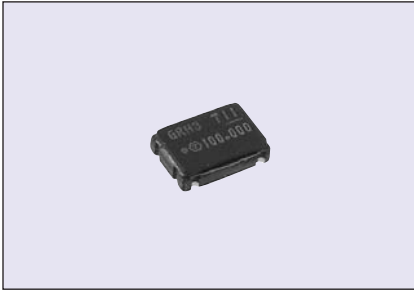


Crystal Clock Oscillator



TFG-787RH3
TFG-786RH
TFG-786XH

SMO-N CMOS

Features

- CMOS logic output
- Small size : 7.0(W) X 5.0(D) X 2.0(H)mm
- One chip PLL with VCO
- Low operation voltage (+3.3V & +5.0V)

Specifications

Absolute Maximum Ratings

Parameter	Symbol	Rating
Supply voltage	V _{CC}	-0.5 to +7.0 V
Input voltage	V _{IN}	-0.5 to V _{CC} +0.5 V
Output voltage	V _O	-0.5 to V _{CC} +0.5 V
Input current	I _{IN}	±20 mA
Output current	I _O	±20 mA
Storage temperature	T _{stg}	-40 to +85 °C
Soldering condition	T _{sol} T	+260°C / 20sec or +230°C / 180sec

Parameter		TFG-787RH3	TFG-786RH	TFG-786XH	Conditions
Frequency	f _o	70 to 140 MHz	70 to 112 MHz		
Frequency Stability	Δf/f _o	±100 ppm max.	±50 ppm max.		(*1)
Operating Temperature	T _{opr}	0 °C to +70 °C			
Supply Voltage	V _{CC}	+5.0 V ±10 % +3.3 V ±10 %	+5.0 V ±10 %	+3.3 V ±10 %	DC
Supply Current	I _{CC}	See Table A (max.)			V _{CC} =+5.5V or +3.6V
Input Voltage	V _{IH} V _{IL}	V _{IH} =70% V _{CC} min. / V _{IL} =20% V _{CC} max.			#1:V _{IH} or OPEN ... Enable #1:V _{IL} or GND ... Disable
Output Voltage	V _{OH} V _{OL}	V _{OH} =90% V _{CC} min. / V _{OL} =10% V _{CC} max.			I _{OH} =-4mA, I _{OL} =+4mA at V _{CC} =+4.5V I _{OH} =-2.4mA, I _{OL} =+2.4mA at V _{CC} =+3.0V
Symmetry	SYM	45 to 55 %			at 50% V _{CC}
Rise/Fall time	t _r /t _f	3 ns max.			at 20% to 80% V _{CC}
Load Capacitance	C _L	30 pF max. 15 pF max.			70 < f _o ≤ 120 MHz 120 < f _o ≤ 140 MHz
Start-up time	t _{st}	2 ms max.			(*2)

*1 Inclusive of calibration tolerance at +25°C, operating temperature, operating voltage range.

*2 Rise time (0 to +4.5V or +3.0V) of V_{CC} > 150μs

Package Outlines [Dimensions in mm]

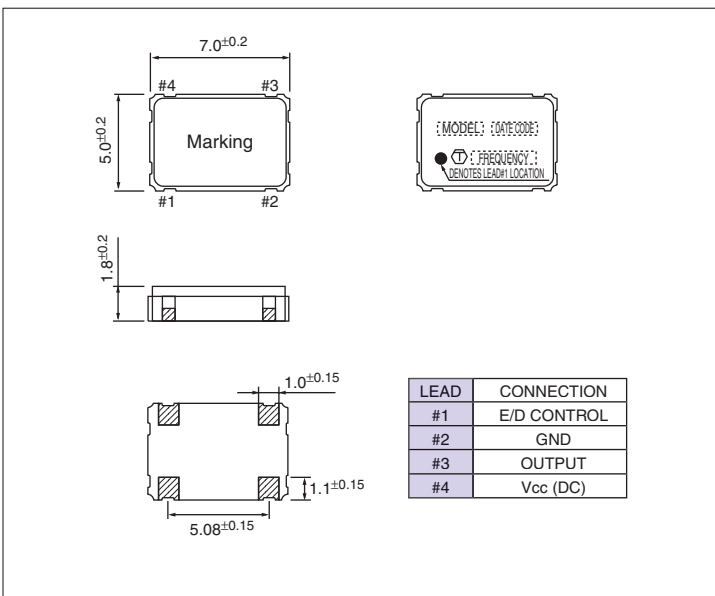


Table A

Freq. (MHz)	70 < f _o ≤ 96	96 < f _o ≤ 120	120 < f _o ≤ 140	V _{CC}
I _{CC} (mA)	60	70	60	at +5.5V
	40	50	50	at +3.6V

Test Circuit

See Test Circuit page TEST-4

Footprint [Dimensions in mm]

