



# WF152D

## 1. KEY FEATURES:

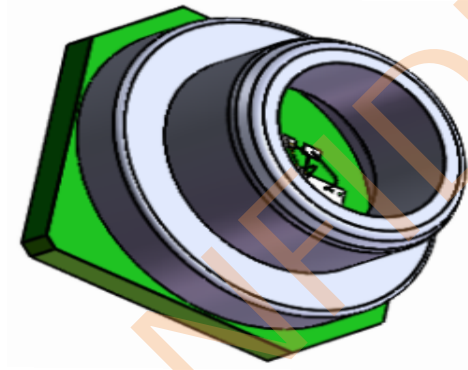
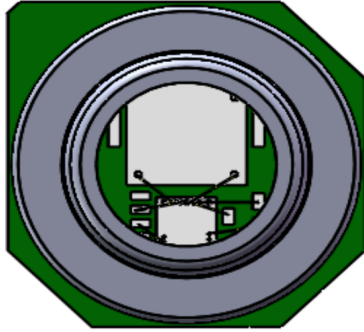
- Piezo-resistive silicon micro-machined sensor
- Gauge type pressure sensor
- I2C Interface
- Pressure range: 40KPa(5KPa/10KPa/20KPa/40KPa/100KPa/200KPa/300KPa/500KPa/1000KPa)
- Pressure Sensitivity: 0.027 Pa/LSB
- 24 Bit  $\Sigma$ - $\Delta$  ADC
- Temperature Compensation:  $-40^{\circ}\text{C} \sim 125^{\circ}\text{C}$
- Operating voltage 3.3V
- Operating mode current:  $\sim 1\text{mA}$  (typical)
- Sleep Mode current: 0.1 $\mu\text{A}$  (typical)
- LGA4 package
- RoHS compliant and Halogen-free

## 2. PRODUCT INTRODUCTION:

WF152D series product is the pressure sensor which measures gauge pressures. It consists of a silicon micro-machined sensing element chip and a signal conditioning ASIC. The ASIC is equipped with a 24-bit resolution  $\Sigma$ - $\Delta$  ADC and outputs a highly precise pressure value as a digital value.

WF152D series products provides digital output interface. It can achieve ESD robustness, fast response time, high accuracy and linearity as well as long-term stability. All measurement data is fully calibrated and temperature compensated. In addition, it allows for easy system integration.

This series pressure sensor use LGA4 package which is suitable for lots application.



### 3. APPLICATION

- BPM
- Consumer electronics
- Household electronic
- Industrial monitor and control
- Medicine care

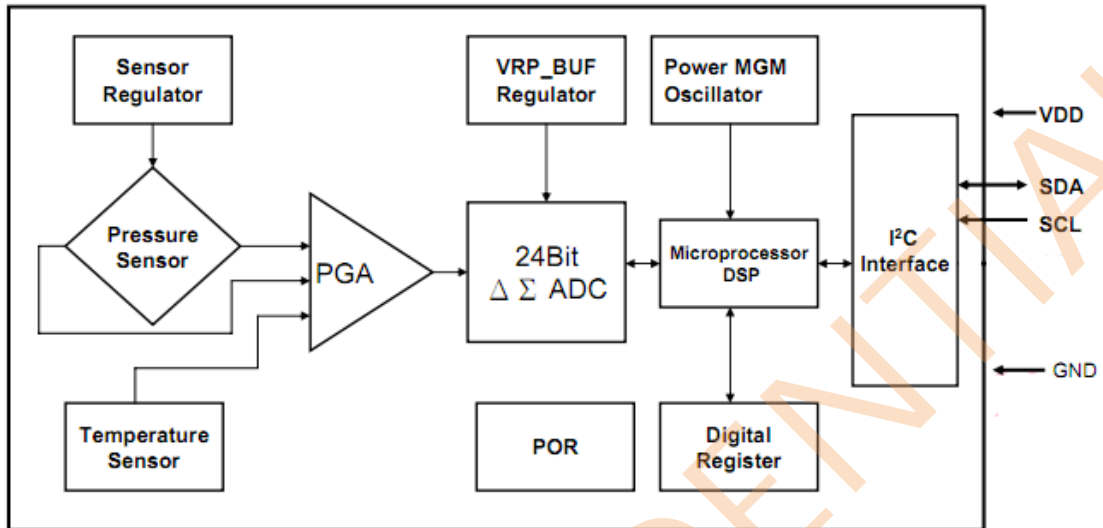


## 4. PERFORMANCE SPECIFICATIONS

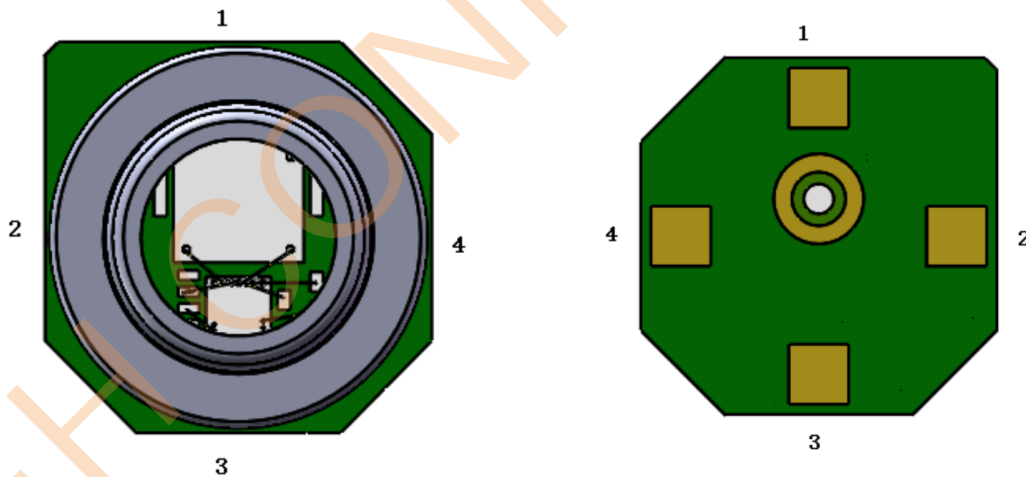
Table 1 Specifications

Parameter	Condition	Min.	Typical	Max.	Unit	Remark
Supply Voltage		1.8	3.3	3.6	Vdc	
Supply Current			1		mAdc	
Pressure range		40			kPa	
Sleep current	25°C	-	0.1	0.3	μA	
Relative accuracy	25°C~40°C	-	±0.3	-	hPa	
Absolute accuracy	-40°C~125°C	-	±4	-	hPa	
Linearity		--	0.2	0.5	%FS	
Resolution of output data in ultra high resolution mode	Pressure	-	0.05	-	Pa	
	Temperature	-	0.01	-	°C	
Absolute accuracy temperature	25°C	-	±0.5	-	°C	
	0°C~65°C	-	±1.0	-	°C	
TCR		1500	2000	2500	ppm/°C	
Stability		0.2			%FS/Y	
Hysteresis		--	0.05	0.1	%FS	
Overpressure		3X			--	
Operation temperature		-40	--	125	°C	
I2C Clock Frequency	3V	-	--	400	kHz	
Convert time	3V	-	5	-	ms	T&P

### 5. APPLICATION SCHEMATIC



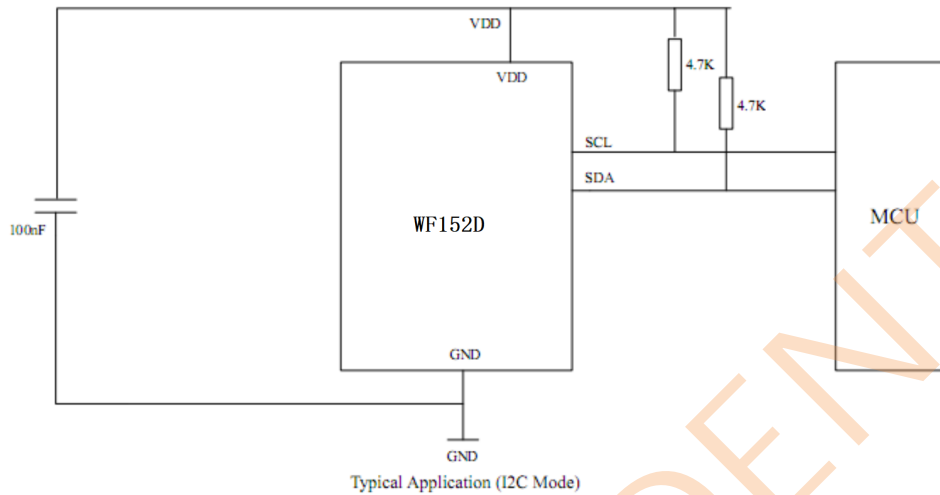
### 6.CONNECTIONS



Pin	Name	Function
1	GND	Ground
2	SCL	IIC Clock
3	SDA	IIC Data
4	VDD	Positive Supply



## 7. CONNECTION DIAGRAM



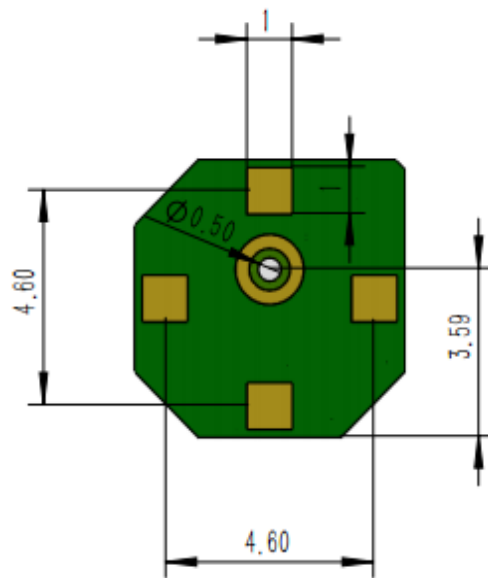
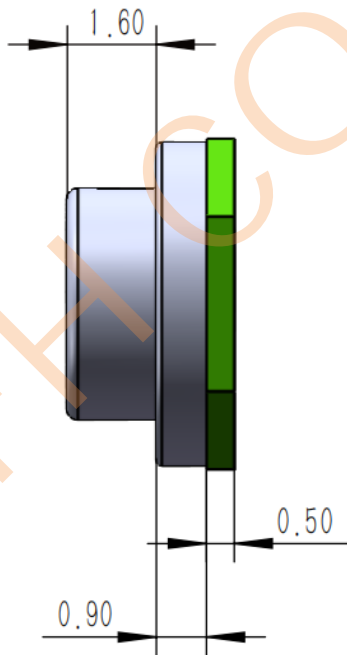
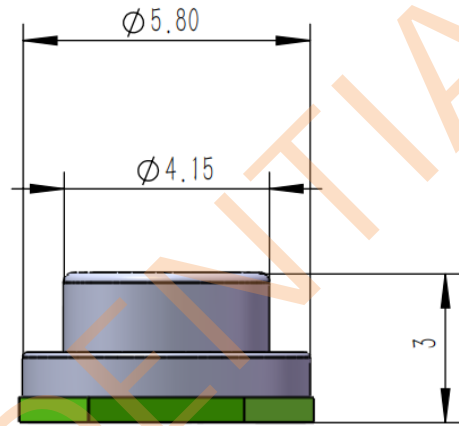
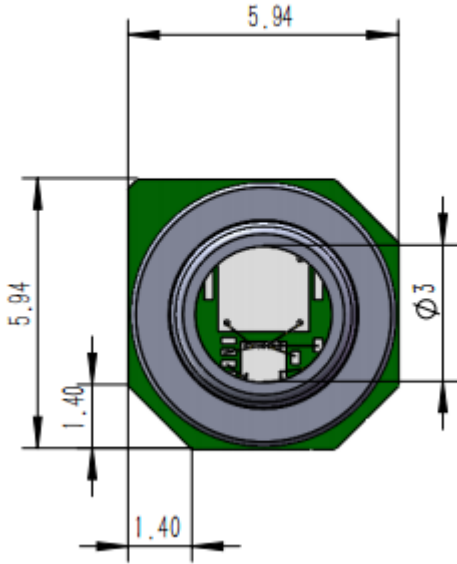
Notes:

- The recommended value for C1 is 100nF
- The value for the pull-up resistors R1, R2 should be based on the interface timing and the bus load; a normal value of R1 is 4.7k $\Omega$ , R2 is 4.7k $\Omega$ .



### 8. PRODUCT DIMENSIONS

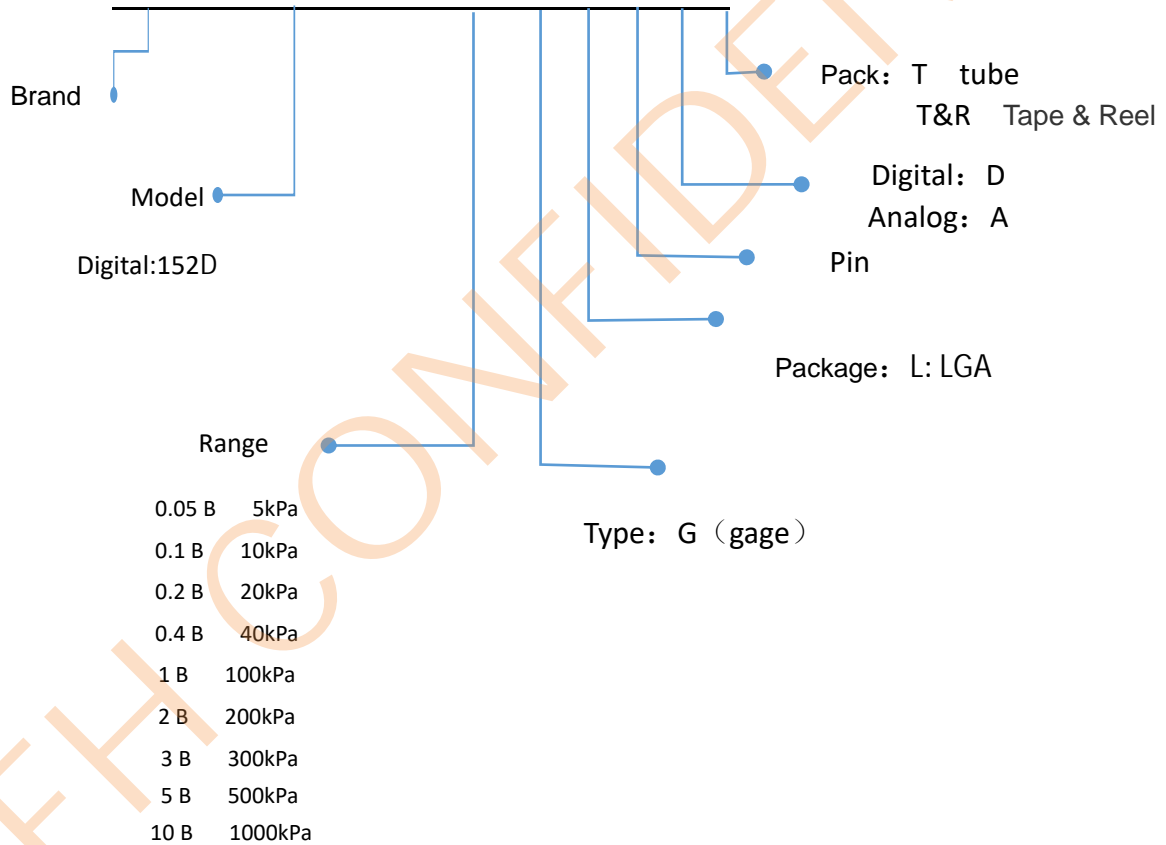
Unit: mm





## 9. ORDER INFORMATION

**WF152D 0.4 B G L 4 D T**



## 10. SOLDERING RECOMMENDATION

The recommended soldering profile is shown in Figure 1 , followed by a description of the profile features in Table 3 .

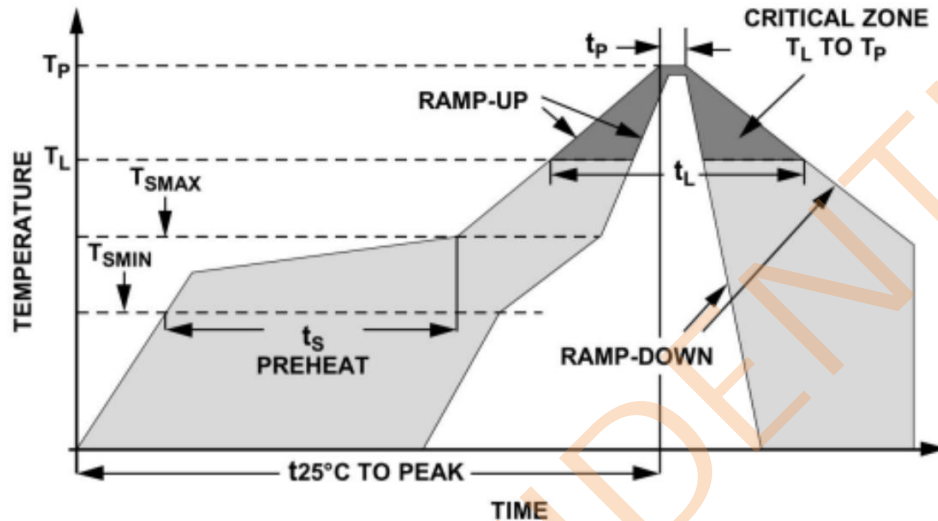


Figure 1 Recommended Soldering Profile

Table 3 Recommended Soldering Profile

Profile Feature	Pb-Free
Average ramp-up rate( $T_{sMax}$ to $T_p$ )	3°C/sec max.
Preheat:	
-Temperature Min.( $T_{sMin}$ )	150°C
-Temperature Max.( $T_{sMax}$ )	200°C
-Time.( $T_{sMin}$ to $T_{sMax}$ )( $T_s$ )	60 sec to 180 sec
Time maintained above:	
-Temperature( $T_L$ )	217°C
-Time( $t_L$ )	60 sec to 150 sec
Peak temperature( $T_p$ )	250°C
Time within 5°C of actual peak temperature( $T_p$ ) <sup>2</sup>	20 sec to 40 sec
Ramp-down rate	4°C/sec max.
Time 25°C to peak temperature	8 minutes max.