

### Features

- Frequency range : 1MHz to 200MHz
- SMD seam sealing ceramic package
- Supply voltage : 1.8V ~ 3.3V
- CMOS output
- Tri-state function available
- Dimensions L 2.5 x W 2.0 x H 0.8 mm
- AEC-Q100 compliant (option)
- RoHS compliant & Pb free

### Applications

- Networking, Server, Storage
- Wireless communications
- Fibre channel, Ethernet, SATA, SAS, PCI-E, USB, WLAN, xDSL, xPON
- PC mainboard, Notebook, HDD, SSD, Graphics card, Computer peripherals
- Audio, Video, Gaming, Printer, DSC, IP CAM, Consumer products

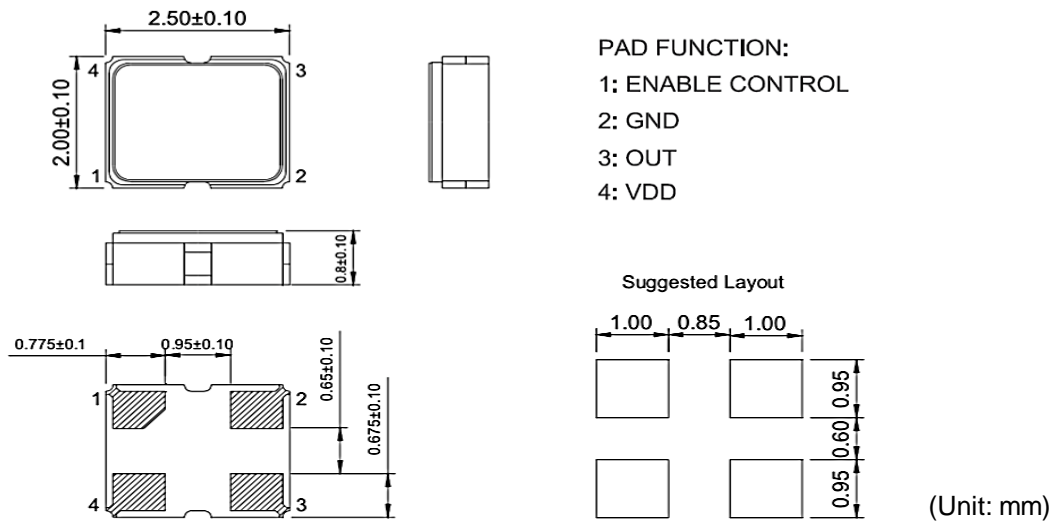
### Electrical Characteristics

Item	QTM252J	Conditions
Frequency Range ( $F_0$ )	1MHz ~ 125MHz	$V_{DD}=1.8V$
	1MHz ~ 200MHz	$V_{DD}=2.5V, 3.3V$
Frequency Stability ( $F_{stab}$ )	$\pm 50$ ppm	Note [2]
Operating Temperature Range ( $T_{OTR}$ )	$-40^{\circ}C \sim +85^{\circ}C$	
	$-40^{\circ}C \sim +105^{\circ}C$	
Supply Voltage ( $V_{DD}$ )	Typ. 1.8V (1.65V ~ 1.95V) Typ. 2.5V (2.25V ~ 2.75V) Typ. 3.3V (2.97V ~ 3.63V)	
Current Consumption ( $I_{DD}$ )	22 mA Max.	No load, $F_0=110MHz$ , $V_{DD}=2.5V\sim 3.3V$
OE Mode Disable Current ( $I_{od}$ )	18 mA Max.	OE=GND, output is Pulled Down
PDB Mode Standby Current ( $I_{std}$ )	400 $\mu A$ Typ.	OE=GND, output is Pulled Down
Output Type	CMOS	
Output Load ( $C_L$ )	15 pF	
Duty Cycle	45% ~ 55%	
Rise & Fall Time ( $T_r / T_f$ )	1.5 ns Typ.	$C_L=15pF$ , 10%~90% $V_{DD}$ high drive ( $V_{DD}=2.5V, 3.3V$ )
Output Voltage High ( $V_{OH}$ )	$V_{DD} - 0.4$ Min.	$I_{OH}=-4mA$ , $I_{OL}=4mA$ , Standard Drive
Output Voltage Low ( $V_{OL}$ )	0.4 Max.	
Input Voltage High ( $V_{IH}$ )	70% $V_{DD}$ Min.	Pin1, OE
Input Voltage Low ( $V_{IL}$ )	30% $V_{DD}$ Max.	
Start-up Time ( $T_{start}$ )	5ms Typ. / 7ms Max.	Note [3]
OE Enable/Disable Time ( $T_{oe}$ )	10 nS Max.	Note [4]
Resume Time ( $T_{resume}$ )	7 mS Max.	In PDB mode, $T_a=25^{\circ}C$ , $C_L=15pF$
PK-PK Period Jitter ( $T_{jitt}$ )	200pS Typ. / 300pS Max.	$F_0=125MHz$ , $V_{DD}=2.5V$ or 3.3V
	220pS Typ. / 300pS Max.	$F_0=125MHz$ , $V_{DD}=1.8V$
Phase Jitter, RMS ( $T_{phj}$ )	0.7pS Typ. / 1.0pS Max.	$F_0=125MHz$ , $V_{DD}=3.3V$ , integrated 12kHz~20MHz
First Year aging ( $F_{aging}$ )	$\pm 1.5$ ppm Max.	at $25^{\circ}C \pm 3^{\circ}C$
10 Years Aging	$\pm 5$ ppm Max.	
Storage Temperature Range ( $T_{STR}$ )	$-55^{\circ}C \sim +125^{\circ}C$	

### Notes:

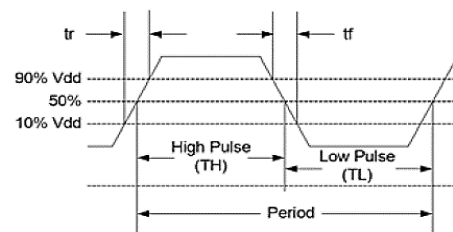
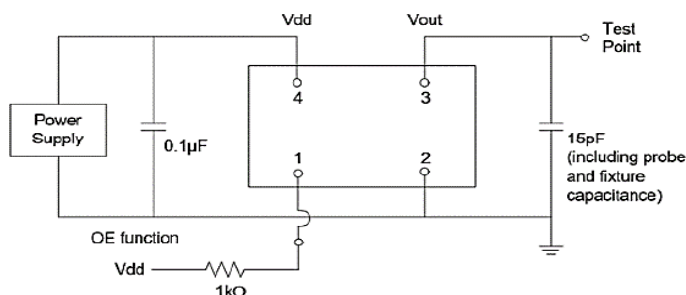
- [1] All electrical specifications in the above table are specified with 15pF output load and for all  $V_{DD}$  unless otherwise stated.
- [2] Inclusive of frequency tolerance at 25°C, 1st year aging at 25°C, and variations over operating temperature, supply voltage, and load.
- [3] Measure from the time  $V_{DD}$  reaches its rated minimum value.
- [4] OE function;  $T_a = 25^\circ\text{C}$ ,  $C_L = 15\text{pF}$ . Add one clock period to this measurement for a usable clock output.

### Dimensions & Pin Configuration



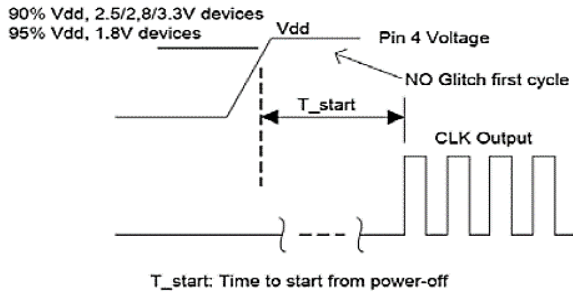
Pin	Symbol	Functionality	
1	OE	Output Enable	H or Open, Specified frequency output. L: output is high impedance. Only output driver is disabled.
		PDB mode (Option)	H or Open, Specified frequency output. L: output is low. Device goes to sleep mode. Supply current reduces to $I_{std}$ .
2	GND	Ground	Electrical ground
3	OUT	Output	Oscillator output
4	VDD	Power	Power supply voltage

### Test Circuit and Waveform

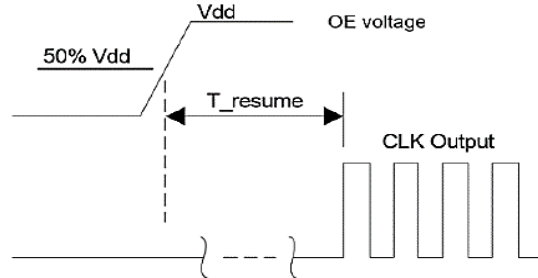


### Test Diagram

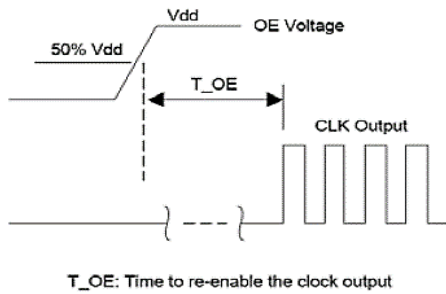
Startup Timing (OE mode)



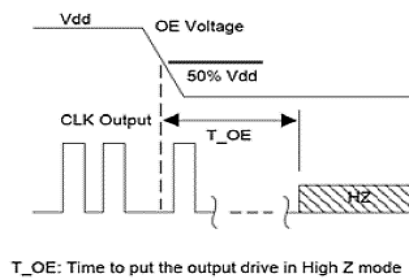
Standby Resume Timing (PDB mode)



OE Enable Timing



OE Disable Timing



### Ordering Information

**QTM252J - 30.000M B E - T**

**Frequency in Hz**  
Please contact us for available frequencies

**Packaging Method**  
T Tape & Reel

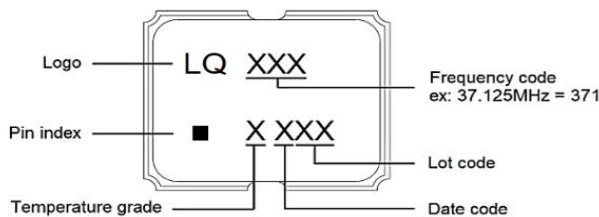
**Supply Voltage**

B	3.3 V
C	2.5 V
D	1.8 V

**Frequency Stability**

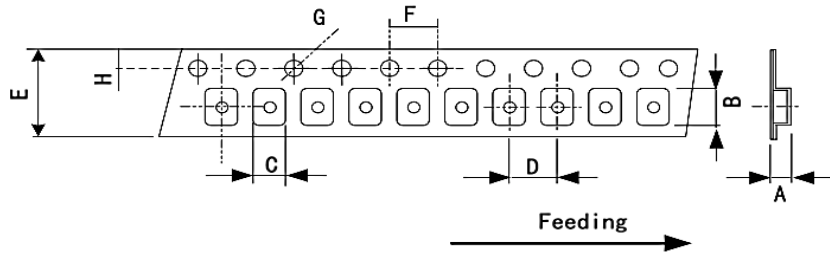
E	± 50 ppm (-40°C ~ +85°C)
J	± 50 ppm (-40°C ~ +105°C)

### Making

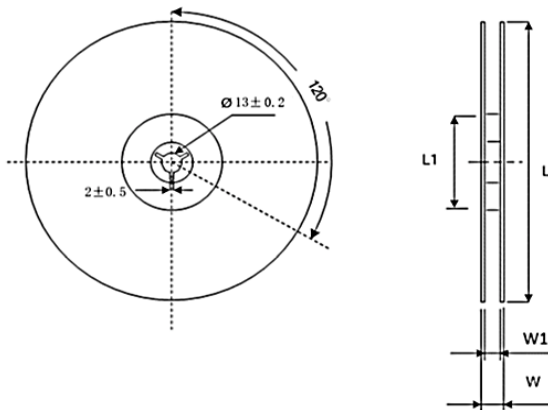
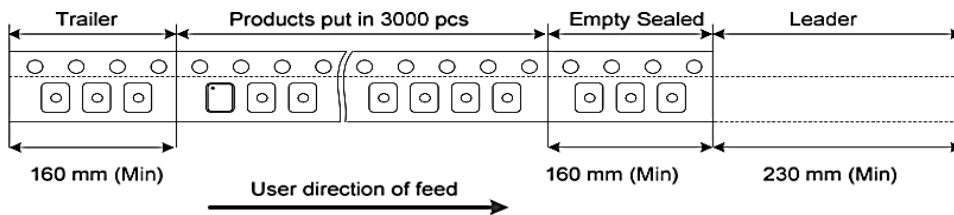


Temperature grade	Temperature range
I	-40°C ~ +85°C
E	-40°C ~ +105°C

### Packing



Dimensions	A	B	C	D	E	F	G	H	(Unit:mm)
	1.15 ±0.05	2.70 ±0.05	2.25 ±0.05	4.00 ±0.10	8.00 ±0.20	4.00 ±0.10	1.55 ±0.05	1.75 ±0.10	



Dimensions	L	L1	W	W1	Standard Reel Quantity is 3,000 pcs per reel (Unit:mm)
	180 0/-3	60 +1/0	11.4 ±1	9 ±0.3	

### Reflow Profile

Solder melting point :  $220^{\circ}\text{C} \pm 10^{\circ}\text{C}$ , 60 sec. Min.

Peak temperature :  $260^{\circ}\text{C} \pm 10^{\circ}\text{C}$ , 10 sec. Min.

