



A Product Line of  
Diodes Incorporated



# SPECIFICATION FOR APPROVAL

CUSTOMER \_\_\_\_\_

NOMINAL FREQUENCY 32.768 KHz

PRODUCT TYPE G2 Series Cylinder Through Hole Quartz Crystal

SPEC. NO. ( P/N ) G23270015

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

ISSUE DATE Apr.17,2018

VERSION B

APPROVED	PREPARED	QA

## Diodes Incorporated

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

# G2 Series 2.0x6.0mm Cylinder Through Hole Quartz Crystal

## G23270015

VER. B 17-Apr-18

### VERSION HISTORY

Version No.	Version Date	Description	Notes
A	Jun.13,2011	Initial Release	
B	Apr.17,2018	Updated logo	



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### ELECTRICAL SPECIFICATIONS

SRe Part Number : G23270015

Parameters	Symbol	Specifications	Units	Notes
Nominal Frequency	Fn	32.768	KHz	
Mode of Oscillation	MO	Fundamental		+2° X-Cut
Drive Level	DL	1	μW	Max.
Load Capacitance	CL	6	pF	Typical
Frequency Tolerance	FT	±20	ppm	at 25°C ± 5°C
Operating Temperature Range	TR	-40 to +85	°C	
Equivalent Series Resistance	ESR	50	KΩ	Max.
Temperature Coefficient	K	-0.035	ppm/°C <sup>2</sup>	Typical
Aging		± 3	ppm	Max 1st year
Insulation Resistance		500	MΩ	at DC 100V ± 15V

### Reliability ( Mechanical and Environmental Endurance )

No.	Test Items	Test Method and Condition	Requirements
1	Vibration	(1) Vibration Frequency: 10 to 55Hz (2) Vibration Amplitude: 1.5mm (3) Cycle Time: 1-2min(10-55-10Hz) (4) Direction: X.Y.Z (5) Duration: 2h/each direction	Frequency Change: ±10ppm Max. Resistance Change:5kohm Max.
2	Shock	3 Times free drop from 75cm height to hard wooden board of thickness more than 30mm	Frequency Change: ±10ppm Max. Resistance Change:5kohm Max.
3	Leakage	Put crystal units into a hermetic container and Helium for 0.5-0.6Mpa, and keep it for 1h; Check the leakage by a Helium leak detector	Leakage: 1x10 <sup>-8</sup> Pa·m1/s Max.



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4	Lead Strength (DIP)	The crystal lead with the 0.9kg(9N) power (keep it for 30s±5s) and bend the crystal lead 90° with 0.45kg power and two times	The crystal lead is not abnormality
5	High Temperature Endurance	The crystal units shall be put in somewhere for 2 hrs at temperature of 85°C±2°C, then keep it for 1 to 2 hrs under room temperature.	Frequency Change: ±10ppm Max. Resistance Change:5kohm Max.
6	Low Temperature Endurance	The crystal units shall be put in somewhere for 2 hrs at temperature of -25°C, then keep it for 1 to 2 hrs under room temperature.	
7	Humidity Endurance	The crystal units shall be put in somewhere at 40°C in relative humidity of 90-95% for 48 hrs, then keep it for one or two hours under room temperature.	
8	Temperature Cycle	Temperature shift from low(-40°C) to high(100°C, keep 30 mins), satisfy high(100°C) to low(-40°C, keep 30 mins), then go up to room temperature for 5 cycles.	
10	Salt Spray Test	Put the crystal units in the salt spray room (salt density: 5%) at the temperature of 35°C for 96 hrs. Then clean it with water and dry its surface.	The appearance shall has no abnormality and soldering is good. Frequency Change: ±10ppm Max. Resistance Change:5kohm Max.

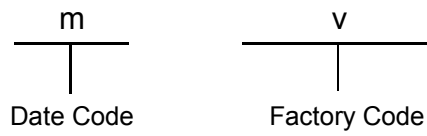
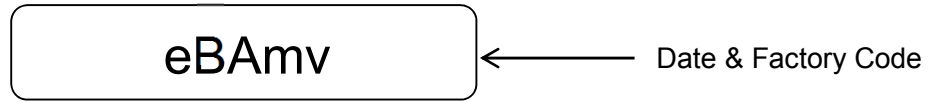


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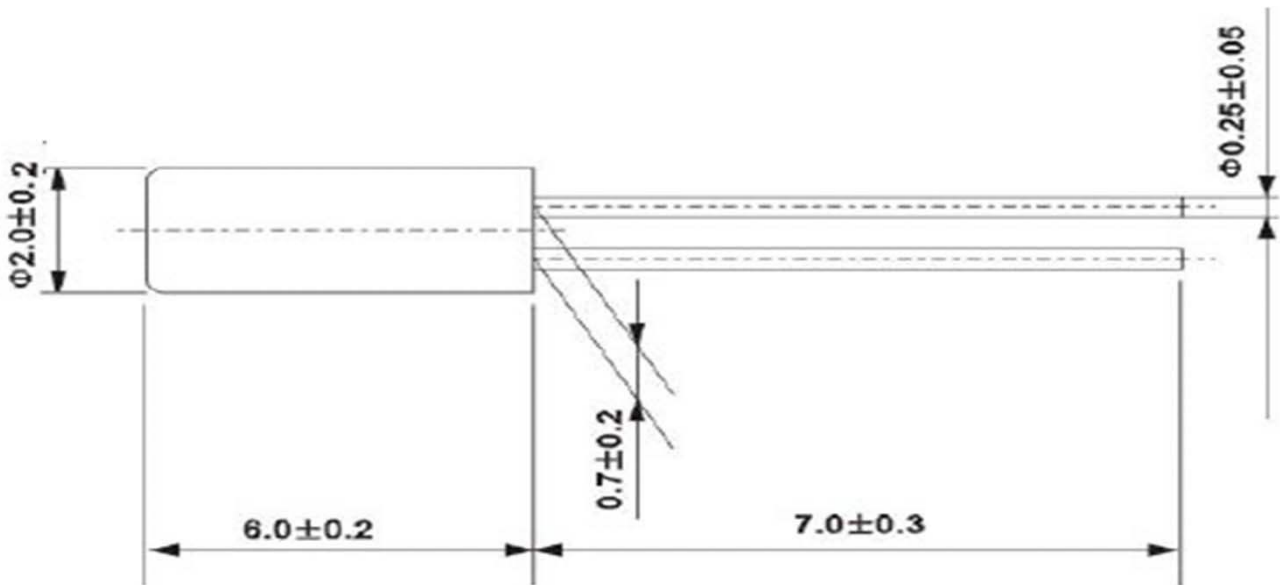
**G23270015**

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## MARKING



## DIMENSIONS (Unit:mm)

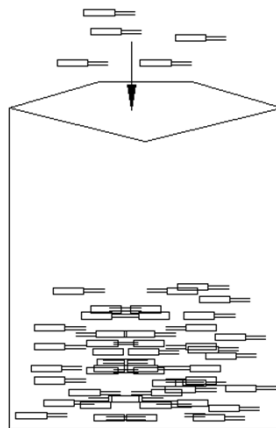
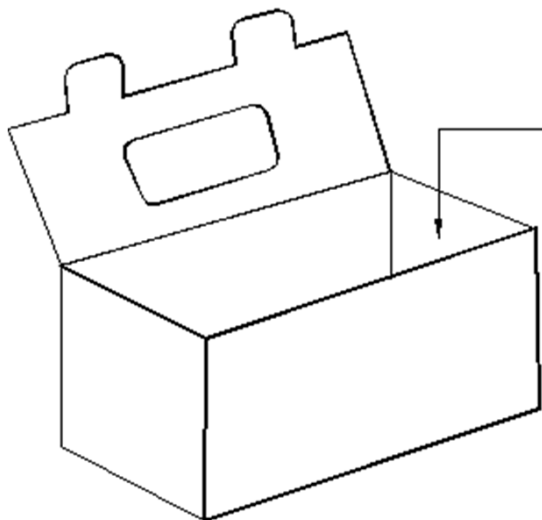


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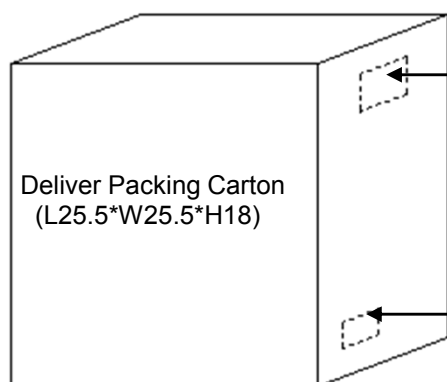
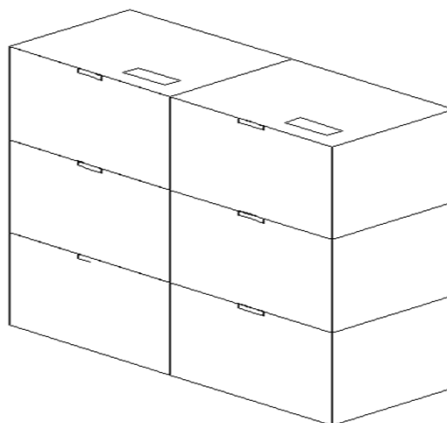
**G23270015**

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## PACKING



Quantity for Each Bag : 1000 pcs



Deliver Packing Carton  
(L25.5\*W25.5\*H18)

Storeroom Label

Green Qualified Label