

## SC-Cut Crystal - Square Wave - 5.0 Volts

- Frequency Range 5.0MHz to 20.0MHz
- 50.8 x 50.8 x 16.0mm 7 pin metal, solder-sealed package
- Supply Voltage 5.0 Volts
- SC-Cut Crystal
- Squarewave Output
- EFC (Voltage control) as standard

### DESCRIPTION

OC22T5S series oven-controlled crystal oscillators are close tolerance OCXOs with excellent phase noise performance.

### SPECIFICATION

|                                |   |
|--------------------------------|---|
| Crystal Cut:                   | SC-cut  |
| Output Waveform:               | Square Wave   |
| Supply Voltage:                | +5.0 VDC $\pm 0.2V$   |
| Frequency Range:               | 5.0MHz to 20.0MHz   |
| Initial Calibration Tolerance: | $\pm 0.1$ ppm max.(at $V_{CON} + 2.5V$ )  |
| Frequency Stability            |   |
| over 0° to +60°C:              | $\pm 0.01$ ppm  |
| over -20° to +70°C:            | $\pm 0.02$ ppm  |
| over -40° to +85°C:            | $\pm 0.03$ ppm  |
| vs. Voltage Change:            | $< \pm 1.0$ ppb for $\pm 5\%$ change  |
| vs. Ageing:                    | $\pm 0.5$ ppb max per day<br>$\pm 50$ ppb per first year<br>$\pm 150$ ppb over 10 years |
| vs. Load Change:               | $< \pm 1.0$ ppb for $\pm 5\%$ change  |

Warm-up Time: 5 minutes max. to within  $\pm 10$ ppb of nominal freq.

### Voltage Control

|                         |   |
|-------------------------|---|
| Control Voltage Centre: | +2.5 Volts ( $V_{CON}$ )  |
| Freq. Deviation Range:  | $\pm 0.5$ ppm min., $\pm 1$ ppm max. ref. to 25°C and O.T.R.    |
| Control Voltage Range:  | 2.5V $\pm 2.0$ Volts  |
| Transfer Function:      | Positive: Increasing control voltage increases output frequency |
| Input Impedance:        | 100k $\Omega$ minimum   |
| EFC Linearity:          | $\pm 10\%$ maximum  |

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Power Dissipation: 2.0W max. steady state  
6.0W max. at turn on

### Output

|                    |  |
|--------------------|--|
| Load:              | 15pF HCMOS                               |
| Output Logic HIGH: | +4.5V minimum                            |
| Output Logic LOW:  | 0.5V maximum                             |
| Duty Cycle:        | 50% $\pm 10\%$                           |
| Rise/Fall Time:    | 5ns max (20%~80%)<br>Frequency dependant |

Reference Voltage: +4.0  $\pm 0.3$ VDC or custom

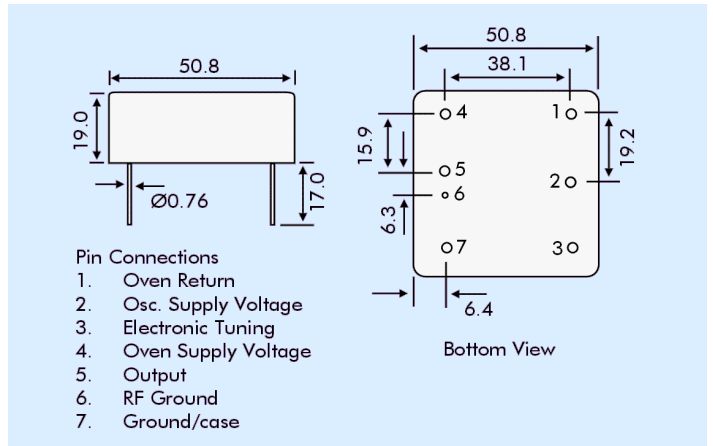
### Environmental

|                      |                                 |
|----------------------|---------------------------------|
| Storage Temperature: | -55° to +125°C                  |
| Shock:               | 2000g, 0.3ms $\frac{1}{2}$ sine |
| Vibration:           | 10 ~2000Hz / 10g                |

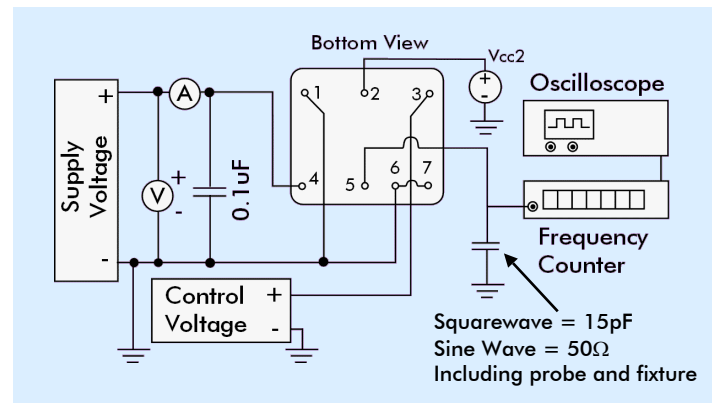
### PHASE NOISE (at 10MHz)

| Offset | dBc/Hz |
|--------|--------|
| 1Hz    | -85    |
| 10Hz   | -120   |
| 100Hz  | -140   |
| 1kHz   | -145   |
| 10kHz  | -150   |

### OUTLINE & DIMENSIONS



### TEST CIRCUIT



### PART NUMBER FORMAT

Example: **OC22GT5S-10.000-0.01/-20+70**

