

# BME 8503S-04 A

MAGNETIC BUZZER

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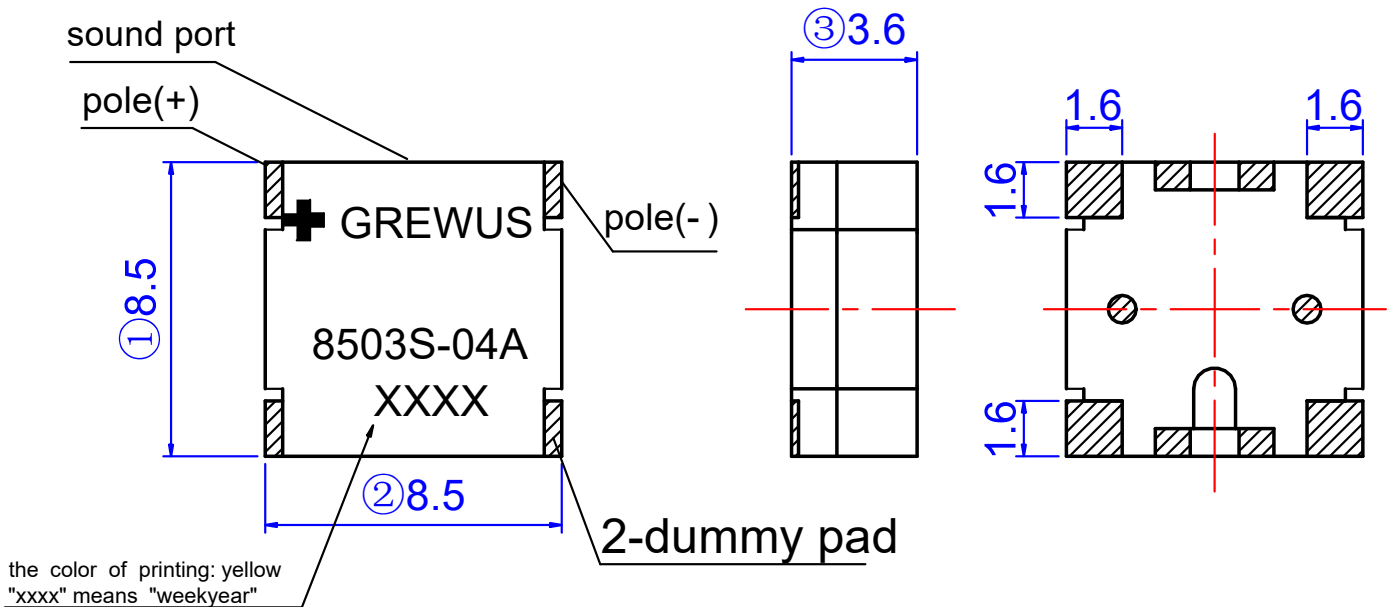


## 1. SPECIFICATIONS

Parameter	Unit	Conditions / Description	MIN	TYP	MAX
Operating Voltage	Vo-p		2		5
Rated Voltage	Vo-p			3	
SPL	dBa	Value applying rated voltage (2730Hz, 3Vo-p, 1/2 duty, square wave) at 10 cm	85		
Rated Current	mA	Value applying rated voltage (2730Hz, 3Vo-p, 1/2 duty, square wave)			80
Resonance Frequency	Hz			2.730	
Coil Resistance	$\Omega$		15	18	21
Housing Material				LCP (BLACK)	
Contact				SMD	
Packaging				REEL	
Operating Temperature	$^{\circ}\text{C}$		-40		+85
Storage Temperature	$^{\circ}\text{C}$		-40		+85
Weight	g				0,8

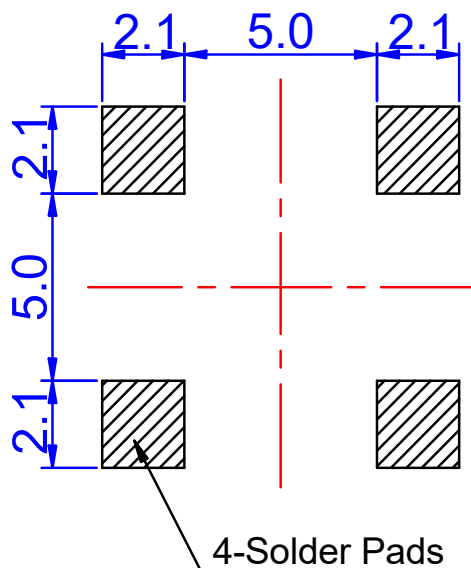
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CHANGED BY	Rabea Richter	DATE	2023.08.28				
DRAWING NO.	406184704						

## 2. DRAWING



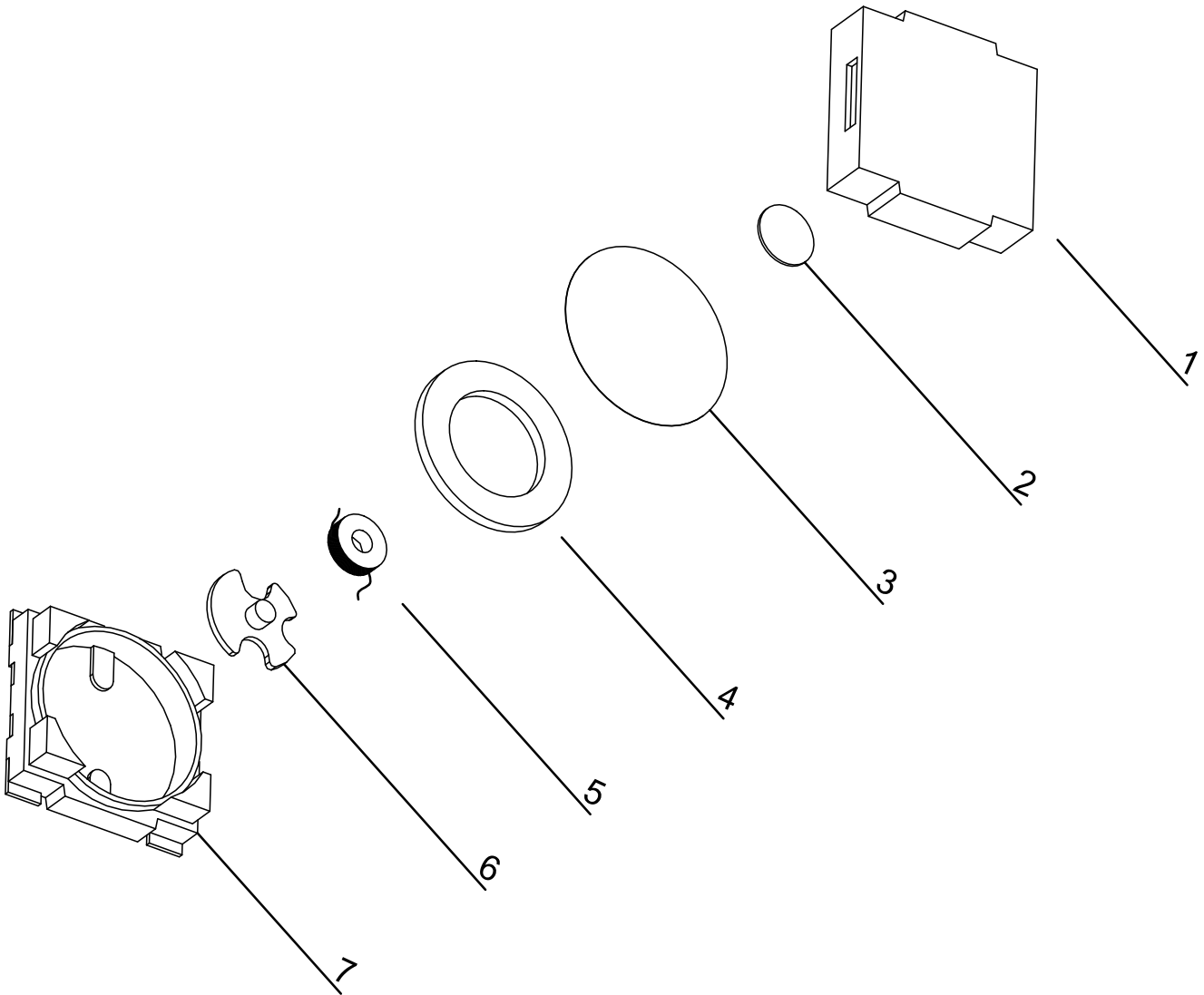
Tolerance: ±0.2 Unit: mm

## SOLDERING PATTERN



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#### 2.1 PART LIST



7	Housing	LCP
6	T-Yoke	SPCC
5	Voice Coil	Cu
4	Magnet Ring	Nd Co Fe B
3	Membrane	NiFe
2	Magnet Piece	SPCC
1	Cover	LCP
<b>No.</b>	<b>Part Name</b>	<b>Material</b>

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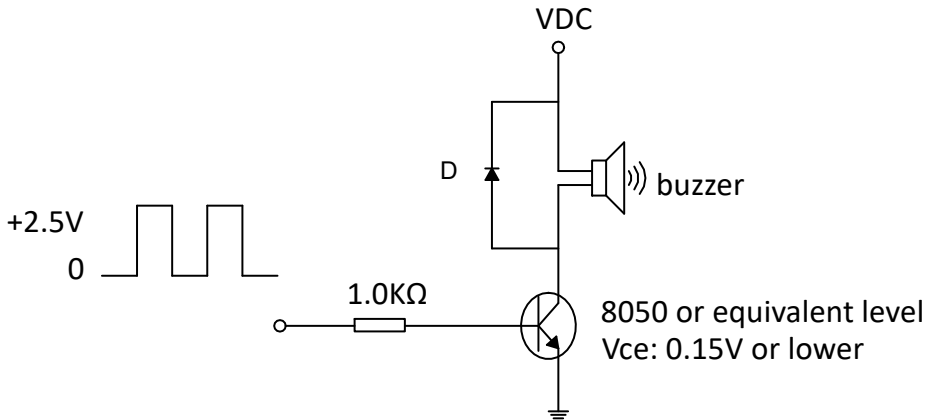
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## 3. TEST METHOD

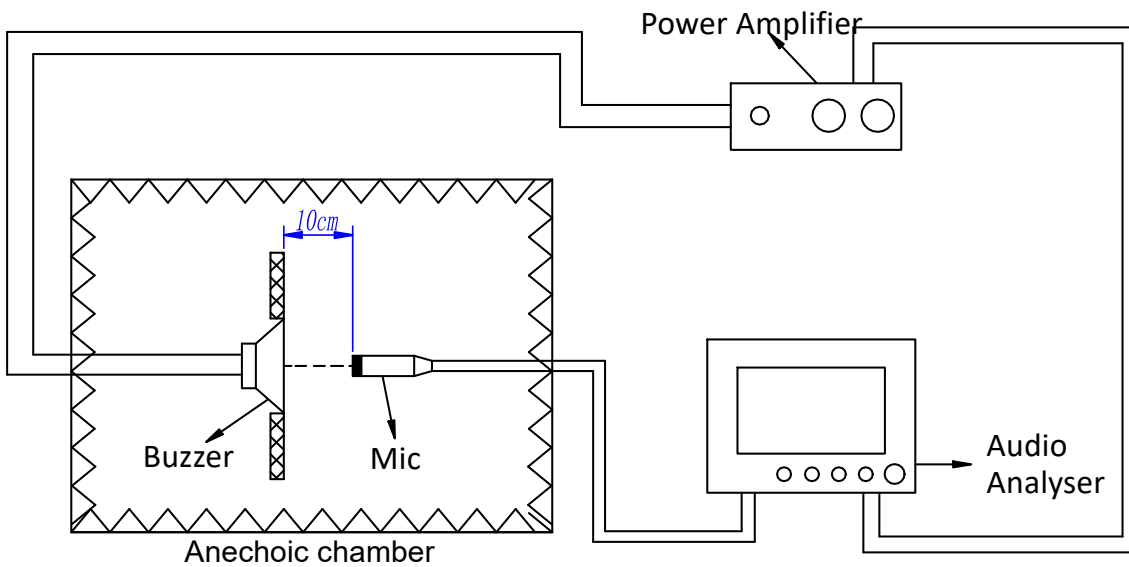
### 3.1 RECOMMENDED CIRCUIT

The following are examples of externally driven circuits.



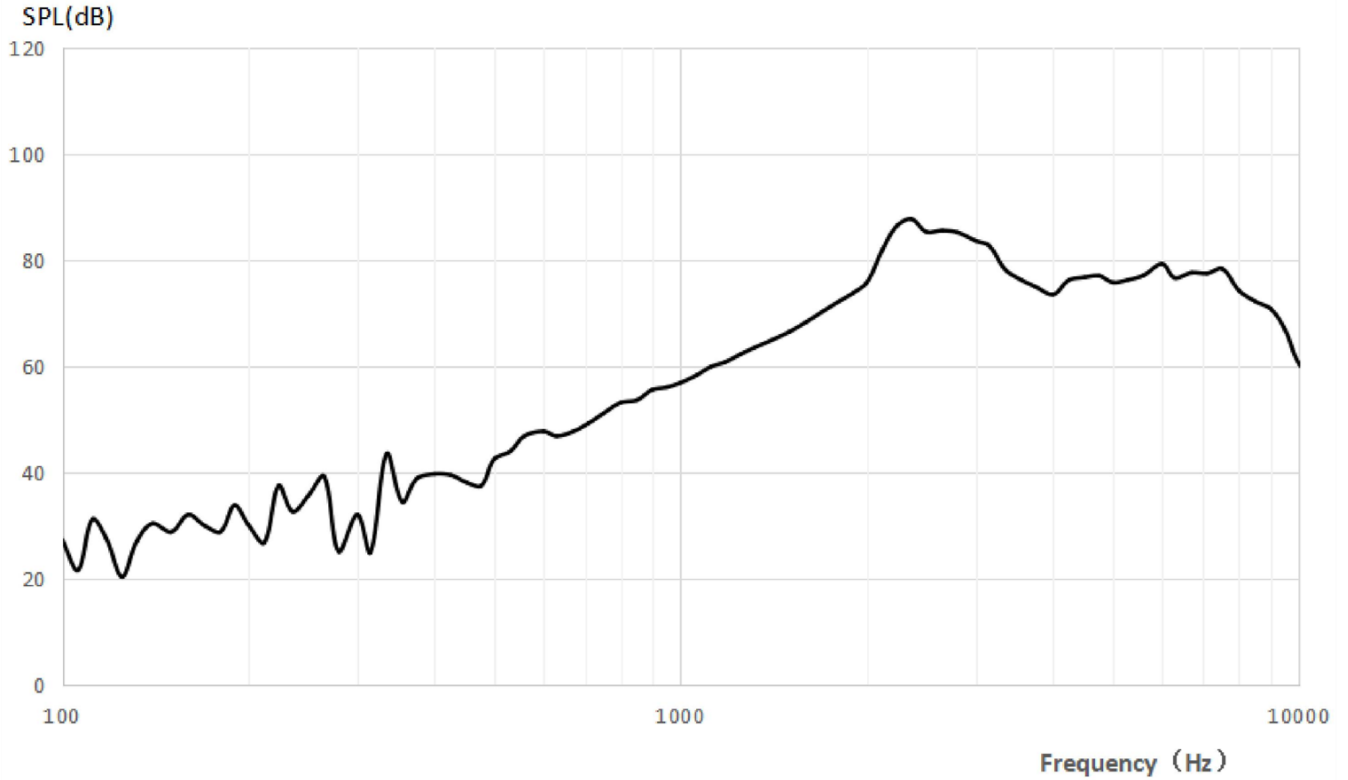
### 3.2 STANDARD TEST FIXTURE

No reaction in space with in 400mm in all direction



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### 3.3 FREQUENCY RESPONSE CURVE



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### 4. RELIABILITY TEST

#### 4.1 High Temperature Storage Life Test

Temperature +85°C  
Duration 96 hours

#### 4.2 Low Temperature Storage Life Test

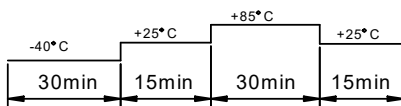
Temperature -40°C  
Duration 96 hours

#### 4.3 Life Test in normal Temperature

Power supply Rated voltage  
Duration 96 hours

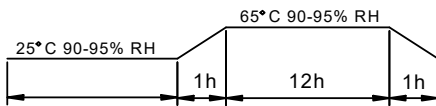
#### 4.4 Temperature Shock Test

Cycles 14



#### 4.5 Humidity Cycle Test

Cycles 10



#### 4.6 High Temperature Life Test

Temperature +85°C  
Duration 96 hours

#### 4.7 Low Temperature Life Test

Temperature -40°C  
Duration 96 hours

All these tests above should be measured after leaving normal temperature for 4 hours.

#### 4.8 Vibration Test

Vibration Frequency 10~200~10Hz  
Time 15 minutes  
Acceleration 5g  
Direction x, y, z each 2 hours (total 6 hours)

#### 4.9 Drop Test

Height 150cm (to concrete floor)  
Direction One time each 6 planes (total 6 times)

#### 4.10 Solderability Test

Soldering temperature 255 ±5°C  
Heat applying time 2 ±0,5 seconds

**Notice:** All specification must be satisfied in this condition except SPL. SPL shall be 83dB or more.

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**5. SURFACE MOUNTING CONDITION**

In automated mounting of The SMD Sound Transducers on printed circuit boards, any bending, expanding and pulling forces or shocks against the SMD Sound Transducers shall be kept minimum to prevent them from electrical failures and mechanical damages of the devices.

Soldering (Reflow)

- 1) Solderings of The SMD Sound Transducers shall conform to the soldering conditions in the individual specifications.
- 2) The SMD Sound Transducers are designed for "Reflow Solderings"
- 3) In the reflow solderings, too high soldering temperatures and too large temperature gradient such as rapid heating or cooling may cause electrical failures and mechanical damages of the devices.

Following soldering conditions are recommend; Refer to Fig.1

Temperature profile for a lead-free reflow process

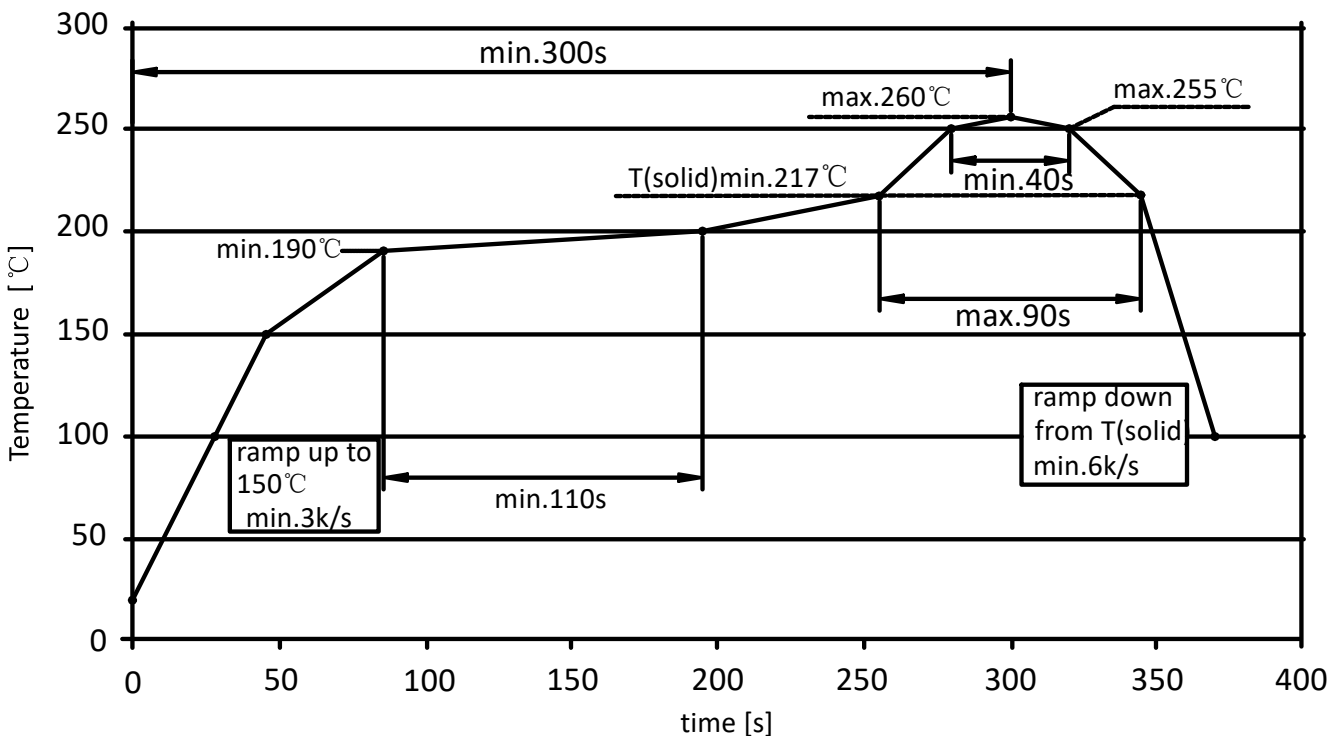


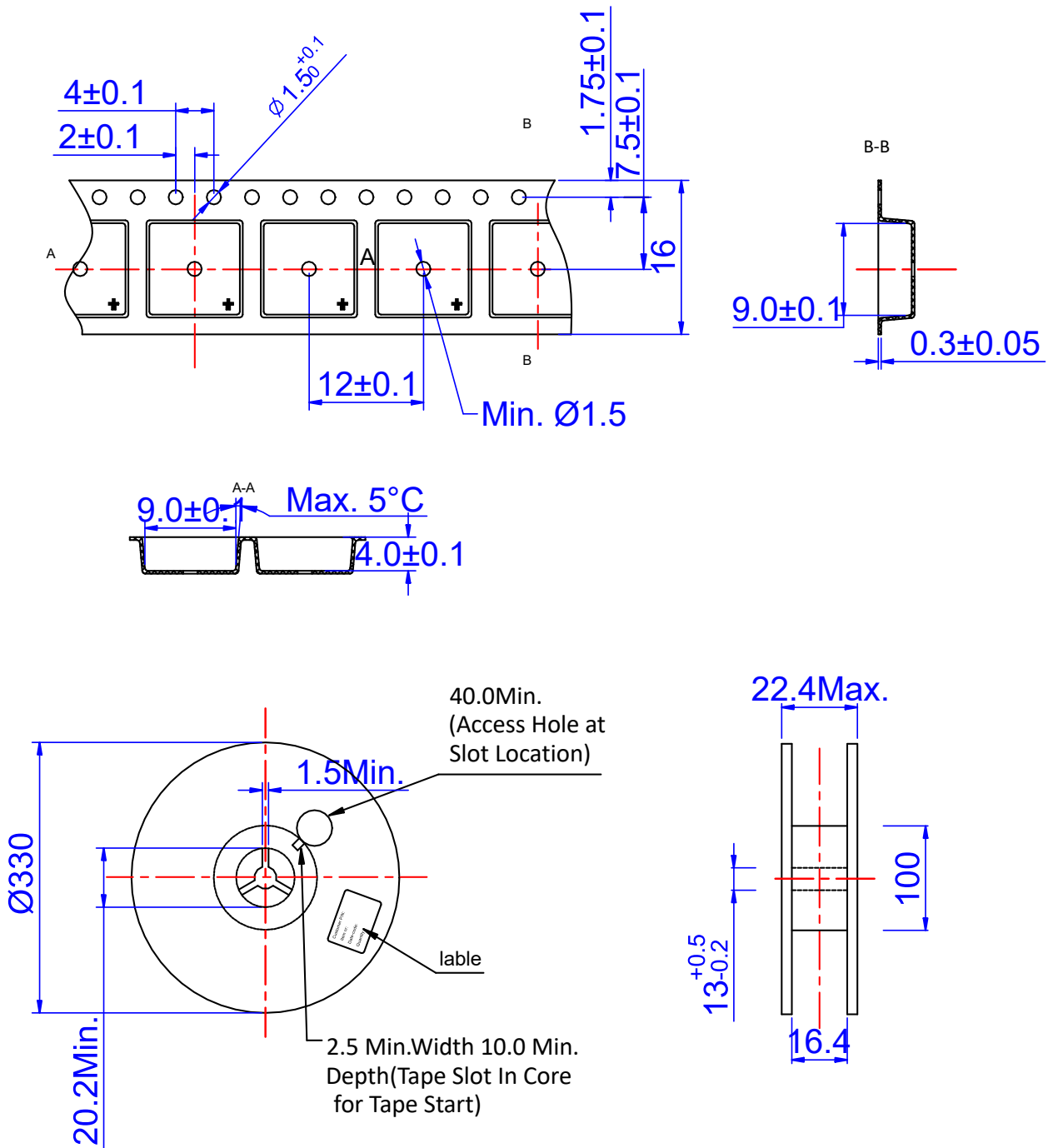
Fig. 1 Recommended soldering Temperature-Time profile (Reflow soldering)

**Notice:** All specification must be satisfied in this condition except SPL. SPL shall be 83dB or more.

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## 6. PACKING

### 6.1 TAPE ON REEL PACKING

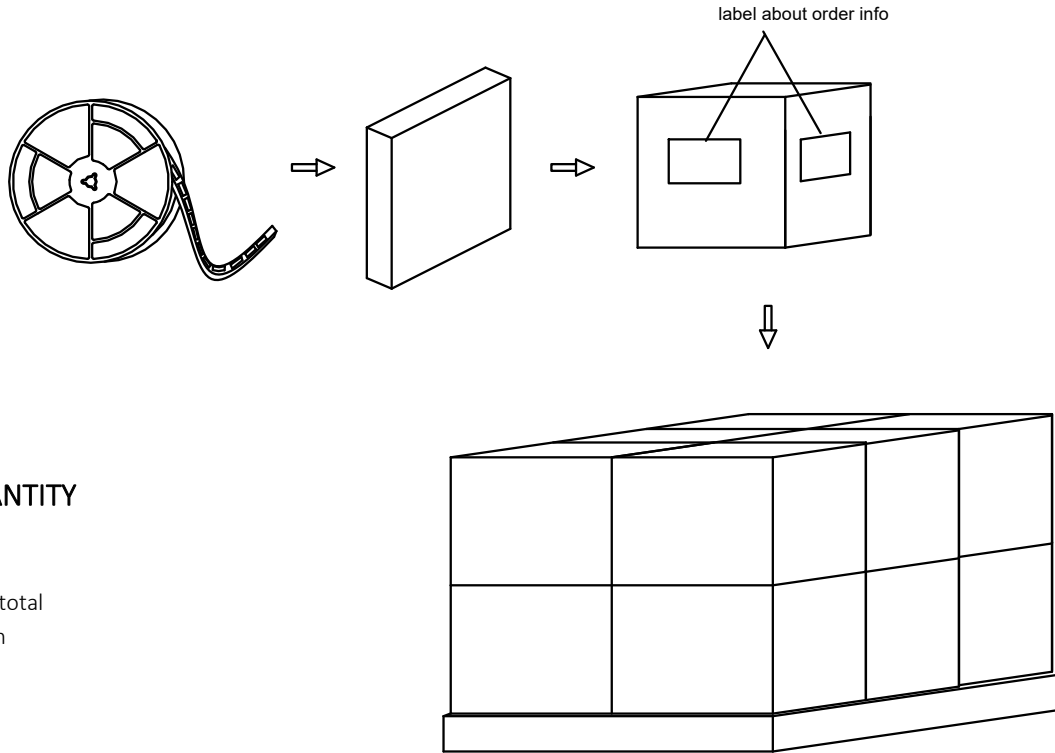


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### 6.2 PACKING QUANTITY

- 1000 pcs per reel
- 5 reels per carton
- 5.000 pcs per carton in total
- Carton size 38x28x37cm
- 12 cartons per tray
- Tray size 85x77x74cm

### 7. NOTICE

#### 7.1 The products mustn't be washed

#### 7.2 Storage Condition

The products should be stored in a room, where the temperature/humidity is stable. And avoid such places where there are large temperature changes. Please store the products at the following conditions:

Temperature: -10 to + 40 C Humidity: 15 to 85% R.H.

#### 7.3 Expire Date on Storage

Expire date (Shelf life) of the products is twelve months after production under the conditions of a sealed and an unopened package. Please use the products within twelve months after production.

If you store the products for a long time (more than twelve months after production date), use them carefully, because the products may be degraded in the solderability and/or rusty. Please confirm solderability and characteristics for the products regularly.

#### 7.4 Notice on Product Storage

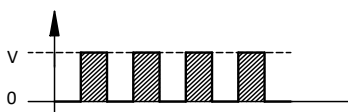
(1) Please do not store the products in a chemical atmosphere (Acids, Alkali, Bases, Organic gas, Sulfides and so on), because the characteristics may be reduced in quality, and/or be degraded in the solderability due to the storage in a chemical atmosphere.

(2) Please use the products immediately after the package is opened, because the characteristics may be reduced in quality, and/or be degraded in the solderability due to storage under the poor condition.

#### 7.5 Rated Voltage

Rated Voltage in specification of Vo-p & VDC are different as:

For external Drive Circuitry Buzzer (Vo-p)





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## 8. HISTORY CHANGE RECORD

REV	CHANGE ITEMS		DATE
	BEFORE CHANGE	AFTER CHANGE	
A1	 <b>GREWUS</b> <b>BME8503S-04A</b> <b>XX.X</b>	 GREWUS  <b>8503S-04A</b> <b>XX.X</b>	2016.06.30
A2		Add the dimension of the poles and the soldering pattern	2017.08.21
A3	Old Layout	New Layout	2019.08.02
A4	Shelf life: six months	Shelf life: twelve months	2019.11.05
A5	Datecode print XX.X "year.month"	Datecode print XXXX "weekyear" Update product picture, 3.1 and 3.2 Add 2.1 Part List, 3.3. Frequency Response Curve And 7.5 Rated Voltage Notice	2023.06.28

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