A Product Line of Diodes Incorporated

SPECIFICATION FOR APPROVAL

CUSTOMER	
NOMINAL FREQUENCY	8.000000 MHz
PRODUCT TYPE	**TYPE F9 5.0x3.2 GLASS SEALED CRYSTAL**
SPEC. NO. (P/N)	F90800031Q
CUSTOMER P/N	
ISSUE DATE	November 29, 2017
VERSION	A

APPROVED	PREPARED	QA
Brenda	Claire	Jenny Yang

Diodes Incorporated

No.2, Ziqiang 5th Rd., Zhongli Industrial Park,
Zhongli Dist., Taoyuan City 32063, Taiwan
(R.O.C.)
TEL: 886-3-451-8888
FAX: 886-3-461-3865
https://www.diodes.com

***RoHS Exemption**
***HF-Halogen Free**
***REACH Compliant**
***AEC-Q200 Compliant**

VERSION HISTORY

Verision No.	Verision Date	Description	Notes
A	Nov.29,2017	Initial Release	

TYPE F9 5.0x3.2 GLASS SEALED CRYSTAL

F90800031Q

VER. A 29-Nov-17

ELECTRICAL SPECIFICATIONS

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	Fn	8.000000	MHz	
Mode of Oscillation	MO	AT Cut-Fundamental		
Calibration Load Capacitance	CL	18	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		10	µW	
Maximum Drive Level		100	µW	
Equivalent Series Resistance	ESR	140	Ω	Max
Shunt Capacitance	C0	5	pF	Max.
Aging at 25°C		±3	ppm	Max, 1st year
Storage Temperature		-55 to +125	°C	
Insulation Resistance		500	MΩ	Min

AEC-Q200 RELIABILITY TEST SPECIFICATIONS:

1. Initial

1.1 Physical Dimensions: JESD22, Method JB1-100

1.2 External Visual: MIL-STD-883, Method 2009

1.3 Freq. Vs. Temperature: Per Specification/Datasheet

2. Mechanical

2.1 Mechanical Shock: MIL-STD-202 Method 213

2.2 Vibration: MIL-STD-202 Method 204

2.3 Solderability: J-STD-002

2.4 Board Flex: AEC Q200-005

2.5 Terminal Strength (SMD): AEC Q200-006

3.Environmental

3.1 Temp Cycle: JESD22, Method JA-104

3.2 Resistance to Solder Heat: MIL-STD-202 Method 210

3.3 High Temperature Operating Life: MIL-STD-202, Method 108

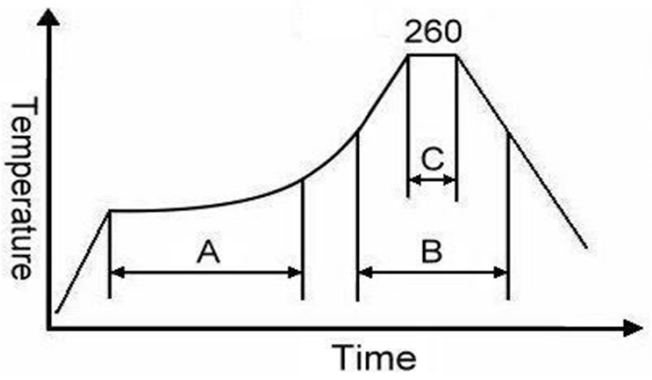
3.4 High Temp. Exposure: MIL-STD-202, Method 108

3.5 High Temp. & High Humidity: MIL-STD-202, Method 103

3.6 Thermal Shock: MIL-STD-202, Method 107

SUGGESTED IR REFLOW PROFILE

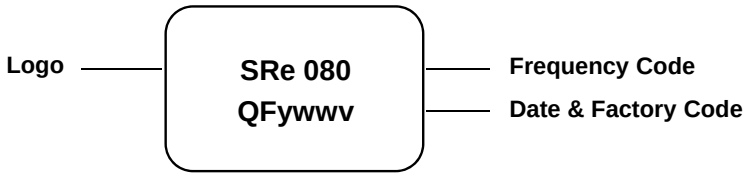
*As per IPC-JEDEC J-STD-020D



Note:

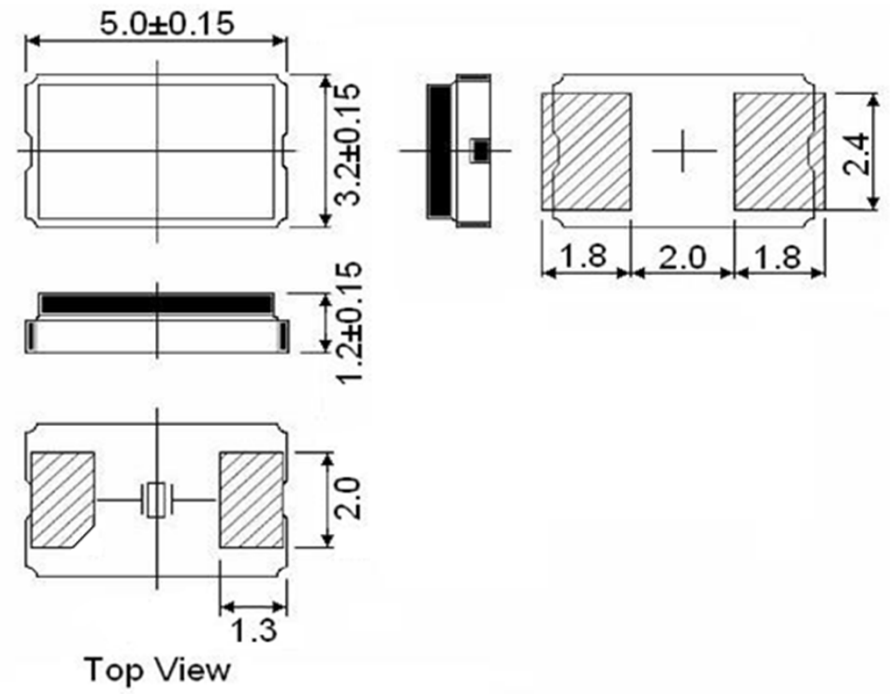
	Stage	Temperature	Time
A	Preheat	150~200°C	60~120 Sec
B	Primary Heat	217°C	60~150 Sec
C	Peak	260°C	10 Sec

MARKING



Q	F	y	ww	v
Automotive	CL Code	Year Code (last digit of year)	Week Code	Factory Code

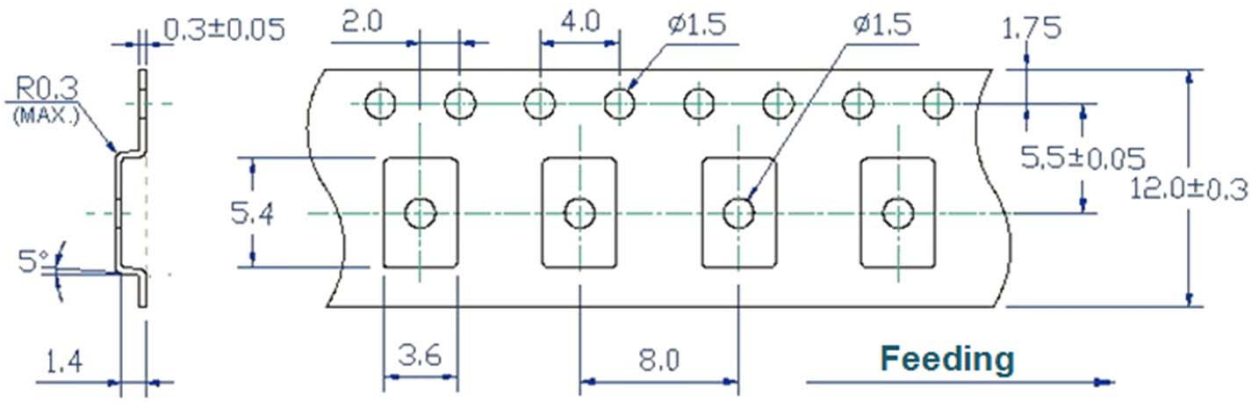
MECHANICAL DRAWINGS (Scale: None. Dimensions are in mm.)

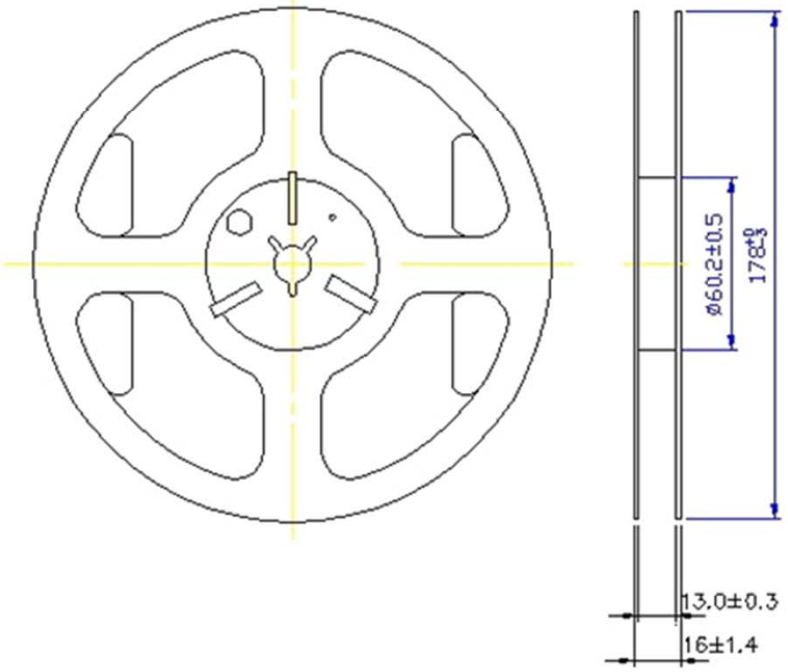


Note:

Pin shape is only for reference, and the Pin with chamfer or without chamfer is based on the real product.

Tape & Reel

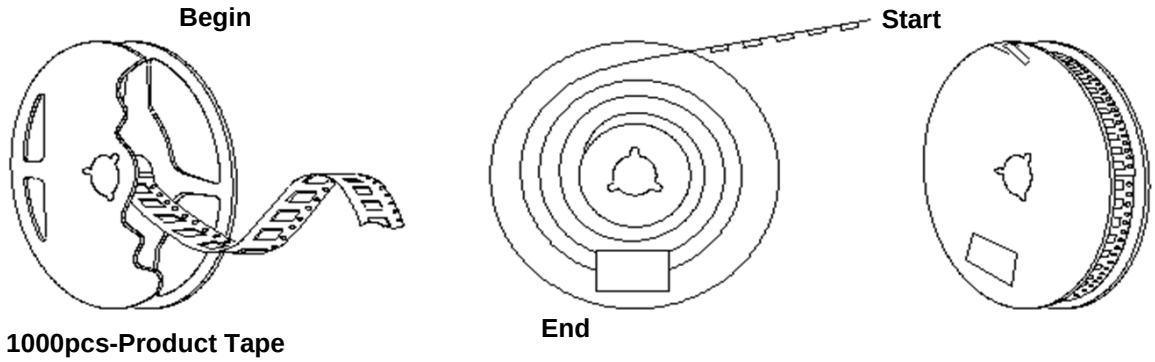


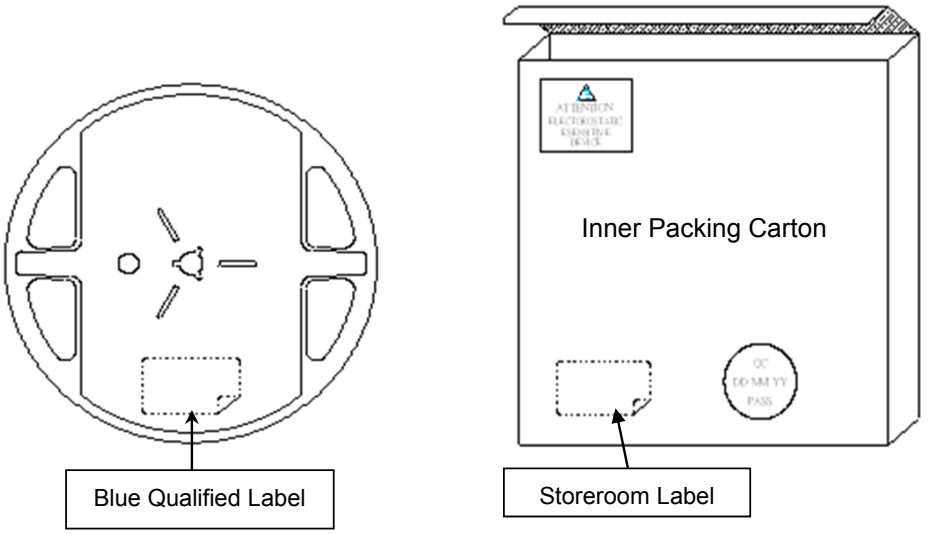


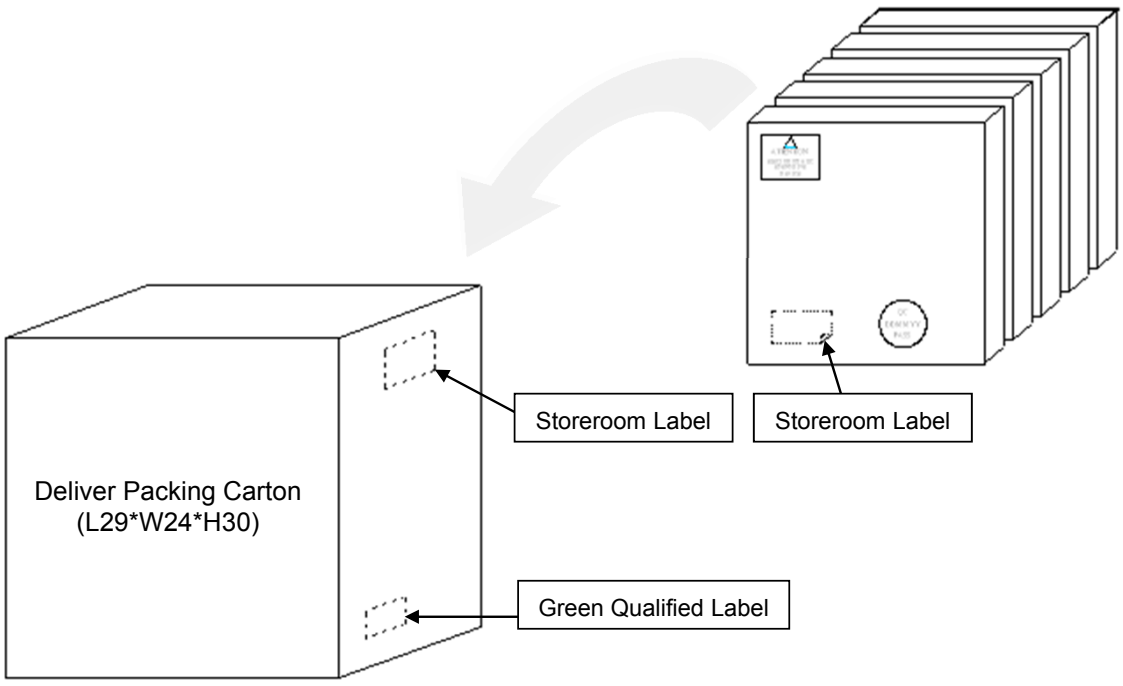
1. 230mm minimum leafer which consist of carrier and/or tape followed by a minimum of 160mm of empty carrier tape sealed with cover tape.

2. 160mm minimum trailer of empty carrier tape sealed with cover tape.

PACKING


Begin
Start
End
1000pcs-Product Tape


Inner Packing Carton
Blue Qualified Label
Storeroom Label


Deliver Packing Carton
(L29*W24*H30)
Storeroom Label
Storeroom Label
Green Qualified Label