ABLIC

S-5842A Series

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DUAL TRIP TEMPERATURE SWITCH IC (THERMOSTAT IC)

µ

Features

- − + +
- ±
- + +
  +
  − +
- µ +
-
-
-
- − +
- [1]

[1] Product Name Structure

Applications

-
-
-
-
-

Packages

-
-

Block Diagrams

1. CMOS output product (Output type: Separate)

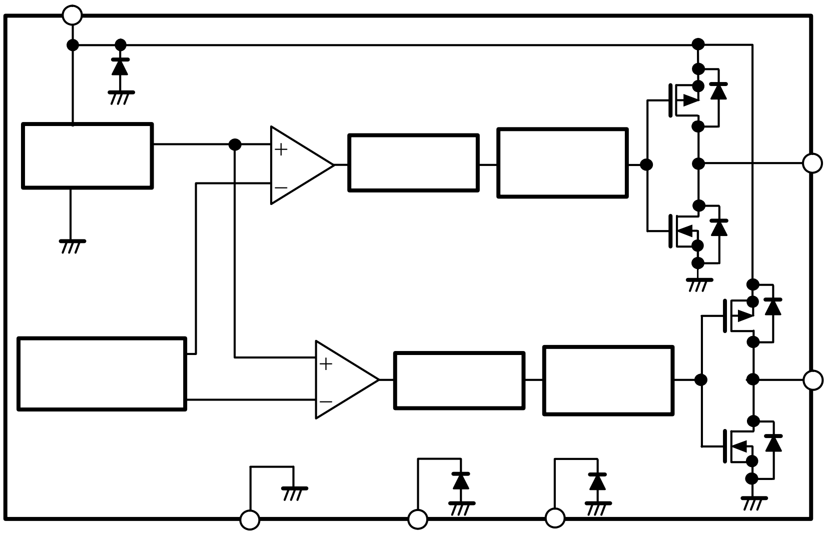


Figure 1

2. Nch open-drain output product (Output type: Separate)

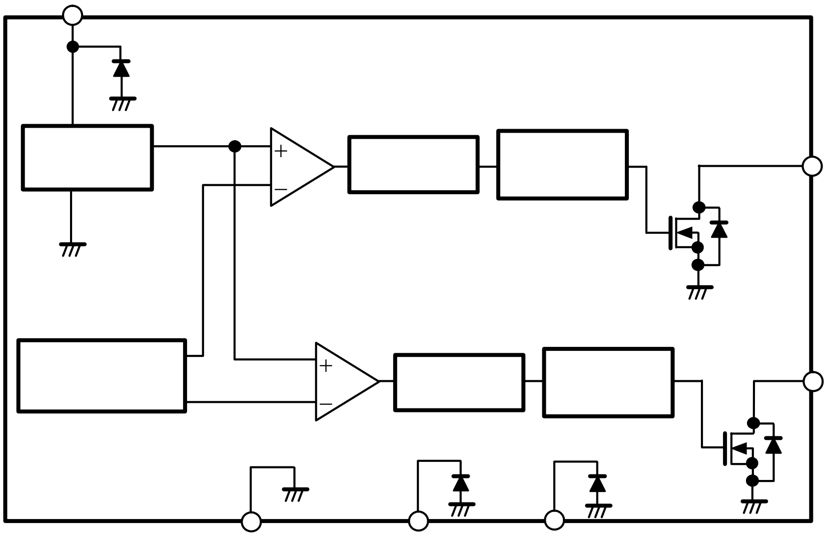


Figure 2

3. CMOS output product (Output type: Integrate)

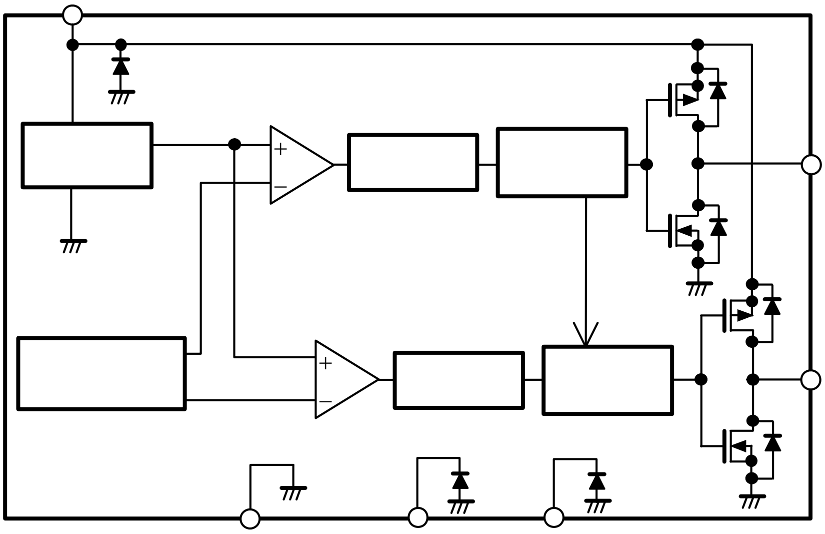


Figure 3

4. Nch open-drain output product (Output type: Integrate)

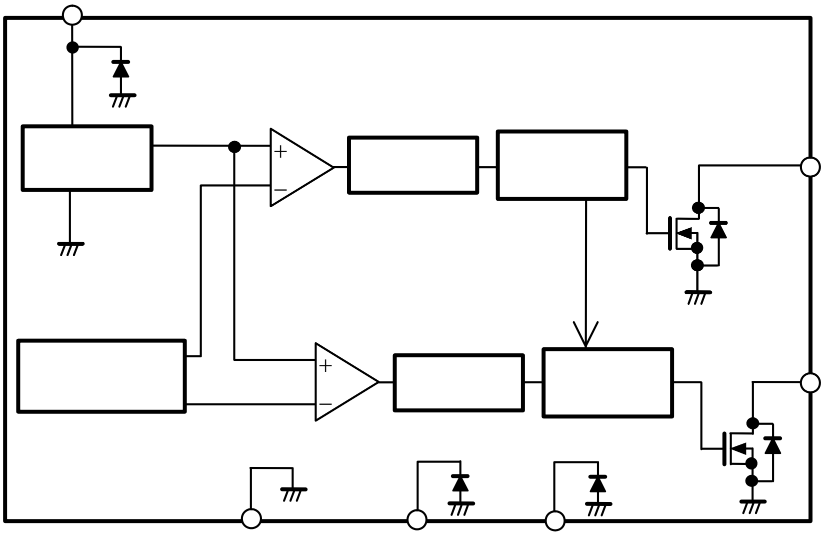
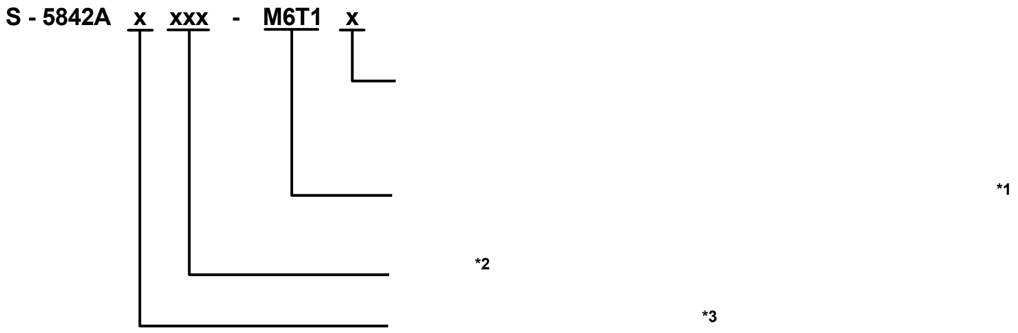


Figure 4

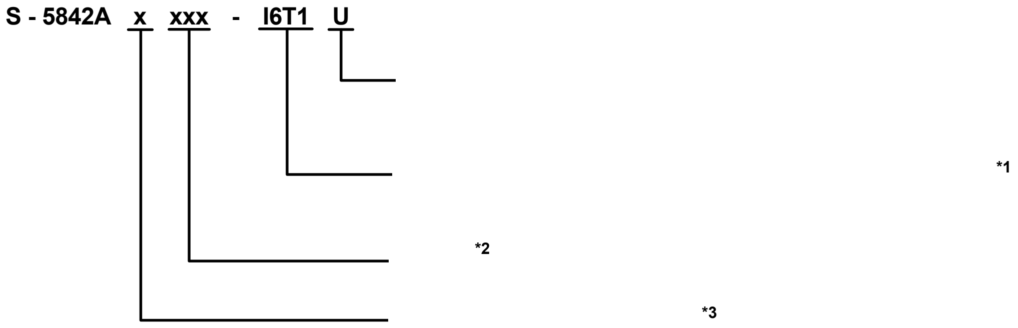
Product Name Structure

1. Product name

1. 1 SOT-23-6


S - 5842A x xxx - M6T1 x
*1
*2
*3

1. 2 SNT-6A


S - 5842A x xxx - I6T1 U
*1
*2
*3

*1.
*2. Selection of Product Option
*3. Selection of Product Option

2. Packages

Table 1 Package Drawing Codes

				−

3. Product name list

3. 1 SOT-23-6

Table 2

			*1				*1		
		+ °	−	− °		+ °	± °	− °	
		+ °	−	− °		°	± °	+ °	
		+ °	± °	− °		°	−	+ °	
		+ °	−	− °		+ °	± °	− °	
		+ °	−	− °		°	± °	− °	

*1 ± °

Remark 1. **Selection of Product Option**

2.

3.

3. 2 SNT-6A

Table 3

			*1				*1		
		+ °	± °	− °		°	−	+ °	
		+ °	−	− °		°	± °	+ °	
		+ °	−	+ °		− °	± °	− °	
		+ °	−	− °		°	± °	+ °	
		+ °	−	− °		+ °	± °	+ °	
		+ °	−	− °		+ °	± °	− °	
		+ °	−	− °		+ °	± °	− °	
		+ °	−	− °		+ °	± °	− °	
		+ °	−	− °		− °	± °	+ °	
		+ °	−	− °		°	± °	+ °	
		+ °	± °	− °		+ °	−	− °	
		+ °	± °	− °		+ °	−	− °	
		+ °	−	− °		°	± °	+ °	

***1** ± °

Remark **Selection of Product**
Option

Pin Configurations

1. SOT-23-6

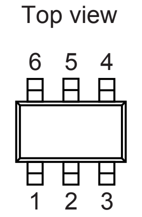

Top view
6
5
4
1
2
3

Figure 5

Table 4

	*1	
	*2	

***1.**

***2.**

2. SNT-6A

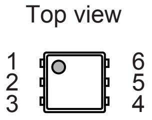

Top view
1
2
3
6
5
4

Figure 6

Table 5

	*1	
	*2	

***1.**

***2.**

Absolute Maximum Ratings

Table 6

+ °

			+	
			− +	
			− +	
			− +	
			*1	
			*1	
			− +	
			− +	

*1.

× ×

Caution **The absolute maximum ratings are rated values exceeding which the product could suffer physical damage. These values must therefore not be exceeded under any conditions.**

DC Electrical Characteristics

1. CMOS output product

Table 7

+ °

		+ +		−			
		+		−			
		− +		−			
*1		−	−		+		
*2	Δ		−	Δ	−		
*3			−	− − + +	−		
*3			−	− − + +	−		
					−		
					−		
					−		
					−		
			−			μ	

***1.**

± °

***2.** Δ −

Δ

Δ

Δ …

***3.** − − + +

[Fahrenheit ⇔ Celsius Conversion equation]

° ° − ×

° + ° ×

2. Nch open-drain output product

Table 8

+ °

		+ +		−			
		+		−			
		− +		−			
*1		−	−		+		
*2	Δ		−	Δ	−		
*3			−	− − + +	−		
*3			−	− − + +	−		
			−	−			
			−	−			
					−		
					−		
			−			μ	

***1.**

± °

***2.** Δ −

Δ

Δ

Δ …

***3.** − − + +

[Fahrenheit ⇔ Celsius Conversion equation]

° ° − ×

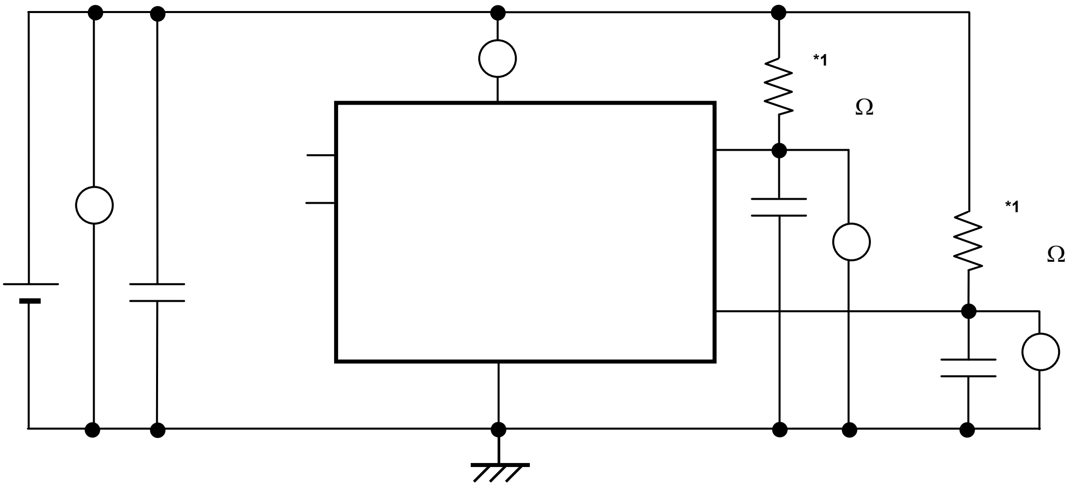
° + ° ×

AC Electrical Characteristics

Table 9

			−		−	μ	−

Test Circuits



*1.

Figure 7　Test Circuit 1

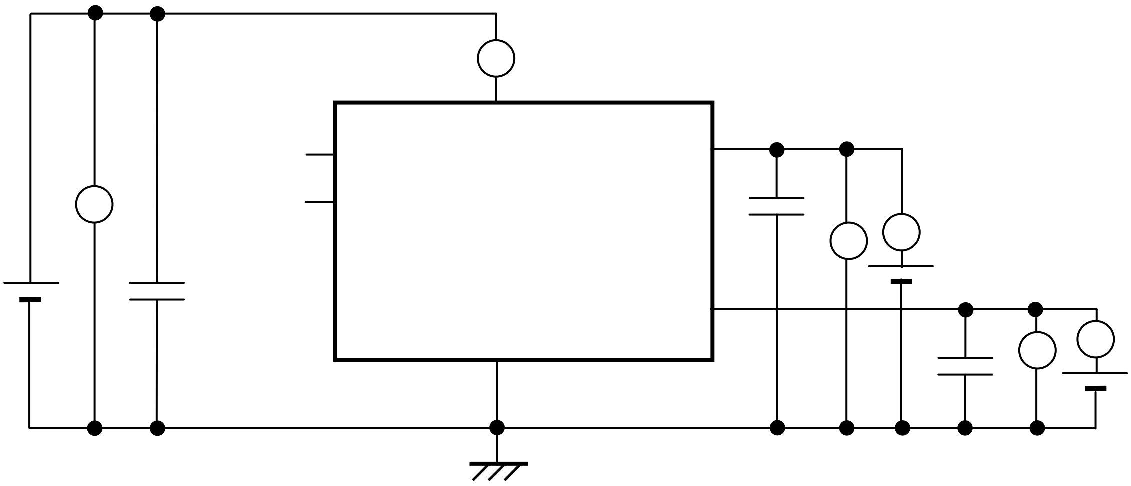


Figure 8　Test Circuit 2

Selection of Product Option

1. Description of product option

•

•

•

•

± *1

• + +

• − +

• Δ

Δ …

• + +

• +

• − +

*1 ± °

−

− + +

• −

• −

• +

• +

>

+ +

− −

• >

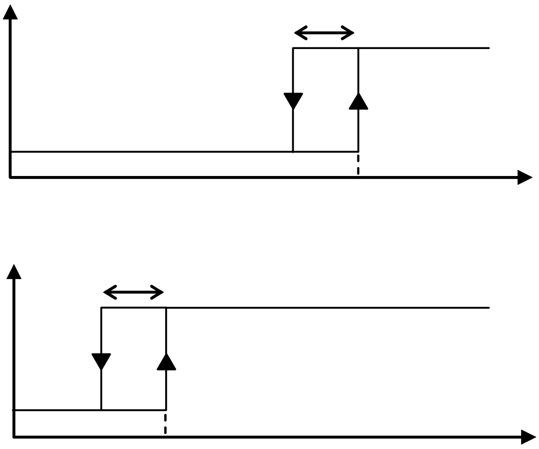
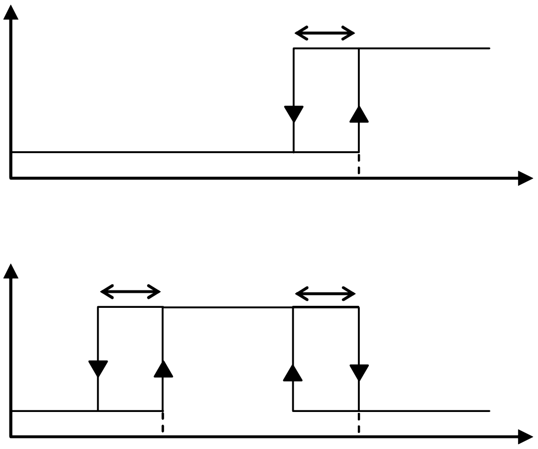
• >

+ +

• >

• >

2. Example of product spec

< <	 Figure 9 Operation for CMOS Output and Separate Type
< <	 Figure 10 Operation for CMOS Output and Integrate Type

Operation

1. Separate type

Figure 11

-
- + −

+ −

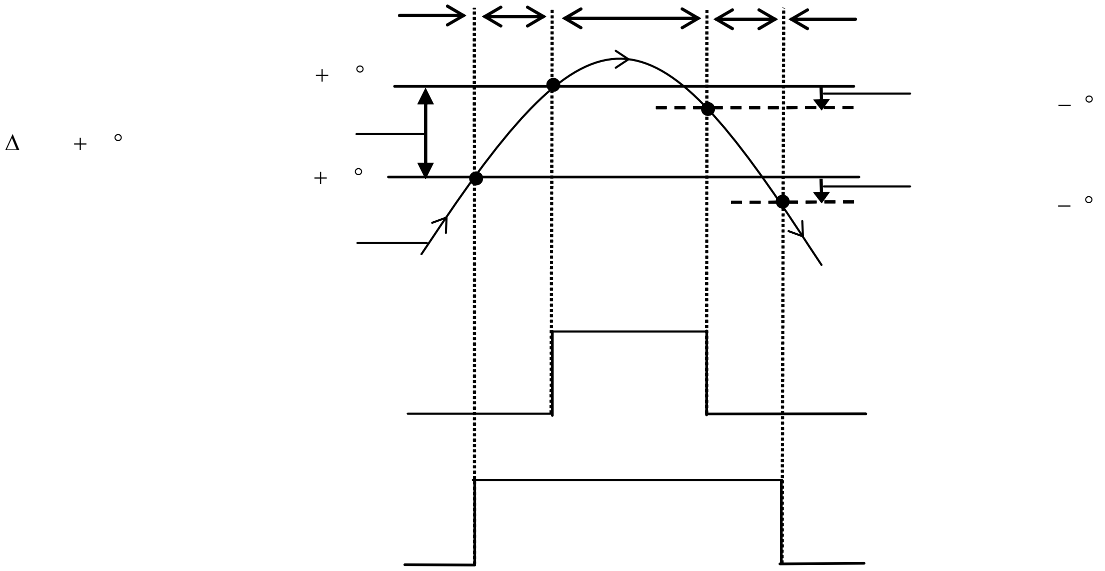


Figure 11 Timing Chart for CMOS Output and Separate Type

< +

+ < < +

> +

+ + > > + +

< + +

2. Integrate type

Figure 12

-
- + –

  + –

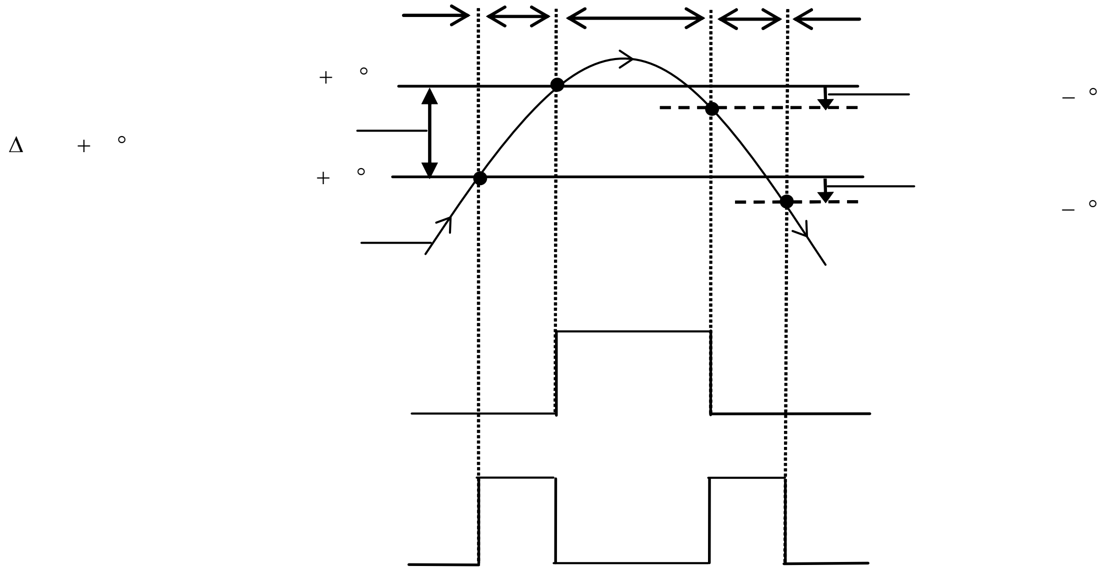


Figure 12 Timing Chart for CMOS Output and Integrate Type

< +

+ < < +

> +

+ + > > + +

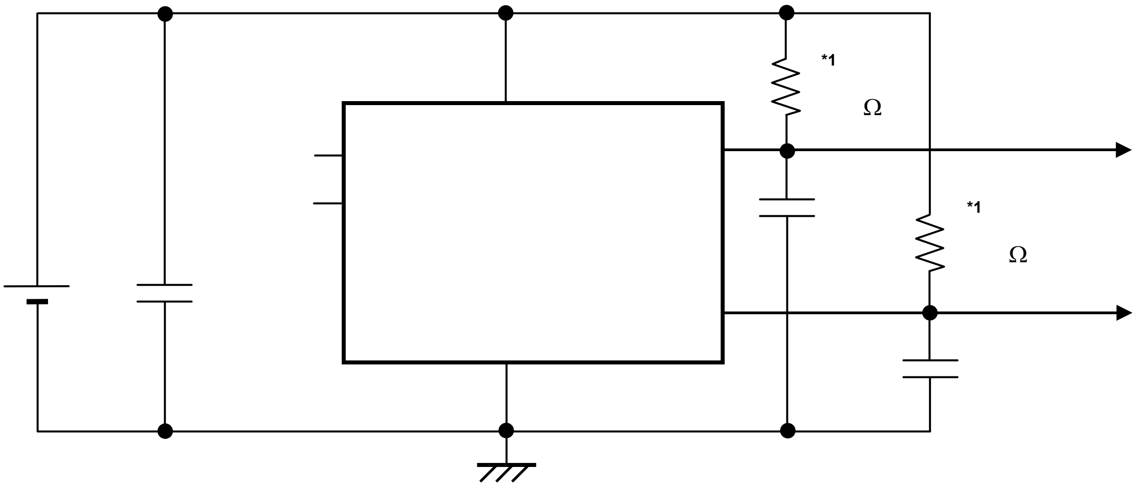
< + +

3. Delay circuit

3. 1 The temperature is the detection temperature or less

3. 2 The temperature exceeds the detection temperature

Standard Circuit



*1.

Figure 13

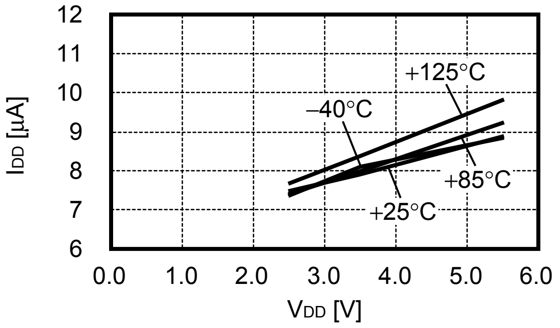
Caution The above connection diagram will not guarantee successful operation. Perform thorough evaluation using actual application to set the constant.

Precautions

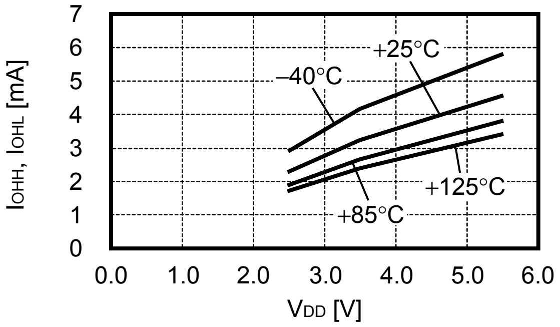
- ± °
- μ
- μ
-
- >
-
-

Characteristics (Typical Data)

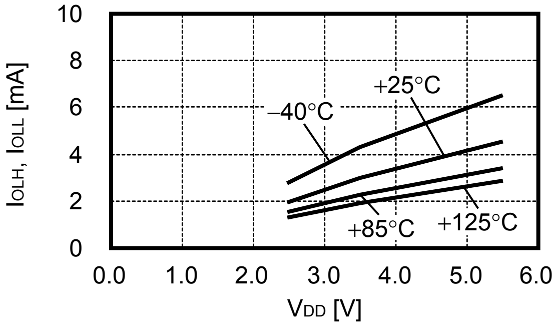
1. Current consumption during operation vs. Power supply voltage characteristics



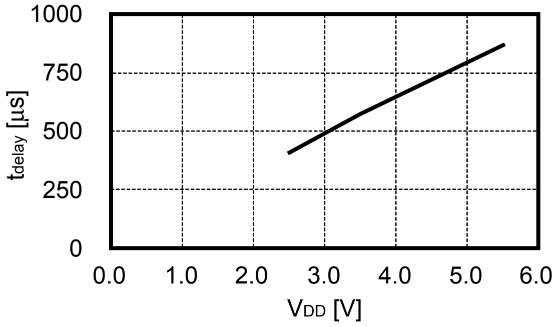
2. Output current "H" of DETH / DETL pin vs. Power supply voltage characteristics (CMOS output product only)



3. Output current "L" of DETH / DETL pin vs. Power supply voltage characteristics

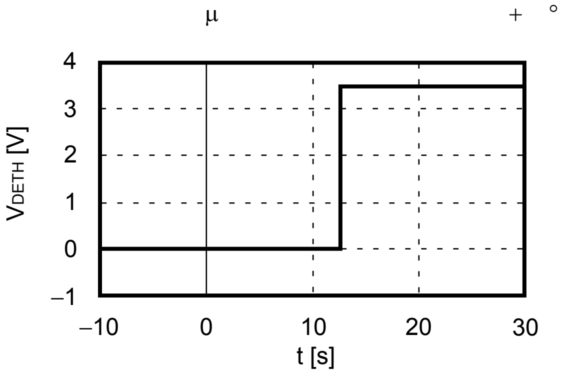


4. Noise suppression time vs. Power supply voltage characteristics

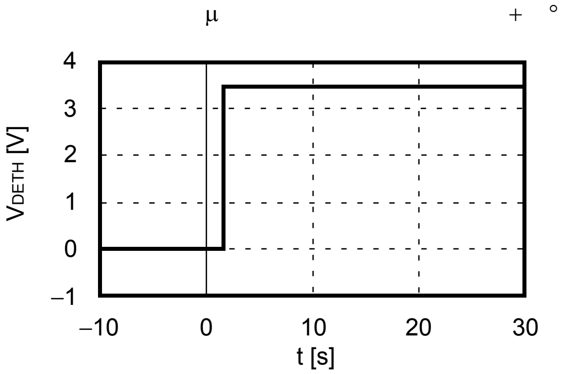


5. Response against heat (Output voltage vs. Time)

5. 1 When SNT-6A is put into the air of +100°C from the air of +25°C at t = 0 s



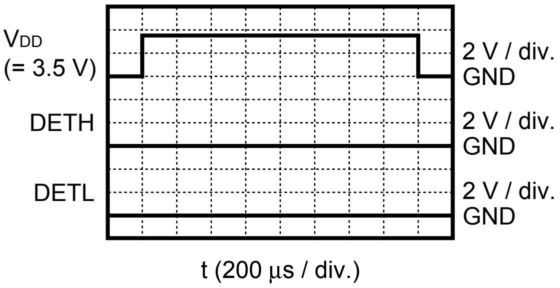
5. 2 When SNT-6A is put into the liquid of +100°C from the air of +25°C at t = 0 s



6. Response against startup

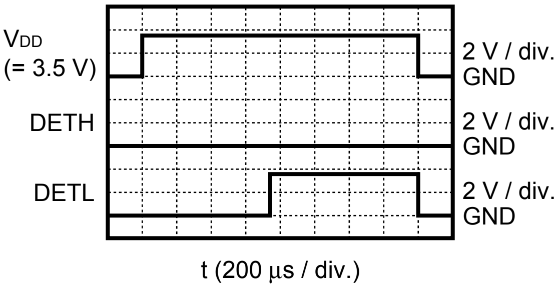
6. 1 Power-on at Ta = +25°C

+ ° + ° µ



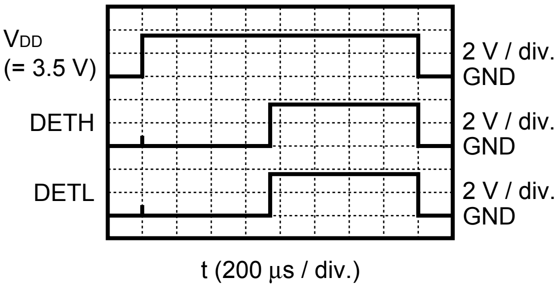
6. 2 Power-on at Ta = +80°C

+ ° + ° µ



6. 3 Power-on at Ta = +120°C

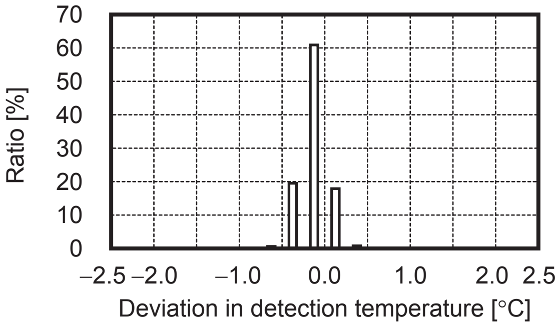
+ ° + ° µ



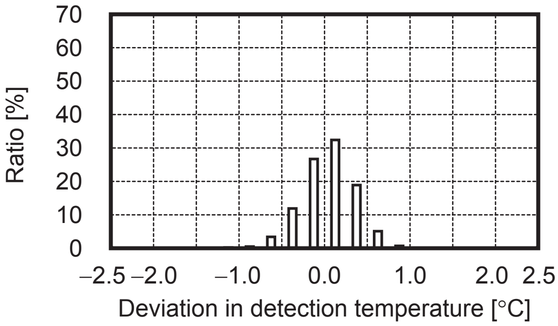
7. Accuracy of detection temperature

+ ° + °

7. 1 Accuracy of detection temperature at T_{DH} = +110°C (Higher accuracy)

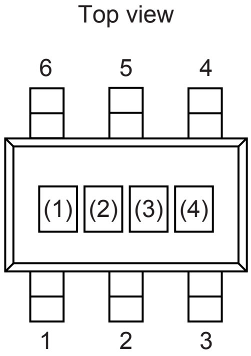


7. 2 Accuracy of detection temperature at T_{DL} = +45°C



Marking Specifications

1. SOT-23-6


Top view
6
5
4
(1)
(2)
(3)
(4)
1
2
3

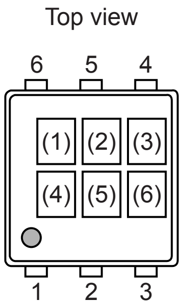
Product name vs. Product code

Product name vs. Product code

Remark 1.

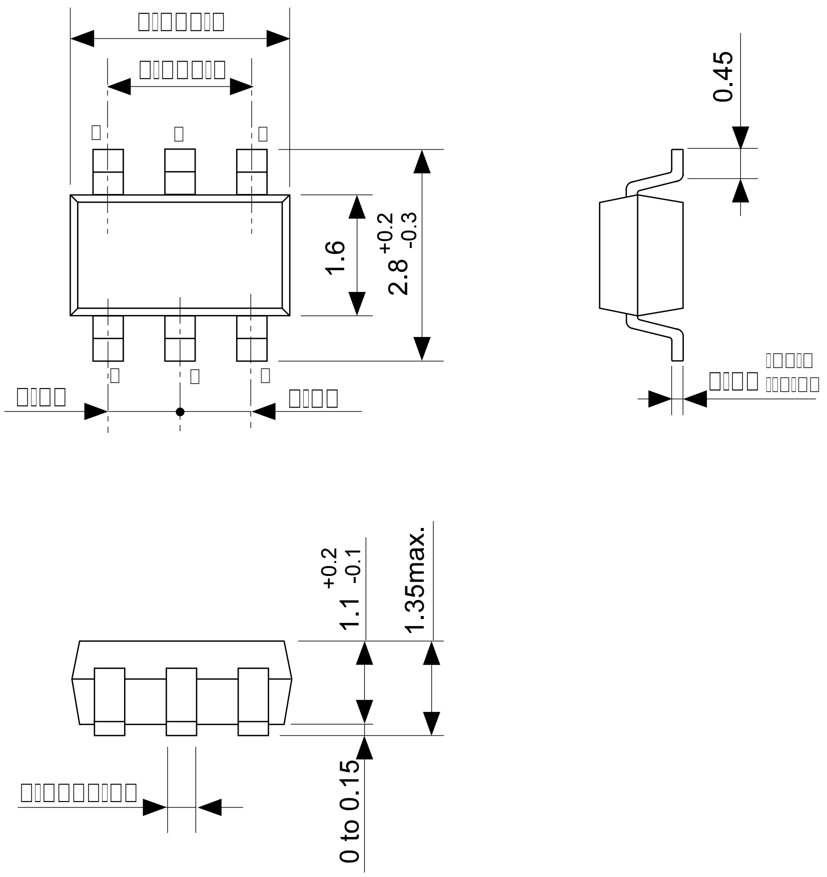
2.

2. SNT-6A


Top view
6
5
4
(1)
(2)
(3)
(4)
(5)
(6)
1
2
3

Product name vs. Product code

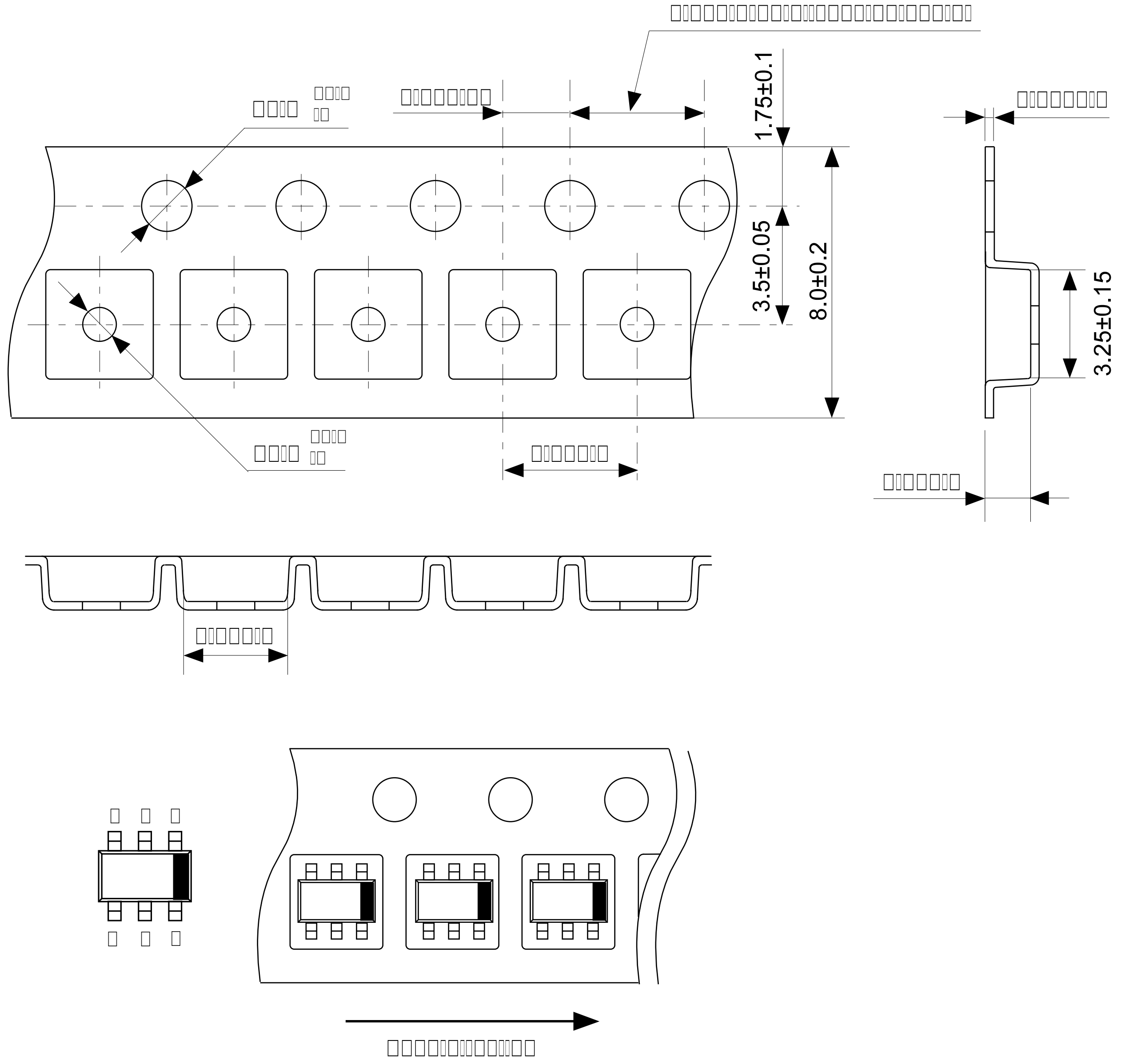
Product name vs. Product code


0.45
1.6
2.8 +0.2 -0.3
1.1 +0.2 -0.1
1.35max.
0 to 0.15

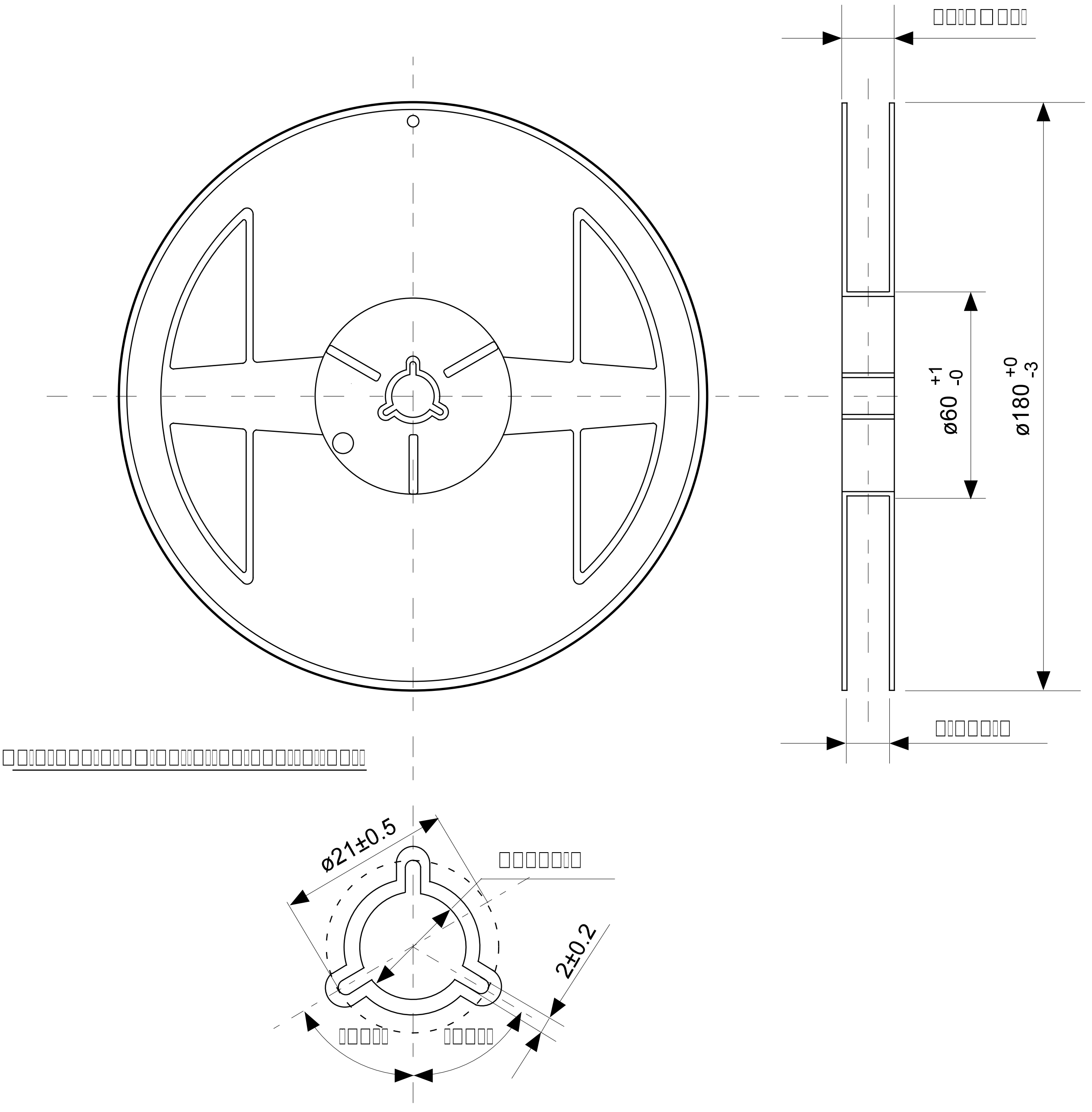
[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	
[illegible]	[illegible]

ABLIC Inc.


1.75±0.1
3.5±0.05
8.0±0.2
3.25±0.15

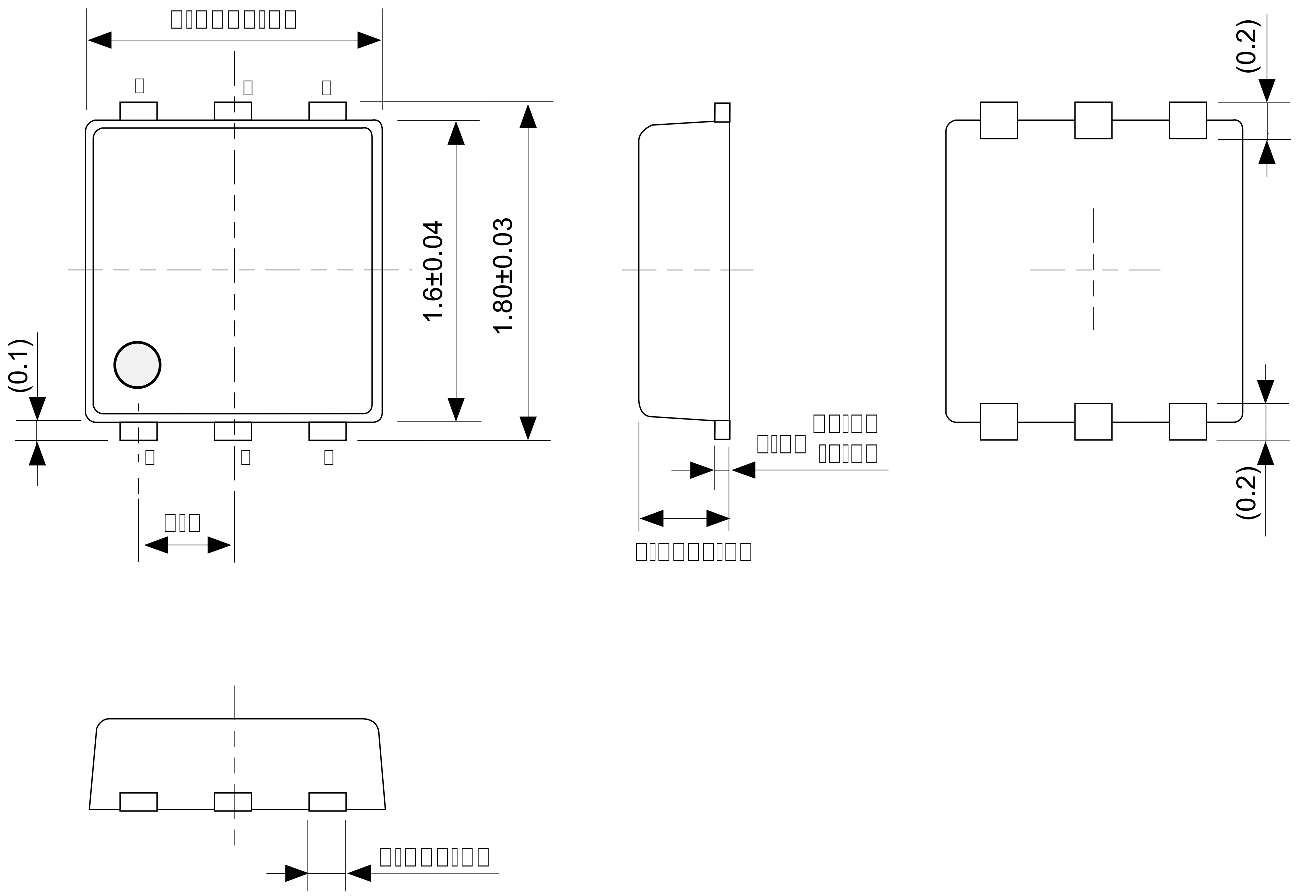
ABLIC Inc.


ø60 +1 -0
ø180 +0 -3
ø21±0.5
2±0.2

[illegible]

[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]		[illegible]	[illegible]
[illegible]	[illegible]		

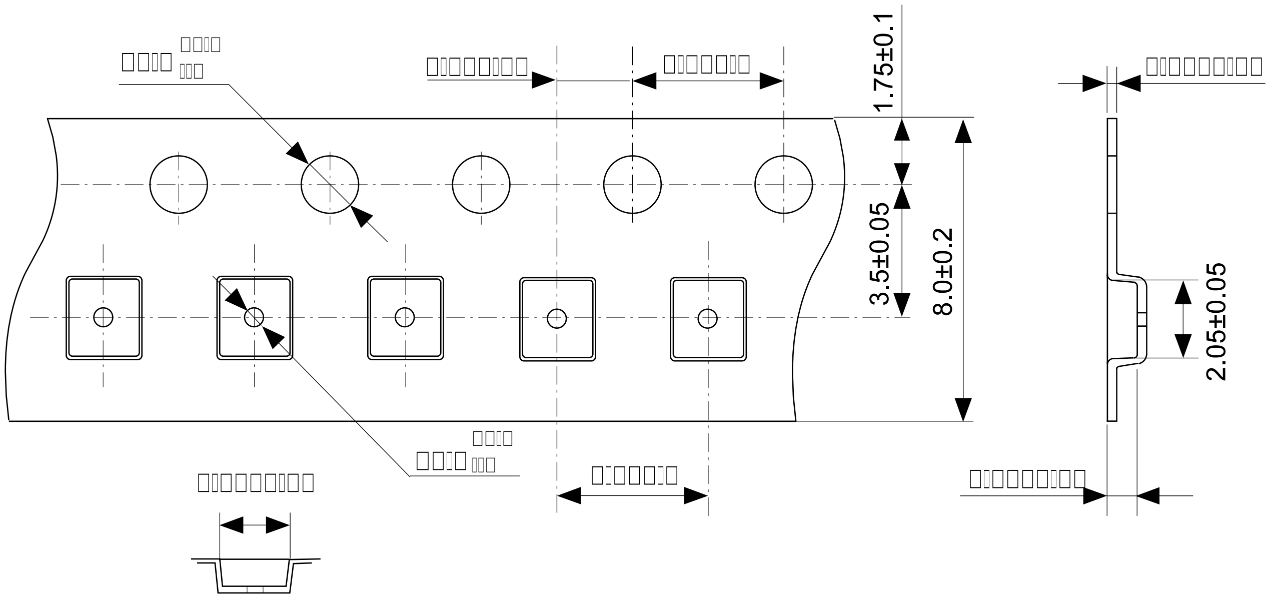
ABLIC Inc.

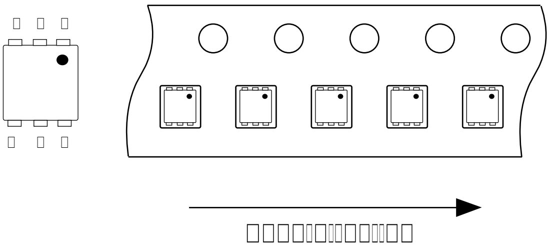

(0.1)
1.6±0.04
1.80±0.03
(0.2)
(0.2)

[illegible]

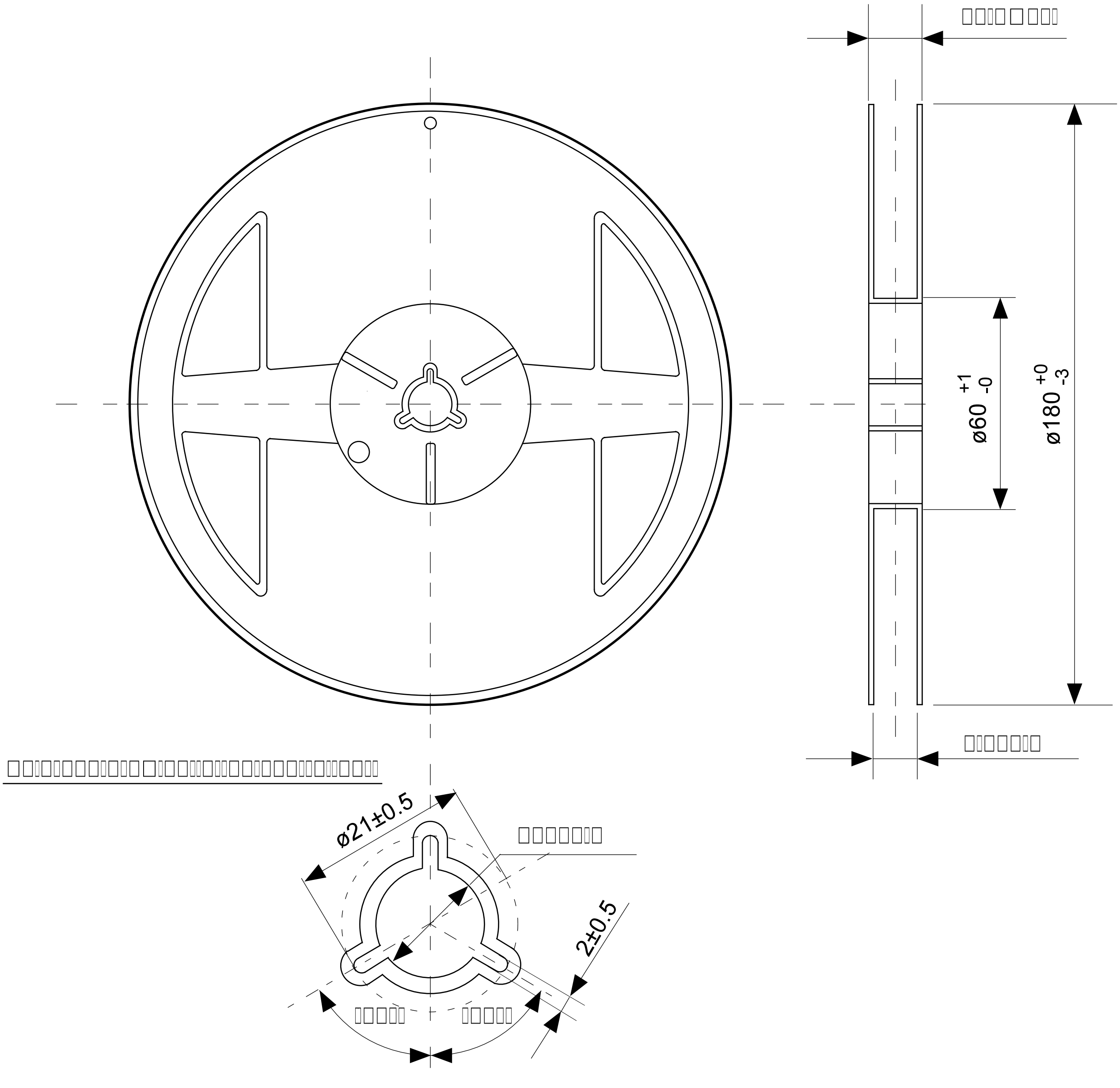
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	
[illegible]	[illegible]

ABLIC Inc.


1.75±0.1
3.5±0.05
8.0±0.2
2.05±0.05



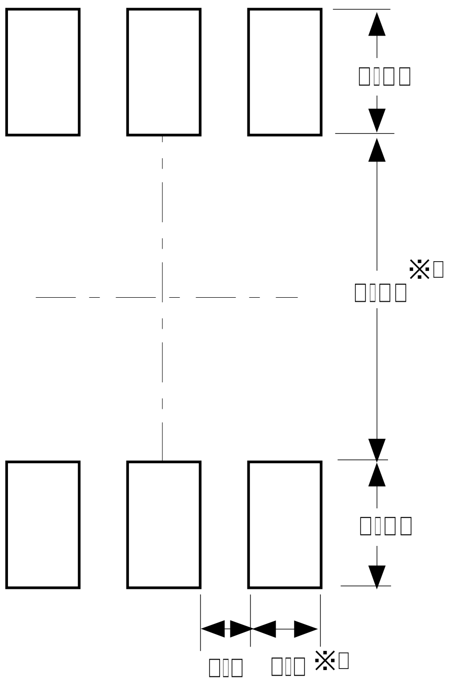
ABLIC Inc.


ø21±0.5
2±0.5
ø60 +1 -0
ø180 +0 -3

[illegible]

[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]		[illegible]	[illegible]
[illegible]	[illegible]		

ABLIC Inc.



※ランドパターンの幅に注意してください。
※パッケージ中央にランドパターンを広げないでください。

注意 1. パッケージのモールド樹脂下にシルク印刷やハンダ印刷などしないでください。
2. パッケージ下の配線上のソルダーレジストなどの厚みをランドパターン表面から0.03 mm以下にしてください。
3. マスク開口サイズと開口位置はランドパターンと合わせてください。
4. 詳細は〝SNTパッケージ活用の手引き〟を参照してください。

※
※

Caution 1. Do not do silkscreen printing and solder printing under the mold resin of the package.
2. The thickness of the solder resist on the wire pattern under the package should be 0.03 mm or less from the land pattern surface.
3. Match the mask aperture size and aperture position with the land pattern.
4. Refer to "SNT Package User's Guide" for details.

※ 请注意焊盘模式的宽度。
※ 请勿向封装中间扩展焊盘模式。

注意 1. 请勿在树脂型封装的下面印刷丝网、焊锡。
2. 在封装下、布线上的阻焊膜厚度（从焊盘模式表面起）请控制在 0.03 mm 以下。
3. 钢网的开口尺寸和开口位置请与焊盘模式对齐。
4. 详细内容请参阅 "SNT 封装的应用指南"。

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   The entire system must be sufficiently evaluated and applied on customer's own responsibility.
10. The products are not designed to be radiation-proof. The necessary radiation measures should be taken in the product design by the customer depending on the intended use.
11. The products do not affect human health under normal use. However, they contain chemical substances and heavy metals and should therefore not be put in the mouth. The fracture surfaces of wafers and chips may be sharp. Be careful when handling these with the bare hands to prevent injuries, etc.
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