

Description

ECS1251 Hall-effect sensor is a temperature stable, stress-resistant, Low Tolerance of Sensitivity micro-power switch. Superior high-temperature performance is made possible through a dynamic offset cancellation that utilizes chopper-stabilization. This method reduces the offset voltage normally caused by device over molding, temperature dependencies, and thermal stress. This device requires the presence of omni-polar magnetic fields for operation.

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

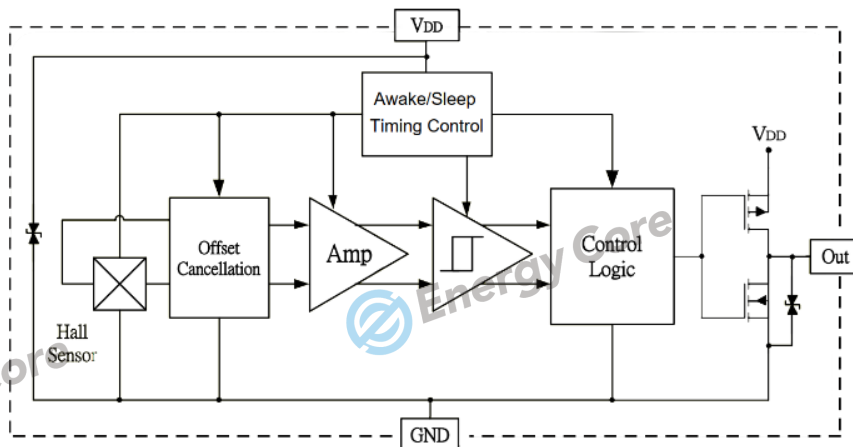
Feature

- ◆ Input voltage range : 1.8V~6V
- ◆ Totem-pole output
- ◆ Solid-State reliability
- ◆ CMOS Hall IC Technology
- ◆ Good ESD protection

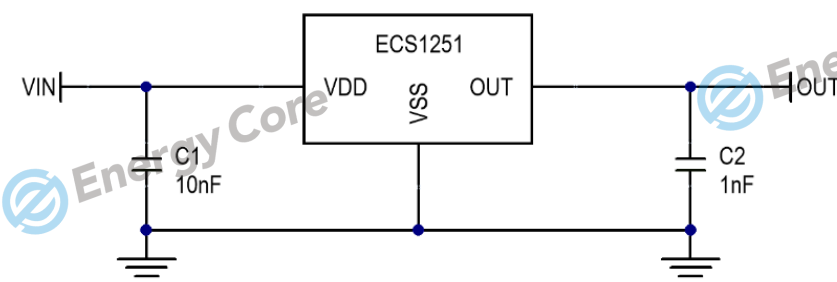
Application

- ◆ 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



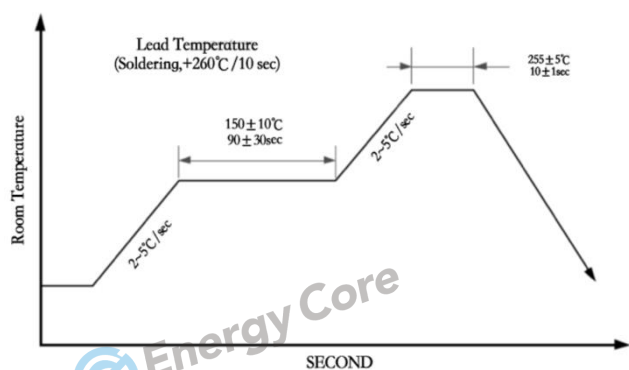
Absolute Maximum Ratings

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Voltage	V_{DD}				6.5	V
Output Voltage	V_{OUT}				6.5	V
Reverse Voltage	V_{DD}				-0.3	V
Output Current	I_{OUT}				1	mA
Operating Temperature Range	T_A		-40		+85	°C
Storage temperature range	T_S		-65		+150	°C
Junction Temperature	T_J				+150	°C
Thermal Resistance	θ_{JA}	YR/DR	310/206			°C/W
	θ_{JC}	YR/DR	223/148			°C/W
Package Power Dissipation	P_D	YR			400	mW
		DR			606	mW

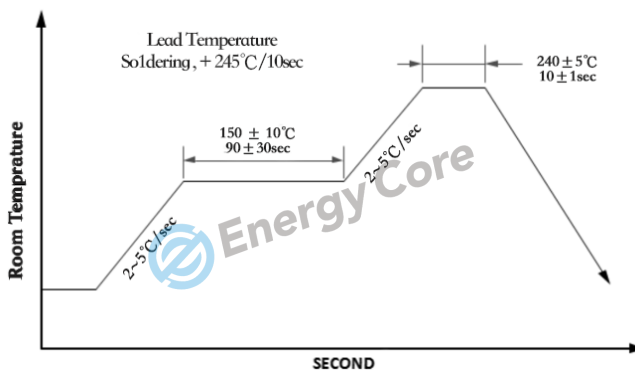
Electrical Characteristics $V_{in}=1.8V, T_A=25^{\circ}C$ (unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Input Voltage	V_{DD}		1.8		6	V
Input Current	I_{DD}	Awake State		1.4	3	mA
		Sleep State		3.6	7	μA
		Average		5	10	μA
Output Leakage Current		Output Off			1	μA
Awake mode time	T_{aw}			40	80	μs
Sleep mode time	T_{SL}			40	80	mS
Operate Point	B_{OPS}			30	55	Gauss
	B_{OPN}		-55	-30		
Release Point	B_{RPS}		10	20		Gauss
	B_{RPN}			-20	-10	
Hysteresis	B_{HYS}			10		Gauss
Electro-Static Discharge	HBM		4			KV

IR Reflow Curve



YR Soldering Condition

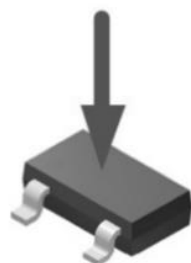


DR Soldering Condition

Ordering Information

Part Number*	Package	Top Marking
ECS1251-YR	TSOT23-3	251XX
ECS1251-DR	TO-92S-3	251

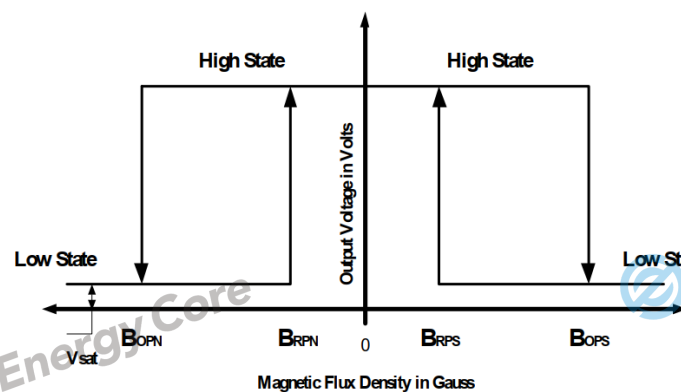
North Pole



YR Package

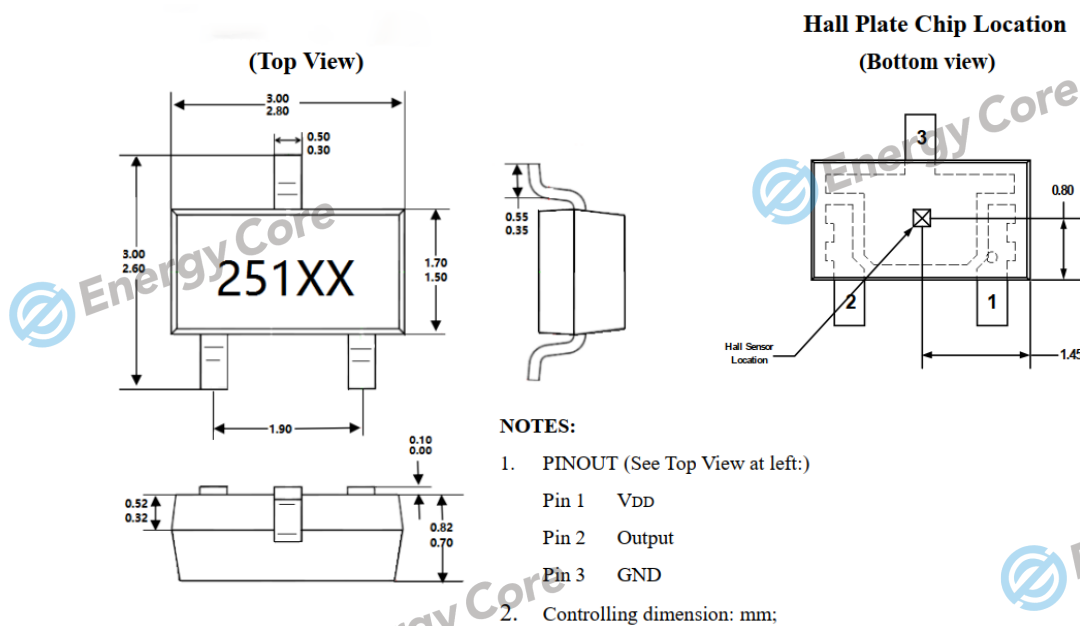


DR Package

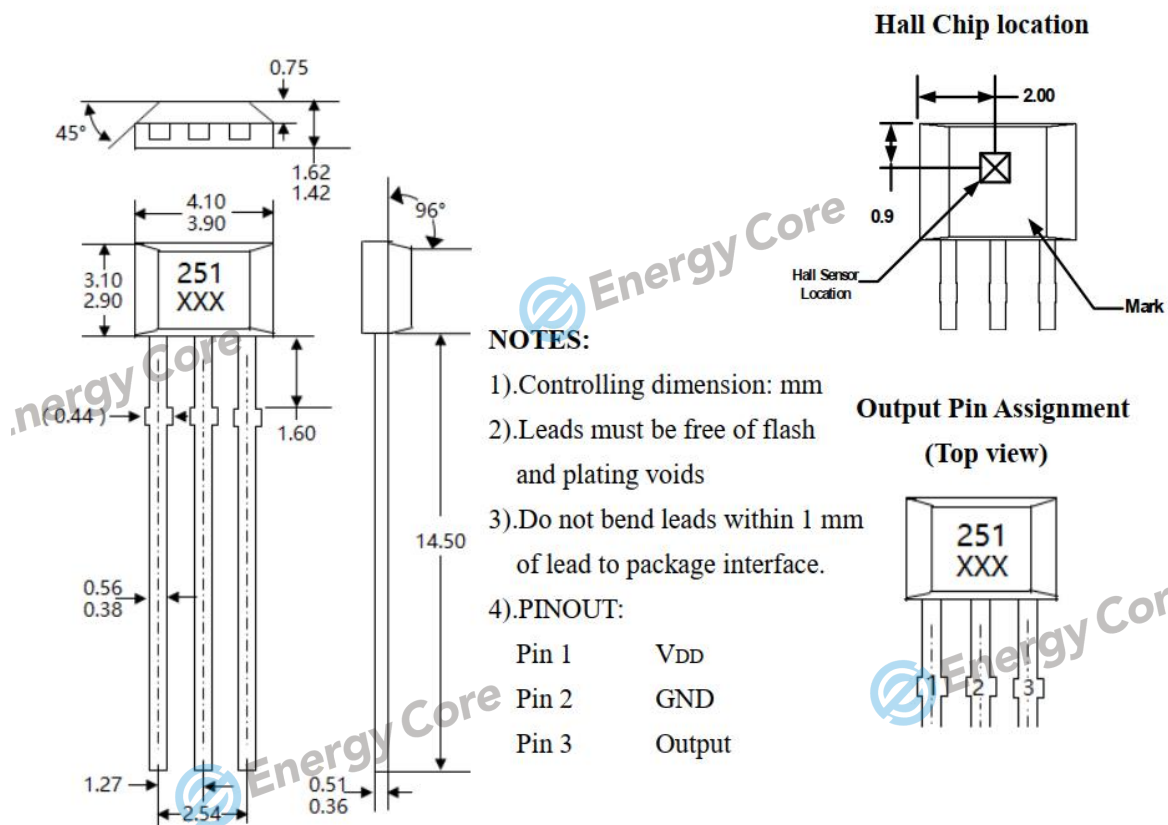


Sensor Location, Package And Marking

YR Package (TSOT23-3)



DR Package (TO-92S-3)



SECTION A-A

Marking

Feed direction

NOTES:

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