



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) _____ GC2500168 _____

CUSTOMER P/N _____

ISSUE DATE _____ April 27, 2018 _____

VERSION _____ F _____

APPROVED	PREPARED	QA
		

Diodes Incorporated

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*RoHS Compliant
*HF-Halogen Free
*REACH Compliant

TYPE GC 49S SMD QUARTZ CRYSTAL

GC2500168

VER. F 27-Apr-18

VERSION HISTORY

Version No.	Version Date	Description	Notes
A	Jan.28,2013	Initial Release	
B	Jan.29,2013	Updated mechanical drawing	
C	Oct.24,2013	Updated mechanical drawing : added the dimension of the third pin.	
D	Nov.7,2013	Updated C0/C1 Ratio from 240 max to 250 max	
E	Jan.13,2014	Updated the dimension of the third pin to 3.0±1.0mm	
F	Apr.27,2018	Updated logo	



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ELECTRICAL SPECIFICATIONS

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	F _n	25.000000	MHz	
Mode of Oscillation	MO	AT Cut-Fundamental		
Calibration Load Capacitance	CL	10	pF	
Calibration Tolerance	FL	±20	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	±20	ppm	Reference to the Frequency at 25°C
Operating Drive Level		300	μW	
Maximum Drive Level		1000	μW	
Equivalent Series Resistance	ESR	50	Ω	Max
Shunt Capacitance	C0	4 / 7	pF	Typ / Max
C0/C1 Ratio	C0/C1	220 / 250		Typ / Max
Aging at 25°C		±3	ppm	Max, 1st year
Aging at 25°C		±10	ppm	Max, 15 years
3 rd Overtone F _L	F _{L_30VT}		ppm	Min
3 rd Overtone F _L Spurs	F _{L_30VT_spurs}		ppm	Min
Storage Temperature		-55 to +125	°C	
Insulation Resistance		500	MΩ	Min

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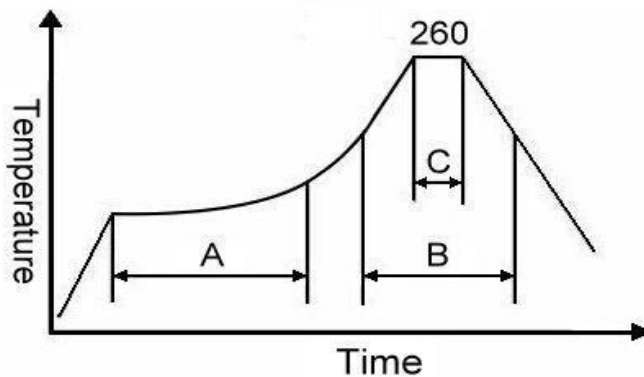
RELIABILITY SPECIFICATIONS

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:

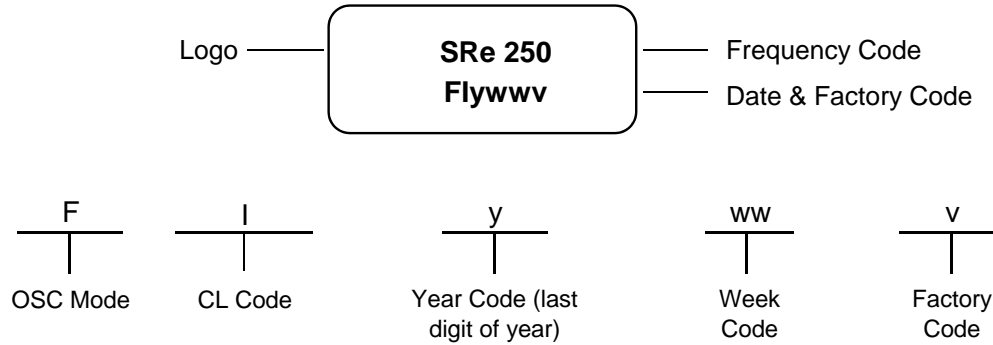
	Stage	Temperature	Time
A	Preheat	150~200°C	60~120 Sec
B	Primary Heat	217°C	60~150 Sec
C	Peak	260°C	10 Sec

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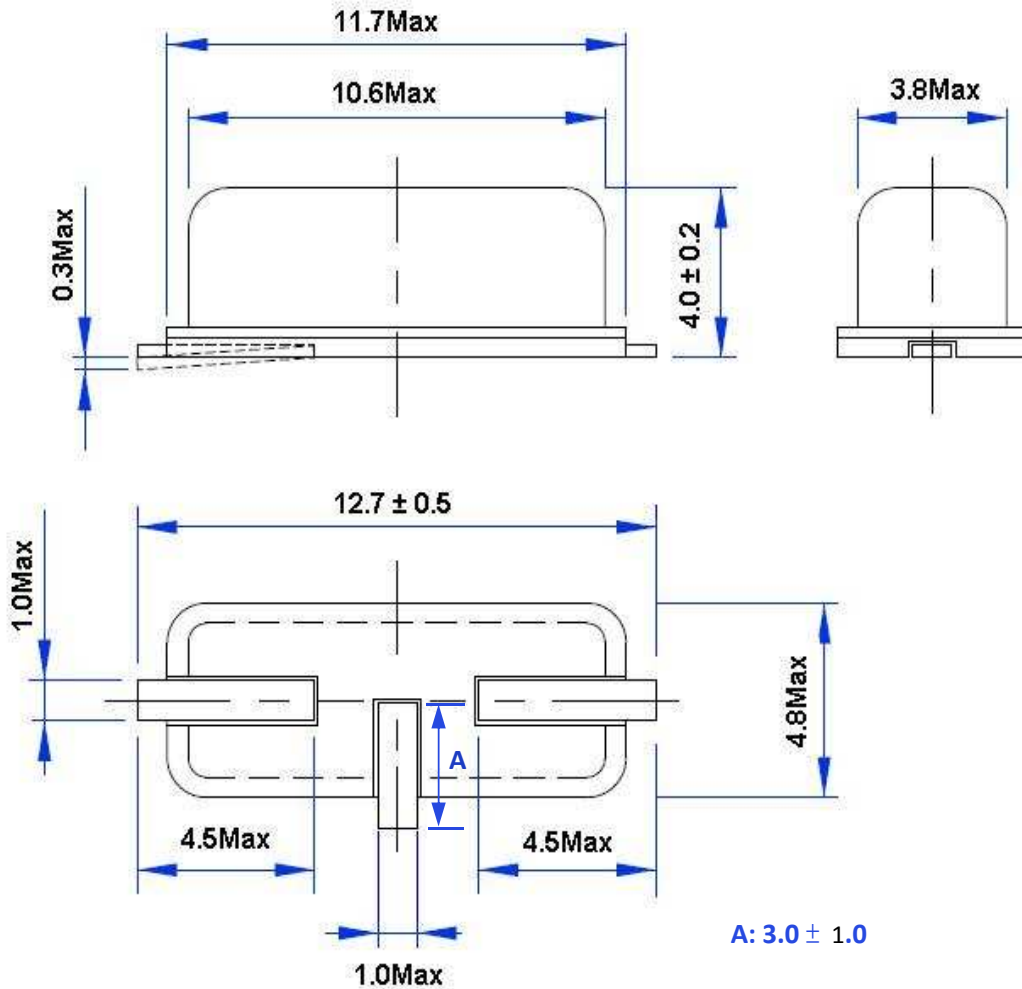
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MARKING



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



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PACKING

