

SPECIFICATION FOR CRYSTAL UNIT

N a t i o n a l S e m i c o n d u c t o r

- ◎ Parts Number :
- ◎ Model Name : TSS-6035B
- ◎ Frequency : 13000.000kHz
- ◎ Application : B.T.
- ◎ Package : Tape and Reel
- ◎ Other :
No attached test data
It is possible to endure for Lead-free
Reflow-soldering. And Lead non-use
concerned with product materials.

CUSTOMER SIGNATURE

DATE

- (1) Tokyo Denpa Co., Ltd. requires one copy returned with signature and title of authorized individual that signifies acceptance of the attached specifications.
- (2) Any orders received and accepted by Tokyo Denpa Co., Ltd. prior to return of signed copy of specification will be produced per these specifications.
- (3) Any changes to these specifications must be agreed upon in writing prior to acceptance by Tokyo Denpa Co., Ltd. for any orders.

WRITER	DESIGNER	Q. A	DATE	Jun. 03, 2004	SPECIFICATION No.	PAGE
			TOKYO DENPA CO., LTD.		1 2 0 - 1 2 6 7 3	1 7

SPECIFICATION FOR CRYSTAL UNIT

REV.	DATE	PAGE	ITEM No.	CONTENTS OF CHANGE
	Jun. 03, 2004			First

TITLE	DATE	Jun. 03, 2004	SPECIFICATION No.	PAGE
SPECIFICATION FOR CRYSTAL UNIT	TOKYO DENPA CO., LTD.	1 2 0 - 1 2 6 7 3	2	7

SPECIFICATION FOR CRYSTAL UNIT

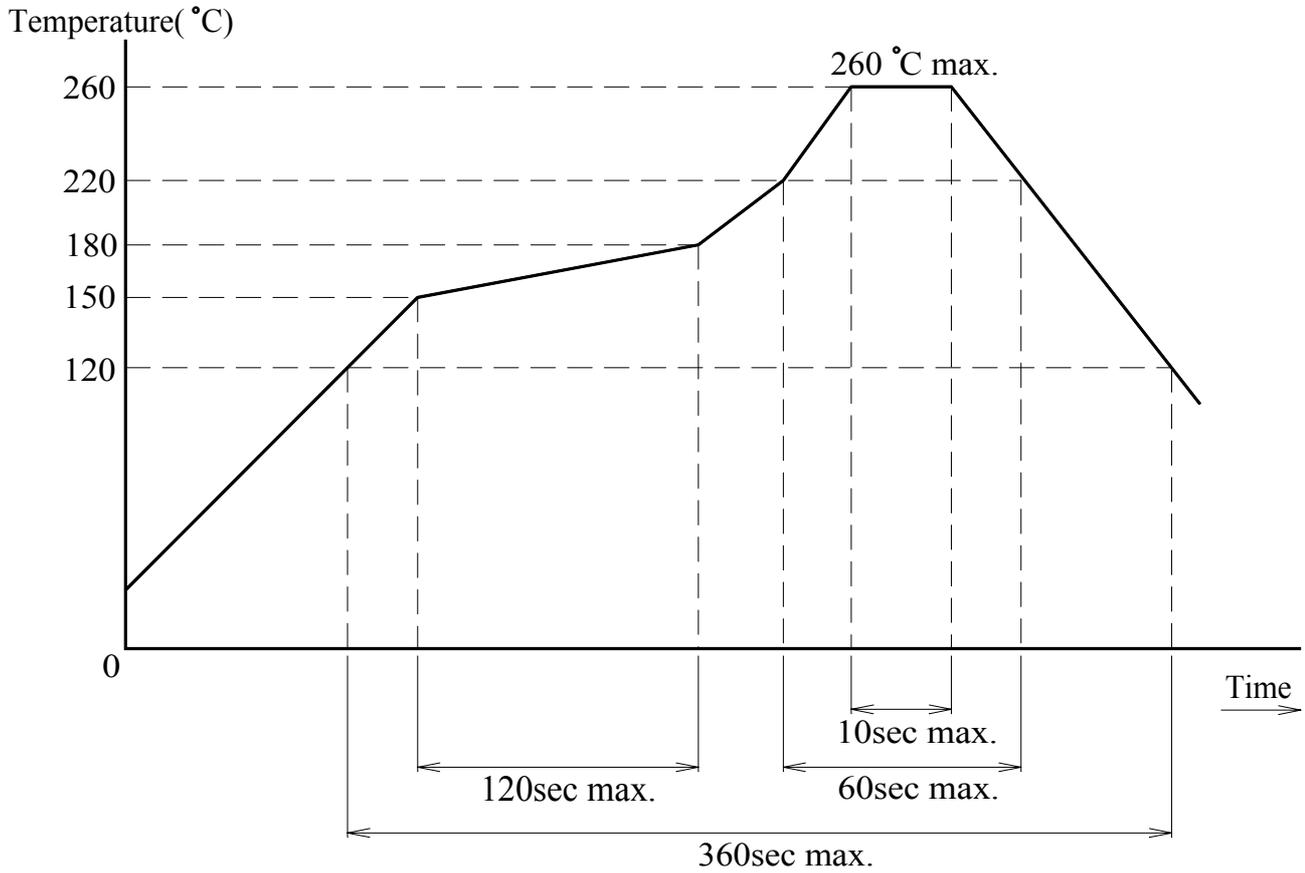
1. General Specification

- | | | |
|------|---|------------------|
| 1. 1 | Holder | TSS-6035B |
| 1. 2 | Frequency | 13000.000kHz |
| 1. 3 | Mode of Oscillation | Fundamental |
| 1. 4 | Operating Temp. Range | -40°C ~ +85°C |
| 1. 5 | Storage Temp. Range | -45°C ~ +105°C |
| 1. 6 | Load Capacitance | 16.0pF |
| | (The tolerance on the load capacitance shall be within ±1% from the nominal value or shall not exceed ±10% from frequency tolerance at the reference temperature (25±3°C), which ever value is smaller, however, in case of problem, standard test fixture shall be exchanged.) | |
| 1. 7 | Drive Level | 100±20 μ W |
| 1. 8 | Outer Appearance, Dimension & Marking | As per attached. |

2. Electrical Specification

- | | | |
|------|-------------------------------|--|
| 2. 1 | Frequency Tolerance | ± 10 × 10 ⁻⁶ (25±3°C) |
| 2. 2 | Equivalent Series Resistance | 40 Ω Max. |
| 2. 3 | Temp.VS Freq. Characteristics | ± 15 × 10 ⁻⁶
(referred to the value at 25°C) |
| 2. 4 | Shunt Capacitance (C0) | 5.0pF Max. |
| 2. 5 | Insulation Resistance | 500MΩ Min. (DC100V±15V) |
| 2. 6 | Aging | ± 1.0 × 10 ⁻⁶ Max. / year |

TITLE	DATE	SPECIFICATION No.	PAGE
SPECIFICATION FOR CRYSTAL UNIT	TOKYO DENPA CO., LTD.	120-12673	3 / 7



1) Reflow soldering : three times max.

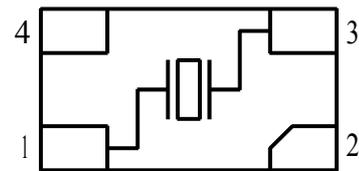
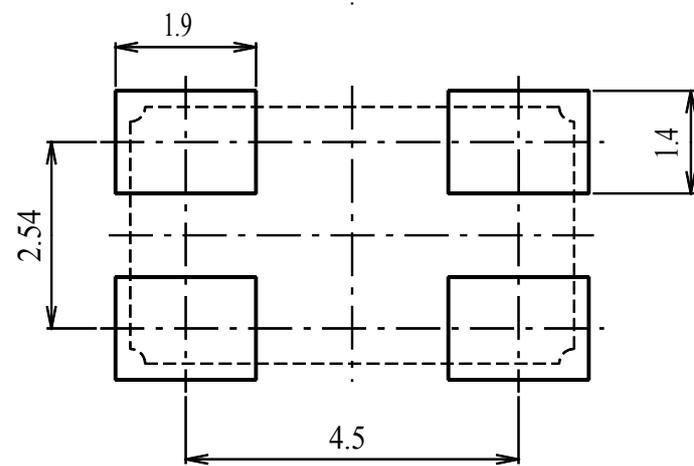
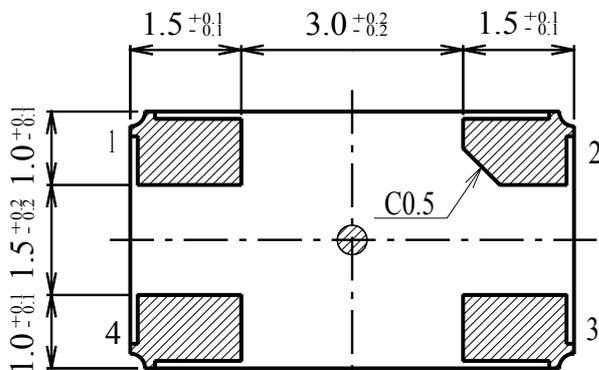
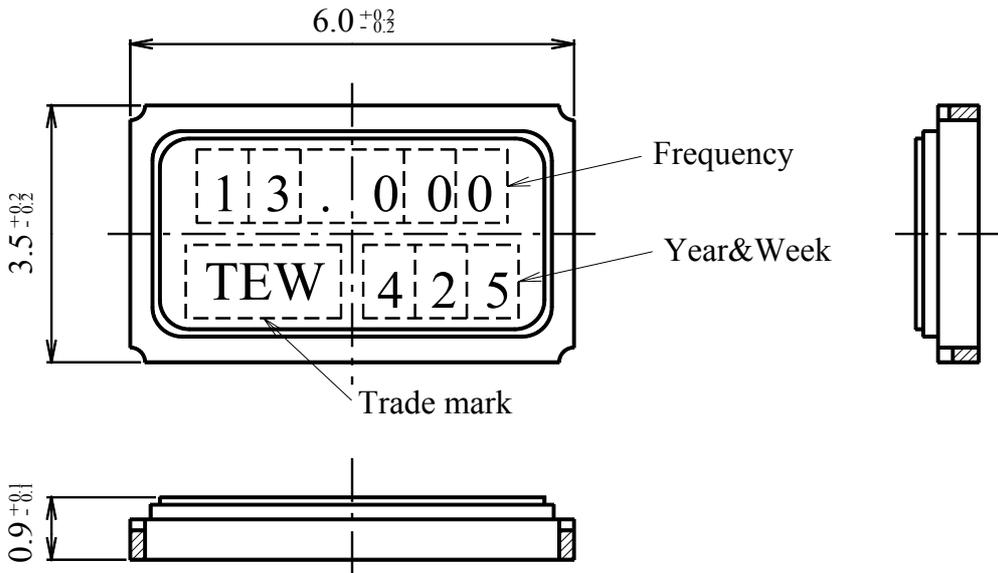
DATE	Mar.14.2001		

NAME OF UNIT	TITLE
	Reflow Temperature Profile (12-F0260)

NOTE	UNIT	PROJECTION	SCALE	D.W.G. NO.
Lead free solder				

APPROVE	DESIGN	DRAWING	TOKYO DENPA CO.,LTD.	120-12673 4/7

Marking on the can is prepared with rubber stamp
or marked with laser etching



Connections
(Top view)

Reference land pattern

DATE	JAN.12.1999		
	JUN.04.1999		
△	OCT.03.2001		

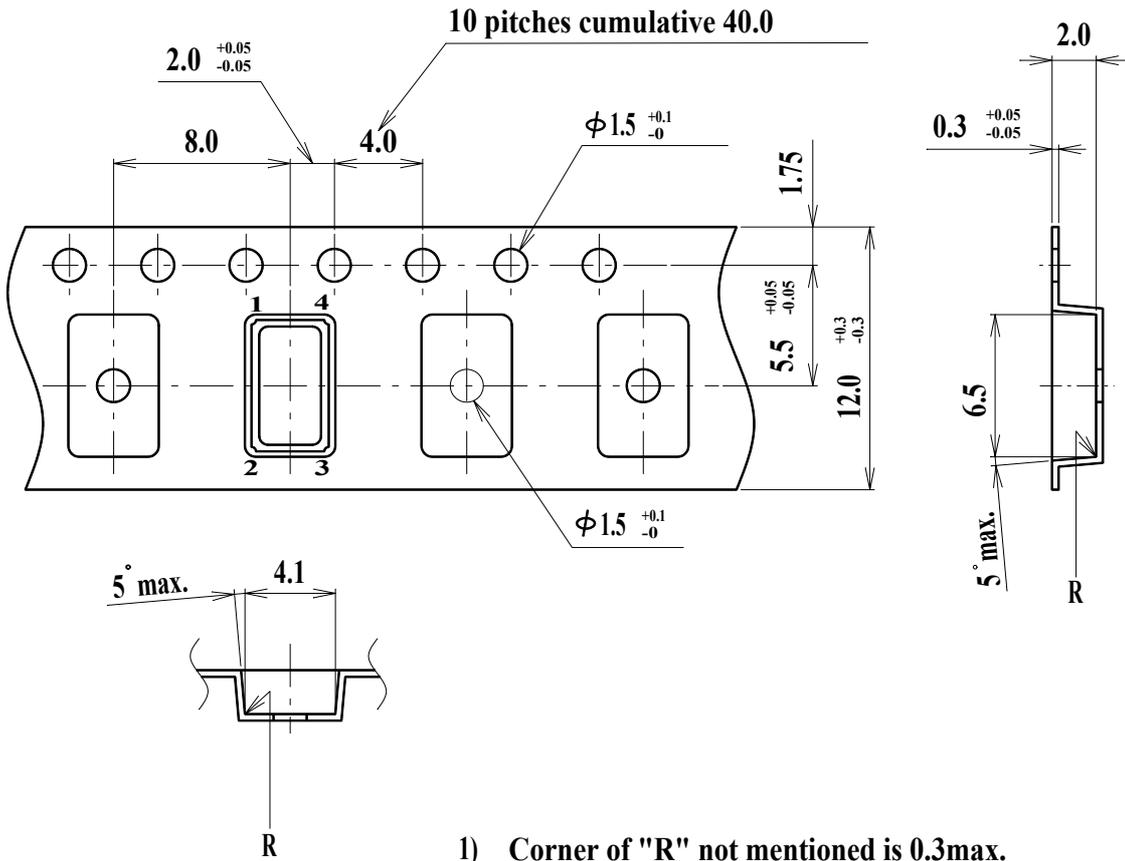
NAME OF UNIT △ TSS-6035B (TSS-3B(1.0))

TITLE Outline drawing (12-F0120D)

NOTE	UNIT	PROJECTION	SCALE	D.W.G. NO.
	mm	3rd angle	10/1	

APPROVE	DESIGN	DRAWING	TOKYO DENPA CO.,LTD.	120-12673 5/7
---------	--------	---------	----------------------	---------------

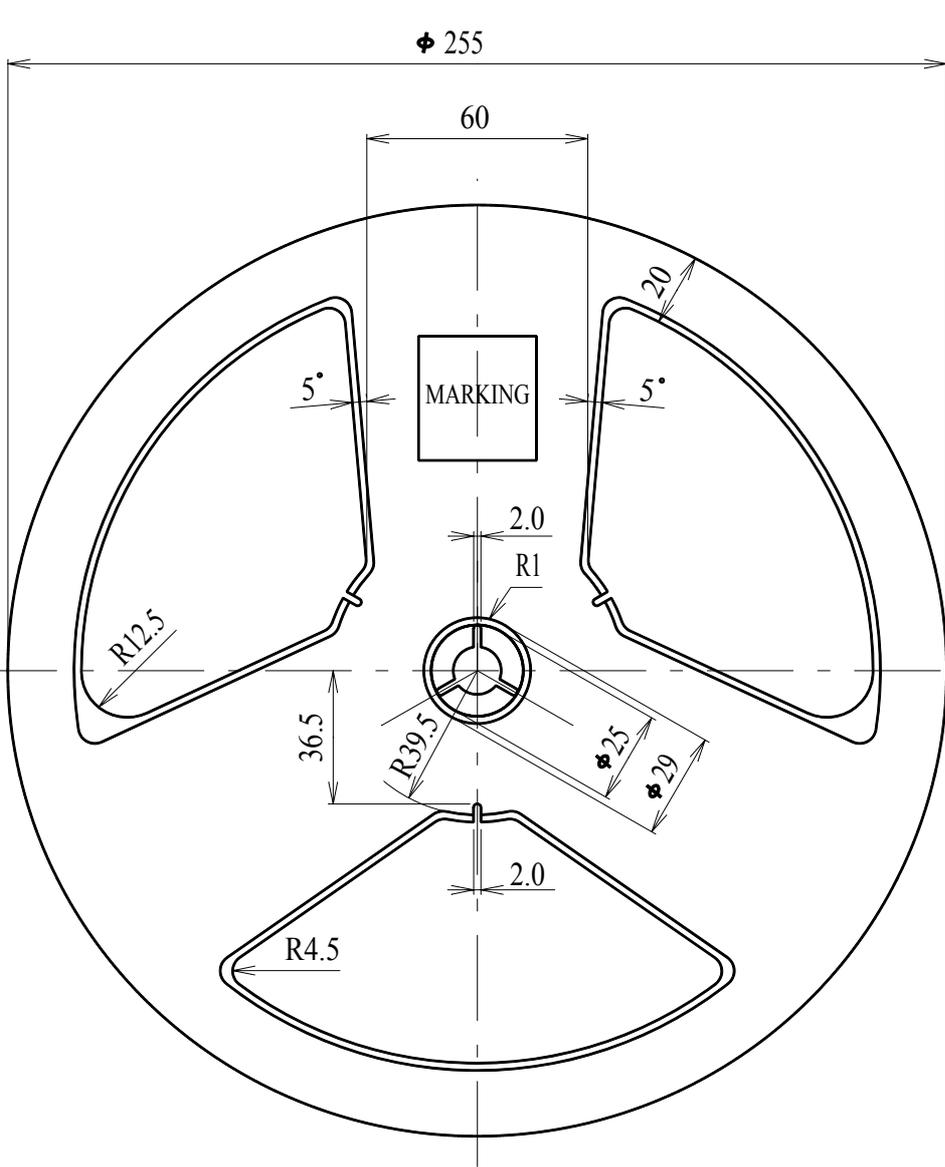
DRAWING OUT DIRECTION →



- 1) Corner of "R" not mentioned is 0.3max.
- 2) The tolerance not mentioned is +0.1/-0.1.

DATE	Jul.27.1999		
△	Oct.05.2001		

NAME OF UNIT		TAPE			TITLE		(12-F0211A)	
NOTE				UNIT	PROJECTION	SCALE	D.W.G. NO.	
△ TSS-6035B (TSS-3B(1.0)) 12mm (Standard)				mm	3rd angle	3/1		
APPROVE	DESIGN	DRAWING	TOKYO DENPA CO.,LTD.				120-12673 6/7	



1
2
3
4
5
6
7
8

CONTENTS

1. CUSTOMER
2. P/No. ; PARTS NUMBER
3. TYPE
4. FREQ. (MHz/KHz)
5. Q'TY ; QUANTITY
6. LOT No.
7. CONTROL No.
8. TEW MADE IN JAPAN

MARKING

DATE	FEB.12.1997		
DATE	AUG.26.1998		
DATE	JUL.16.1999		

NAME OF UNIT		TITLE	
Reel and Marking		OUTLINE DRAWING (12-F0083B)	

NOTE	12mm ϕ 250	UNIT	PROJECTION	SCALE	D.W.G. NO.
		mm	3rd angle	1/2	

APPROVE	DESIGN	DRAWING	TOKYO DENPA CO.,LTD.	120-12673 7/7