

Features

- Frequency range : 1MHz to 40MHz
- SMD seam sealing ceramic package
- Supply voltage : 1.8V ~ 3.3V
- CMOS output
- Phase modulation clock function selectable for EMI reduction
- External dimensions (mm)
L : 2.0 x W : 1.6 x H : 0.76
- RoHS compliant & Pb free

Applications

- Imaging & Display Devices
- HD Camera, DVR
- HD Surveillance Camera
- Computer Peripherals
- Consumer products

Electrical Characteristics

| Item | QTM216E | Conditions |
|---|--------------------------|--------------------------------------|
| Frequency Range (F ₀) | 1MHz ~ 40MHz | |
| Frequency Stability (F _{stab}) | ±50 ppm | Note [1] & [2] |
| Operating Temperature Range (T _{OTR}) | -40°C ~ +85°C | |
| | -40°C ~ +105°C | |
| | -40°C ~ +125°C | |
| Supply Voltage (V _{DD}) | 1.8V, 2.5V, 3.3V | V _{DD} ± 5% |
| Current Consumption (I _{DD}) | 10 mA Max. | |
| Output Type | CMOS | |
| Output Load (C _L) | 15 pF | |
| Output Voltage High (V _{OH}) | 80% V _{DD} Min. | |
| Output Voltage Low (V _{OL}) | 20% V _{DD} Max. | |
| Rise & Fall Time (T _r / T _f) | 8 ns Max. | 20% ~ 80% of V _{DD} |
| Duty Cycle | 45% ~ 55% | |
| Start-up Time | 1 ms Max. | |
| Phase Jitter, RMS | 1 ps Max. | Note [2] Integrated 12kHz~5MHz. |
| Phase Modulation Clock Mode | Enable | 30% V _{DD} Max. (Logic "0") |
| | Disable | 70% V _{DD} Min. (Logic "1") |
| | | Input to Pin1; Note [3] |
| Aging (F _{aging}) | ±3 ppm Max. | at 25°C±3°C, first year |
| Storage Temperature Range (T _{STR}) | -55°C ~ +125°C | |

Notes:

[1] Inclusive of frequency tolerance at 25°C, variations over operating temperature, supply voltage, load and 1st year aging at 25°C.

[2] Phase modulation clock mode is disabled.

[3] Phase modulation clock mode will be enabled if Pin1 is Logic "0"; Phase modulation clock mode will be disabled if Pin1 is Logic "1" or open (Internal pull-high resistor).

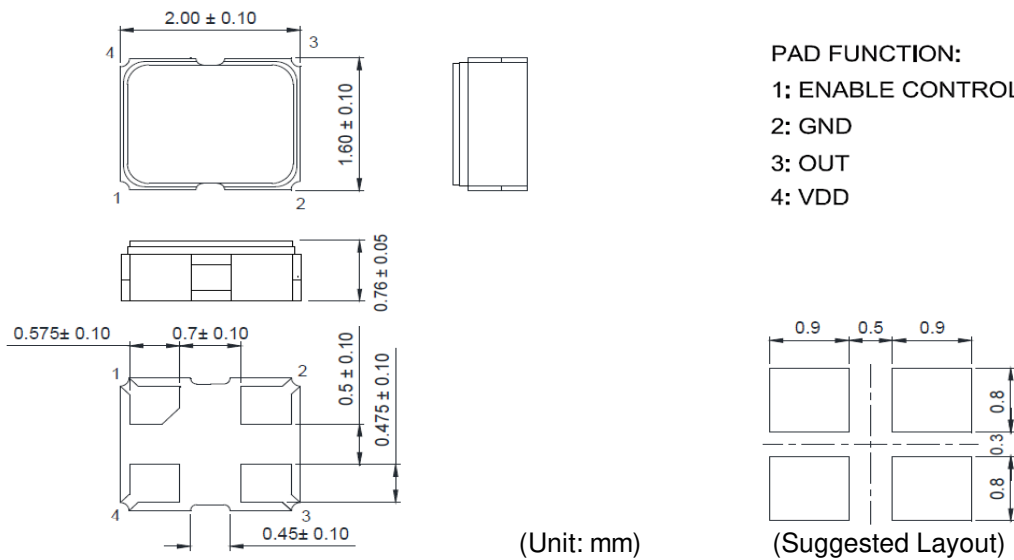
Phase Modulation Mode Deviation [4]

| Frequency (MHz) | Deviaton range (%) | | |
|-----------------|----------------------|----------------------|----------------------|
| | V _{DD} 1.8V | V _{DD} 2.5V | V _{DD} 3.3V |
| 20 | ± 0.54 | ± 0.36 | ± 0.29 |
| 24 | ± 0.62 | ± 0.42 | ± 0.34 |
| 25 | ± 0.65 | ± 0.45 | ± 0.35 |
| 27 | ± 0.70 | ± 0.54 | ± 0.40 |

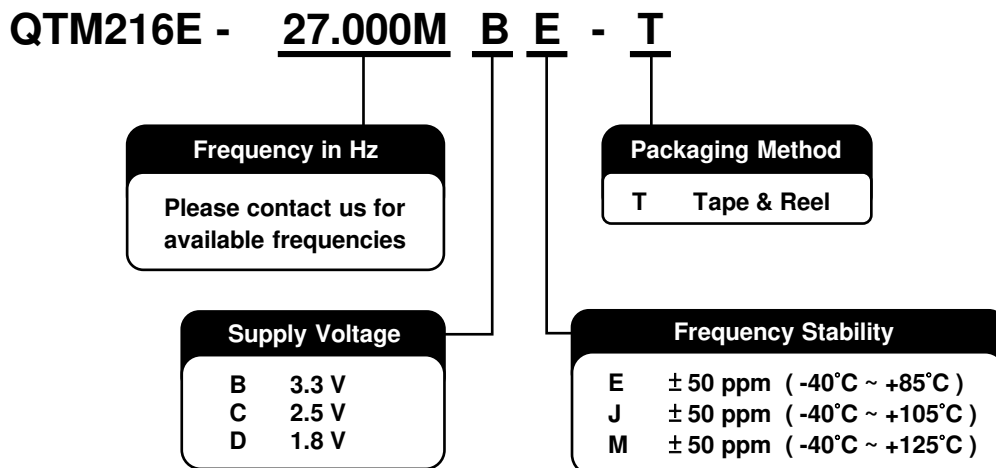
Notes:

[4] Contact us for available frequencies and deviation range.

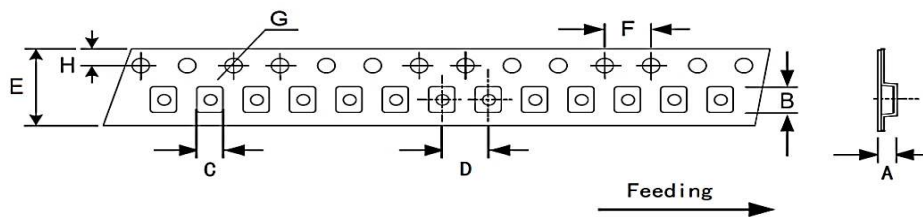
Dimensions



Ordering Information

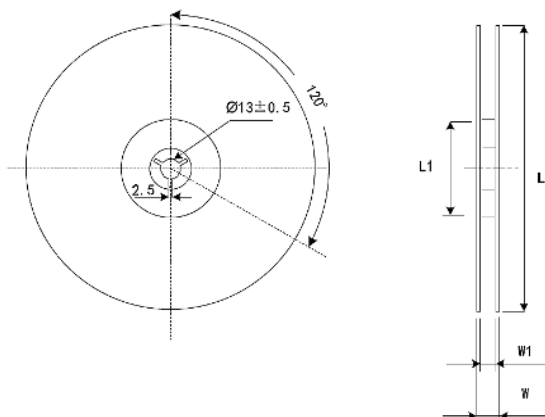


Packing



| DIMENSIONS | A | B | C | D | E | F | G | H |
|------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | 0.90 ±0.10 | 2.30 ±0.10 | 1.90 ±0.10 | 4.00 ±0.10 | 8.00 ±0.20 | 4.00 ±0.10 | 1.55 ±0.05 | 1.75 ±0.10 |

(Unit: mm)



| DIMENSIONS | L | L1 | W | W1 |
|------------|--------------|---------------|--------------|------------|
| | 178 ±1.00 | 60.2 ±0.50 | 11.5 ±0.2 | 8 +1/-0 |

(Unit: mm)

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.

