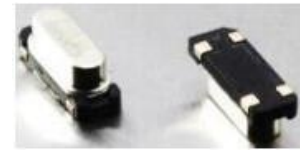


Main Feature

- RoHS compliant
- Low Profile
- 4 pads



13.4*4.8*5.2mm

Application

- Communication, Test equipment
- Computers, Modems, Microprocessors

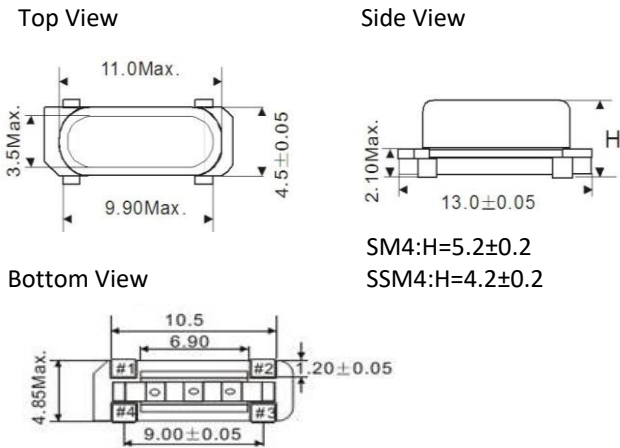
Standard Specification

Frequency Range: 3.2000MHz ~ 70.000Hz
 Frequency Tolerance (at 25°C): ±10~ ±50ppm
 Load Capacitance: 18pF (Typ.) or Specify
 Frequency Stability: ±10 ~ ±100ppm
 Operating Temperature: -20°C~ +70°C and -40°C~ +85°C
 Equivalent Series Resistant: see Table 1
 Storage Temperature: -55 °C~ +125°C (typ.)
 Aging (at 25°C): ±5ppm Max.
 Shunt Capacitance (C0): 7.0pF Max.
 Drive Level: 100µW Typ.
 Package:Tape/Reel

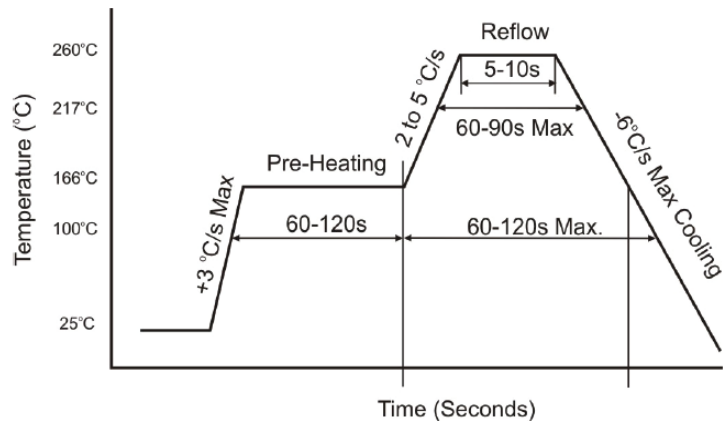
Standard ESR Table 1

Frequency Range in MHz	ESR Value in Ohm Max.
3.2000~3.499 (Fund.)	300
3.5000~3.999(Fund.)	200
4.0000~5.999(Fund.)	150
6.0000~6.999(Fund)	100
7.0000~8.9990(Fund)	80
9.0000~12.999(Fund)	60
13.0000~19.999(Fund)	40
20.000~26.999(Fund)	30
27.000~70.000(3rd OT)	100

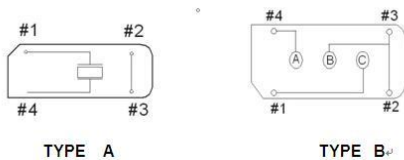
Dimension (Unit: mm)



Reflow Profile Condition(260 °C Max.)



Electrode Arrangement



TGS part No. Guide

TGS	CSM4A	12M0A	50-	18-	50-	40-	60	T	LF	XX
	1	2 3	4	5	6	7	8	9	10	11

- 1) CSM4A: TGS Part Family No.
- 2) 12M0: Frequency Range in MHz or specify
- 3) Oscillator Mode- A: AT- Cut Fund. ; B: Bt-Cut; C: 3rd OT
- 4) 50: Frequency Tolerance in +/-50ppm or specify
- 5) 18: Load Capacitor in pF or specify
- 6) 50: Frequency Stability in +/-50 ppm or specify
- 7) 40: Operating Temp. in -40°C~ + 85°C or specify
- 8) 60: ESR Max. in 80 ohm or see table 1
- 9) T: Tape /Reel
- 10) LF: RoHS compliant
- 11) XX: 2 letters as Internal Control Code