

$\Delta\Sigma$
■ Features

-
-
-
-
-
-
-
-

μ	$+$		
μ	$+$		
\pm		$-$	$+$
\pm		$-$	$+$

*1

*1.

■ Product Name Structure
■ Applications

-
-
-
-

■ Packages

-
-

2-WIRE DIGITAL TEMPERATURE SENSOR
S-5851A Series

■ **Block Diagram**

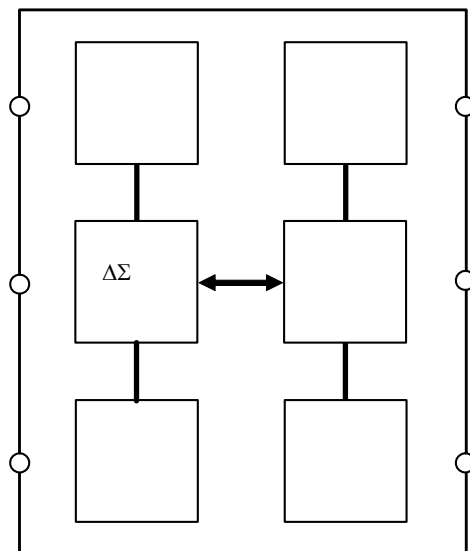
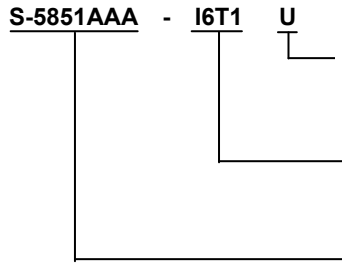


Figure 1

■ **Product Name Structure**

1. **Product name**

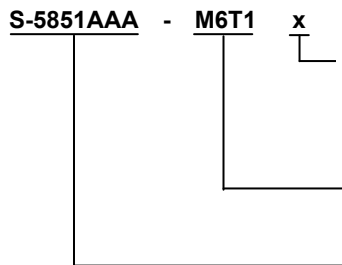
(1) SNT-6A



*1

*1.

(2) SOT-23-6



*1

*1.

2. **Package**

3. **Product name list**

Table 1

Remark 1

2.

2-WIRE DIGITAL TEMPERATURE SENSOR
S-5851A Series

■ Pin Configuration

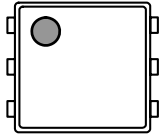


Figure 2

Table 2

Remark

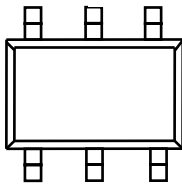


Figure 3

Table 3

Remark

■ Pin Functions

1. AD0, AD1 pins (Address input)

Ω

2. SDA pin (I/O for serial data)

Figure 4

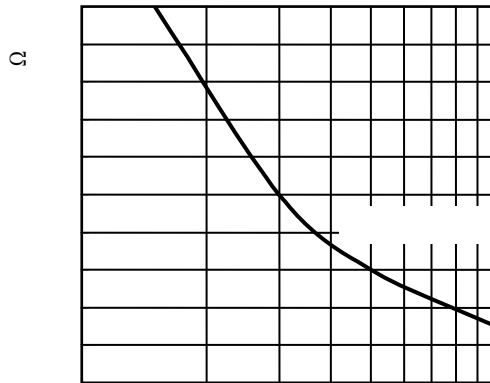


Figure 4 Output Load

3. SCL pin (Input for serial clock)

2-WIRE DIGITAL TEMPERATURE SENSOR

S-5851A Series

■ Equivalent Circuits of Input, I/O pins

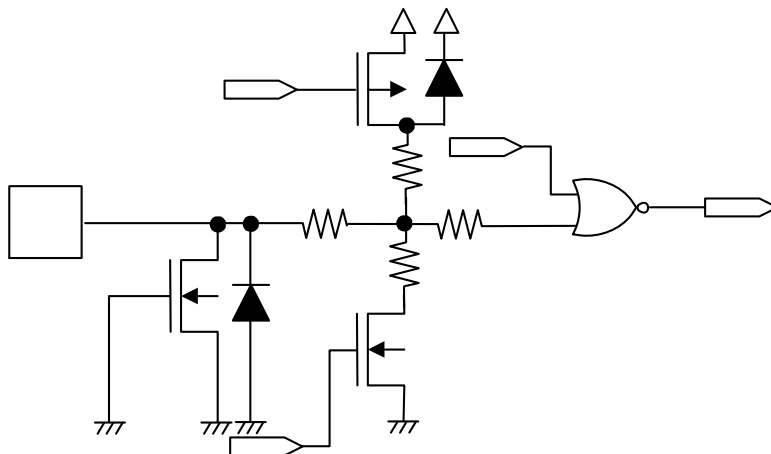


Figure 5 AD0, AD1 Pins

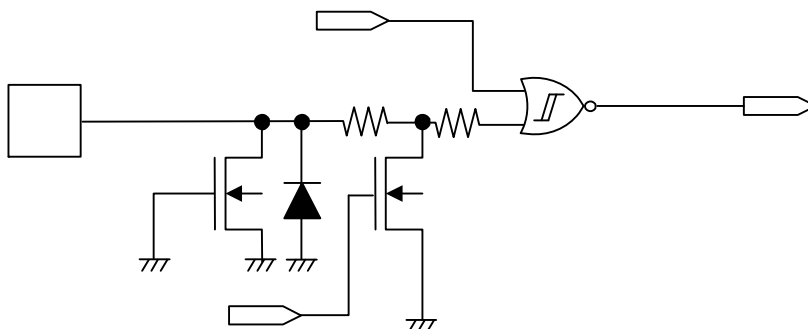


Figure 6 SDA Pin

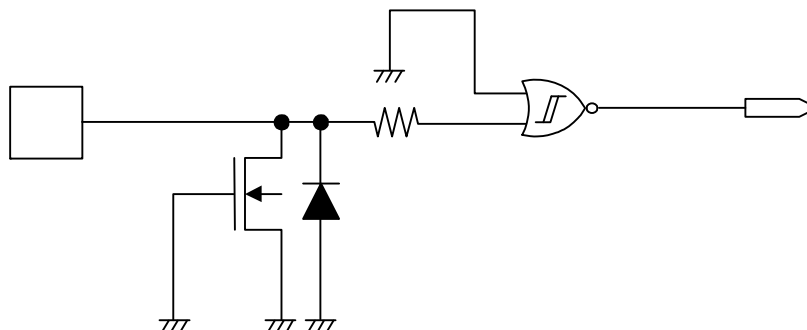


Figure 7 SCL Pin

■ **Absolute Maximum Ratings**

Table 4

		+		
		-	+	
		-	+	
		-	+	
		*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.

2-WIRE DIGITAL TEMPERATURE SENSOR
S-5851A Series

■ Pin Capacitance

Table 5

			—		
			—		

■ Temperature Characteristics

Table 6

		—	—	—	+	°
		- +	—	±	±	°
		- +	—	±	±	°
		—	—		—	°
		—	—		—	
	*1	—	—			

*1.

■ DC Electrical Characteristics

Table 7

		—		—		
			—			μ
			—		—	μ
			—			μ
			—		—	μ
			×	—	+	
			×	—		
				—	×	
				—	×	
			—			μ
			—			μ
				—		

■ **AC Electrical Characteristics**

Table 8 Measurement Conditions

	×	×	
	×	×	

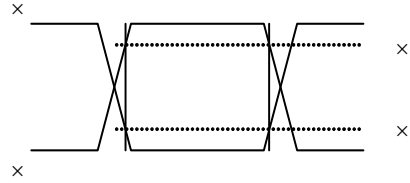


Figure 8 AC Measurement I/O Waveform

Table 9

		—	—		
			—	—	
			—	—	
			—	—	
			—	—	
			—	—	
			—	—	

2-WIRE DIGITAL TEMPERATURE SENSOR
S-5851A Series

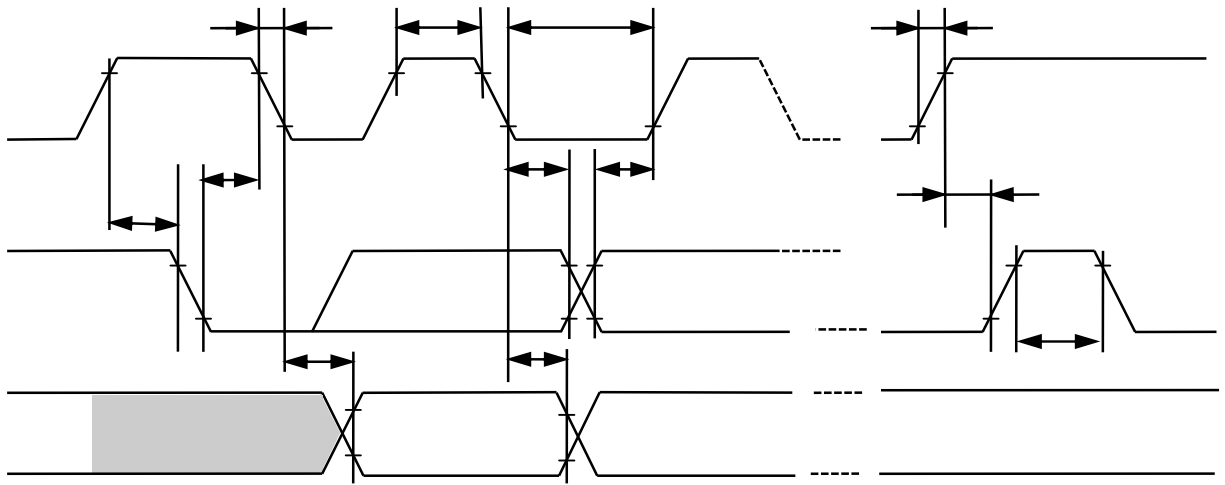


Figure 9

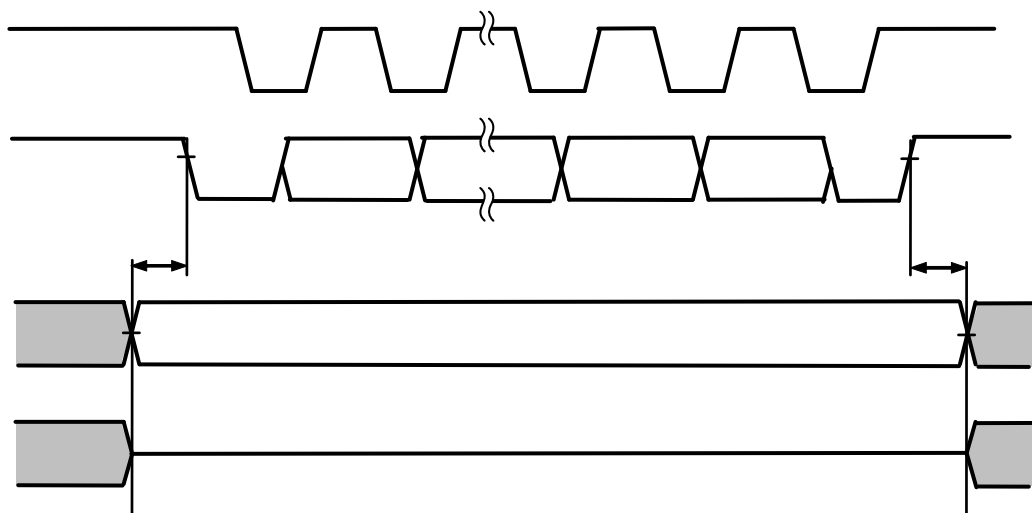


Figure 10

■ Registers

1. Configuration of register

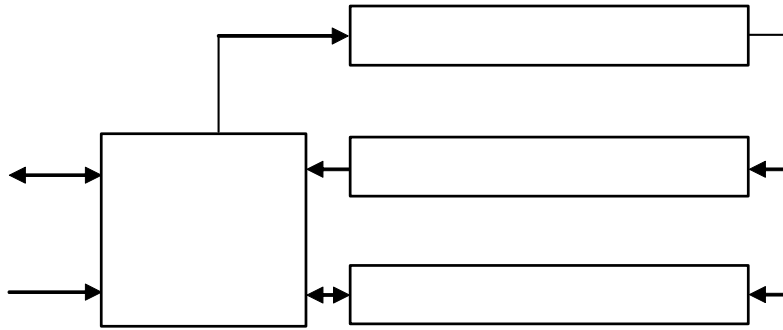


Figure 11 Configuration of Register

2. Pointer register



Figure 12 Configuration of Pointer Register

2-WIRE DIGITAL TEMPERATURE SENSOR
S-5851A Series

3. Temperature register

o

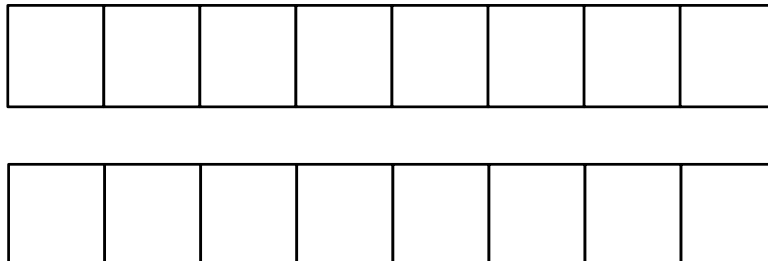


Figure 13 Configuration of Temperature Register

o **Table 10**

Table 10 Temperature Data

o		
	—	
—		
—		
—		

4. Configuration register



Figure 14 Configuration Register

4.1 Shutdown mode (SD)

μ

4.2 One-shot mode (OS)

2-WIRE DIGITAL TEMPERATURE SENSOR

S-5851A Series

■ Operation

μ

1. Start condition

2. Stop condition

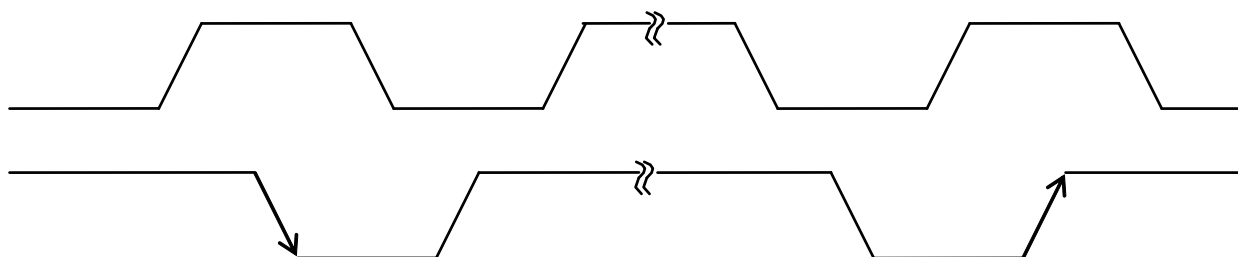


Figure 15 Start/Stop Conditions

3. Data transmission

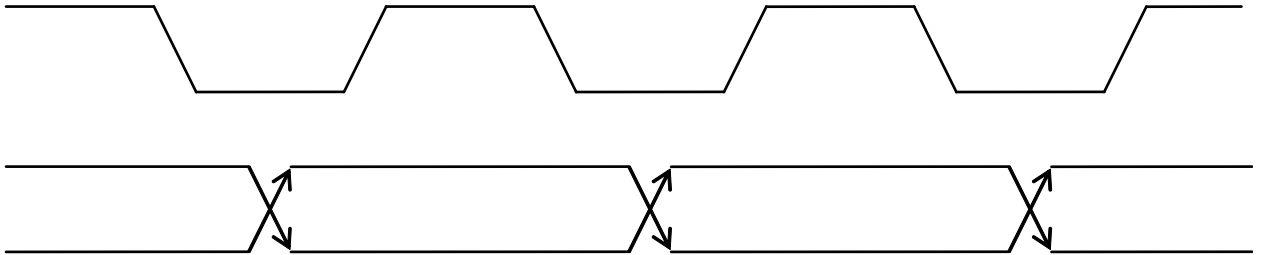


Figure 16 Data Transmission Timing

4. Acknowledgment

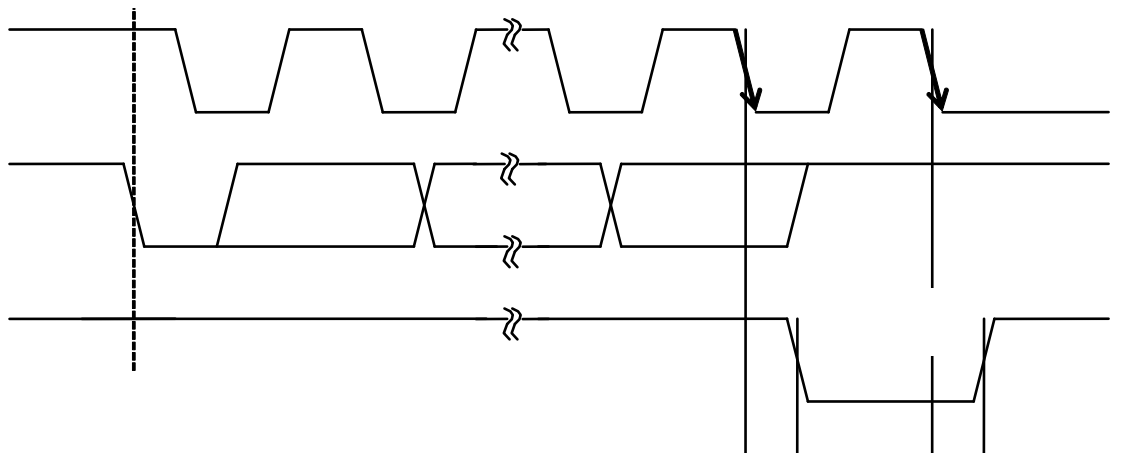


Figure 17 Acknowledgment Output Timing

2-WIRE DIGITAL TEMPERATURE SENSOR
S-5851A Series

5. Device addressing

Table 11

Table 11 Settings for Address Input Pin and Slave Address

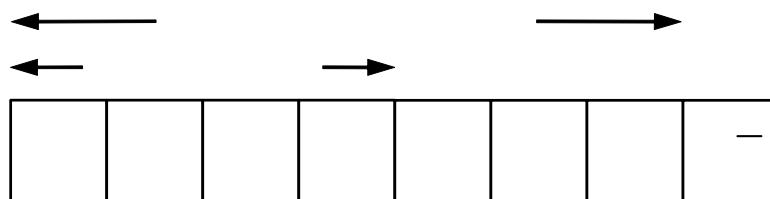


Figure 18 Slave Address

6. Configuration register's Write operation



Figure 19 Write Operation

7. Read operation

7.1 Read by register-designation

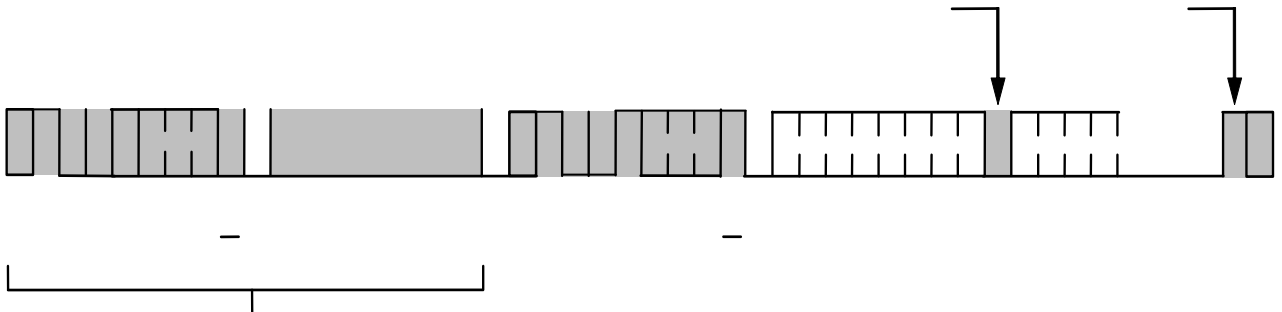


Figure 20 When Reading Temperature Register

2-WIRE DIGITAL TEMPERATURE SENSOR

S-5851A Series

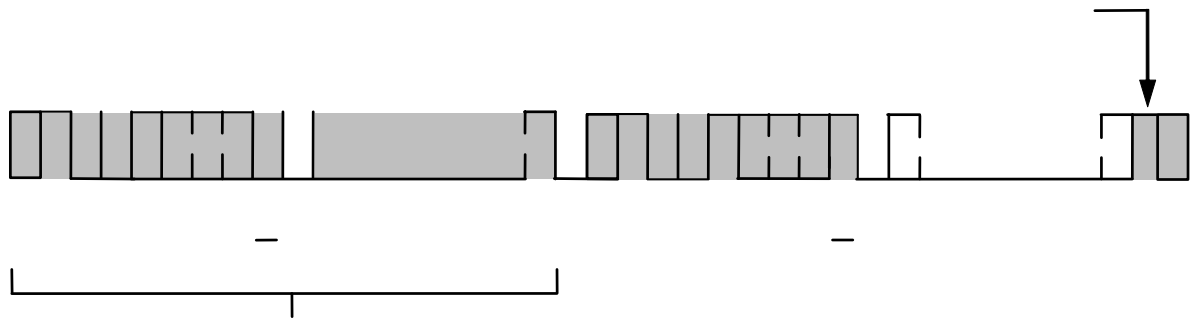


Figure 21 When Reading Configuration Register

7.2 Current Register Read

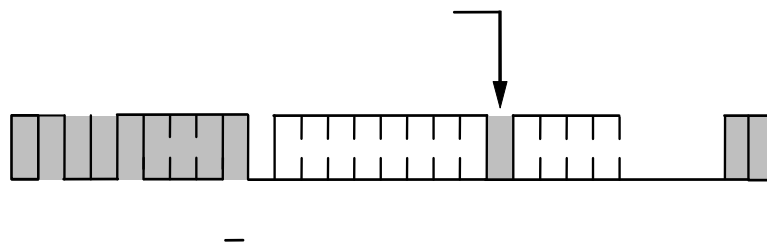


Figure 22 Current Register Read

8. General call

■ Operation during the Low Power Supply Voltage

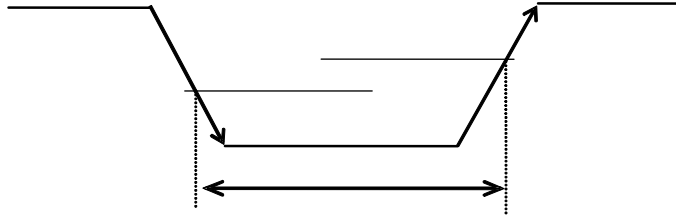


Figure 23 Operation during the Low Power Supply Voltage

■ How to Reset S-5851A Series

-
-

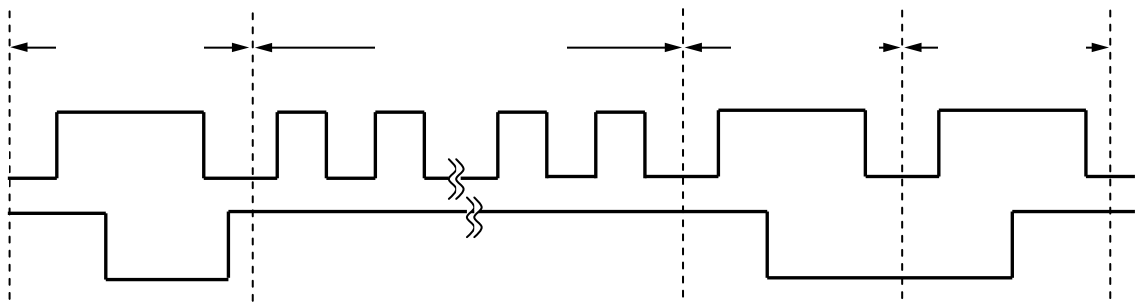


Figure 24 How to Release Bus

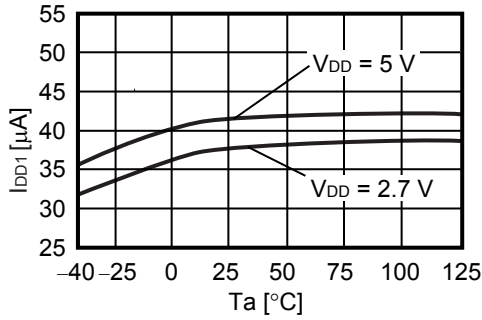
2-WIRE DIGITAL TEMPERATURE SENSOR S-5851A Series

■ Precaution

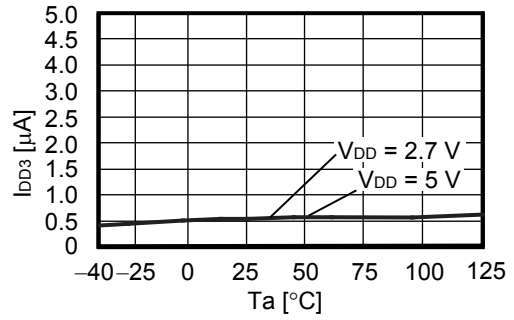
- μ
-
-
-

■ Characteristics (Typical Data)

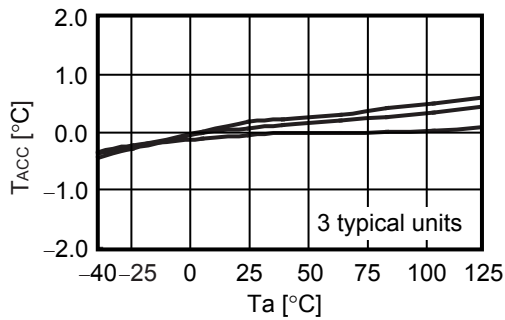
1. Current consumption at operation (I_{DD1}) — Temperature



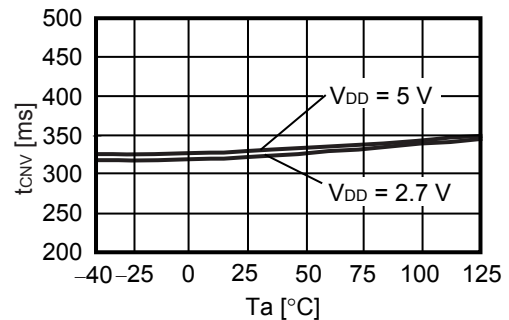
2. Current consumption at shutdown (I_{DD3}) — Temperature



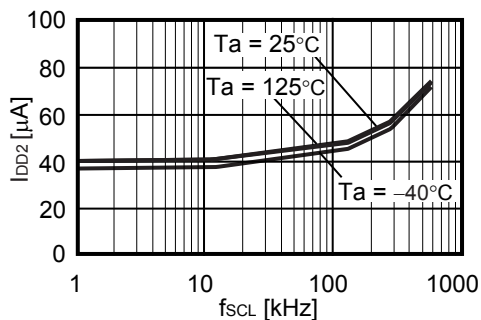
3. Temperature accuracy (T_{ACC}) — Temperature



4. Temperature update time (t_{CNV}) — Temperature



5. Current consumption at serial bus active (I_{DD2}) — Clock frequency





No. PG006-A-P-SD-2.1

TITLE	SNT-6A-A-PKG Dimensions
No.	PG006-A-P-SD-2.1
ANGLE	
UNIT	mm
ABLIC Inc.	



Feed direction

No. PG006-A-C-SD-2.0

TITLE	SNT-6A-A-Carrier Tape
No.	PG006-A-C-SD-2.0
ANGLE	
UNIT	mm
ABLIC Inc.	

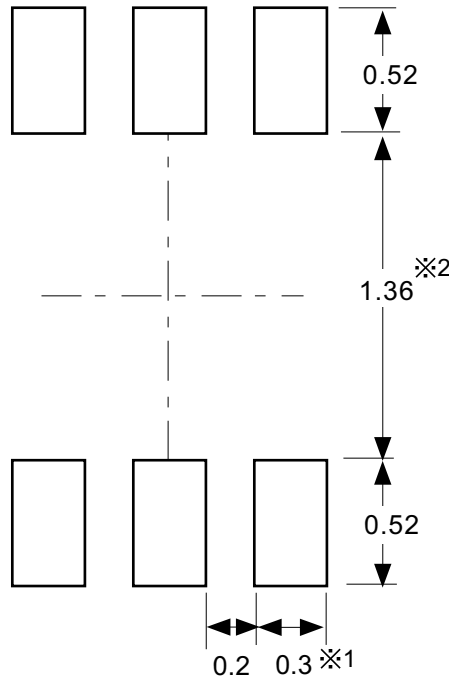


Enlarged drawing in the central part



No. PG006-A-R-SD-1.0

TITLE	SNT-6A-A-Reel		
No.	PG006-A-R-SD-1.0		
ANGLE		QTY.	5,000
UNIT	mm		
ABLIC Inc.			



※1. ランドパターンの幅に注意してください (0.25 mm min. / 0.30 mm typ.).
 ※2. 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 (1.30 mm ~ 1.40 mm)。

- 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。

※1. Pay attention to the land pattern width (0.25 mm min. / 0.30 mm typ.).
 ※2. Do not widen the land pattern to the center of the package (1.30 mm ~ 1.40 mm).

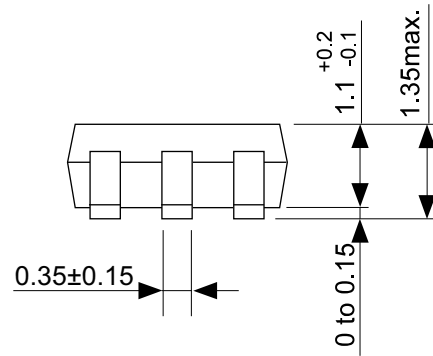
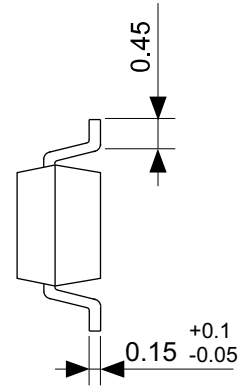
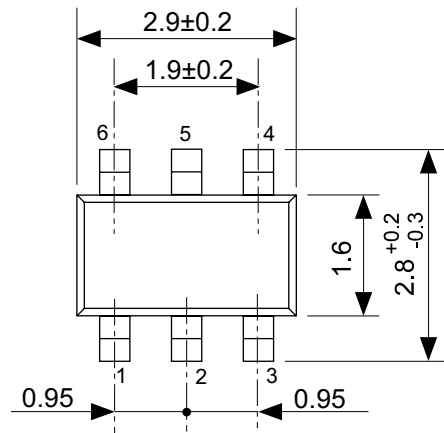
- Caution**
1. Do not do silkscreen printing and solder printing under the mold resin of the package.
 2. The thickness of the solder resist on the wire pattern under the package should be 0.03 mm or less from the land pattern surface.
 3. Match the mask aperture size and aperture position with the land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

※1. 请注意焊盘模式的宽度 (0.25 mm min. / 0.30 mm typ.).
 ※2. 请勿向封装中间扩展焊盘模式 (1.30 mm ~ 1.40 mm)。

- 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"。

No. PG006-A-L-SD-4.1

TITLE	SNT-6A-A -Land Recommendation
No.	PG006-A-L-SD-4.1
ANGLE	
UNIT	mm
ABLIC Inc.	



No. MP006-A-P-SD-2.1

TITLE	SOT236-A-PKG Dimensions
No.	MP006-A-P-SD-2.1
ANGLE	
UNIT	mm
ABLIC Inc.	

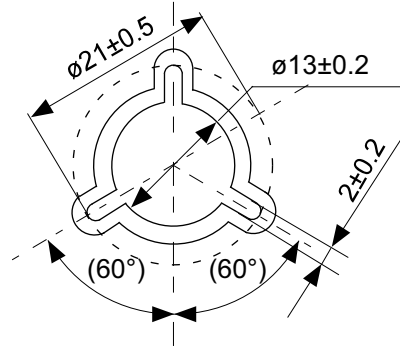


No. MP006-A-C-SD-3.1

TITLE	SOT236-A-Carrier Tape
No.	MP006-A-C-SD-3.1
ANGLE	
UNIT	mm
ABLIC Inc.	



Enlarged drawing in the central part



No. MP006-A-R-SD-2.1

TITLE	SOT236-A-Reel		
No.	MP006-A-R-SD-2.1		
ANGLE		QTY	3,000
UNIT	mm		
ABLIC Inc.			

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The entire system must be sufficiently evaluated and applied on customer's own responsibility.
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