



## CRYSTAL OSCILLATOR (SPXO)

OUTPUT : CMOS



Product Number  
 SG5032CBN: X1G004461xxxx00  
 SG5032CCN: X1G004471xxxx00  
 SG7050CBN: X1G004491xxxx00  
 SG7050CCN: X1G004501xxxx00

# SG5032CBN / CCN

# SG7050CBN / CCN

- Frequency range : CBN 80 MHz to 170 MHz (Fundamental mode)  
: CCN 2.5 MHz to 50 MHz (Fundamental mode)
- Supply voltage : CBN 1.8 V to 3.3 V Typ.  
: CCN 5.0 V Typ.
- Function : CBN Standby ( $\overline{ST}$ )  
: CCN Output enable (OE)
- Output : CMOS

SG5032CBN / CCN  
(5.0 × 3.2 × 1.1 mm)SG7050CBN / CCN  
(7.0 × 5.0 × 1.3 mm)

## Specifications (characteristics)

Item	Symbol	Specifications		Conditions / Remarks
		SG5032CBN / SG7050CBN	SG5032CCN / SG7050CCN	
Output frequency range	$f_o$	80 MHz to 170 MHz	2.5 MHz to 50 MHz	Please contact us about available frequencies.
Supply voltage	$V_{CC}$	T: 1.6 V to 3.63 V	H: 4.5 V to 5.5 V	
Storage temperature	$T_{stg}$	-40 °C to +125 °C		Storage as single product.
Operating temperature	$T_{use}$	B: -20 °C to +70 °C, G: -40 °C to +85 °C		
Frequency tolerance	$f_{tol}$	J: $\pm 50 \times 10^{-6}$		-20 °C to +70 °C, -40 °C to +85 °C
Current consumption	$I_{CC}$	11 mA Max.	20 mA Max.	No load condition Maximum frequency.
Stand-by current	$I_{std}$	10 $\mu$ A Max.	-	$\overline{ST}$ = GND
Disable current	$I_{dis}$	-	10 mA Max.	OE = GND
Symmetry	SYM	45 % to 55 %	40 % to 60 %	50 % $V_{CC}$ level, $L_{CMOS} \leq 15$ pF
Output voltage	$V_{OH}$	90 % $V_{CC}$ Min.		
	$V_{OL}$	10 % $V_{CC}$ Max.		
Output load condition	$L_{CMOS}$	15 pF Max.	50 pF Max.	
Input voltage	$V_{IH}$	80 % $V_{CC}$ Min.		$\overline{ST}$ , OE terminal
	$V_{IL}$	20 % $V_{CC}$ Max.		
Rise time / Fall time	$t_r / t_f$	3 ns Max.	5 ns Max.	20 % $V_{CC}$ to 80 % $V_{CC}$ level, $L_{CMOS} = 15$ pF
Start-up time	$t_{str}$	5 ms Max.		$t = 0$ at 90 % $V_{CC}$ , +85 °C
Frequency aging	$f_{age}$	$\pm 5 \times 10^{-6}$ / year Max.		+25 °C, First year.

Product Nam SG5032 CBN 125.000000MHz T J G A (⑤⑥: Available code JB, JG, LG)  
 (Standard form) ① ② ③ ④⑤⑥⑦

- ① Model ② Output (C: CMOS) ③ Frequency  
 ④ Supply voltage ⑤ Frequency tolerance  
 ⑥ Operating temperature range ⑦ Internal identification code ("A" is default)

④ Supply voltage	
T	1.8 V to 3.3 V Typ.
H	5.0 V Typ.

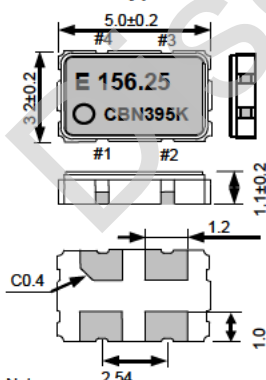
⑤ Frequency tolerance	
J	$\pm 50 \times 10^{-6}$
L	$\pm 100 \times 10^{-6}$

⑥ Operating temperature range	
B	-20 °C to +70 °C
G	-40 °C to +85 °C

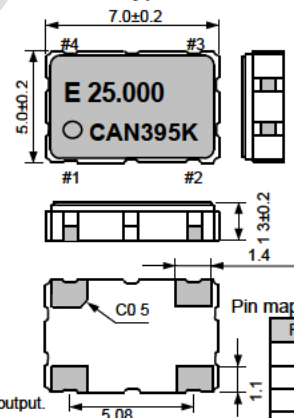
## External dimensions

(Unit:mm)

## •SG5032 type



## •SG7050 type



Pin map

Pin	Connection
1*	OE or $\overline{ST}$
2	GND
3	OUT
4	$V_{CC}$

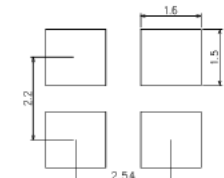
\*OE function is available for SGxxxxCCN

Note.  
 OE pin = "H" or "open" : Specified frequency output.  
 OE pin = "L" : Output is high impedance.  
 $\overline{ST}$  pin = "H" or "open" : Specified frequency output.  
 $\overline{ST}$  pin = "L" : Output is high impedance, oscillation stops.

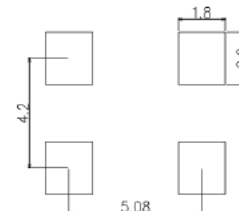
## Footprint (Recommended)

(Unit:mm)

## •SG5032 type



## •SG7050 type



To maintain stable operation, provide a 0.01  $\mu$ F to 0.1  $\mu$ F by-pass capacitor at a location as near as possible to the power source terminal of the crystal product (between  $V_{CC}$  - GND).

► Explanation of the mark that are using it for the catalog

	<p>► Pb free.</p>
	<p>► Complies with EU RoHS directive.          *About the products without the Pb-free mark.          Contains Pb in products exempted by EU RoHS directive.          (Contains Pb in sealing glass, high melting temperature type solder or other.)</p>
	<p>► Designed for automotive general equipment.</p>
	<p>► Designed for automotive applications related to driving and safety.</p>

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