

## Datasheet

### SP1C

### HCMOS SURFACE MOUNT CRYSTAL CLOCK OSCILLATOR

## FEATURES

14.0 x 9.8 x 4.7 mm

- Plastic molded package
- J-lead terminals
- Applications: Clock signals for microprocessors, Telecommunication equipment,



| Item                                  | Specification  |   |
|---------------------------------------|--|---|
| Frequency Range                       | 1.0 MHz - 200.0 MHz  |   |
| Output Logic                          | CMOS   |   |
| Overall Frequency Stability *         | ± 20 ppm ~ ± 100 ppm ( see options )   |   |
| Operating Temperature Range           | 0 ~ +70°C commercial application (see options)<br>-40 ~ +85°C industrial application (see options) |   |
| Supply Voltage Vdd                    | +3.3V ±5%  | +5.0V ±5%   |
| Supply Current Idd                    | 15 mA ~ 60 mA  | 20 mA ~ 80 mA                                       |
| Output Level                          | VOH ≥ 0.9 Vdd  | VOL ≤ 0.1 Vdd                                       |
| Output Load                           | 15 pF  |   |
| Symmetry                              | 40 / 60 %  |   |
| Rise Time / Fall Time Fr/Ff           | 2 ~ 10 ns  |   |
| Tri-state function                    | pin #1 = high or open<br>pin #1 = low  | pin #3 ==> oscillation<br>pin #3 ==> high impedance |
| Start-up Time                         | 10 ms max.   |   |
| RMS Jitter<br>(12 kHz to 20 MHz band) | 1 ps max.  |   |
| Packing Unit                          | 1000pcs / reel   |   |
| Soldering Condition                   | 260°C , 10 sec x2 max  |   |

**Customer specifications on request**

(\*) Includes initial tolerance @+25°C, stability over operating temperature, stability vs. load change, stability vs. supply change and one year aging

## OPTIONS & ORDERING INFORMATION

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| .....            | .....             | .....               | .....              | .....         | ..... MHz          |
|------------------|-------------------|---------------------|--------------------|---------------|--------------------|
| Supply Voltage * | Operating Temp. * | Overall Stability * | Tri-state Function | Output Load * | Frequency in MHz   |
| 33 = +3.3V       | D = -10° / +60°C  | 20 = ±20 ppm        | E = Tri-state      | blanc = 15 pF | Please specify the |
| 50 = +5.0V       | E = 0° / +70°C    | 25 = ±25 ppm        |                    | H = 30 pF     | frequency in MHz   |
|                  | F = -20° / +70°C  | 30 = ±30 ppm        |                    |               |                    |
|                  | G = -30° / +75°C  | 50 = ±50 ppm        |                    |               |                    |
|                  | H = -30° / +85°C  | 100 = ±100 ppm      |                    |               |                    |
|                  | K = -40° / +85°C  |                     |                    |               |                    |

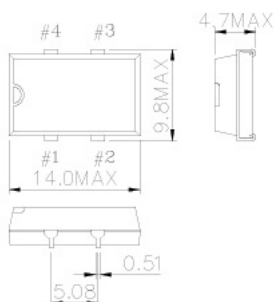
(\*) Note : Not all combinations are possible, please consult us.

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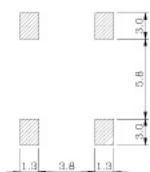
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**OUTLINE DIMENSIONS**



Recommended Soldering Pattern



**Pin Connections**    #1 : E/D                      #2 : GND                      #3: Output                      #4 : Vdd