

## Description

ECS1252 is a low-power integrated Hall switch designed to sense the applied magnetic flux density and give a digital output, which indicates the present condition of the magnitude sensed. One example of the applications is the on/off switch in cellular flip-phones.

The micro power design is especially suitable for battery-operated systems such as cellular phones or laptop computers, in which power consumption is one major concern. The typical power consumption of ECS1252 is below  $10\mu\text{W}$  at 2.7V.

For ECS1252, the output will be at the "low" level if the applied magnetic flux density(North pole) is stronger than the switching threshold.

The package type is in a Halogen Free version has been verified by third party Lab.

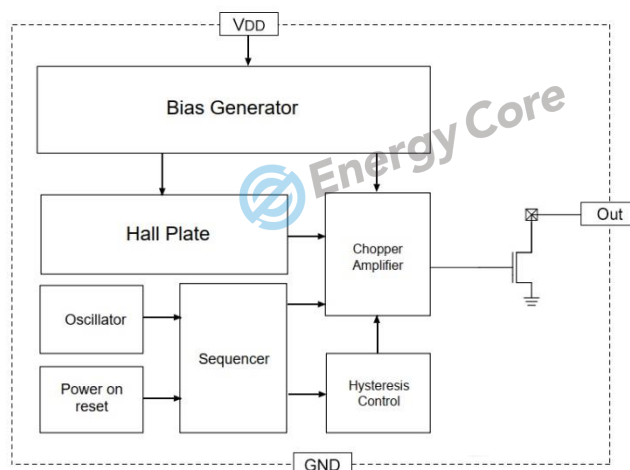
## Feature

- ◆ Input voltage range : 2.4V~5.5V
- ◆ Solid-State reliability
- ◆ CMOS Hall IC Technology
- ◆ Good ESD protection

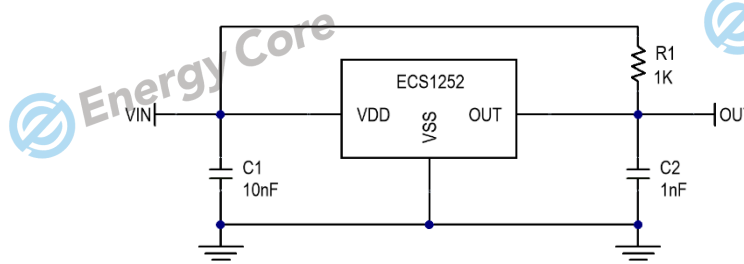
## Application

- ◆ Solid state switch
- ◆ Lid close sensor for battery powered devices Interrupter
- ◆ Water Meter
- ◆ Magnet proximity sensor for reed switch replacement

## Functional Block Diagram



## Typical Application



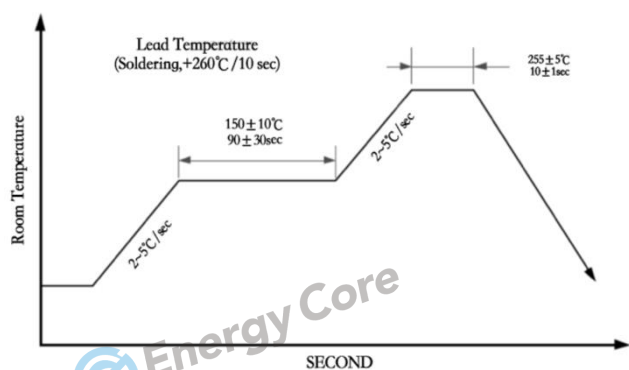
## Absolute Maximum Ratings

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Voltage	V <sub>DD</sub>			2.7	5.5	V
Output Voltage	V <sub>OUT</sub>			2.7	5.5	V
Reverse Voltage	V <sub>DD</sub>				-0.3	V
Output Current	I <sub>OUT</sub>				1	mA
Operating Temperature Range	T <sub>A</sub>		-40		+85	°C
Storage temperature range	T <sub>S</sub>		-40		+150	°C
Junction Temperature	T <sub>J</sub>				+150	°C

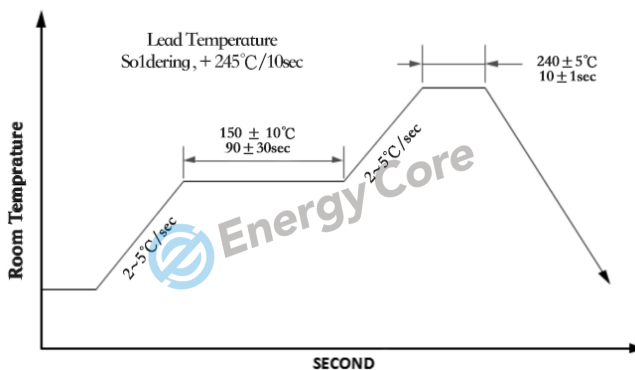
## Electrical Characteristics V<sub>in</sub>=2.7V, T<sub>A</sub>=25°C (unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Input Voltage	V <sub>DD</sub>		2.4	2.7	5.5	V
Average Supply Current	I <sub>DD</sub>			3		μA
		operating phase		1.1		mA
		stand-by phase		2.5		μA
Output Leakage Current		Output Off		0.01		μA
Operating time				60		μs
Standby time				150		ms
Duty cycle				0.04		%
Operate Point	B <sub>OP</sub>		+40 (-60)	±50	+60 (-40)	Gauss
Hysteresis	B <sub>HYS</sub>		5	10	15	Gauss
Electro-Static Discharge	HBM		4			KV

## IR Reflow Curve



YR Soldering Condition



DR Soldering Condition

## Ordering Information

Part Number*	Package	Top Marking
ECS1252-YR	TSOT23-3	252XX
ECS1252-DR	TO-92S-3	252

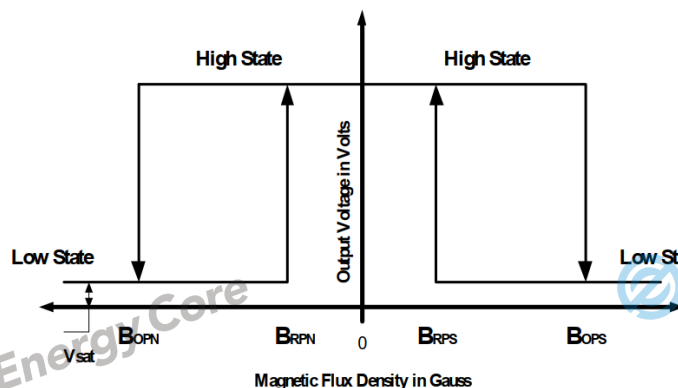
North Pole



YR Package

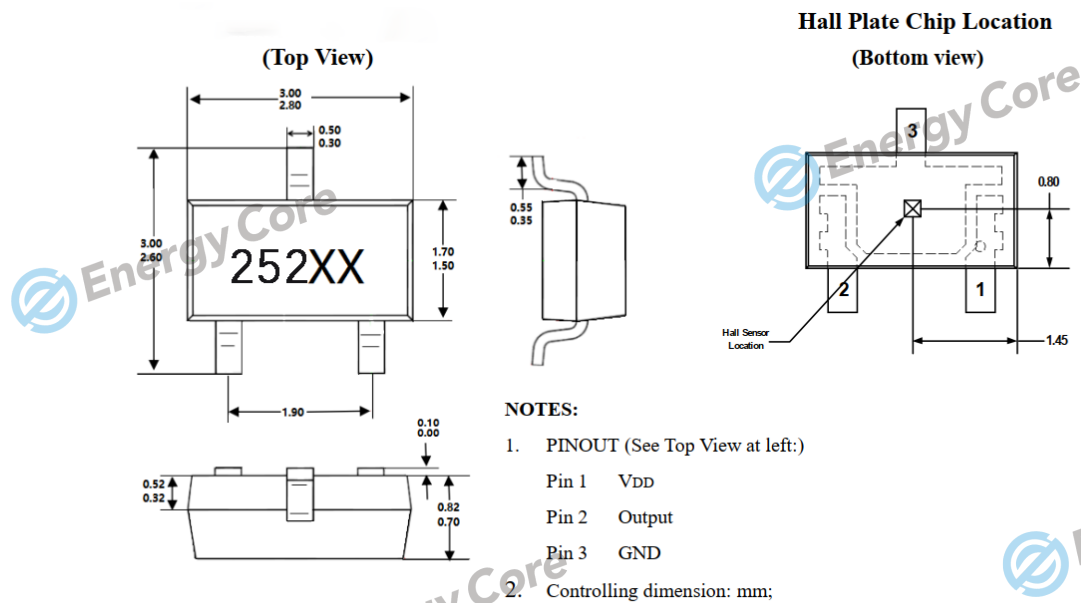


DR Package

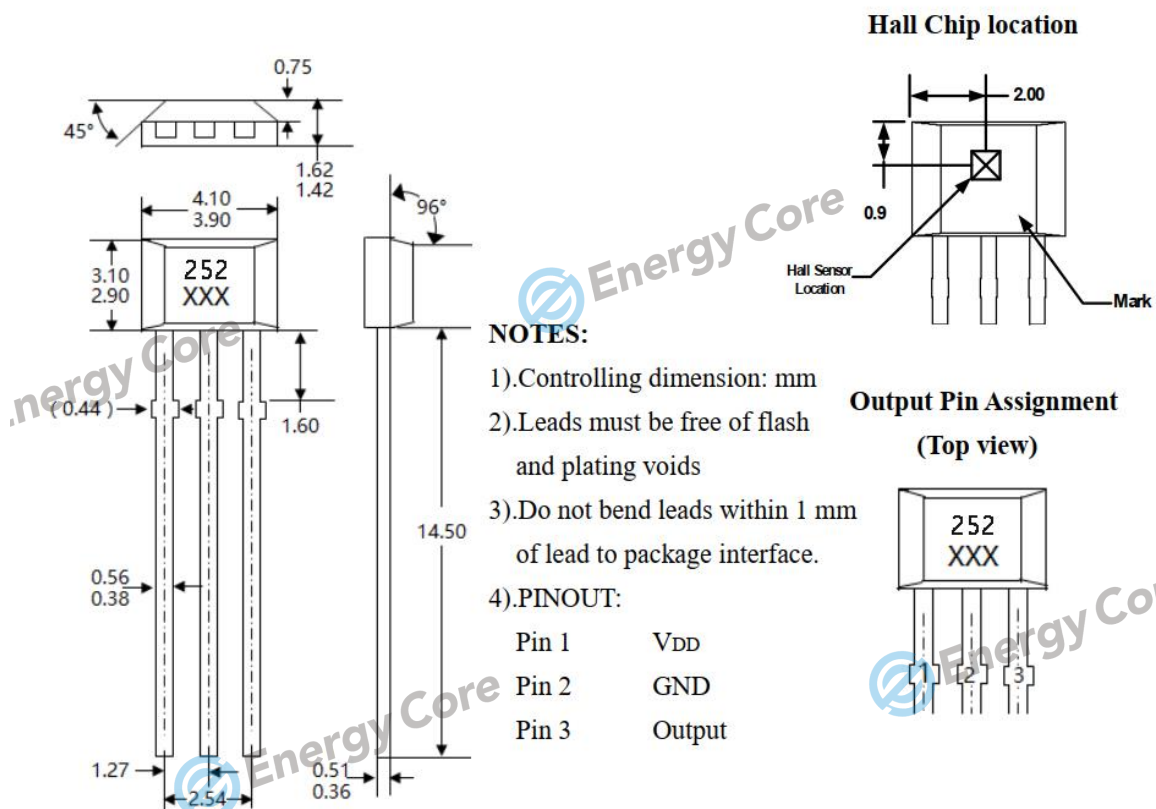


## Sensor Location, Package And Marking

### YR Package (TSOT23-3)



### DR Package (TO-92S-3)



Technical drawing of a 3-pin DIN connector, showing dimensions and marking.

**Top View Dimensions:**

- Overall width: 7.8
- Pin pitch: 3.45
- Pin diameter: 1.65
- Distance from edge to first pin: 1.85
- Distance between pins: 3.55
- Distance from last pin to edge: 1.65
- Overall length: 4.1
- Distance from edge to first pin: 3.9
- Distance between pins: 2.05
- Distance from last pin to edge: 1.95

**Side View Dimensions:**

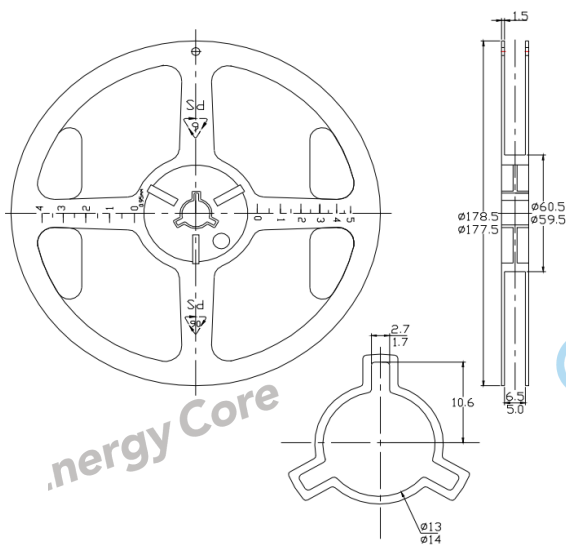
- Overall height: 8.2
- Pin height: 3.55
- Distance from edge to pin: 2.75

**Cross-section A-A Dimensions:**

- Pin diameter:  $\varnothing 3.2$
- Pin height:  $\varnothing 3.4$
- Chamfer: 5° MAX. (2X)
- Radius: R0.3

**Marking Diagram:**

- Pin numbers: 1, 2, 3
- Feed direction: Indicated by an arrow pointing right.



1. Material: Conductive polystyrene;
2. DIM in mm;
3. 10 sprocket hole pitch cumulative tolerance  $\pm 0.2$ ;
4. Camber not to exceed 1mm in 100mm;
5. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole;
6. (S.R. OHM/SQ) Means surface electric