



A Product Line of  
Diodes Incorporated



## SPECIFICATION FOR APPROVAL

CUSTOMER \_\_\_\_\_

NOMINAL FREQUENCY \_\_\_\_\_ 25.000000 MHz \_\_\_\_\_




PRODUCT TYPE \_\_\_\_\_ **TYPE GC 49S SMD QUARTZ CRYSTAL** \_\_\_\_\_

SPEC. NO. ( P/N ) \_\_\_\_\_ GC2500113 \_\_\_\_\_

CUSTOMER P/N \_\_\_\_\_

ISSUE DATE \_\_\_\_\_ June 21, 2018 \_\_\_\_\_

VERSION \_\_\_\_\_ E \_\_\_\_\_

APPROVED	PREPARED	QA
		

### Diodes Incorporated

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\*RoHS Compliant  
\*HF-Halogen Free  
\*REACH Compliant



# TYPE GC 49S SMD QUARTZ CRYSTAL

## GC2500113

VER. E 21-Jun-18

### ELECTRICAL SPECIFICATIONS

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	Fn	25.000000	MHz	
Mode of Oscillation	MO	AT Cut-Fundamental		
Calibration Load Capacitance	CL	18	pF	
Calibration Tolerance	FL	±30	ppm	at 25°C±3°C
Operating Temperature Range	TR	-40 to +85	°C	
Frequency Stability (Frequency Deviation over the Operating Temperature Range)	F/T	±50	ppm	Reference to the Frequency at 25°C
Operating Drive Level		100	µW	
Maximum Drive Level		500	µW	
Equivalent Series Resistance	ESR	20	Ω	Max
MaxRR-MinRR at Drive Level Dependency Sweep	DLD2	10	Ω	Max
MaxRR at Drive Level Dependency Sweep	RLD2	20	Ω	Max
Shunt Capacitance	C0	7	pF	Max
Motional Capacitance	C1	15	fF	Typ
Aging at 25°C		±5	ppm	Max, 1st year ; ±1 ppm/year thereafter
Storage Temperature		-55 to +125	°C	
Insulation Resistance		500	MΩ	Min

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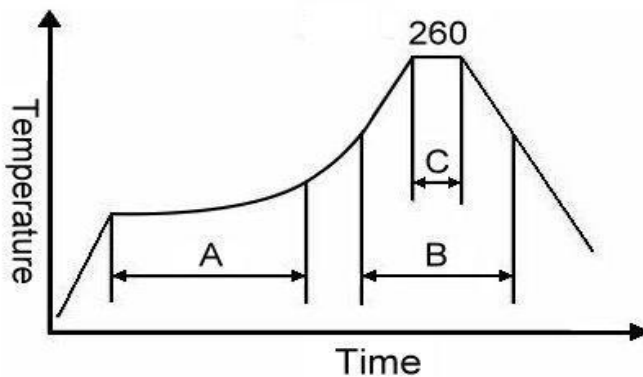
## RELIABILITY SPECIFICATIONS

### MECHANICAL AND ENVIRONMENTAL RATINGS:

- a) FINE LEAK TEST: JESD22-A109 (Condition 1A)
- b) GROSS LEAK TEST: JESD22-A109 (Condition C)
- c) MOISTURE RESISTANCE: JESD22-A113
- d) SHOCK: JESD22-B104 (Condition B)
- e) SOLDERABILITY : (RoHS version): J-STD-002
- f) VIBRATION: JESD22-B103
- g) SOLVENT RESISTANCE: JESD22-B107
- h) RESISTANCE TO SOLDERING HEAT (RoHS version): J-STD-020D Table 5.2 Pb free devices (3 cycles max)

## SUGGESTED IR REFLOW PROFILE

\*As per IPC-JEDEC J-STD-020D



Note:

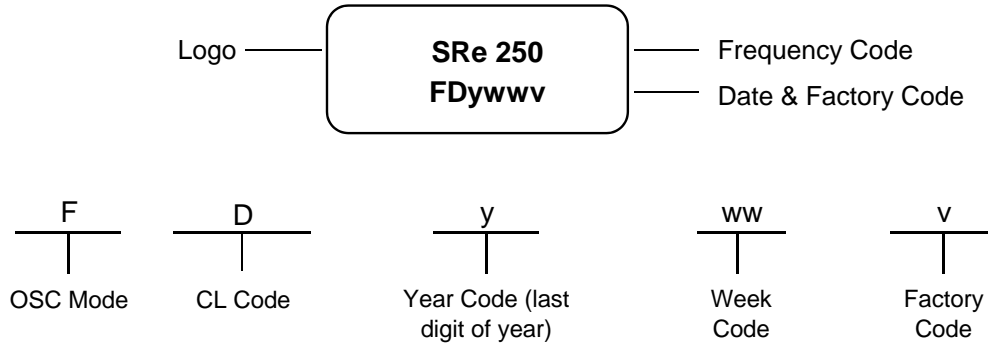
	Stage	Temperature	Time
A	Preheat	150~200°C	60~120 Sec
B	Primary Heat	217°C	60~150 Sec
C	Peak	260°C	10 Sec

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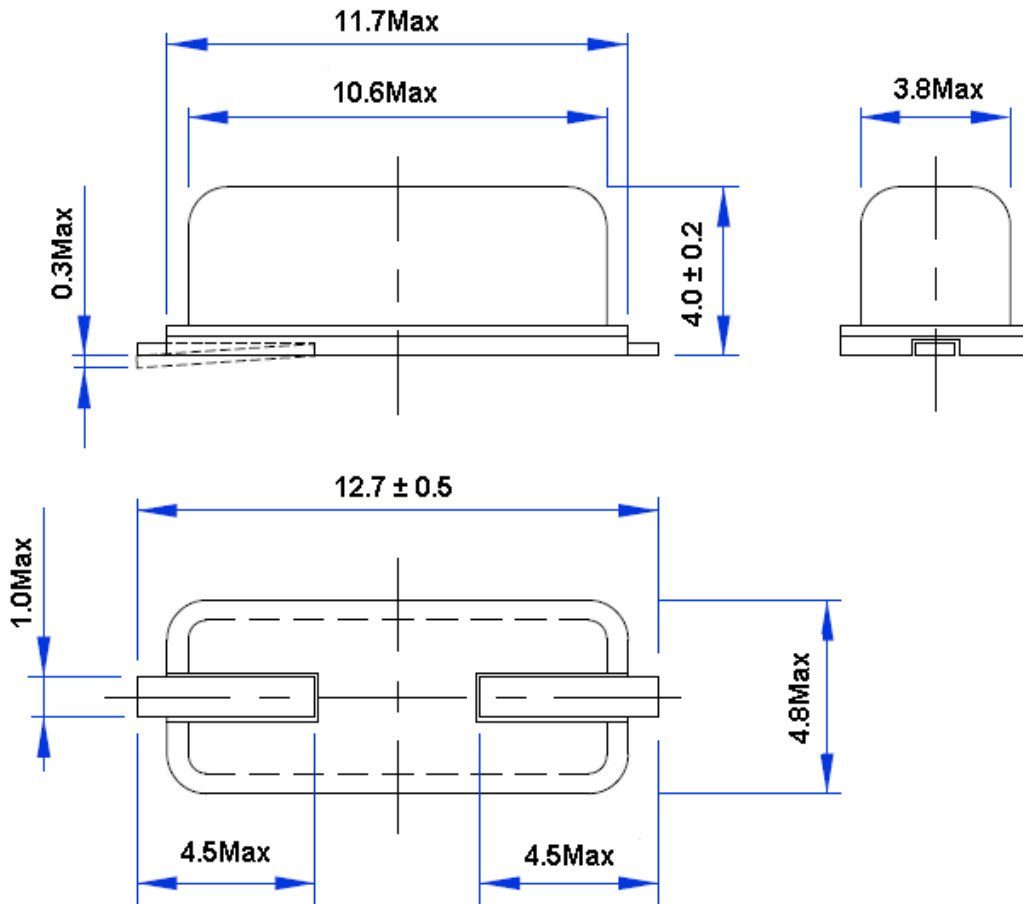
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### MARKING



### MECHANICAL DRAWINGS ( Scale: None. Dimensions are in mm.)



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### PACKING

