



## 2111 Comprehensive Drive

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**CS-044**  
**3.2x2.5mm**  
**Crystal Resonator**

# CONNOR WINFIELD



**Description:**

The Connor-Winfield model CS-044 is a 54MHz fundamental mode, AT-cut crystal in a 3.2x2.5mm surface mount package. The CS-044 is designed to be used as a reference crystal in synthesizer applications.

### Features:

- Frequency: 54.0 MHz
- Frequency Calibration: +/-15 ppm
- Frequency Stability: +/-25 ppm
- Temperature Range: -40 to 85°C
- Surface Mount Package
- Tape and Reel Packaging
- RoHS Compliant / Lead Free 

## Electrical Specifications

| Parameter                                                                                  | Minimum | Nominal     | Maximum | Units    | Notes     |
|--------------------------------------------------------------------------------------------|---------|-------------|---------|----------|-----------|
| Output Frequency (Fo)                                                                      |         | 54.0        |         | MHz      |           |
| Frequency Calibration (@25°C)                                                              | -15     |             | 15      | ppm      |           |
| Frequency Stability vs. Change in Temperature (Referenced to the frequency measured @25°C) |         |             |         |          |           |
|                                                                                            | -25     |             | 25      | ppm      |           |
| Operating Temperature Range:                                                               | -40     |             | 85      | °C       |           |
| Operation Mode                                                                             |         | Fundamental |         |          |           |
| Cut                                                                                        |         | AT Cut      |         |          |           |
| Aging                                                                                      | -1      |             | 1       | ppm/Year |           |
| Shunt Capacitance: (Co)                                                                    |         |             | 2.0     | pF       |           |
| Load Capacitance: (CL)                                                                     |         | 8           |         | pF       |           |
| Equivalent Series Resistance @ 25 °C                                                       |         |             | 20      | Ohms     |           |
| Drive Level                                                                                |         | 10          | 200     | uW       |           |
| Insulation Resistance                                                                      |         | 500         |         | Mohm     | @ 100 Vdc |
| Storage Temperature:                                                                       | -40     |             | 95      | °C       |           |

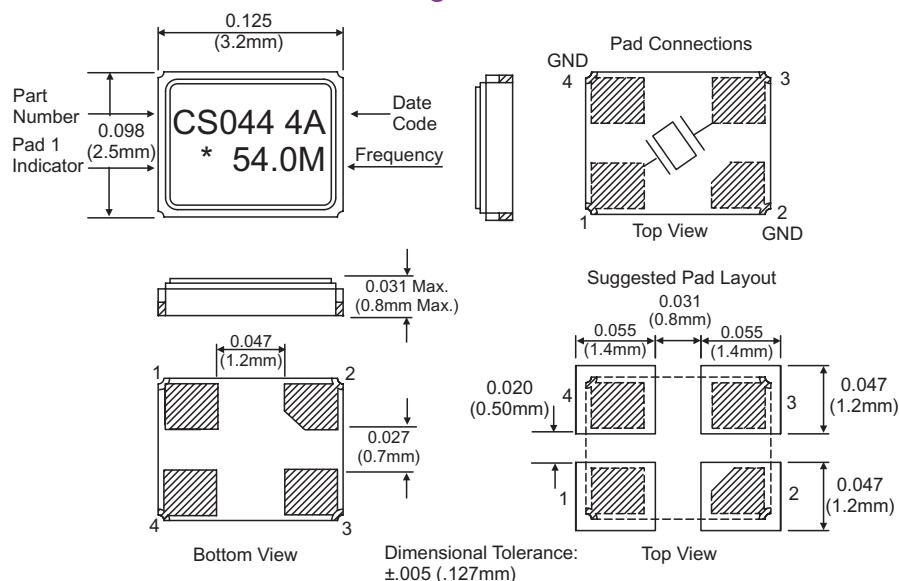
## Package Characteristics

|         |                                                    |
|---------|----------------------------------------------------|
| Package | Hermetically sealed ceramic 3.2x2.5mm SMD Package. |
| Leakage | 0.01ppm atm. cc/sec. maximum                       |

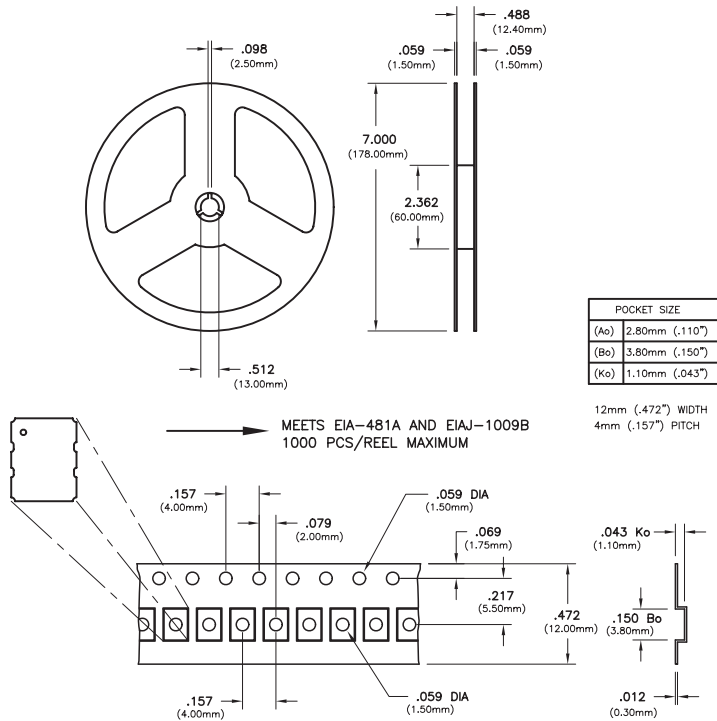
## Ordering Information

CS-044-054.0M

## Package Outline



## Tape and Reel Information



## Date Code Information

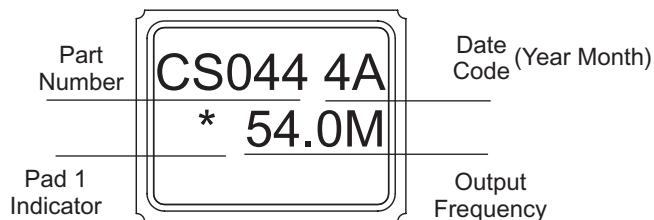
### 2 Character Date Code

| Year Code | Month Code    |
|-----------|---------------|
| 3 = 2013  | A = January   |
| 4 = 2014  | B = February  |
| 5 = 2015  | C = March     |
| 6 = 2016  | D = April     |
| 7 = 2017  | E = May       |
| 8 = 2018  | F = June      |
| 9 = 2019  | G = July      |
| 0 = 2020  | H = August    |
| 1 = 2021  | J = September |
| 2 = 2022  | K = October   |
|           | M = November  |
|           | N = December  |

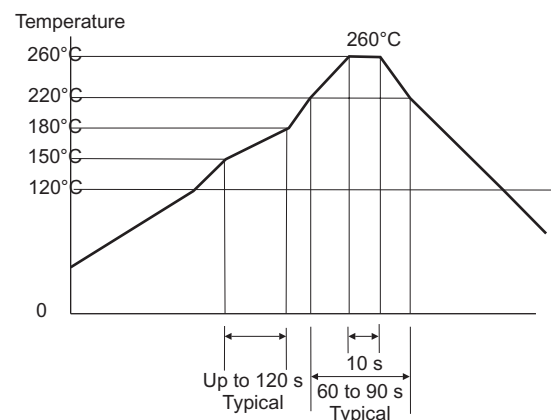
Date Code Example: 9G

9 = 2019, G = July

## Marking Information



## Solder Profile



Meets IPC/JEDEC J-STD-020C

## Revision History

| Revision | Date     | Revision.                               |
|----------|----------|-----------------------------------------|
| 00       | 01/14/14 | New Release                             |
| 01       | 07/08/14 | Update to Electrical Specs              |
| 02       | 08/03/15 | Update to Electrical Specs and Digi-Key |
| 03       | 07/23/19 | Updated Tape and Reel dimensions        |

|          |              |
|----------|--------------|
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| Page     | 2 of 2       |
| Revision | 03           |
| Date     | 23 July 2019 |