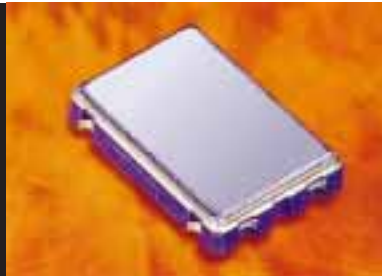


Through Hole & Surface Mount Programmable Oscillators



Order Code Example: **20M0000C75T5BTS**

20M0000

Frequency
1.0000-133.00
Mhz

C

Output
C = HCMOS
T = TTL

7

Style
1 = 14 pin dip
4 = 8 pin dip
7 = 5x7 smd
8 = plastic

5

Voltage
5 = 5volt
3 = 3.3v

T

Packing
T = Tube

5

Temp °C
1 = 0-70
5 = -20+70
7 = -40+85

B

Stability
A = 100ppm
B = 50ppm
C = 25ppm

TS

Tri State
TS = Tristate
PD = pwr dwn

For more details on these and the full range of products available, contact our sales office at:

Programmable Oscillator

- *Can be programmed twice*
- *Provides a sealed finished custom oscillator*
- *Standard Package Options*

Specifications:

	Min	Typ	Max	Unit
Frequency Range: Programmable to Any Discrete Frequency	1.000		133.000	MHz
Available Stability Options: (Aging tolerance included)	-100 -50		100 50	ppm ppm
Programmable Input Voltage: (1–133 MHz)	+4.5	5.0	5.5	VDC
(1–100 MHz)	+3.0	3.3	3.6	VDC
Operating Temperature Range Options:	0 -20 -40		+70 +70 +85	°C °C °C
Storage Temperature:	-55		+125	°C
Aging (PPM/Year-stability incl.) Ta=25°C, Vdd=5/3.3V aging			±5	ppm
Programmable Output Level:	TTL/CMOS			
Packaging:	Tape and Reel (1K per Reel) Tube			

Note: Bypass Vdd to GND with a 0.1 uF capacitor

Operating Conditions:

	Description	Min	Max	Unit
V _{DD}	Digital Supply Voltage	3.0	5.5	V
C _{TTL}	Max Capacitive Load on outputs for TTL levels			
	4.5V–5.5V V _{DD} ≤ 40 MHz		50	pF
	4.5V–5.5V V _{DD} > 40–133 MHz		25	pF
C _{CMOS}	Max Capacitive Load on outputs for CMOS levels			
	4.5V–5.5V V _{DD} , ≤ 66 MHz		50	pF
	4.5V–5.5V V _{DD} , >66–133 MHz		25	pF
	3.0V–3.6V V _{DD} , ≤ 40 MHz		30	pF
	3.0V–3.6V V _{DD} , >40–100 MHz		15	pF

Electrical Characteristics

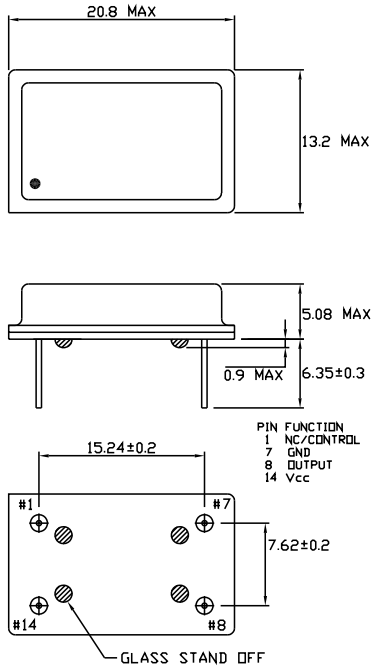
	TEST CONDITIONS	Min	Typ	Max	Unit
Input Characteristics (Pin 1):					
V _{IL} , Low-Level Input Voltage TO DISABLE OUTPUT	4.5–5.5V V _{DD}			0.8	V
	3.0–3.6V V _{DD}			0.2V _{DD}	V
V _{IH} , High-Level Input Voltage TO ENABLE OUTPUT OR NO CONNECT	4.5–5.5V V _{DD}	2.0			V
	3.0–3.6V V _{DD}	0.7V _{DD}			V
I _{IL} , Input Low Current	V _{IN} = 0V			10	mA
I _{IH} , Input High Current	V _{IN} = V _{DD}			5	mA
Output Characteristics:					
V _{OL} , Low-Level Output Voltage	4.5V–5.5V V _{DD} , 16 mA I _{OL}			0.40	V
	3.0V–3.6V V _{DD} , 8 mA I _{OL}			0.40	V
V _{OHTTL} , High-level Output Voltage TTL	4.5V–5.5V V _{DD} , -16 mA I _{OL}	2.40			V
V _{OHCMOS} , High-level CMOS Voltage	4.5V–5.5V V _{DD} , -16 mA I _{OL}	V _{DD} -0.4			V
	3.0V–3.6V V _{DD} , -8 mA I _{OL}	V _{DD} -0.4			V
Power Supply Current: (unloaded)	4.5–5.5 V _{DD} , OUTPUT FREQ ≤ 133 MHz			45	mA
	3.0–3.6 V _{DD} , OUTPUT FREQ ≤ 100 MHz			25	mA
Standby Current:			10	50	mA
Input Pull-Up Resistor	4.5–5.5 V _{DD} , V _{IN} = 0V	1.1	3.0	8.0	MΩ
	4.5–5.5 V _{DD} , V _{IN} = 0.7V	50	100	200	kΩ
CLKOUT Pull-Down Current	5.0 V _{DD}		20		μA
Output Enable Mode:	Output is Tri-Stated				
Power Down Mode:	Output is <u>NOT</u> Tri-Stated.				

Programmable Oscillator

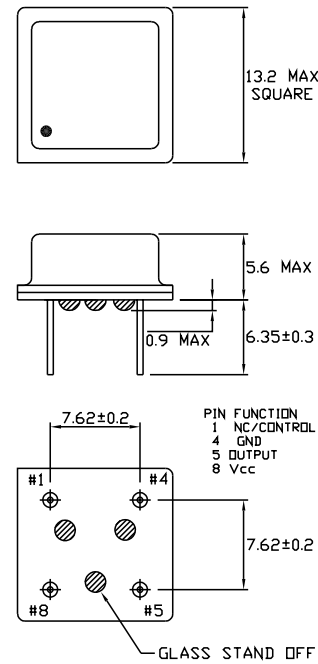
Output Clock Switching Characteristics

	TEST CONDITIONS	Min	Typ	Max	Unit
Duty Cycle: TTL @ 1.4 V, 4.5–5.5 V _{DD}	≤ 50 MHz, C _L = 50 pF	45		55	%
	50–66 MHz, C _L = 15 pF	45		55	%
	66–125 MHz, C _L = 25 pF	40		60	%
	125–133 MHz, C _L = 15 pF	40		60	%
CMOS @ V _{DD} /2, 4.5–5.5 V _{DD} 3.0–3.6 V _{DD}	≤ 66 MHz, C _L ≤ 25 pF	45		55	%
	66–125 MHz, C _L ≤ 25 pF	40		60	%
	125–133 MHz, C _L ≤ 15 pF	40		60	%
	≤ 40 MHz, C _L ≤ 30 pF	45		55	%
	40–100 MHz, C _L ≤ 15 pF	40		60	%
Output Clock Rise/Fall	0.8V–2.0V, 4.5–5.5 V _{DD} , C _L = 50			1.8	ns
	0.8V–2.0V, 4.5–5.5 V _{DD} , C _L = 25			1.2	ns
	0.8V–2.0V, 4.5–5.5 V _{DD} , C _L = 15			0.9	ns
	0.2–0.8V _{DD} , 4.5–5.5 V _{DD} , C _L = 50			3.4	ns
	0.2–0.8V _{DD} , 3.0–3.6 V _{DD} , C _L = 30			4.0	ns
	0.2–0.8V _{DD} , 3.0–3.6 V _{DD} , C _L = 15			2.4	ns
Start Up Time	From power on			10	ms
Power Down Delay Time	PWR_DWN pin HIGH to output LOW		T/2	T+10	ns
Output Disable Time	OE pin HIGH to output Hi-Z T = Frequency oscillator period		T/2	T+10	ns
Output Enable Time				100	ns
RMS Jitter	≤ 33.000, 5 V			± 50	ps
	> 33.000, 5 V			± 30	ps
	≤ 33.000, 3 V			± 50	ps
	> 33.000, 3 V			± 40	ps

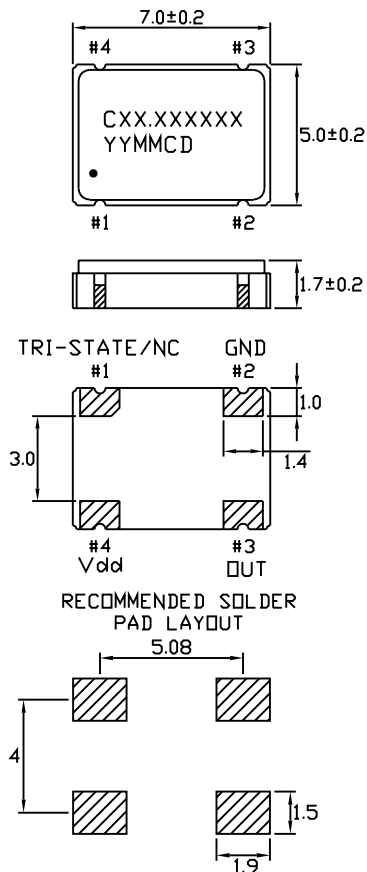
Style 1 Full Size 14 Pin Dip



Style 4 Half Size 8 Pin Dip



Style 7 5x7 Ceramic SMD



Style 8 Plastic SMD

