

Features

- Frequency range : 1MHz to 200MHz
- SMD seam sealing ceramic package
- Supply voltage : 1.8V, 2.5V, 3.3V
- CMOS output
- Operating Temperature : -40°C~+105°C
- Phase Jitter : 1ps(typ.)@100MHz, 3.3V
- Dimensions : 5.0 x 3.2 x 1.2 mm
- RoHS & REACH compliant, Pb-free, Halogen-free

Applications

- NB, PC, Tablet, Smartphone, PC peripherals, IPC, Server, Storage, Ethernet, USB...etc.
- Audio ADC, Video, AI Vision Processing Unit, CPLD, FPGA, CPU, GPU, MCU, BMC...etc.

Electrical Characteristics

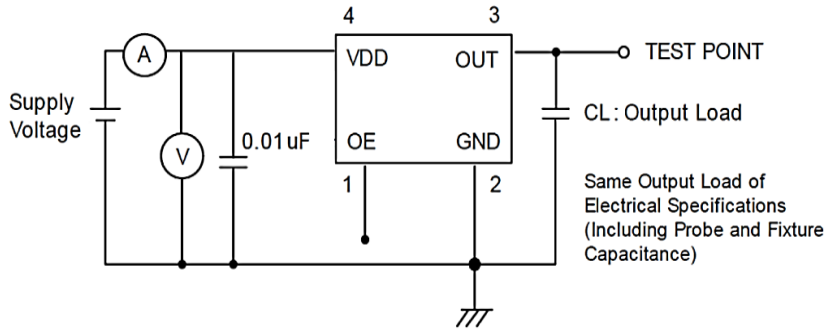
Item	QTM532T	Conditions
Frequency Range (F_0)	1MHz ~ 200MHz	V_{DD} @ 2.5 or 3.3V
	1MHz ~ 125MHz	V_{DD} @ 1.8V
Frequency Stability (F_{stab})	±25 ppm	-40°C ~ +85°C; Note [1]
	±50 ppm	-40°C ~ +105°C; Note [1]
Operating Temperature Range (T_{OTR})	-40°C ~ +85°C	
	-40°C ~ +105°C	
Supply Voltage (V_{DD})	1.8V, 2.5V, 3.3V	$V_{DD} \pm 10\%$
Current Consumption (I_{DD})	30 mA Max.	
Standby current (I_{DD_ST})	5 mA Max.	OE = Low
Output Type / Load (C_L)	CMOS / 15 pF	
Output Voltage High (V_{OH})	90% V_{DD} Min.	V_{DD} @ 2.5 or 3.3V
	($V_{DD} - 0.4V$) Min.	V_{DD} @ 1.8V
Output Voltage Low (V_{OL})	10% V_{DD} Max.	V_{DD} @ 2.5 or 3.3V
	0.4V Max.	V_{DD} @ 1.8V
Rise & Fall Time (T_r / T_f)	5 ns Max.	10% ~ 90% of V_{DD} level
Duty Cycle	45% ~ 55%	
Start-up Time	10 ms Max.	To 90% of final amplitude
Enable Voltage High (V_{IH}), Logic "1"	70% V_{DD} Min.	Enable control @ Pin 1
Enable Voltage Low (V_{IL}), Logic "0"	30% V_{DD} Max.	
Aging (F_{aging})	±3 ppm Max.	First year at 25°C
RMS Phase Jitter (PJ) ^[2] Fout range : 10MHz~40MHz @ Integrated from 12kHz~5MHz	1.2 ps Typ.	V_{DD} @ 3.3V
	1.5 ps Typ.	V_{DD} @ 2.5V
	2.0 ps Typ.	V_{DD} @ 1.8V
RMS Phase Jitter (PJ) ^[2] Fout range : 40MHz~200MHz @ Integrated from 12kHz~20MHz	1.0 ps Typ.	V_{DD} @ 3.3V
	1.1 ps Typ.	V_{DD} @ 2.5V
	1.5 ps Typ.	V_{DD} @ 1.8V

Notes:

[1] Inclusive of frequency tolerance at 25°C, variation over temperature, supply voltage variation, aging and vibration.

[2] Phase Jitter will be slightly different according to output frequency and supply voltage.

Testing diagram:

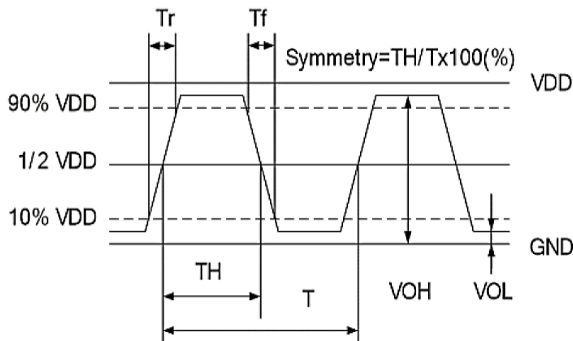


Pad 1 (OE)	Pad 3 (output)	Oscillator
High (or open)	OSC out	Normal operation
Low	High impedance	Stop oscillation

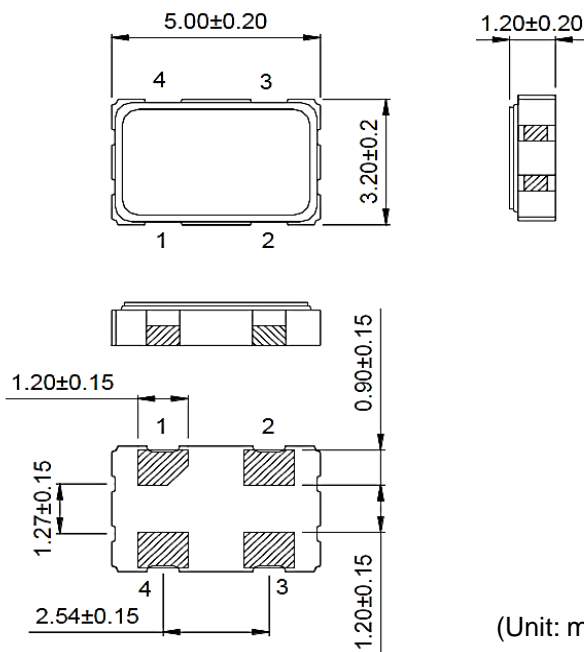
Notes: Sets CL to 15pF for simulation IC load. Customer does not need to layout it in reality circ

Waveform conditions :

Waveform measurement system should have a min. bandwidth of 5 times the frequency being testec



Dimensions & Recommended Footprint

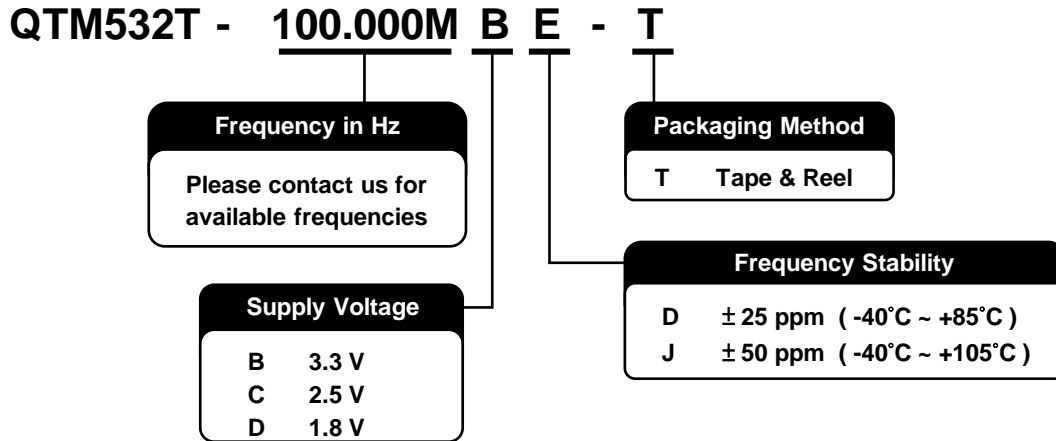


PAD FUNCTION:

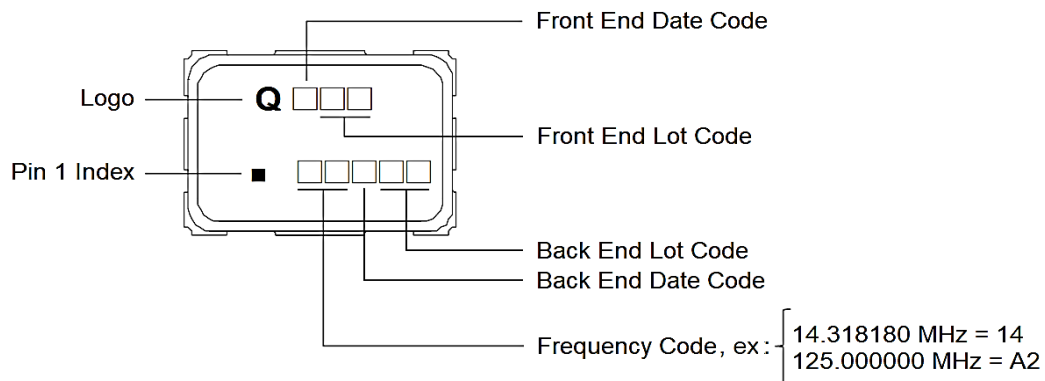
- 1: OE
- 2: GND
- 3: OUT
- 4: VDD

(Unit: mm)

Ordering Information



Marking

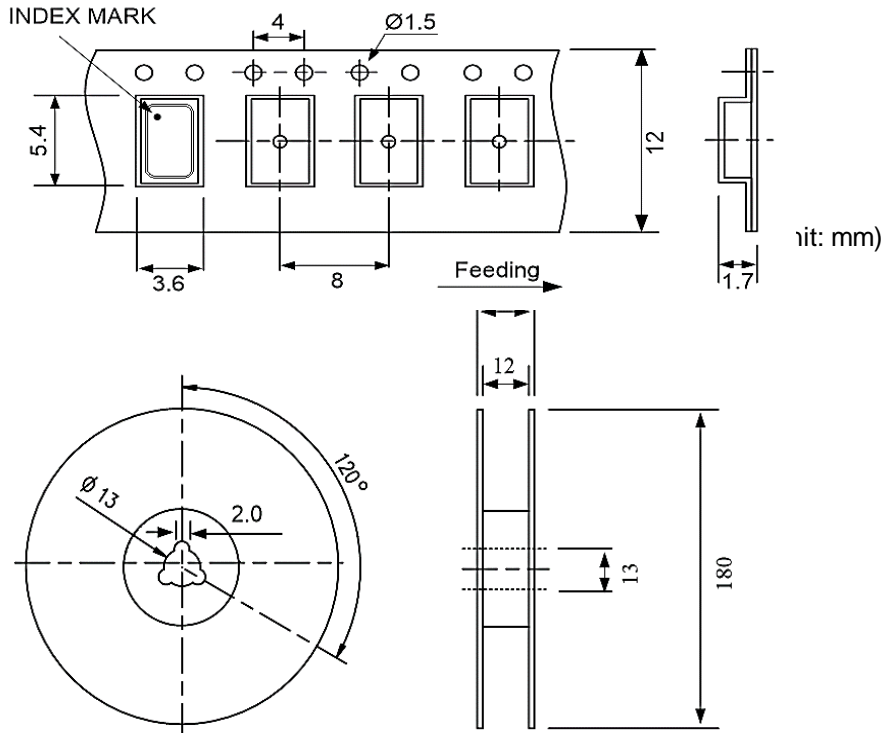


Date Code:

YEAR \ MONTH					JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
					A	B	C	D	E	F	G	H	J	K	L	M
2021	2025	2029	2033	2037	N	P	Q	R	S	T	U	V	W	X	Y	Z
2022	2026	2030	2034	2038	a	b	c	d	e	f	g	h	j	k	l	m
2023	2027	2031	2035	2039	n	p	q	r	s	t	u	v	w	x	y	z
2024	2028	2032	2036	2040												

*This date code will be cycled every four years

Packing



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.

