



CRYSTAL OSCILLATOR

SAW-Based Differential Multi Output (HCSL)

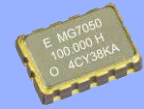
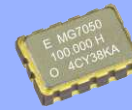
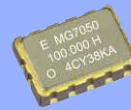
MG7050HAN

NEW
Feature

- Ultra Low jitter : 0.3 ps Max.
- 2 or 4 outputs and it is able to reduce fan-out buffers
- Frequency range : 100 MHz to 200 MHz
- Supply voltage : 2.5 V / 3.3 V
- External dimensions : 7.0 × 5.0 × 1.6 mm
- Output : HCSL (2 or 4 outputs)
- Output impedance select by ZSEL

Application

GbE, Fiber Channel, SAS, PCI express


 Product Number (please contact us)
 X1G000431xxxx00


Actual size


Specifications (characteristics)

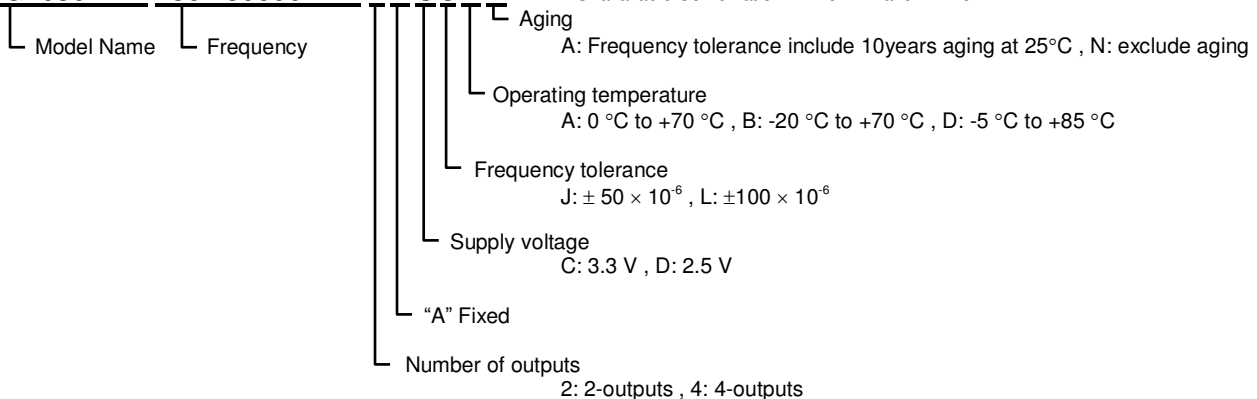
Item	Symbol	Specifications	Conditions / Remarks
Output frequency range	fo	100 MHz to 200 MHz	Please contact us about available frequencies.
		100 MHz, 125 MHz, 156.25 MHz, 200 MHz	Standard frequency
Supply voltage	V _{CC}	D: 2.5 V ± 0.125 V C: 3.3 V ± 0.33 V	V _{CC} 1 and V _{CC} 2 need same voltage
Storage temperature	T _{stg}	-55 °C to +125 °C	Store as bare product after packing
Operating temperature	T _{use}	A: 0 °C to +70 °C, B: -20 °C to +70 °C	
		D: -5 °C to +85 °C	
Frequency tolerance *1	f _{tol}	J: ±50 × 10 ⁻⁶ , L: ±100 × 10 ⁻⁶	
Current consumption	I _{CC}	T.B.D.	2-outputs
		T.B.D.	4-outputs
Disable current	I _{dis}	8 mA Typ., 20 mA Max.	OE=GND
Symmetry	SYM	45 % to 55 %	At outputs crossing point
Output voltage	V _{OH}	0.66 V to 0.85 V	DC characteristics
	V _{OL}	-0.15 V to 0.15 V	
Output load condition	L _{HCSL}	50 Ω or 43 Ω, with C _L =2 pF, R _s =33 Ω or 27 Ω	
Input voltage	V _{IH}	70% V _{CC} Min.	OE and ZSEL terminals
	V _{IL}	30% V _{CC} Max.	
Rise / Fall skew rate	Rr/Rf	1 V/ns to 4 V/ns	Between -0.15 V and 0.15 V of differential output.
Start-up time	t _{str}	5 ms Typ., 10 ms Max.	Time at minimum supply voltage to be 0 s
Phase Jitter	t _{PJ}	T.B.D.	fo=100 MHz
		T.B.D.	fo=125 MHz
		T.B.D.	fo=156.25 MHz
		T.B.D.	fo=200 MHz
		0.3 ps Max.	Offset frequency: 12 kHz to 20 MHz
Skew	t _{skew}	20 ps Typ., 50 ps Max.	ZSEL=H
Aging	f _{age}	N: ±10 × 10 ⁻⁶ /year Max.	First year
		A: Included in Frequency tolerance *2	10 years

*1 Frequency tolerance includes initial frequency tolerance, temperature variation, supply voltage change and reflow drift.

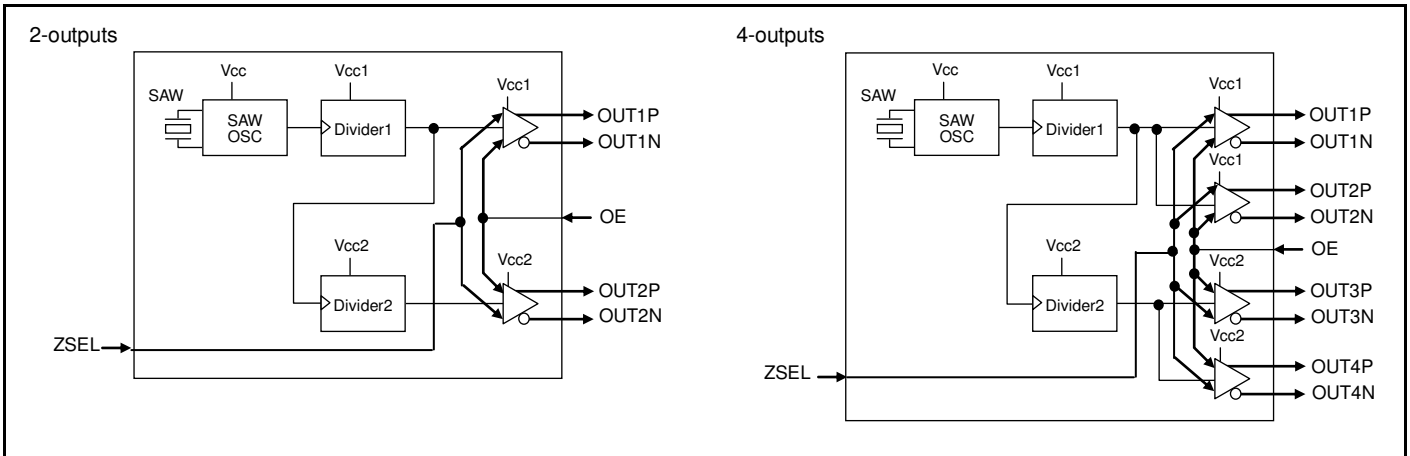
*2 "A" is not acceptable when Frequency tolerance is "J" and Operating temperature is "B" or "D".

Part number
MG7050HAN 156.25000MHz 4 A C J A N

* Unavailable Combination : xAxJDA and xAxJBA



Block diagram

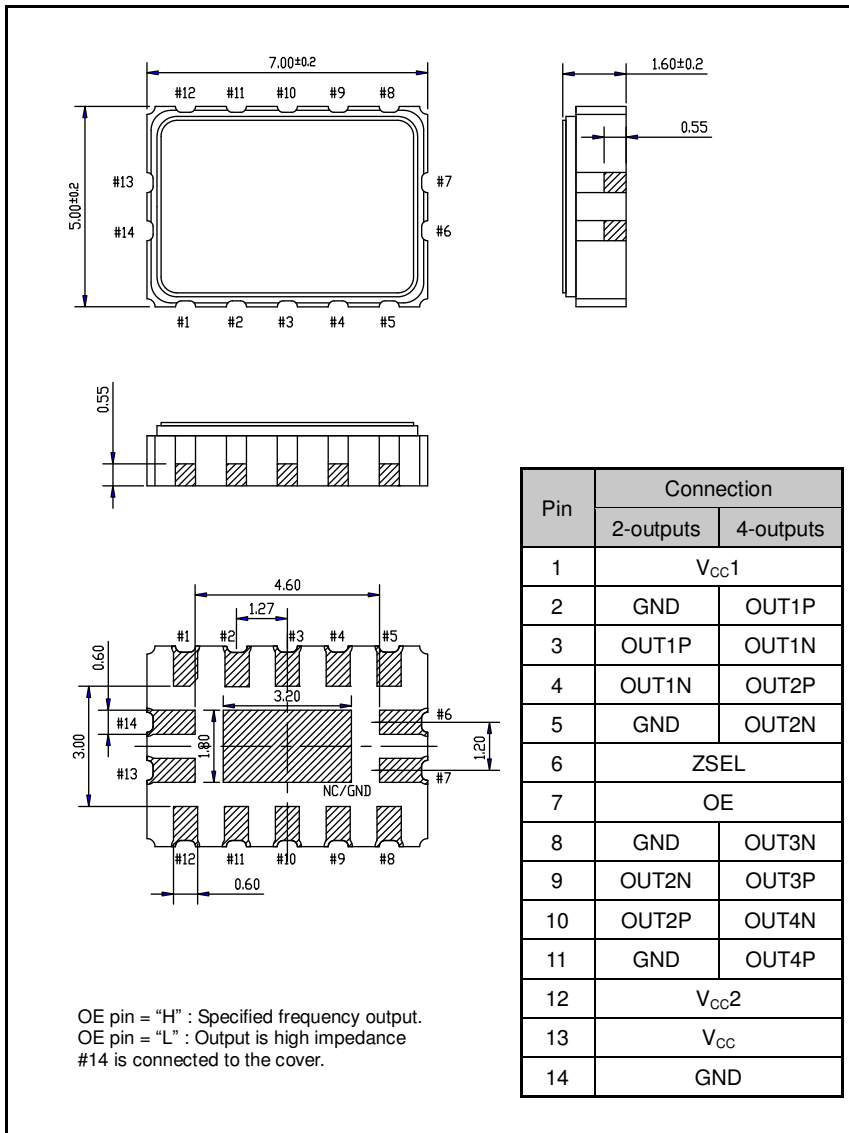


ZSEL function

		Output line Differential Zo	HCSL load L_HCSL	Shunt resistor Rs
ZSEL	H	100 Ω	50 Ω	33 Ω
	L	85 Ω	43 Ω	27 Ω

External dimensions

(Unit :mm)



Footprint (Recommended) (Unit :mm)

