B	T	-	10.000	R	-	C1.5
	(2)	25	HM53	-	F	T	-	75.000	B	-	C2.0
	(3)	18	HM32	-	E	T	-	25.000	C	-	D1.0

Ex (1) : 3HM572 - BT - 10.000R - C1.5 [+3.3V, HM-series, HM572 type, ±50ppm from -10°C to +70°C, OE Function, 10.000MHz, R Group, 1.5% center spread]

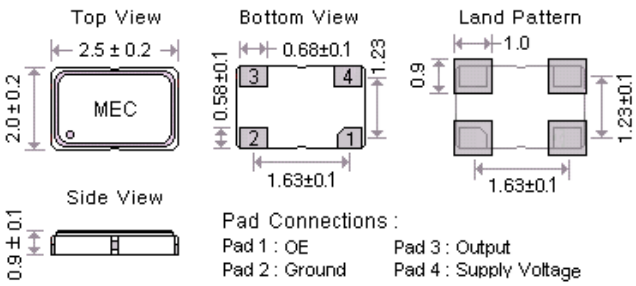
Ex (2) : 25HM53 - FT - 75.000B - C2.0 [+2.5V, HM-series, HM53 type, ±100ppm from -40°C to +85°C, OE Function, 75.000MHz, B Group, 2.0% center spread]

Ex (3) : 18HM32 - ET - 25.000C - D1.0 [+1.8V, HM-series, HM32 type, ±50ppm from -40°C to +85°C, OE Function, 25.000MHz, C Group, 1.0% down spread]

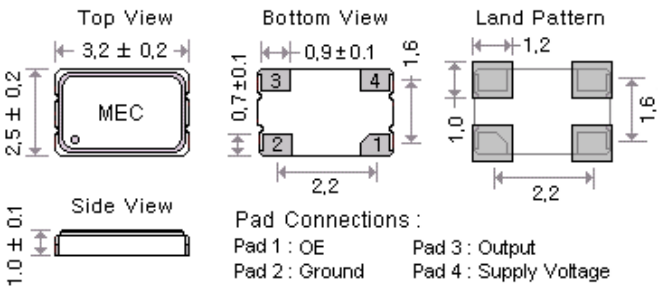
[1]	Supply voltage code : " 18 " for +1.8V , " 25 " for +2.5V , " 3 " for +3.3V	
[2]	Holder Type (HM22 , HM32 , HM53 , HM572 or HM43)	
[3]	-10°C ~ 70 °C	" A " ± 25ppm ; " B " ± 50ppm ; " C " ± 100ppm
	-40°C ~ 85 °C	" D " ± 25ppm ; " E " ± 50ppm ; " F " ± 100ppm
[4]	" T " for OE Function	
[5]	Frequency in MHz	
[6]	Group " R " , " B " , " C "	
[7]	Spread type & percentage ; " C " for center spread , " D " for down spread	

Outline Dimensions (Unit : mm) , Suggested pad Layout for SMDs

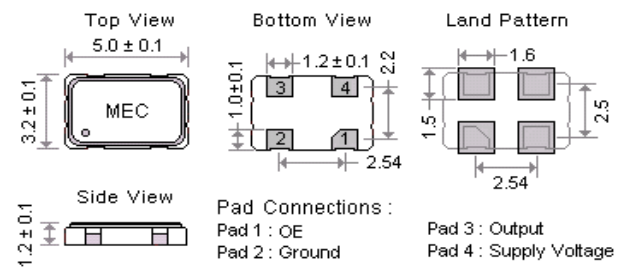
[HM22] For group : **C**



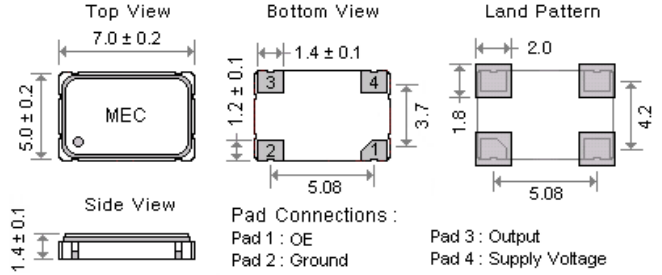
[HM32] For group : **C**



[HM53] For group : **R** **B** **C**

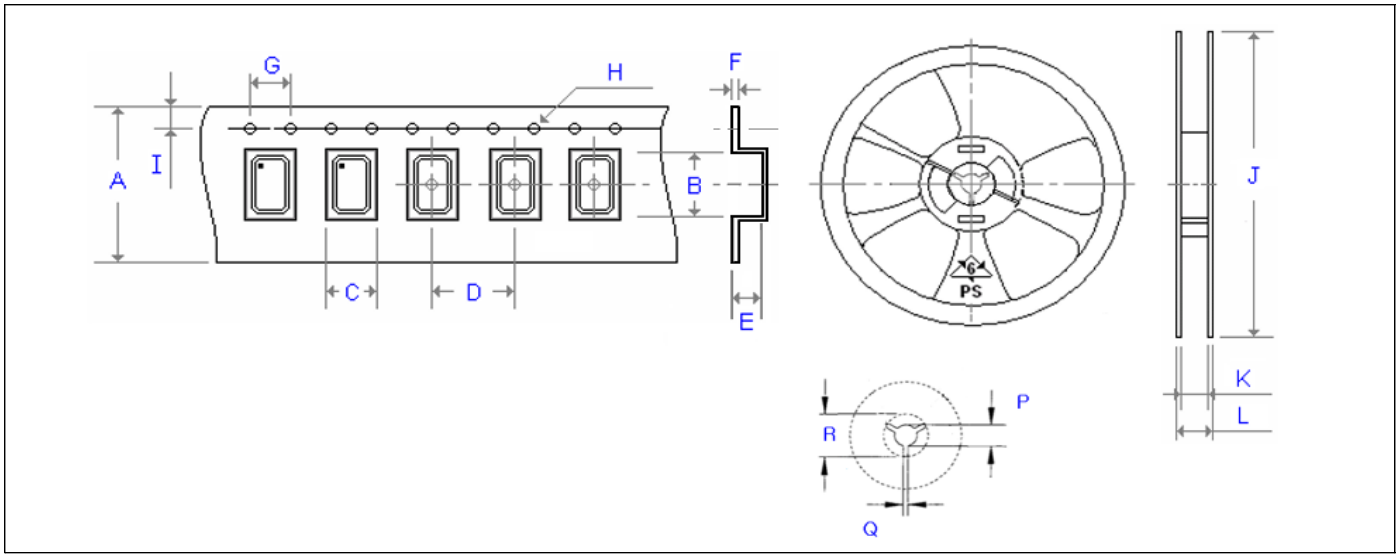


[HM572] For group : **R** **B** **C**



Emboss Taping and Reel Specifications

[Crystal Oscillator Units]



Carrier Type Dimensions (unit : mm) ±0.3mm

	A	B	C	D	E	F	G	H	I	pcs / reel
H21	8.00	2.30	1.90	4.00	0.90	0.25	4.00	Ø 1.50	1.75	3000
H_22	8.00	2.80	2.25	4.00	1.10	0.30	4.00	Ø 1.50	1.75	3000
H_32	8.00	3.40	2.70	4.00	1.40	0.25	4.00	Ø 1.50	1.75	3000
H_53	12.00	5.30	3.60	8.00	1.40	0.30	4.00	Ø 1.50	1.75	1000
H_57	16.00	7.30	5.30	8.00	1.90	0.32	4.00	Ø 1.50	1.75	1000
SWO	16.00	7.20	5.40	8.00	1.80	0.32	4.00	Ø 1.50	1.75	1000
H _ 226	8.00	2.80	2.25	4.00	1.10	0.30	4.00	Ø 1.50	1.75	3000
H _ 326	8.00	3.40	2.70	4.00	1.40	0.25	4.00	Ø 1.50	1.75	3000
H _ 536	12.00	5.30	3.60	8.00	1.40	0.30	4.00	Ø 1.50	1.75	1000
H _ 576	16.00	7.30	5.30	8.00	1.90	0.32	4.00	Ø 1.50	1.75	1000
H _ 328	8.00	3.40	2.70	4.00	1.40	0.25	4.00	Ø 1.50	1.75	3000
H _ 538	12.00	5.40	3.60	8.00	1.70	0.30	4.00	Ø 1.50	1.75	1000
H _ 578	16.00	7.30	5.30	8.00	1.90	0.32	4.00	Ø 1.50	1.75	1000
H_43	24.00	11.80	10.00	16.00	5.00	0.30	4.00	Ø 1.50	1.75	500

Reel Dimensions (unit : mm) ±2mm

	J	K	L	P	Q	R	pcs / reel
H21	180.00	9.00	12.00	13.00	2.50	20.20	3000
H_22	180.00	8.40	11.40	13.00	2.50	20.20	3000
H_32	180.00	9.00	12.00	13.00	2.50	20.20	3000
H_53	180.00	13.00	16.00	13.00	2.50	20.20	1000
H_57	180.00	17.20	19.30	13.00	2.50	20.20	1000
SWO	180.00	17.20	19.30	13.00	2.50	20.20	1000
H_226	180.00	8.40	11.40	13.00	2.50	20.20	3000
H_326	180.00	9.00	12.00	13.00	2.50	20.20	3000
H_536	180.00	13.00	16.00	13.00	2.50	20.20	1000
H _ 576	180.00	17.20	19.30	13.00	2.50	20.20	1000
H _ 328	180.00	8.00	12.00	13.00	2.50	20.20	3000
H _ 538	180.00	13.00	16.00	13.00	2.50	20.20	1000
H _ 578	180.00	17.20	19.30	13.00	2.50	20.20	1000
H_43	330.00	24.50	29.10	13.00	2.50	20.20	500